



CLI Command Reference for Ethernet Routing Switch 4900 and 5900 Series

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Chapter 1: About this Document

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

Purpose

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

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

Conventions

This section discusses the conventions used in this guide.

Text Conventions

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

Table 1: Notice Icons




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

Table continues...




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

Table 2: Text Conventions

| Convention | Description |
|------------------------|--|
| Angle brackets (< >) | <p>Angle brackets (< >) indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when you enter the command.</p> <p>If the command syntax is <code>cfm maintenance-domain maintenance-level <0-7></code> , you can enter <code>cfm maintenance-domain maintenance-level 4</code>.</p> |
| Bold text | <p>Bold text indicates the GUI object name you must act upon.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Click OK. • On the Tools menu, choose Options. |
| Braces ({ }) | <p>Braces ({ }) indicate required elements in syntax descriptions. Do not type the braces when you enter the command.</p> <p>For example, if the command syntax is <code>ip address {A.B.C.D}</code>, you must enter the IP address in dotted, decimal notation.</p> |
| Brackets ([]) | <p>Brackets ([]) indicate optional elements in syntax descriptions. Do not type the brackets when you enter the command.</p> <p>For example, if the command syntax is <code>show clock [detail]</code>, you can enter either <code>show clock</code> or <code>show clock detail</code>.</p> |
| Ellipses (...) | <p>An ellipsis (...) indicates that you repeat the last element of the command as needed.</p> <p>For example, if the command syntax is <code>ethernet/2/1 [<parameter> <value>]...</code> , you enter <code>ethernet/2/1</code> and as many parameter-value pairs as you need.</p> |

Table continues...

| Convention | Description |
|---------------------|---|
| <i>Italic Text</i> | Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles that are not active links. |
| Plain Courier Text | Plain Courier text indicates command names, options, and text that you must enter. Plain Courier text also indicates command syntax and system output, for example, prompts and system messages. Examples: <ul style="list-style-type: none"> • <code>show ip route</code> • <code>Error: Invalid command syntax</code> <code>[Failed][2013-03-22 13:37:03.303</code> <code>-04:00]</code> |
| Separator (>) | A greater than sign (>) shows separation in menu paths. For example, in the Navigation tree, expand the Configuration > Edit folders. |
| Vertical Line () | A vertical line () separates choices for command keywords and arguments. Enter only one choice. Do not type the vertical line when you enter the command. For example, if the command syntax is <code>access-policy by-mac action { allow deny }</code> , you enter either <code>access-policy by-mac action allow</code> or <code>access-policy by-mac action deny</code> , but not both. |

Documentation and Training

Find Extreme Networks product information at the following locations:

[Current Product Documentation](#)

[Release Notes](#)

[Hardware and software compatibility](#) for Extreme Networks products

[Extreme Optics Compatibility](#)

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

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

Getting Help

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

[Extreme Portal](#)

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

[The Hub](#)

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

[Call GTAC](#)

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

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

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

Subscribe to Service Notifications

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

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

*** Note:**

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

4. Select **Submit**.

Providing Feedback

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

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

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

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

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

Chapter 2: New in this Document

The following sections detail what is new in this document.

New Commands

The following commands are newly added to this document:

Zero Touch Provisioning Plus (ZTP+)

- [auto-provision](#) on page 110
- [show auto-provision](#) on page 468

DHCP-OOB client

- [ip mgmt address source](#) on page 158
- [show ip mgmt address source](#) on page 371

Chapter 3: Application Configuration

This chapter provides information related to the Application configuration commands.

end (Application Configuration)

Exits from configure mode.

Syntax

- `end`

Default

None

Command Mode

Application Configuration

exit (Application Configuration)

Exits from application configuration mode.

Syntax

- `exit`

Default

None

Command Mode

Application Configuration

slamon agent ip address

Configures the agent IP address.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Application Configuration

slamon agent port

Configures the UDP port.

Syntax

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

Command Parameters

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

Default

The default is 50011.

Command Mode

Application Configuration

slamon agent-comm-port

Configures the agent-to-agent communication port.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Application Configuration

slamon cli

Enables the SLA Monitor agent CLI support.

Syntax

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

Default

None

Command Mode

Application Configuration

slamon cli-timeout

Configures the agent automatic CLI session timeout value.

Syntax

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

Command Parameters

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

Default

60

Command Mode

Application Configuration

slamon cli-timeout-mode

Enables the agent automatic CLI session timeout.

Syntax

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

Default

None

Command Mode

Application Configuration

slamon ntr

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Application Configuration

slamon oper-mode

Enables the SLA Monitor agent.

Syntax

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

Default

None

Command Mode

Application Configuration

slamon refuse-server-tests

Enables the agent refuse server test mode.

Syntax

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

Default

None

Command Mode

Application Configuration

slamon RTP

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Application Configuration

slamon server ip address

Configures the agent server IP address.

Syntax

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

Command Parameters

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

Default

0.0.0.0

Command Mode

Application Configuration

slamon server port

Configure the server TCP registration port.

Syntax

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

Command Parameters

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

Default

0

Command Mode

Application Configuration

slamon server-bypass

Enables the agent server bypass mode.

Syntax

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

Default

None

Command Mode

Application Configuration

Chapter 4: DHCP Guard Configuration

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

device-role (DHCP Guard Configuration)

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

Syntax

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

Command Parameters

| | |
|---------------|-------------------|
| client | Specifies client. |
| server | Specifies server. |

Default

The default is router.

Command Mode

DHCP Guard Configuration

preference

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

DHCP Guard Configuration

Chapter 5: Ethernet Interface Configuration

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

adac (on a port)

Modifies ADAC port settings.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

adac detection

Enables detection mechanisms on ports.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

auto-negotiation-advertisements

Configure auto-negotiation advertisement settings.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

brouter

Configures brouter ports.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

clear arp-cache (on a port)

Clears the Layer 3 ARP cache.

Syntax

- `clear arp-cache`

Default

None

Command Mode

Ethernet Interface Configuration

clear eapol non-eap (on a port)

Clears NEAP authenticated clients.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

clear ip dhcp-snooping binding (on a port)

Clears DHCP snooping bindings.

Syntax

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

Command Parameters

- | | |
|----------------|--------------------------------------|
| dynamic | Clear DHCP snooping dynamic bindings |
| static | Clear DHCP snooping static bindings |

Default

None

Command Mode

Ethernet Interface Configuration

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

Clears UDP broadcast counters.

Syntax

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

Command Parameters

- | | |
|---------------------|----------------------------------|
| <LINE> | Clear counters for specific VLAN |
|---------------------|----------------------------------|

Default

None

Command Mode

Ethernet Interface Configuration

clear ip igmp profile stats (on a port)

Clears IGMP profile statistics.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

clear ip ospf counters (on a port)

Clears OSPF statistics counters.

Syntax

• `clear ip ospf counters <1-4094>`

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

clear ip verify source statistics (on a port)

Clears IP Source Guard statistics.

Syntax

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

Command Parameters

| | |
|---------------------------|------------------|
| <WORD> | Port list |
| interface Ethernet | Select interface |

Default

None

Command Mode

Ethernet Interface Configuration

clear ip-blocking (on a port)

Clears the Layer 3 IP blocking state.

Syntax

- `clear ip-blocking`

Default

None

Command Mode

Ethernet Interface Configuration

clear ipv6 destinationcache (on a port)

Clear the IPv6 destination cache.

Syntax

- `clear ipv6 destinationcache`

Default

None

Command Mode

Ethernet Interface Configuration

clear ipv6 neighbor-cache (on a port)

Clears the IPv6 neighbor-cache.

Syntax

- `clear ipv6 neighbor-cache`

Default

None

Command Mode

Ethernet Interface Configuration

clear ipv6 statistics (on a port)

Clear IPv6 statistics.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

clear isis lsdb (on a port)

Clears LSP database and restarts the state machine.

Syntax

- `clear isis lsdb`

Default

None

Command Mode

Ethernet Interface Configuration

clear isis stats (on a port)

Clears ISIS statistics.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

clear license (on a port)

Clears licenses.

Syntax

- `clear license`

Default

None

Command Mode

Ethernet Interface Configuration

clear logging (on a port)

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

Syntax

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

Command Parameters

| | |
|-----------------|-----------------------------|
| critical | Clear critical log messages |
|-----------------|-----------------------------|

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

Default

None

Command Mode

Ethernet Interface Configuration

clear mac-address-table (on a port)

Flushes the MAC address table for a specific VLAN.

Syntax

- `clear mac-address-table [address <H.H.H>|dynamic|static] [interface {Ethernet |mlt <1-64>| vlan <1-4094>}]`
- `clear mac-address-table address <H.H.H>`
- `clear mac-address-table interface mlt <1-64>`

Command Parameters

| | |
|--|---|
| <1-4094> | Vlan to be flushed out |
| address <H.H.H> | Flush a single MAC Address |
| dynamic | Flush only dynamically learned addresses |
| interface {Ethernet mlt <1-64> vlan 1-4094>} | Flush MAC Addresses of a specific interface |
| mlt <1-64> | Trunk to be flushed out |
| static | Flush only statically inserted addresses |

Default

None

Command Mode

Ethernet Interface Configuration

clear sshc known-host

Clears the public key of a known host.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

clear stack port-statistics (on a port)

Clears the stack port counters.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

clear system last-exception (Ethernet Interface Configuration)

Clears last software exception information.

Syntax

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

Command Parameters

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

all All units

Default

None

Command Mode

Ethernet Interface Configuration

clear-stats

Clears the port counter.

Syntax

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

Command Parameters

mgmt Clear management port statistics

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

Default

None

Command Mode

Ethernet Interface Configuration

ddi-logging

Sets logging of DDI (Digital Diagnostics Interface) events

Syntax

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

Command Parameters

enable Enables DDI events logging.

Default

None

Command Mode

Ethernet Interface Configuration

eapol (on a port)

Modifies EAPOL-based security parameters.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

eapol guest-vlan (on a port)

Sets guest-vlan.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

eapol multihost (on a port)

Sets EAPOL multihost settings.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

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

Sets fail-open-vlan.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

eapol multihost non-eap-mac

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

eapol multivlan(on a port)

Sets EAPOL MHMV on ports.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

eapol radius-dynamic-server enable

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

Syntax

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

Command Parameters

<LINE> Indicates an individual port or list of ports

Default

None

Command Mode

Ethernet Interface Configuration

end (DHCP Guard Configuration)

Exits from configure mode.

Syntax

- `end`

Default

None

Command Mode

Ethernet Interface Configuration

end (on a port)

Exits from configure mode.

Syntax

- `end`

Default

None

Command Mode

Ethernet Interface Configuration

energy-saver (on a port)

Configures per-port energy saver settings.

Syntax

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

Command Parameters

| | |
|--------------------------------|-----------------------|
| <code>enable</code> | Enable energy saving |
| <code>port <LINE></code> | Specify list of ports |

Default

None

Command Mode

Ethernet Interface Configuration

exit (on a port)

Exits from interface configuration mode.

Syntax

- `exit`

Default

None

Command Mode

Ethernet Interface Configuration

flowcontrol

Configures flow control mode of a port.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

ip arp-inspection (on a port)

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

Syntax

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

Command Parameters

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

Default

untrusted

Command Mode

Ethernet Interface Configuration

ip dhcp-relay (on a port)

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

Syntax

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

Command Parameters

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

port <LINE> Specify list of ports

Default

None

Command Mode

Ethernet Interface Configuration

ip dhcp-snooping (on a port)

Configures DHCP snooping port settings.

Syntax

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

Command Parameters

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

port <portlist> Specifies a port or group of ports

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

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

Default

None

Command Mode

Ethernet Interface Configuration

ip igmp filter

Adds IGMP filter profile to interface.

Syntax

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

Command Parameters

<1-65535> Add IGMP filter profile to interface

Default

None

Command Mode

Ethernet Interface Configuration

ip ipfix (on a port)

Enables IPFIX for one or more ports.

Syntax

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

Command Parameters

enable Enable IPFIX for one or more ports

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

Default

None

Command Mode

Ethernet Interface Configuration

ip ospf (on a port)

Configures OSPF for an interface.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

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

Configure MD5 key for interface.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

ip rip (for a port)

Configures RIP parameters on an interface.

Syntax

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

Command Parameters

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

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

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

interface Ethernet Select Ethernet interfaces

Default

None

Command Mode

Ethernet Interface Configuration

ipv6 dhcp guard attach-policy

Attaches dhcp guard policy on interface

Syntax

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

Command Parameters

<WORD> Specifies the policy name.

Default

None

Command Mode

Ethernet Interface Configuration

ipv6 nd inspection dynamic-learning enable

Enable dynamic learning of a neighbor source address.

Syntax

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

Default

None

Command Mode

Ethernet Interface Configuration

ipv6 nd raguard attach-policy

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

Syntax

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

Command Parameters

<WORD> Specifies the policy.

Default

The default is disabled.

Command Mode

Ethernet Interface Configuration

ipv6 source-guard

Enables Source Guard on interface.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

isis

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

isis hello-auth type

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

Syntax

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

Command Parameters

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

key <WORD> Authentication key

key-id Key value (1-16 length)

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

Default

None

Command Mode

Ethernet Interface Configuration

isis l1-dr-priority

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

Syntax

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

Command Parameters

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

Default

64

Command Mode

Ethernet Interface Configuration

isis l1-hello-interval

Configures the level 1 hello interval.

Syntax

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

Command Parameters

<1-600> Configures the level 1 hello interval

Default

9

Command Mode

Ethernet Interface Configuration

isis l1-hello-multiplier

Configures the level 1 hello multiplier.

Syntax

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

Command Parameters

<2-100> Level-1 hello multiplier value

Default

3

Command Mode

Ethernet Interface Configuration

isis spbm

SPBM commands

Syntax

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

Command Parameters

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

<1-100> SPBM instance

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

Default

None

Command Mode

Ethernet Interface Configuration

lacp aggregation

Enables the port aggregation mode.

Syntax

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

Command Parameters

enable Enable port aggregation mode

port <portList> Specify port list

Default

None

Command Mode

Ethernet Interface Configuration

lacp clear-stats

Clears LACP statistics.

Syntax

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

Command Parameters

port <WORD> Specify port list

Default

none

Command Mode

Ethernet Interface Configuration

lacp key (on a port)

Configures the administrative LACP key for a set of ports.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

lacp mode

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

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

lacp priority

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

Syntax

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

Command Parameters

<0-65535> The priority value to assign

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

Default

None

Command Mode

Ethernet Interface Configuration

lacp timeout-time

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

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

lldp config-notification(on a port)

Enable notification on configuration change.

Syntax

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

Default

None

Command Mode

Ethernet Interface Configuration

lldp location-identification (on a port)

Location Configuration Information (LCI)

Syntax

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

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

lldp med-network-policies (on a port)

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

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

lldp port (on a port)

Port list

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

lldp status (on a port)

Set 802.1ab port(s) admin status

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

lldp tx-tlv (on a port)

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

Syntax

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

```

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

```

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

Ildp vendor-specific (on a port)

Configures 802.1ab vendor-specific settings.

Syntax

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

Command Parameters

dot1q-framing {auto | untagged | tagged}

Enables the Layer 2 priority tagging TLV transmit flag.

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

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

Default

None

Command Mode

Ethernet Interface Configuration

macsec confidentiality-offset (on a port)

Configures Encryption Offset on the port

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

macsec connectivity-association (on a port)

Associates a connectivity association to a port.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

macsec enable (Ethernet Interface Configuration)

Enables macsec on a port.

Syntax

- `macsec enable`
- `no macsec enable`

Default

Disabled

Command Mode

Ethernet Interface Configuration

macsec encryption enable (on a port)

Enables macsec encryption on a port.

Syntax

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

Default

Disabled

Command Mode

Ethernet Interface Configuration

macsec replay-protect enable (on a port)

Prevents the macsec port from replay-attacks

Syntax

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

Command Parameters

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

Default

Disabled

Command Mode

Ethernet Interface Configuration

mac-security (Ethernet Interface Configuration)

Enables /disables MAC-based security for individual port.

Syntax

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

Command Parameters

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

port <portlist> Specifies a port or list of ports

Default

None

Command Mode

Ethernet Interface Configuration

name (Ethernet Interface Configuration)

Sets the names of ports.

Syntax

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

Command Parameters

<LINE> New port name

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

Default

None

Command Mode

Ethernet Interface Configuration

poe poe-limit (for PoE units)

Sets the power limit for channels.

Syntax

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

Command Parameters

<3-16> Power limit in watt

port <portlist> Select port for operation

Default

None

Command Mode

Ethernet Interface Configuration

poe poe-limit (for PoE+ units)

Sets the power limit for channels.

Syntax

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

Command Parameters

<3-32> Power limit in watt

port <portlist> Select port for operation

Default

None

Command Mode

Ethernet Interface Configuration

poe poe-priority

Sets the port power priority.

Syntax

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

Command Parameters

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

port <portlist> The ports to set priority for

Default

None

Command Mode

Ethernet Interface Configuration

poe poe-shutdown

Disables PoE to a port.

Syntax

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

Command Parameters

`port <portlist>` List of ports

Default

None

Command Mode

Ethernet Interface Configuration

qos if-assign (Ethernet Interface Configuration)

Adds ports to an interface group.

Syntax

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

Command Parameters

`name <WORD>` Specify name of interface group

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

Default

None

Command Mode

Ethernet Interface Configuration

qos if-queue-shaper

Creates an egress queue shaper for one or more interfaces.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

qos if-shaper

Configures the interface shaping parameters for a set of ports.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

rate-limit

Configures rate-limiting on the port.

Syntax

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

Command Parameters

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

pps Changes rate-limit in pps

Default

None

Command Mode

Ethernet Interface Configuration

sflow (Ethernet Interface Configuration)

Configures sFlow on the switch.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

shared-port

Configures shared-port setting.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

show sflow (Ethernet Interface Configuration)

Displays sFlow-related information.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

shutdown (for a port)

Shut downs the selected interface.

Syntax

- `shutdown [port <portlist>]`

Command Parameters

`port <portlist>` Specifies a port or list of ports

Default

None

Command Mode

Ethernet Interface Configuration

slpp enable (Ethernet Interface Configuration)

Enable SLPP receive on ports.

Syntax

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

Default

Disabled

Command Mode

Ethernet Interface Configuration

slpp packet-rx-threshold (Ethernet Interface Configuration)

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

Syntax

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

Command Parameters

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

Default

Default is 5

Command Mode

Ethernet Interface Configuration

slpp port (Ethernet Interface Configuration)

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

Syntax

- `slpp port`

Default

None

Command Mode

Ethernet Interface Configuration

slpp-guard (Ethernet Interface Configuration)

Configures SLPP Guard for switch ports.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

spanning-tree (Ethernet Interface Configuration)

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

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

spanning-tree bpdu-filtering (Ethernet Interface Configuration)

Configures STP BPDU filtering.

Syntax

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

Command Parameters

enable Enables STP BPDU Filtering on the specified ports. The default value is disabled

port <portlist> Specifies the ports affected by the command.

timeout <10-65535 | 0> When BPDU filtering is enabled, this indicates the time (in seconds) during which the port remains disabled after it receives a BPDU. The port timer is disabled if this value is set to 0. The default value is 120 seconds.

Default

None

Command Mode

Ethernet Interface Configuration

spanning-tree mstp (Ethernet Interface Configuration)

Sets the MSTP parameters.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

spanning-tree rstp (Ethernet Interface Configuration)

Sets the RSTP parameters.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Ethernet Interface Configuration

speed

Sets the port speed.

Syntax

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

Command Parameters

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

port <portlist> List of ports

Default

None

Command Mode

Ethernet Interface Configuration

storm-control (Ethernet Interface Configuration)

Configures storm control.

Syntax

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

Command Parameters

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

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

broadcast Configures storm-control settings for broadcast traffic.

enable Enables storm control.

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

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

Default

None

Command Mode

Ethernet Interface Configuration

vlacp (Ethernet Interface Configuration)

Configures VLACP parameters per port.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Ethernet Interface Configuration

Chapter 6: Global Configuration

This chapter provides information related to the Global configuration commands.

adac call-server-port

Sets call server port(s) range.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

adac enable

Enables adac on the port or ports listed.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

adac mac-range-table

Adds new supported MAC address range.

Syntax

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

Command Parameters

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

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

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

Default

None

Command Mode

Global Configuration

adac op-mode

Sets ADAC operation mode.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

adac uplink-port

Sets uplink port(s) range.

Syntax

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

Command Parameters

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

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

Default

The default is none.

Command Mode

Global Configuration

adac voice-vlan

Sets Voice-VLAN ID.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

application

Enters application mode.

Syntax

- `application`

Default

None

Command Mode

Global Configuration

app-telemetry collector

Configures Application Telemetry Collector address.

Syntax

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

Command Parameters

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

*** Note:**

Application Telemetry sends data only over IPv4 GRE tunnels.

Default

None

Command Mode

Global Configuration

app-telemetry enable

Enables Application Telemetry.

Syntax

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

Command Parameters

enable Enables Application Telemetry protocol.

ports Enables Application Telemetry only on particular ports.

LINE Port list.

*** Note:**

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

Default

The default value is disable.

Command Mode

Global Configuration

arp

Configures a static ARP entry.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

asset-id

Configures the Asset-ID.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

audit

Configures audit settings.

Syntax

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

Command Parameters

| | |
|-------------|--------------------------------|
| log | Configure audit log settings |
| save | Enable audit log save settings |

Default

None

Command Mode

Global Configuration

audit encryption-key aes-cbc

Changes the audit log encryption key.

Syntax

- `audit encryption-key aes-cbc`

Default

None

Command Mode

Global Configuration

audit

Configures audit settings.

Syntax

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

log Configures audit log settings.

save Enables audit log save settings.

Default

None

Command Mode

Global Configuration

auto-provision

Enables ZTP+ auto-provisioning on the switch.

Syntax

- `auto-provision enable`
- `no auto-provision enable`

Default

Enabled

Command Mode

Global Configuration

auto-pvid

Enables Auto-PVID (for all ports).

Syntax

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

Default

None

Command Mode

Global Configuration

autosave

Changes autosave settings.

Syntax

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

Command Parameters

`enable` Enable autosave

Default

None

Command Mode

Global Configuration

autotopology

Enables the autotopology protocol.

Syntax

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

Default

None

Command Mode

Global Configuration

banner

Sets custom banner info.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

certificate ca

Configures Certificate Authority / Trustpoint.

Syntax

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

Command Parameters

| | |
|--|--|
| 1.2.3.4 | Specifies the name of the feature that uses this identity. |
| action caauth | Authenticates the trustpoint CA by getting the certificate of the CA and stores the CA certificate locally. |
| action enroll [challengepassword WORD<1–128>] | This password is given offline by the CA during the end entity registration. The length of the password is from 1 to 128. |
| action enroll [validity-days <7–1185>] | Generates certificate signing request to obtain identity certificate from configured trustpoint CA, gets the digital certificate, and stores it locally, associating with the trustpoint CA. |
| action generate-selfsigned- cert | Generates a self-signed subject certificate. |
| action get-crl | Gets the Certificate Revocation List from the CDP and stores into a file. |
| action remove | Releases the locally stored certificate associated with the trustpoint CA post revocation. |
| action renew [challengepassword WORD<1-128>] | This password is given offline by the CA during the end entity registration. The length of the password is from 1 to 128. |
| action renew [validity- days<7–1185>] | Generates certificate renewal request for given trustpoint CA, gets the digital certificate, and stores it locally by replacing the old certificate with the new one. The validity-days specifies the number of days for which the certificate will remain valid. The default value is 365 days. |
| ca-url WORD<1–1000> | Specifies the IPv4 or IPv6 address of the SFTP server. The range for IPv6 is 1–128. The range for IPv4 is 0.0.0.0 to 255.255.255.255. |
| common-name [WORD<1– 64>] | Specifies the name of the owner of the device or us |
| encrypted | Specifies a passphrase for decryption. |
| export | Export CA related files. |
| filename | Specifies the filename of the SFTP server. |
| import | Import CA related files. |
| key-name WORD<1–45> | Specifies the key pair generated by the command that was first associated with the CA trustpoint. |

| | |
|--------------------------------------|--|
| ramdisk | Imports specified certificate authority files from ramdisk. |
| regenerate-key-on-reenroll | Generates a new key pair before each re-enrollment. |
| sftp | Imports specified certificate authority files from SFTP server. |
| terminal | Imports specified certificate authority files from a terminal. |
| usb | Imports specified certificate authority files from USB storage. |
| use-post <false true> | Specifies the HTTP request style. The default value is True. |
| username | Specifies the username of the SFTP server. |
| username WORD<1-64> | Specifies the trusted CA url. |
| WORD <1-45> | Specifies the name of the certificate authority. It should be alphanumeric and case-sensitive. The maximum length should be 45 characters. |

Default

None

Command Mode

Global Configuration

certificate copy

Copies a certificate or a CRL.

Syntax

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

Command Parameters

| | |
|----------------------------|--|
| ca WORD<1-45> | Specifies the name of the source CA. |
| trust-store | Copies the certificate from trust store. |

Default

None

Command Mode

Global Configuration

certificate key

Configures Key pair.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

certificate move

Moves or renames a certificate or CRL.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

certificate subject

Defines subject information for device certificate.

Syntax

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

Command Parameters

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

| | |
|--|--|
| organization WORD<0-64> | Specifies the organization of the subject sending the Certificate Signing Request to the Certificate Authority. |
| province WORD<0-128> | Specifies the province of the subject sending the Certificate Signing Request to the Certificate Authority. |
| unit WORD<0-64> | Specifies the organizational unit of the subject sending the Certificate Signing Request to the Certificate Authority. |

Default

None

Command Mode

Global Configuration

certificate trust-store

Configures trust store.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

cfm

Configures CFM.

Syntax

- `cfm {[ethertype <0x0-0xFFFF>] | [spbm [enable] [level <0-7>] mepid <1-8191>]}`
- `default cfm ethertype`
- `default cfm spbm [enable] [level] [mepid]`
- `no cfm spbm enable`

Command Parameters

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

Default

None

Command Mode

Global Configuration

clear fa statistics

Clears FA summary and per-port statistics counters.

Syntax

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

Command Parameters

summary Clears FA summary statistics.

Default

None

Command Mode

Global Configuration

clear stack port-statistics

Clears the stack port counters.

Syntax

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

Command Parameters

unit <1-8> Specifies the unit number.

Default

None

Command Mode

Global Configuration

cli

Modifies session settings.

Syntax

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

Command Parameters

<WORD> password

local Use local password

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

Default

None

Command Mode

Global Configuration

clock set

Configure Real Time Clock

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

clock source

Configures time source.

Syntax

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

Command Parameters

| | |
|------------------------|---|
| <code>ntp</code> | Configure NTP as time source |
| <code>rtc</code> | Configure RTC as time source |
| <code>sntp</code> | Configure SNTP as time source |
| <code>sysUpTime</code> | Configure System Up Time as time source |

Default

None

Command Mode

Global Configuration

clock summer-time

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

Syntax

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

Command Parameters

`<1-1440>` Number of minutes to add/subtract during summer-time recurring

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

Default

None

Command Mode

Global Configuration

clock sync-rtc-with-time-client

Enables RTC sync with NTP/SNTP status.

Syntax

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

Command Parameters

enable Enable RTC sync with NTP/SNTP status

Default

None

Command Mode

Global Configuration

clock time-zone

Sets local time zone.

Syntax

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

Command Parameters

- <0-59>** Minutes difference from UTC (0, 15, 30 or 45)
- <-12 - 13>** Hours difference from UTC
- <WORD>** Set time zone acronym containing at most 4 chars

Default

None

Command Mode

Global Configuration

csnp-interval

Creates/modifies/deletes ASCII configuration script table entries.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

default app-telemetry

Default all Application Telemetry configuration. The default mode:

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

Syntax

- `default app-telemetry`

Command Parameters

app-telemetry Default all App-telemetry configuration

Default

None

Command Mode

Global Configuration

default clock

Configure clock settings

Syntax

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

Command Parameters

source Configure default time source

summer-time Set default values for summer-time.

sync-rtc-with-time-client Configure default status of synchronization of RTC with NTP/SNTP

Default

None

Command Mode

Global Configuration

diagnostics-quick-mode

Diagnostics quick mode.

Syntax

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

Command Parameters

enable Enable diagnostics quick mode

Default

None

Command Mode

Global Configuration

eapol (Global Configuration)

Enables/Disables EAPOL protocol.

Syntax

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

Command Parameters

{disable|enable} Disable/enable EAPOL protocol

Default

None

Command Mode

Global Configuration

eapol allow-port-mirroring

Enables port mirroring on eap ports.

Syntax

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

Default

None

Command Mode

Global Configuration

eapol guest-vlan (global)

Sets guest-vlan.

Syntax

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

Command Parameters

| | |
|---------------------------------|-------------------|
| <code>enable</code> | Enable guest-vlan |
| <code>vid <1-4094></code> | guest-vlan ID |

Default

None

Command Mode

Global Configuration

eapol multihost (global)

Sets EAPOL multihost settings of port.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

eapol multihost fail-open-vlan (global)

Sets fail-open-vlan.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

eapol multihost non-eap-pwd-fmt

Sets bits in RADIUS non-EAPOL password format.

Syntax

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

Command Parameters

| | |
|---------------------|----------------------------------|
| <LINE> | Non-EAP Password key |
| ip-addr | Set IP Address bit |
| key | Use the key for Non-EAP Password |

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

Default

None

Command Mode

Global Configuration

eapol multihost non-eap-user-based-policies

Enables non-EAP user based policies.

Syntax

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

Command Parameters

enable Enables non-EAP user based policies.

Default

Disabled

Command Mode

Global Configuration

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

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

Syntax

- `eapol multihost non-eap-user-based-policies filter-on-mac enable`
- `default eapol multihost non-eap-user-based-policies filter-on-mac enable`

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

Command Parameters

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

Default

Disabled

Command Mode

Global Configuration

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

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

Syntax

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

Command Parameters

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

Default

Disabled

Command Mode

Global Configuration

eapol multihost voip-vlan

Sets voip-vlan.

Syntax

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

Command Parameters

| | |
|---------------------------|---------------------|
| <1-5> | Number of voip vlan |
| enable | Enable voip-vlan |
| vid <1-4094> | voip-vlan ID |

Default

None

Command Mode

Global Configuration

eapol multivlan(global)

Sets EAPOL MHMV on ports.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

eapol user-based-policies

Enables EAPoL user based policies.

Syntax

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

Command Parameters

enable Enables EAPoL user based policies.

Default

Disabled

Command Mode

Global Configuration

eapol user-based-policies filter-on-mac

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

Syntax

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

Command Parameters

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

Default

Disabled

Command Mode

Global Configuration

eapol user-based-policies dynamic-ubp

Enables the creation of dynamic EAPoL user based policies.

Syntax

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

Command Parameters

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

Default

Disabled

Command Mode

Global Configuration

edm help-file-path

Sets the EDM help file path.

Syntax

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

Command Parameters

| | |
|-----------------------------|---------------------------------|
| <A.B.C.D> | IPv4 address of the TFTP server |
| <IPv6-address> | IPv6 address |
| <WORD> | EDM help file path |
| address | TFTP server address |
| tftp | Tftp-server |
| unit | Unit |
| usb | Usb device |

Default

None

Command Mode

Global Configuration

edm inactivity-timeout

Sets the EDM inactivity timeout.

Syntax

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

Command Parameters

`<30 - 65535>` seconds

Default

None

Command Mode

Global Configuration

end (global)

Exits from configure mode.

Syntax

- `end`

Default

None

Command Mode

Global Configuration

energy-saver (global)

Configures global energy saver settings.

Syntax

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

Command Parameters

`efficiency-mode` Enable Efficiency mode

| | |
|-------------------------|-------------------------|
| enable | Enable energy saver |
| poe-power-saving | Enable POE power saving |

Default

None

Command Mode

Global Configuration

energy-saver schedule

Configures energy saver activation/deactivation schedule.

Syntax

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

Command Parameters

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

weekend Configure schedule entries for weekends

Default

None

Command Mode

Global Configuration

enhanced-secure-mode

Enables or disables Enhanced Secure Mode.

Syntax

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

Command Parameters

disable Disables Enhanced Secure Mode.

enable Enables Enhanced Secure Mode.

no Disables Enhanced Secure Mode.

Default

None

Command Mode

Global Configuration

exit (Global configuration)

Exits from configure mode.

Syntax

- `exit`

Default

None

Command Mode

Global Configuration

fa

Configures Fabric Attach.

Syntax

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

Default

Enabled

Command Mode

Global Configuration

fa authentication-key

Configure Fabric Attach authentication key.

Syntax

- `fa authentication-key`

Default

None

Command Mode

Global Configuration

fa auto-provision

Configure Fabric Attach auto provision setting.

Syntax

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

Command Parameters

- proxy** Configure Fabric Attach auto provision setting as proxy.
- server** Configure Fabric Attach auto provision setting as server.

Default

None

Command Mode

Global Configuration

fa extended-logging

Enables Fabric Attach extended logging

Syntax

- `fa extended-logging`

Default

None

Command Mode

Global Configuration

fa message-authentication

Enable Fabric Attach message authentication.

Syntax

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

Command Parameters

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

Default

Enabled

Command Mode

Global Configuration

fa port-enable

Enables the Fabric Attach operation for each port.

Syntax

- `fa port-enable <LINE>`

Command Parameters

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

Default

Enabled

Command Mode

Global Configuration

fa proxy

Enable Fabric Attach client proxy.

Syntax

- `fa proxy`

Default

None

Command Mode

Global Configuration

fa uplink

Configures Fabric Attach uplink data

Syntax

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

Command Parameters

port <port> Specifies the uplink port.

trunk <trunkId> Specifies the uplink trunk.

Default

None

Command Mode

Global Configuration

fa vlan

Configure Fabric Attach VLANs.

Syntax

- `fa vlan`

Command Parameters

<LINE> Enable Fabric Attach client proxy.

Default

None

Command Mode

Global Configuration

fa zero-touch

Enable Fabric Attach Zero Touch.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

fa zero-touch-client

Configure Fabric Attach Zero Touch Client specifications.

Syntax

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

Command Parameters

| | |
|---------------------------------|--|
| camera | Specifies the client type as IP Camera |
| i-sid <0-16777214> | Specifies the client I-SID for I-SID/VLAN binding generation. |
| keep-static | Specifies whether static VLANs should be kept or removed on the client port for the duration of the client connection. |
| ona-sdn | Specifies the client type as ONA (SDN) |
| ona-spb-over-ip | Specifies the client type as ONA (SpbOIp) |
| phone | Specifies the client type as IP Phone |
| priority <0-7> | Specifies the client port priority. |
| router | Specifies the client type as Router |
| security-dev | Specifies the client type as Security Device |
| srvr-endpt | Specifies the client type as Server Endpoint |
| standard | Specifies the Standard (pre-defined) client type. |
| switch | Specifies the client type as Switch |
| video | Specifies the client type as IP Video |
| virtual-switch | Specifies the client type as Virtual Switch |
| vlan <1-4094> | Specifies the VLAN ID. |
| wap-type1 | Specifies the client type as Wireless AP (Type 1) |
| wap-type2 | Specifies the client type as Wireless AP (Type 2) |

Default

None

Command Mode

Global Configuration

fa zero-touch-options

Configure Fabric Attach Zero Touch option settings.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

http-port

Sets the TCP port on which web server will listen.

Syntax

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

Command Parameters

<1024-65535> http port number

Default

None

Command Mode

Global Configuration

https-only

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

Syntax

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

Default

None

Command Mode

Global Configuration

interface

Selects an interface to configure.

Syntax

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

Command Parameters

| | |
|------------------------------|--|
| <LINE> | Specifies the port list. |
| Ethernet | Specifies the Ethernet IEEE 802.3 interface. |
| loopback <1-16> | Specifies the loopback interface. |
| mgmt <1-8> | Specifies the mgmt interface. |

vlan <1-4094> Specifies the Layer 3 IP VLAN interface.

Default

None

Command Mode

Global Configuration

ip address (global)

Sets switch/stack IP address.

Syntax

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

Command Parameters

| | |
|----------------------------------|-------------------------------------|
| <source> | Restore default BootP/DHCP settings |
| A.B.C.D | IP address |
| bootp-always | Always use the bootp server |
| bootp-last-address | Use the last time bootp server |
| bootp-when-needed | Use bootp server when needed |
| configured-address | User-configured IP address |
| default-gateway {A.B.C.D} | set default-gateway address |
| dhcp-always | Always use the DHCP server |
| dhcp-last-address | Use the last time DHCP server |
| dhcp-when-needed | Use DHCP client when needed |
| netmask {A.B.C.D} | The subnet mask |
| source | BootP/DHCP mode |

| | |
|-----------------------------------|--|
| stack | The address of the stack |
| switch | To set the IP address of local unit |
| unit <1-8> {A.B.C.D} | To set the IP address of another unit in a stack |

Default

None

Command Mode

Global Configuration

ip arp-inspection (global)

Enables ARP inspection.

Syntax

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

Command Parameters

vlan <LINE> Configure ARP inspection VLAN list.

Default

None

Command Mode

Global Configuration

ip blocking-mode

Configures the Layer 3 IP blocking mode.

Syntax

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

Command Parameters

full Set the IP blocking mode to full

none Set the IP blocking mode to none

Default

None

Command Mode

Global Configuration

ip bootp

Configures BOOTP services.

Syntax

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

Command Parameters

- | | |
|-------------------|------------------------------------|
| always | Always use the bootp server |
| default-ip | Use BootP server or the default IP |
| disable | Never use bootp server |
| last | Use the last time bootp server |

Default

None

Command Mode

Global Configuration

ip default-gateway

Specifies default gateway (if not routing IP).

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip dhcp

Configures DHCP client settings.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip dhcp-relay (global)

Enables DHCP relay.

Syntax

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

Command Parameters

| | |
|--|--|
| bootp | set DHCP server mode to BOOTP only |
| bootp-dhcp | set DHCP server mode to both BOOTP and DHCP |
| dhcp | set DHCP server mode to DHCP only |
| disable | disable this forwarder path |
| enable | enable this forwarder path |
| fwd-path <agent-ip> <dhcp-ip> | Configure DHCP relay forward path |
| max-frame <576-1536> | Set the maximum length for which option82 is added to DHCP packets for relay |
| mode | set DHCP mode supported by this forwarder path |
| option82 | Enable option 82 for DHCP Relay |

Default

None

Command Mode

Global Configuration

ip dhcp-snooping (global)

Configures DHCP snooping settings.

Syntax

- `default ip dhcp-snooping {external-save | option82 | vlan <LINE> option82}`

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

Command Parameters

| | |
|--------------------------|---|
| enable | Enable DHCP Snooping |
| external-save | Disable DHCP snooping binding table external saving |
| option82 | Enable option 82 for DHCP snooping |
| vlan <LINE> | Configure DHCP snooping VLANs |

Default

None

Command Mode

Global Configuration

ip dhcp-snooping binding

Adds static DHCP snooping binding table entry.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip dhcp-snooping external-save

Controls the external DHCP snooping binding table saving.

Syntax

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

Command Parameters

| | |
|------------------------------|--|
| enable | Enables DHCP snooping binding table external saving. |
| filename <WORD> | DHCP snooping binding table external file name |
| sftp | Saves the DHCP snooping binding table on a SFTP server. |
| tftp | Save the DHCP snooping binding table on a TFTP server |
| unit <1-8> | USB unit number on which to save the DHCP snooping binding table |
| usb | Save the DHCP snooping binding table on USB |
| WORD | IPv6 address of TFTP server |

Default

None

Command Mode

Global Configuration

ip directed-broadcast

Enabled directed broadcast forwarding.

Syntax

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

Command Parameters

| | |
|---------------|------------------------------|
| enable | Enable IP directed broadcast |
|---------------|------------------------------|

Default

None

Command Mode

Global Configuration

ip domain-name

Configures DNS domain name.

Syntax

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

Command Parameters

<LINE> DNS domain name

Default

None

Command Mode

Global Configuration

ip forward-protocol

Configures broadcast forwarding.

Syntax

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

Command Parameters

<1-128> Enter ID of list of ports to forward

<1-65535> Enter UDP port to forward

<A.B.C.D> Enter IP Destination for the UDP port

| | |
|---------------------|------------------------------------|
| <WORD> | Protocol name |
| name | Enter name of the list |
| portfwlist | Set a port forwarding list |
| udp | Configure UDP broadcast forwarding |

Default

None

Command Mode

Global Configuration

ip fwd-nh (Global configuration mode)

Configure IP forwarding next-hop settings

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip igmp (Global Configuration)

Configures global IGMP settings.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip ipfix (Global)

Configures IPFIX.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip ipfix collector

Configures IPFIX collectors.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip ipfix enable

Enables IPFIX.

Syntax

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

Default

None

Command Mode

Global Configuration

ip ipfix slot

Configures IPFIX per-slot/unit settings.

Syntax

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

Command Parameters

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

- active-timeout <1-60>** Set the active timeout value (mins).
- aging-interval <0-2147400>** Set the aging interval value (seconds)

Default

None

Command Mode

Global Configuration

ip isis

Applies ISIS policy/redistribute configuration

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip isis maximum-path

Sets the maximum number of ECMP path for ISIS routes.

Syntax

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

Command Parameters

- <1-4>** Specifies the ECMP path value.

Default

None

Command Mode

Global Configuration

ip mgmt

Configures management information.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip mgmt address

Configures management IP address.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip mgmt address source

Configures management DHCP-OOB status.

Syntax

- `ip mgmt address source dhcp-when-needed`
- `ip mgmt address source configured-address`

Command Parameters

| | |
|---------------------------|-------------------|
| dhcp-when-needed | Enable DHCP-OOB. |
| configured-address | Disable DHCP-OOB. |

Default

None

Command Mode

Global Configuration

ip mgmt default-gateway

Specify management default gateway (if not routing IP).

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip mgmt limit

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

Syntax

• `ip mgmt limit <50-10000>`

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip mgmt netmask

Set management subnet mask.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

ip mgmt route

Configure a static route for the mgmt vlan.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip mgmt shutdown

Shutdown the mgmt port.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip mgmt shutdown-interval

Set the mgmt port shutdown time.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip name-server

Configures DNS server IP addresses.

Syntax

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

Command Parameters

<A.B.C.D> IPv4 address

<WORD> IPv6 address, 45 length

Default

None

Command Mode

Global Configuration

ip pim

Configure global Protocol Independent Multicast (PIM) settings.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip pim rp-candidate group

Configure a dynamic C-RP.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip pim static-rp

Configure a Protocol Independent Multicast (PIM) static RP.

Syntax

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

Command Parameters

| | |
|------------------|--|
| <A.B.C.D> | The first <A.B.C.D> specifies the group address. |
| <A.B.C.D> | The third <A.B.C.D> specifies the RP address. |
| <A.B.C.D>/<0-32> | The second <A.B.C.D> specifies the address and mask. |
| enable | Enables the static RP. |

Default

None

Command Mode

Global Configuration

ip pim virtual-neighbor

Configure a Protocol Independent Multicast (PIM) virtual neighbor.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip prefix-list

Adds/modifies a prefix from an IP prefix list.

Syntax

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

Command Parameters

<WORD> Ip prefix list name

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

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

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

name <WORD> Rename the ip prefix list

Default

None

Command Mode

Global Configuration

ip route

Creates a static IP route.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip route preference protocol

Configures the ip route preference protocol value.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

ip routing (global)

Enables global routing.

Syntax

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

Command Parameters

force Do not ask for confirmation

Default

None

Command Mode

Global Configuration

ip source-interface

Configures source interface.

Syntax

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

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ip static-mroute

Configure static multicast route.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ipmgr

Modifies IP Manager settings.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ipv6

Sets global IPv6 configuration subcommands.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ipv6 address

Sets default IPv6 address.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

ipv6 autoconfig

Configures IPv6 autoconfiguration.

Syntax

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

Default

None

Command Mode

Global Configuration

ipv6 default-gateway

Configures IPv6 default gateway.

Syntax

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

Command Parameters

<WORD> IPv6 address

Default

None

Command Mode

Global Configuration

ipv6 dhcp

Global dhcp guard subcommands

Syntax

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

Command Parameters

| | |
|---------------------|---|
| <WORD> | Specifies the Dynamic Host Configuration Protocol (DHCP) policy name. |
| clear | Clear statistics globally |
| enable | Enable dhcp guard globally |
| guard | Global dhcp guard subcommands |
| LINE | List of ports |
| policy | Create a policy globally |
| stats | Clear statistics globally |

Default

None

Command Mode

Global Configuration

ipv6 dhcp-relay fwd-path

Create fwd-path.

Syntax

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

Command Parameters

<WORD> Agent IPv6 address

Default

None

Command Mode

Global Configuration

ipv6 fhs

Global ipv6 fhs subcommands.

Syntax

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

Command Parameters

enable Enable First Hoop Security globally

ipv6-access-list Ipv6 access list

mac-access-list Create FHS mac access list

nd ND subcommands

Default

None

Command Mode

Global Configuration

ipv6 fhs ipv6-access-list

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

Syntax

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

Command Parameters

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

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

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

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

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 fhs mac-access-list

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

Syntax

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

Command Parameters

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

<WORD> Specifies the MAC address name.

mode {allow|deny} Specifies the access mode.

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 fhs nd inspection stats clear

Clears ND inspection global overflow statistics.

Syntax

- `ipv6 fhs nd inspection stats clear`

Default

None

Command Mode

Global Configuration

ipv6 icmp addr-unreach

Configure IPv6 Internet Control Message Protocol (ICMP) parameters.

Syntax

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

Command Parameters

icmp Enables IPv6 redirect message.

Default

None

Command Mode

Global Configuration

ipv6 icmp port-unreach

Configure IPv6 Internet Control Message Protocol (ICMP) parameters.

Syntax

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

Command Parameters

icmp Enables IPv6 ICMP port unreachable message.

Default

None

Command Mode

Global Configuration

ipv6 mgmt

Configure IPv6 management port

Syntax

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

Command Parameters

address Configure management stack/unit/switch address

dad-ns Duplicate address detection - number of neighbor solicitations

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

Default

None

Command Mode

Global Configuration

ipv6 mld (global)

Configure global MLD settings.

Syntax

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

Command Parameters

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

stream Flushes MLD Streams.

vlan <1-4094> Flushes the VLAN interfaces.

Default

None

Command Mode

Global Configuration

ipv6 nd (global)

Global ipv6 nd subcommands.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ipv6 nd inspection clear stats

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

Syntax

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

Command Parameters

<LINE> Specifies a list of ports.

Default

None

Command Mode

Global Configuration

ipv6 nd inspection enable

Enable ND inspection globally.

Syntax

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

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 nd rguard clear stats

Clear the router advertisement (RA) guard statistics.

Syntax

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

Command Parameters

<LINE> Specifies a list of ports.

Default

None

Command Mode

Global Configuration

ipv6 nd raguard enable

Enable router advertisement (RA) guard globally.

Syntax

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

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 nd raguard policy

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

Syntax

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

Command Parameters

<WORD> Specifies the RA guard policy name.

Default

The default is disabled.

Command Mode

Global Configuration

ipv6 neighbor

Configures neighbor cache.

Syntax

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

Command Parameters

<WORD> IPv6 address, 45 length

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

port <WORD> unit/ port

Default

None

Command Mode

Global Configuration

ipv6 neighbor binding clear

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

Syntax

- `ipv6 neighbor binding clear`

Default

None

Command Mode

Global Configuration

ipv6 neighbor binding down-lifetime

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

Syntax

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

Command Parameters

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

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

Default

The default is 86400.

Command Mode

Global Configuration

ipv6 neighbor binding max-entries

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

Syntax

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

Command Parameters

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

Default

The default is 512.

Command Mode

Global Configuration

ipv6 neighbor binding reachable-lifetime

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

Syntax

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

Command Parameters

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

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

Default

The default is 300 seconds.

Command Mode

Global Configuration

ipv6 neighbor binding stale-lifetime

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

Syntax

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

Command Parameters

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

Default

The default is 86400 seconds.

Command Mode

Global Configuration

ipv6 neighbor binding vlan

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ipv6 rip

Enables RIPng interface.

Syntax

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

Command Parameters

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

Default

Disabled

Command Mode

Global Configuration

ipv6 route

Creates a static route and set the parameters.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

ipv6 slow-path-to-cpu

Enables slow path to cpu.

Syntax

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

Command Parameters

enable Enable slow path to cpu.

Default

None

Command Mode

Global Configuration

ipv6 tunnel

IPv6 Tunnel configuration commands.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

i-sid

Configures the User-Network-Interface (UNI).

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

isis (global)

Configures ISIS operations.

Syntax

- `isis apply redistribute {direct | static}`

Command Parameters

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

Default

None

Command Mode

Global Configuration

isis maximum-path

Sets the maximum number of ECMP path for ISIS routes.

Syntax

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

Command Parameters

<1-4> Specifies the ECMP path value.

Default

None

Command Mode

Global Configuration

jumbo-frames

Enables jumbo frames on switch/stack.

Syntax

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

Command Parameters

enable Enable jumbo frames on switch/stack

size <1519-9216> Maximum jumbo-frames size

Default

None

Command Mode

Global Configuration

lacp key (global)

Configures LACP key to MLT mappings.

Syntax

- `default lacp key <1-4095>`

- `lacp key <1-4095> mlt-id <1-64>`

Command Parameters

- <1-4095>** LACP key value
- mlt-id <1-64>** Configure MLT ID for this LACP key

Default

None

Command Mode

Global Configuration

lacp port-mode

Configure the LACP port mode for a set of ports.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

lacp system-priority

Sets LACP system priority.

Syntax

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

Command Parameters**<0-65535>**

Priority

Default

None

Command Mode

Global Configuration

link-state

Configures link state tracking group.

Syntax

- `default link-state group <1-2> [downstream] [upstream]`
- `link-state group <1-2> {[downstream interface] [enable] [upstream interface] [Ethernet <LINE>] [mlt <1-64>]}`
- `no link-state group <1-2> {[downstream interface] [enable] [upstream interface] [Ethernet <LINE>] [mlt <1-64>]}`

Command Parameters

| | |
|------------------------------|--|
| downstream interface | Add a specific interface to group downstream |
| enable | Enable group |
| Ethernet <LINE> | Add list of ports |
| group <1-2> | Tracking group ID |
| mlt <1-64> | Add trunk number |
| upstream interface | Add a specific interface to group upstream |

Default

None

Command Mode

Global Configuration

Ildp (global)

Configures 802.1ab settings.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

logging

Changes system event log settings.

Syntax

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

```
{[address] {[A.B.C.D] [WORD]} [enable] [facility] {[daemon] [local0]
[local1] [local2] [local3] [local4] [local5] [local6] [local7]}
[level] {[critical] [informational] [none] [serious]} [secondary-
address] {[A.B.C.D] [WORD]}} [volatile] {[latch] [overwrite]}
```

- no logging [remote] {[address] [enable] [facility] [level] [secondary-address]}

Command Parameters

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

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

mac-address-table

Configures MAC address table settings.

Syntax

- `default mac-address-table [aging-time] [learning <LINE>] [static <H.H.H> <1-4094> interface {[Ethernet <LINE>] | [mlt <1-64>]]}`
- `mac-address-table [aging-time <10-1000000>] [learning <LINE>] [static <H.H.H> <1-4094> interface {[Ethernet <LINE>] | [mlt <1-64>]]}`
- `no mac-address-table [learning <LINE>] [static <H.H.H> <1-4094> interface {[Ethernet <LINE>] | [mlt <1-64>]]}`

Command Parameters

| | |
|---|---|
| aging-time <10 - 1000000> | Configure MAC address table aging time |
| interface {ethernet <LINE> mlt <1-64>} | Add MAC Address of a specific interface |
| learning <LINE> | Enable the list of ports for MAC Address learning |
| static <H.H.H> <1-4094> | Add static MAC Address |

Default

None

Command Mode

Global Configuration

macsec clear-stats

Clears MACSec stats for all ports or entered ports.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

macsec connectivity-association (global)

Configures a new connectivity association.

Syntax

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

Command Parameters

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

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

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

Default

None

Command Mode

Global Configuration

mac-security (Global Configuration)

Configures MAC Address security options.

Syntax

- `default mac-security [auto-learning] {[aging-time] | [sticky]} [mac-da-filter <H.H.H>]`
- `mac-security [auto-learning]{[aging-time <0-65535>] | [sticky]} [mac-address-table] {[address <H.H.H>] {[mlt-id <1-64>] | [port <LINE>]} | [security-list <1-128>]} | {[sticky-address <H.H.H>] {[mlt-id <1-64>] | [port <LINE>]}} [mac-da-filter] {[add <H.H.H>] | [delete <H.H.H>] | <H.H.H>} [disable] [enable] [intrusion-detect] {[disable] | [enable] | [forever]} [intrusion-timer <0-65535>] [filtering] {[disable] | [enable]} [learning] {[disable] | [enable]} [learning-ports] {[add <LINE>] | [LINE] | [remove <LINE>]} [security-list] [<1-128>] {[add <LINE>] | <LINE> | [remove <LINE>]} [snmp-lock] { [disable] | [enable]}`
- `no mac-security [auto-learning] {[aging-time] | [sticky]} [mac-address-table] {[address <H.H.H>] | [mlt-id <1-64>] | [port <LINE>]} | [security-list <1-128>]} [mac-da-filter <H.H.H>] [security-list <1-128>]`

Command Parameters

| | |
|---|--|
| aging-time <0-65535> | Set aging-time value for auto-learned addresses |
| auto-learning | Configure MAC Auto-Learning |
| disable | Disable MAC Address Security |
| enable | Enable MAC Address Security |
| filtering | Enable/disable DA filtering for intruder addresses |
| intrusion-detect | Enable/disable partitioning on intrusion detection |
| intrusion-timer <0-65535> | Set temporary partition time for intrusion detection |
| learning | Enable/disable MAC address learning |
| learning-ports {add <LINE> remove <LINE> <LINE>} | Modify ports participation in MAC address learning |
| mac-address-table | Add addresses to MAC security address table |
| mac-da-filter | Add/delete MAC DA filtering addresses |
| mlt-id <1-64> | Assign specific trunk to a MAC address |

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

Default

None

Command Mode

Global Configuration

maximum-path

Sets the maximum number of ECMP path for static routes.

Syntax

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

Command Parameters

<1-4> ECMP path value

Default

None

Command Mode

Global Configuration

mlt

Modifies Multi-Link Trunking (MLT) configuration.

Syntax

- `default mlt {<1-64> bpdu | shutdown-ports-on-disable enable}`

- `mlt <id> [name <mlt-name>] [enable | disable] [member <LINE>] [learning {disable | fast | normal}] [bpdu {all-ports | single-port}] [loadbalance {advance|basic}]`
- `mlt shutdown-ports-on-disable enable`
- `mlt spanning-tree <1-64> stp {<1-8> | all | learning {disable | normal | fast}}`
- `no mlt {<1-64>|shutdown-ports-on-disable enable}`

Command Parameters

| | |
|---|--|
| <1-64> | MLT ID |
| bpdu {all-ports single-port} | Set BPDU send/receive mode |
| disable | Disable MLT |
| enable | Enable MLT |
| learning {disable fast normal} | Set STP learning mode to disable, fast or normal for a trunk |
| loadbalance {advance basic} | MLT Load Balance Selection (Advance/Basic) |
| member <LINE> | Set port membership of MLT |
| name <mlt-name> | MLT Name |
| shutdown-ports-on-disable | Set protection for disabled trunk |
| spanning-tree | Set MLT spanning-tree settings |
| stp {<1-8> all learning} | Spanning tree group and learning mode |

Default

None

Command Mode

Global Configuration

mvr

Configures MVR on the switch

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

mvr group-range

Configure the IP multicast address ranges for MVR processing

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

mvr vlan

Configures a VLAN as an MVR receiver or Source VLAN

Syntax

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

Command Parameters

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

source Specifies VLAN as MVR source VLAN.

Default

None

Command Mode

Global Configuration

ntp

Enable Network Time Protocol (NTP) globally.

Syntax

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

Default

None

Command Mode

Global Configuration

ntp authentication-key

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

Syntax

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

Command Parameters

<1-65535> Creates the key ID.

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

<WORD> Specifies the secret key.

Default

The default configuration removes the secret key.

Command Mode

Global Configuration

ntp server

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

Syntax

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

Command Parameters

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

Default

No authentication.

Command Mode

Global Configuration

ospf

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

password

Configure password security restrictions.

Syntax

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

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

Command Parameters

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

| | |
|--|--|
| password-change-rate-limiter <1-10> | Restricts number of times a password can be changed in a day. |
| password-history <0-12> | Configures the number of passwords in history if password security is enabled. |
| password-history <0-12> | Configures the number of passwords in the history if password security is enabled. |
| security | Enables password security restrictions. |
| unlock-timer <1-365> | Set number of days after which a disabled account will be enabled. |

Default

None

Command Mode

Global Configuration

poe

Sets global configuration of Power Over Ethernet.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

port-mirroring

Changes port mirroring configuration.

Syntax

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

Command Parameters

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

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

Command Mode

Global Configuration

qos acl-assign

Creates access-list assignment.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos action

Creates base actions entry.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos agent aq-mode

Modifies the Auto QOS application traffic processing mode.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

qos agent buffer

Modifies the QoS resource buffer allocation.

Syntax

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

Command Parameters

large Medium amount of resource sharing.

maximum Maximum amount of resource sharing.

regular Minimum amount of resource sharing.

Default

None

Command Mode

Global Configuration

qos agent dos-attack-prevention

Enable the QoS DoS Attack Prevention

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos agent nvram-delay

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos agent oper-mode

Enables the QoS operational mode.

Syntax

- `default qos agent [oper-mode]`

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

Command Parameters

`enable` QoS enabled globally

Default

None

Command Mode

Global Configuration

qos agent queue-set

Modifies the default QoS CoS queue set.

Syntax

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

Command Parameters

`<1-8>` queue set value

Default

None

Command Mode

Global Configuration

qos agent reset-default

Resets the QoS to its configuration default.

Syntax

- `qos agent reset-default`

Default

None

Command Mode

Global Configuration

qos agent reset-partial-default

Resets the QoS to its partial configuration default.

Syntax

- `qos agent reset-partial-default`

Default

None

Command Mode

Global Configuration

qos agent statistics-tracking

Modifies the QoS default statistics tracking.

Syntax

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

Command Parameters

aggregate Allocate a single statistics counter to track data for all classifier of the QoS policy being created

disable No statistics tracking for QoS policy being created

individual Allocate individual statistics counters to track data for each classifier of the QoS policy being created

Default

None

Command Mode

Global Configuration

qos agent ubp

Modifies the QoS UBP support level.

Syntax

- `default qos agent ubp`

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos classifier

Creates classifier set entry.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos classifier-block

Creates classifier block entry.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos clear-queue-stats

Clears all Quality of Service (QoS) queue statistics.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos clear-stats

Clears all QoS statistic counters.

Syntax

- `qos clear-stats`

Default

None

Command Mode

Global Configuration

qos egressmap

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

Syntax

- `default qos egressmap [ds <0-63>]`
- `qos egressmap [name <WORD>] [ds <0-63>] [1p <0-7>] [dp <low-drop | high-drop>] [ds-new <0-63>]`

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos if-action-extension

Creates interface actions extension entry.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos if-assign (Global Configuration)

Adds interfaces to interface groups.

Syntax

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

Command Parameters

name <WORD> Specify name of interface group

port <LINE> Specify list of ports

Default

None

Command Mode

Global Configuration

qos if-group

Creates interface group.

Syntax

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

Command Parameters

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

name <WORD> Specify name of interface group

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

| | |
|-----------------------|---|
| unrestricted | Traffic received on the associated interfaces may have unrestricted treatment applied (i.e. unrestricted ports can be either access links or connected to the core network; no default processing is applied) |
| untrusted | IPv4 traffic received on the associated interfaces are assumed to be untrusted (i.e. untrusted ports are typically access links that are connected to end stations; DSCP and 802.1p remarked by default) |
| untrustedbasic | IPv4 and IPv6 traffic received on the associated interfaces are assumed to be untrusted (i.e. untrusted ports are typically access links that are connected to end stations; DSCP and 802.1p remarked by default). Tagged and untagged traffic are treated the same for minimum resource consumption. |
| untrustedv4v6 | IPv4 and IPv6 traffic received on the associated interfaces are assumed to be untrusted (i.e. untrusted ports are typically access links that are connected to end stations; DSCP and 802.1p remarked by default) |

Default

None

Command Mode

Global Configuration

qos ingressmap

Configures the 802.1p to DSCP associations.

Syntax

- `default qos ingressmap`
- `qos ingressmap {[name <WORD>] [1p <0-7> ds <0-63>]}`

Command Parameters

| | |
|--------------------------|--|
| 1p <0-7> | Specify the 802.1p user priority used as lookup key for DSCP assignment at ingress |
| ds <0-63> | Specify the DSCP value associated with the target 802.1p priority |
| name <WORD> | Specify label for the ingress mapping |

Default

None

Command Mode

Global Configuration

qos ip-acl

Creates IP access-list element.

Syntax

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

Command Parameters

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

| | |
|-------------------------------------|--|
| src-port-min <0-65535> | Specify the L4 source port minimum value classifier criteria |
| update-1p <0 - 7> | Specify the update user priority |
| update-dscp <0 - 63> | Specify the update DSCP |

Default

None

Command Mode

Global Configuration

qos ip-element

Creates IP classifier element entry.

Syntax

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

Command Parameters

| | |
|--|---|
| addr-type <ipv4 ipv6> | Specify the address type (IPv4, IPv6) classifier criteria |
| ds-field <0-63> | Specify the DSCP classifier criteria |
| dst-ip {A.B.C.D}/<0-32> | Specify the destination IP classifier criteria |
| dst-port-max <0-65535> | Specify the L4 destination port maximum value filter criteria |
| dst-port-min <0-65535> | Specify the L4 destination port minimum value classifier criteria |
| flow-id <0x00-0xffff> | Specify the IPv6 flow identifier classifier criteria |
| ip-flag <LINE> | Specify the IP fragment flag criteria |
| ipv4-option <no-opt with-opt> | Specify the IPv4 option criteria |
| name <WORD> | Specify name of ip-element |

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

Default

None

Command Mode

Global Configuration

qos l2-acl

Creates L2 access-list element.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

qos l2-element

Creates L2 classifier element entry .

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

qos meter

Creates meter entry.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

qos policy

Creates the Quality of Service (QoS) policy entry.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

qos queue-set-assignment

Configures the 802.1p priority to queue.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

qos system-element

Creates system classifier element entry.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

qos traffic-profile classifier

Creates QoS Traffic Profile classifier entry.

Syntax

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

Command Parameters

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

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

| | |
|-------------------------------------|---|
| vlan-min <1-4094> | Specify the Vlan ID minimum value classifier criteria |
| vlan-tag {tagged untagged} | Specify the vlan tag classifier criteria |

Default

None

Command Mode

Global Configuration

qos traffic-profile set

Creates QoS Traffic Profile set.

Syntax

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

Command Parameters

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

uniform-per-policy

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

Default

None

Command Mode

Global Configuration

qos ubp classifier

Creates QoS UBP entries.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

qos ubp set

Creates QoS UBP set.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

quickconfig(global)

Enables quick config.

Syntax

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

Command Parameters

| | |
|---------------|---------------------|
| enable | Enable quick config |
|---------------|---------------------|

Default

None

Command Mode

Global Configuration

radius accounting

Configures RADIUS accounting settings.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

radius dynamic-server

RADIUS Dynamic Authorization Client settings.

Syntax

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

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

radius reachability

Configure RADIUS server reachability settings.

Syntax

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

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

radius server

Configures RADIUS server settings.

Syntax

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

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

radius use-management-ip

Enables Radius use-management-ip flag.

Syntax

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

Default

None

Command Mode

Global Configuration

radius-server

Configures RADIUS server password fallback.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

radius-server encapsulation

Enables Change Radius Password

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

remote connection

Enables or disables SSHC and Telnet on device.

Syntax

• `remote connection {enable | disable}`

Command Parameters

disable Disables SSHC and Telnet on device.

enable Enables SSHC and Telnet on device.

Default

None

Command Mode

Global Configuration

renumber

Renumber unit numbers in a stack.

Syntax

• `renumber unit`

Command Parameters

unit Renumber unit numbers in a stack

Default

None

Command Mode

Global Configuration

rip

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

rmon alarm

Creates RMON Alarm entries.

Syntax

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

Command Parameters

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

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

Default

None

Command Mode

Global Configuration

rmon event

Creates RMON Event entries.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

rmon history

Creates RMON History entries.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

rmon stats

Creates RMON Stats entries.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

role

Configures a role.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

route-map

Adds/modifies an IP route policymap.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

router isis

Changes router ISIS mode configuration.

Syntax

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

Command Parameters

enable Enable router ISIS mode configuration

Default

None

Command Mode

Global Configuration

router ospf

Changes OSPF config settings.

Syntax

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

Command Parameters

enable Enable OSPF config settings

Default

None

Command Mode

Global Configuration

router rip

Changes RIP config settings.

Syntax

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

Command Parameters

enable Enable RIP config settings

ipv6-enable Enable RIPng

Default

None

Command Mode

Global Configuration

router vrrp

Changes VRRP config settings.

Syntax

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

Command Parameters

enable Enable VRRP config settings

Default

None

Command Mode

Global Configuration

script upload (global)

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

serial-console

Enables serial console port.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

serial-security

Serial security settings.

Syntax

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

Command Parameters

enable Enable serial security

Default

None

Command Mode

Global Configuration

sflow (global)

Configures sFlow on the switch.

Syntax

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

Command Parameters

address Specifies the IPv4 address or IPv6 address.

collector <1-4> Specifies the Collector ID.

max-datagram-size <400-9216> Specifies the maximum size of the datagram packets. The default is 1400.

owner <word> Specifies the owner that created the entry (maximum length 20).

port <1-65535> Specifies the UDP port number. The default UDP port is 6343.

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

Default

None

Command Mode

Global Configuration

sflow enable

Enables or disables sFlow on the switch.

Syntax

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

Default

None

Command Mode

Global Configuration

sftp-server

Configure the sftp-server

Syntax

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

Command Parameters

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

<ipv6_address> Specifies the IPv6 address of SFTP server

Default

None

Command Mode

Global Configuration

show password

Displays password security restrictions.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

show sflow (global)

Displays sFlow-related information.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

slpp enable (global)

Enables SLPP.

Syntax

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

Default

Disabled

Command Mode

Global Configuration

slpp timeout (Global Configuration)

Sets the SLPP auto port re-enable timeout

Syntax

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

Command Parameters

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

Default

Default value is 0

Command Mode

Global Configuration

slpp ethertype (global)

Sets the SLPP ethertype.

Syntax

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

Command Parameters

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

Default

Default value is 0x8102

Command Mode

Global Configuration

slpp tx-interval (global)

Sets SLPP packet transmission interval

Syntax

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

Command Parameters

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

Default

Default value is 500

Command Mode

Global Configuration

slpp vid (global)

Sets the SLPP VLAN list.

Syntax

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

Command Parameters

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

Default

Default value is 1

Command Mode

Global Configuration

slpp-guard (global)

Configures SLPP-guard global settings.

Syntax

- `default slpp-guard ethertype`

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snmp-server bootstrap

Generates SNMP bootstrap parameters.

Syntax

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

Command Parameters

minimum-secure Use minimum security configuration

semi-secure Use partial security configuration

very-secure Use maximum security configuration

Default

None

Command Mode

Global Configuration

snmp-server community

Enables SNMP; set community string and access privs.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snmp-server contact

Text for mib object sysContact.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snmp-server disable

Disables SNMP access.

Syntax

- `snmp-server disable`

Default

None

Command Mode

Global Configuration

snmp-server enable

Enables SNMP access.

Syntax

- `snmp-server enable`

Default

None

Command Mode

Global Configuration

snmp-server engine-id

Changes the default unique SNMP Engine ID.

Syntax

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

Command Parameters

<WORD> Specifies the SNMP Engine ID.

Default

None

Command Mode

Global Configuration

snmp-server host

Specifies hosts to receive SNMP notifications.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snmp-server location

Modifies text for mib object sysLocation.

Syntax

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

Command Parameters

<LINE> The physical location of this node

Default

None

Command Mode

Global Configuration

snmp-server name

Modifies text for mib object sysName.

Syntax

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

Command Parameters

<LINE> The system name of this node

Default

None

Command Mode

Global Configuration

snmp-server notification-control

Enables generation of a notification type.

Syntax

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

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snmp-server notify-filter

Creates SNMP notify filter.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snmp-server packet-size

Sets the SNMP maximum packet size.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snmp-server user

Creates SNMPv3 user.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snmp-server view

Creates/modifies an SNMP access view.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

sntp enable

Enables Simple Network Time Protocol (SNTP) parameters.

Syntax

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

Default

None

Command Mode

Global Configuration

sntp server primary

Configures primary SNTP server.

Syntax

- `default sntp server primary`

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snTP server secondary

Configures secondary SNTP server.

Syntax

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

Command Parameters

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

Default

None

Command Mode

Global Configuration

snTP sync-interval

Sets SNTP re-synchronization interval.

Syntax

- `default sntp sync-interval`
- `sntp sync-interval <0-168>`

Command Parameters

<0-168> SNTP re-synchronization interval hours

Default

None

Command Mode

Global Configuration

sntp sync-now

Forces immediate SNTP synchronization.

Syntax

- `sntp sync-now`

Default

None

Command Mode

Global Configuration

spanning-tree 802dot1d-port-compliance

Sets 802dot1d port compliance mode.

Syntax

- `default spanning-tree 802dot1d-port-compliance enable`
- `no spanning-tree 802dot1d-port-compliance enable`
- `spanning-tree 802dot1d-port-compliance enable`

Command Parameters

enable Enable 802dot1d port compliance mode

Default

None

Command Mode

Global Configuration

spanning-tree add-vlan

Adds a VLAN to a spanning-tree group.

Syntax

- `spanning-tree add-vlan <1-4094>`

Command Parameters

<1-4094> VLAN ID

Default

None

Command Mode

Global Configuration

spanning-tree bpdu-filtering (Global Configuration)

Configures spanning-tree bpdu-filtering.

Syntax

- `default spanning-tree bpdu-filtering ignore-self`
- `no spanning-tree bpdu-filtering ignore-self`
- `spanning-tree bpdu-filtering ignore-self`

Command Parameters

ignore-self Ignore bridge's own BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree cost-calc-mode

Sets pathcost type IEEE 802.1d or IEEE 802.1t.

Syntax

- `default spanning-tree cost-calc-mode`
- `spanning-tree cost-calc-mode [dot1d | dot1t]`

Command Parameters

dot1d IEEE 802.1d pathcost

dot1t IEEE 802.1t pathcost

Default

None

Command Mode

Global Configuration

spanning-tree forward-time

Sets spanning tree forwarding time.

Syntax

- `default spanning-tree forward-time [hello-time] [max-age] [multicast-address] [priority] [tagged-bpdu]`
- `spanning-tree forward-time <4-30> [hello-time <1-10>] [max-age <6-40>] [multicast-address <H.H.H>] [priority {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]}]} [tagged-bpdu {[disable] [enable]}]} [tagged-bpdu-vid <1-4094>]`

Command Parameters

<4-30> seconds

disable Disable tagged BPDUs on tagged ports

enable Enable tagged BPDUs on tagged ports

hello-time <1-10> Set spanning tree hello time

max-age <6-40> Set spanning tree maximum age

multicast-address <H.H.H> Set spanning-tree multicast MAC address

priority (0000 - f000 priority value in Hex) Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000.

tagged-bpdu Enable/disable tagged BPDUs on tagged ports

tagged-bpdu-vid <1-4094> Set VLAN ID for tagged BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree hello-time

Sets spanning tree hello time.

Syntax

- `default spanning-tree hello-time [max-age] [multicast-address] [priority] [tagged-bpdu]`
- `spanning-tree hello-time <1-10> [max-age <6-40>] [multicast-address <H.H.H>] [priority {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]}] [tagged-bpdu {[disable] [enable]}] [tagged-bpdu-vid <1-4094>]`

Command Parameters

disable Disable tagged BPDUs on tagged ports

enable Enable tagged BPDUs on tagged ports

hello-time <1-10> Set spanning tree hello time

max-age <6-40> Set spanning tree maximum age

multicast-address <H.H.H> Set spanning-tree multicast MAC address

priority (0000 - f000 priority value in Hex) Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000.

tagged-bpdu Enable/disable tagged BPDUs on tagged ports

tagged-bpdu-vid <1-4094> Set VLAN ID for tagged BPDUs

Default

None

Command Mode

Global Configuration

spanning-tree max-age

Sets spanning tree maximum age.

Syntax

- `default spanning-tree max-age <6-40> [multicast-address] [priority] [tagged-bpdu]`
- `spanning-tree max-age <6-40> [multicast-address <H.H.H>] [priority {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]}] [tagged-bpdu {[disable] [enable]}] [tagged-bpdu-vid <1-4094>]`

Command Parameters

| | |
|---|--|
| disable | Disable tagged BPDUs on tagged ports |
| enable | Enable tagged BPDUs on tagged ports |
| max-age <6-40> | Set spanning tree maximum age |
| multicast-address <H.H.H> | Set spanning-tree multicast MAC address |
| priority (0000 - f000 priority value in Hex) | Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000. |
| tagged-bpdu | Enable/disable tagged BPDUs on tagged ports |
| tagged-bpdu-vid <1-4094> | Set VLAN ID for tagged BPDUs |

Default

None

Command Mode

Global Configuration

spanning-tree mode

Sets spanning tree operation mode.

Syntax

- `spanning-tree mode {mst | rstp | stpg}`

Command Parameters

- mst** 802.1s Multi Spanning Tree Protocol
- rstp** 802.1w Rapid Spanning Tree Protocol (single group/instance)
- stpg** Multi Spanning Tree Protocol

Default

None

Command Mode

Global Configuration

spanning-tree multicast-address

Sets spanning-tree multicast MAC address.

Syntax

- `default spanning-tree multicast-address`
- `spanning-tree multicast-address <H.H.H>`

Command Parameters

- <H.H.H>** Multicast MAC Address (i.e. H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx)

Default

None

Command Mode

Global Configuration

spanning-tree port-mode

Sets spanning-tree port membership mode.

Syntax

- `spanning-tree port-mode {auto | normal}`

Command Parameters

| | |
|---------------|---|
| auto | spanning-tree auto port membership mode |
| normal | spanning-tree normal port membership mode |

Default

None

Command Mode

Global Configuration

spanning-tree priority

Sets spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000.

Syntax

- **default spanning-tree priority** [**multicast-address**] [**tagged-bpdu**] [**tagged-bpdu-vid**]
- **spanning-tree priority** {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]}] [**multicast-address** <H.H.H>] [**tagged-bpdu** {[disable] [enable]}] [**tagged-bpdu-vid** <1-4094>]

Command Parameters

| | |
|---|--|
| disable | Disable tagged BPDUs on tagged ports |
| enable | Enable tagged BPDUs on tagged ports |
| multicast-address <H.H.H> | Set spanning-tree multicast MAC address |
| priority (0000 - f000 priority value in Hex) | Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000. |
| tagged-bpdu | Enable/disable tagged BPDUs on tagged ports |
| tagged-bpdu-vid <1-4094> | Set VLAN ID for tagged BPDUs |

Default

None

Command Mode

Global Configuration

spanning-tree remove-vlan

Removes a VLAN from a spanning-tree group.

Syntax

- `spanning-tree remove-vlan <1-4094>`

Command Parameters

<1-4094> VLAN ID

Default

None

Command Mode

Global Configuration

spanning-tree stp

Specifies spanning-tree group ID.

Syntax

- `default spanning-tree stp <1-8> [forward-time] [hello-time] [max-age] [priority] [tagged-bpdu] [multicast-address]`
- `spanning-tree [stp <1-8>] [forward-time <4-30>] [hello-time <1-10>] [max-age <6-40>] [priority {[0000] [1000] [2000] [3000] [4000] [5000] [6000] [7000] [8000] [9000] [a000] [b000] [c000] [d000] [e000] [f000]}] [tagged-bpdu {enable | disable}] [tagged-bpdu-vid <1-4094>] [multicast-address <H.H.H>] [add-vlan <1-4094>] [create] [delete] [disable] [enable] [remove-vlan <1-4094>]`

Command Parameters

| | |
|----------------------------------|-------------------------------------|
| <1-8> | STPG ID |
| add-vlan <1-4094> | Add a VLAN to a spanning-tree group |
| create | Create a spanning-tree group (STG) |
| delete | Delete a spanning-tree group (STG) |
| disable | Disable a spanning tree group (STG) |
| enable | Enable a spanning tree group (STG) |
| forward-time <4-30> | Set spanning tree forwarding time |

| | |
|---|--|
| hello-time <1-10> | Set spanning tree hello time |
| max-age <6-40> | Set spanning tree maximum age |
| multicast-address <H.H.H> | Set spanning-tree multicast MAC address |
| priority (0000 - f000 priority value in Hex) | Set spanning tree priority (in Hex); if 802.1T compliance, should be multiple of 0x1000. |
| remove-vlan <1-4094> | Remove a VLAN from a spanning-tree group |
| tagged-bpdu {enable disable} | Enable/disable tagged BPDUs on tagged ports |
| tagged-bpdu-vid <1-4094> | Set VLAN ID for tagged BPDUs |

Default

None

Command Mode

Global Configuration

spanning-tree tagged-bpdu

Enables/disables tagged BPDUs on tagged ports.

Syntax

- `spanning-tree tagged-bpdu {enable | disable} [tagged-bpdu-vid <1-4094>] [multicast-address <H.H.H>]`

Command Parameters

| | |
|--|---|
| disable | Disable tagged BPDUs on tagged ports |
| enable | Enable tagged BPDUs on tagged ports |
| multicast-address <H.H.H> | Set spanning-tree multicast MAC address |
| tagged-bpdu-vid <1-4094> | Set VLAN ID for tagged BPDUs |

Default

None

Command Mode

Global Configuration

spanning-tree tagged-bpdu-vid

Sets VLAN ID for tagged BPDUs.

Syntax

- `spanning-tree tagged-bpdu-vid <1-4094> [multicast-address <H.H.H>]`

Command Parameters

| | |
|--|---|
| multicast-address <H.H.H> | Set spanning-tree multicast MAC address |
| tagged-bpdu-vid <1-4094> | Set VLAN ID for tagged BPDUs |

Default

None

Command Mode

Global Configuration

spbm (Global Configuration)

Enables SPBM.

Syntax

- `default spbm ethertype`
- `no spbm`
- `spbm ethertype {0x8100 | 0x88a8}`

Command Parameters

| | |
|---|------------------------------------|
| 0x8100 | Set SPBM ethertype value to 0x8100 |
| 0x88a8 | Set SPBM ethertype value to 0x88a8 |
| ethertype | Set SPBM ethertype |
| reserved-port {front-panel none stack} | Configures one port in loopback. |

Default

None

Command Mode

Global Configuration

ssh (Global Configuration)

Configure SSH setting

Syntax

- `default ssh {dsa-auth | pass-auth | port | rekey | rekey-datalimit | rekey-interval | retries | rsa-auth | timeout | x509v3-auth}`
- `default ssh x509v3-auth username {overwrite | strip-domain | use-domain}`
- `no ssh {dsa-auth | dsa-auth-key | dsa-host-key | pass-auth | rsa-auth | rsa-auth-key | rsa-host-key | x509v3-auth}`
- `no ssh x509v3-auth username {overwrite | strip-domain | use-domain}`
- `ssh download-auth-key {[address <A.B.C.D > | <WORD>] usb [unit <1-8>]} [key-name <WORD>][dsa | rsa]`
- `ssh download-banner {[address <A.B.C.D> | <WORD>] <filename>}`
- `ssh dsa-auth`
- `ssh dsa-host-key`
- `ssh pass-auth`
- `ssh rekey`
- `ssh rekey-datalimit <1-6>`
- `ssh rekey-interval <1-6>`
- `ssh rsa-auth`
- `ssh rsa-host-key`
- `ssh secure [force]`
- `ssh x509v3-auth`
- `ssh x509v3-auth username {overwrite | strip-domain | use-domain}`

Command Parameters

| | |
|--------------------------|---|
| [A.B.C.D] | Specifies the IP address |
| [WORD] | Specifies the IPv6 address |
| address | Specifies the address of the TFTP server |
| certificate | Creates digital certificate. |
| download-auth-key | Download SSH auth key. |
| download-banner | Download SSH Banner. |
| dsa | Specifies DSA authentication key to be downloaded |

| | |
|------------------------------------|---|
| dsa-auth | Enable SSH DSA authentication. |
| dsa-host-key | Generate new SSH DSA host key. |
| filename | Specifies the file to be downloaded from the TFTP server. |
| force | Skips the confirmation step |
| key-name WORD | Specifies the TFTP or USB filename |
| pass-auth | Enable SSH password authentication. |
| port <1-65535> | Set SSH port for accepting new connections |
| rekey | Enables SSH rekey. |
| rekey-datalimit <1-6> | Configures SSH rekey data limit in Gigabytes. The default is 1 Gigabyte. |
| rekey-interval <1-6> | Configures SSH rekey interval in hours. The default is 1 hour. |
| reset | Resets the SSL server |
| retries <1-100> | Configure number of SSH password authentication retries. |
| rsa | Specifies RSA authentication key to be downloaded |
| rsa-auth | Enable SSH RSA Authentication. |
| rsa-host-key | Generate new SSH RSA host key |
| secure | Enable SSH secure mode. |
| timeout <1-120> | Set SSH authentication timeout |
| usb | Downloads SSH auth key via USB. |
| username overwrite | Overwrites the username sent by the SSH client with username information from the client certificate—subject alternative name and principal name. |
| username strip-domain | Strips the domain name so that it is not sent to the RADIUS server. |
| username user-domain | Specifies a locally configured domain to be sent to the RADIUS server. |
| x509v3-auth | Enables SSH RSA Authentication |
| Default | |
| None | |

Command Mode

Global Configuration

sshc authentication

Configure the SFTP authentication method Secure Shell (SSH) Client uses for transferring files.

Syntax

- `default sshc authentication`
- `no sshc authentication`
- `sshc authentication {dsa|password|rsa}`

Command Parameters

- dsa** Enables SFTP DSA authentication for SSH Client (default).
- password** Enables SFTP password authentication for SSH Client.
- rsa** Enables SFTP RSA authentication for SSH Client.

Default

The default is DSA.

Command Mode

Global Configuration

sshc close-session

Close a specific Secure Shell (SSH) Client session.

Syntax

- `sshc close-session <0-8>`

Command Parameters

- <0-8>** Specifies the SSH Client session ID.

Default

None

Command Mode

Global Configuration

sshc dsa-host-key

Generate public and private DSA Secure Shell (SSH) client host keys for user access authentication.

Syntax

- `no sshc dsa-host-key`
- `sshc dsa-host-key [force]`

Command Parameters

force Create a new DSA key, even in the presence of an existing DSA key.

Default

None

Command Mode

Global Configuration

sshc dsa-key

Configures the Secure Shell Client (SSHC) DSA host key size and generates the new key at system reboot.

Syntax

- `default sshc dsa-key`
- `default sshc dsa-keysize`
- `sshc dsa-key <512-1024>`

Command Parameters

<512-1024> Specifies the key size. Use the command `default sshc dsa-key` to clear the SSHC DSA key and then use the command `default sshc dsa-keysize` to configure the keysize to the default.

Default

None

Command Mode

Global Configuration

sshc port

Configures the Secure Shell Client (SSHC) port to accept new connections.

Syntax

- `default sshc port`
- `sshc port <1-65535>`

Command Parameters

`<1-65535>` Specifies the TCP port.

Default

None

Command Mode

Global Configuration

sshc rsa-host-key

Generate public and private Secure Shell Client (SSHC) RSA host keys for user access authentication.

Syntax

- `no sshc rsa-host-key`
- `sshc rsa-host-key [force]`

Command Parameters

`force` Create a new RSA key, even in the presence of an existing RSA key.

Default

None

Command Mode

Global Configuration

sshc rsa-key

Configure Secure Shell Client (SSHC) RSA host key size and generate a new key at the next system reboot.

Syntax

- `default sshc rsa-key`
- `default sshc rsa-keysize`
- `sshc rsa-key <1024-2048>`

Command Parameters

<1024-2048> Specifies the key size. Use the command `default sshc rsa-key` to clear the SSHC RSA key and then use the command `default sshc rsa-keysize` to configure the keysize to the default.

Default

None

Command Mode

Global Configuration

sshc upload-host-key

Upload the Secure Shell Client (SSHC) host key.

Syntax

- `sshc upload-host-key [address {<A.B.C.D>|<WORD>}] [dsa] [key-name <WORD>] [rsa] [usb unit <1-8>]`

Command Parameters

| | |
|-----------------------------------|---|
| address {<A.B.C.D> <WORD>} | Specifies the TFTP server address. |
| dsa | Uploads the Secure Shell Client (SSHC) DSA host key. |
| key-name <WORD> | Specifies the TFTP filename. |
| rsa | Uploads the Secure Shell Client (SSHC) RSA host key. |
| usb unit <1-8> | Uploads the Secure Shell Client (SSHC) authentication key to USB. |

Default

None

Command Mode

Global Configuration

ssl

Configure SSL

Syntax

- `ssl`

Default

None

Command Mode

Global Configuration

stack auto-unit-replacement

Sets auto unit replacement settings.

Syntax

- `default stack auto-unit-replacement enable`
- `no stack auto-unit-replacement enable`
- `stack auto-unit-replacement config {restore unit <1-8> | save [disable] [enable] [unit <1-8>]}`

Command Parameters

| | |
|-------------------------|---|
| config | Modify AUR operational settings |
| disable | Disable AUR auto-save |
| enable | Enable AUR auto-save |
| restore | Restore configuration of a unit from the saved configuration on the base unit |
| save | Enable/disable auto-save of unit configuration to base unit |
| unit <1-8> | Force immediate save of NBU config to BU |

Default

None

Command Mode

Global Configuration

stack auto-unit-replacement-image

Sets auto unit image replacement settings.

Syntax

- `default stack auto-unit-replacement-image enable`
- `no stack auto-unit-replacement-image enable`
- `stack auto-unit-replacement-image enable`

Command Parameters

enable Enable auto unit image replacement

Default

None

Command Mode

Global Configuration

stack forced-mode

Enables the forced stack mode.

Syntax

- `default stack forced-mode`
- `no stack forced-mode`
- `stack forced-mode`

Default

None

Command Mode

Global Configuration

stack reboot-on-failure

Reboots stack units when their stacking ports fail to come up.

Syntax

- `default stack reboot-on-failure`
- `no stack reboot-on-failure`

- `stack reboot-on-failure`

Default

None

Command Mode

Global Configuration

stack replace

Replaces a stack member that is down.

Syntax

- `stack replace unit <1-8>`

Command Parameters

unit <1-8> Select the unit to be replaced

Default

None

Command Mode

Global Configuration

stack retry-count

Configures stack retry count.

Syntax

- `default stack retry-count`
- `stack retry-count <0-4294967295>`

Command Parameters

<0-4294967295> retry count

Default

None

Command Mode

Global Configuration

stack-monitor

Configures stack monitoring.

Syntax

- `default stack-monitor [enable] [stack-size] [trap-interval]`
- `no stack-monitor enable`
- `stack-monitor [enable] [stack-size <2-8>] [trap-interval <30-300>]`

Command Parameters

| | |
|-------------------------------------|---|
| enable | Enable stack monitoring |
| stack-size <2-8> | Set stack size to be monitored <2-8> |
| trap-interval <30-300> | Set interval between traps (seconds) <30-300> |

Default

None

Command Mode

Global Configuration

storm-control

Configures storm control.

Syntax

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

Command Parameters

| | |
|-----------------------------------|---|
| action {drop non shutdown} | Configures the storm control action. |
| all | Configures storm-control settings for all types of traffic. |
| broadcast | Configures storm-control settings for broadcast traffic. |

| | |
|--|--|
| enable | Enables storm control. |
| high-watermark <10-100000000> | Configures the high-watermark in pps. |
| low-watermark <10-100000000> | Configures the low-watermark in pps. |
| multicast | Configures storm-control settings for multicast traffic. |
| poll-interval <5-300> | Configures the interval for watermark checking in seconds. |
| trap-interval <0-1000> | Configures the trap sending interval in poll intervals when above the high-watermark. If the value is zero it does not send. |
| unicast | Configures storm-control settings for unicast traffic. |
| Default | |
| None | |
| Command Mode | |
| Global Configuration | |

tacacs accounting

Configures TACACS+ accounting to track what the user does.

Syntax

- `tacacs accounting {disable | enable}`

Command Parameters

| | |
|----------------|--------------------|
| disable | disable accounting |
| enable | enable accounting |

Default

None

Command Mode

Global Configuration

tacacs authorization

TACACS+ authorization determines what the user is allowed to do.

Syntax

- `tacacs authorization {disable | enable | level {ALL | <LINE> | NONE}}`

Command Parameters

| | |
|----------------|--|
| ALL | all privilege levels |
| disable | disable authorization |
| enable | enable authorization |
| level | authorization level |
| LINE | Enable authorization on privilege level(s) |
| NONE | none privilege level |

Default

None

Command Mode

Global Configuration

tacacs server

TACACS+ server's primary/secondary host, shared secret key and TCP port.

Syntax

- `default tacacs server [host] [secondary-host] [port] [key][retry]`
- `no tacacs server [host] [secondary-host] [port] [key]`
- `tacacs server [host {A.B.C.D}] [secondary-host {A.B.C.D}] [port <1-65535>] [retry <1-5>] [key]`

Command Parameters

| | |
|-----------------------|--|
| {A.B.C.D} | IP address of primary TACACS+ server |
| {A.B.C.D} | IP address of secondary TACACS+ server |
| host {A.B.C.D} | TACACS+ primary host |
| key | TACACS+ shared secret |

| | |
|---------------------------------|--------------------------------------|
| port <1-65535> | TACACS+ TCP port |
| retry | Specifies the TACACS+ retry attempts |
| secondary-host {A.B.C.D} | TACACS+ secondary host |

Default

None

Command Mode

Global Configuration

tacacs switch

Switches between TACACS+ privilege levels.

Syntax

- `tacacs switch {back | level <1-15>}`

Command Parameters

| | |
|---------------------|---------------------|
| <1-15> | privilege level |
| back | Back one level |
| level | New privilege level |

Default

None

Command Mode

Global Configuration

telnet-access

Configures TELNET access settings.

Syntax

- `default telnet-access`
- `no telnet-access source-ip {<1-50> | <51-100>}`
- `telnet-access [enable | disable] [login-timeout <1-10>] [retry <1-100>] [inactive-timeout <0-60>] [logging {none | access | failures | all}] [source-ip {<1-50> {A.B.C.D} mask {A.B.C.D} | <51-100> <WORD>}]`

Command Parameters

| | |
|---|---|
| <1-50> | Select which address/mask pair |
| <51-100> | Select which ipv6 address/prefix |
| access | Log successful telnet connections |
| all | Log all telnet connections |
| disable | Disable TELNET access |
| enable | Enable TELNET access |
| failures | Log failed telnet connections |
| inactive-timeout <0-60> | Inactivity timeout for TELNET and CONSOLE sessions |
| logging {none access failures all} | Level of logging for TELNET and CONSOLE attempts |
| login-timeout <1-10> | Set time to wait for TELNET and CONSOLE login before closing connection |
| mask {A.B.C.D} | Source IP mask from which connections are allowed |
| none | Do not log telnet connections |
| retry <1-100> | Number of allowed login attempts for TELNET and CONSOLE |
| source-ip | Set source IP address from which connections are allowed |

Default

None

Command Mode

Global Configuration

tftp-access

Configures TFTP access.

Syntax

- `default tftp-access`
- `tftp-access {enable | disable}`

Command Parameters

- disable** Disables TFTP access.
- enable** Enables TFTP access.

Default

None

Command Mode

Global Configuration

tftp-server

Configures the tftp server.

Syntax

- `default tftp-server`
- `no tftp-server`
- `tftp-server {<A.B.C.D> | <WORD>}`

Command Parameters

- <A.B.C.D>** IP address of TFTP server
- <WORD>** IPv6 address of TFTP server

Default

None

Command Mode

Global Configuration

usb-host-port

Enables USB Host Port.

Syntax

- `default usb-host-port {[unit <1-8>] [enable]}`
- `no usb-host-port {[unit <1-8>] [enable]}`
- `usb-host-port {[unit <1-8>] [enable]}`

Command Parameters

| | |
|-------------------------|----------------------|
| enable | Enable USB Host Port |
| unit <1-8> | Unit number |

Default

None

Command Mode

Global Configuration

username

Sets the RO/RW credentials.

Syntax

- `default username {ro | rw}`
- `default username lockout-retries`
- `username <WORD> <password> {ro | rw}`
- `username add <WORD> inactive-period <0-360>`
- `username lockout-retries <0-100>`

Command Parameters

| | |
|--------------------------------------|--|
| inactive-period <0-360> | Disables the username after the specified number of days during which the user name has not been used. |
| <password> | Cleartext password (when password security is disabled) |
| <WORD> | Username |
| lockout-retries <0-100> | Configures the lockout retries. |
| ro | Read-only user name reset to default. |
| rw | Read-write user name reset to default. |

Default

None

Command Mode

Global Configuration

username (Enhanced Secure Mode)

Configures user options.

Syntax

- `default username { emergency_account_timeout | <user-name> [daily-access-interval | enable | inactive-period | max-number-of-sessions | role-name | ssh-access | telnet-access] | lockout-time}`
- `no username <user-name> [daily-access-interval | enable | ssh-access | telnet-access]`
- `username emergency_account_timeout <1-360>`
- `username <user-name> {daily-access-interval daily-access-interval access-start-hour <0-24> access-end-hour <0-24> | enable | inactive-period <1-360> | max-number-of-sessions <1-12> | password | role-name | ssh-access | telnet-access}`
- `username lockout-time <0-60>`

Command Parameters

| | |
|---|---|
| <user-name> | Specifies the user name. |
| daily-access-interval daily-access-interval access-start-hour <0-24> | Specifies the day interval during which the user can access the switch. The default interval is 0-24. |
| inactive-period <1-360> | Specifies the period during which the user must access the switch in order to not be locked out. The default value is 360 days. |
| max-number-of-sessions <1-12> | Specifies the number of concurrent sessions allowed for a user. The default value is 12. |
| role-name <role_name> | Specifies the user role. |
| ssh-access | Enables or disables SSH access for the user. |
| telnet-access | Enables or disables telnet access for the user. |

Default

None

Command Mode

Global Configuration

username add (Enhanced Secure Mode)

Creates a user.

Syntax

- `username add <user_name> {daily-access-interval access-start-hour <0-24> access-stop-hour <0-24> | inactive-period <1-360> | max-number-of-sessions <1-12> | role-name <role_name>} password <user_password>`
- `username add <user_name> password <user_password>`

Command Parameters

| | |
|------------------------------------|---|
| <user_name> | Specifies the user name. |
| <user_password> | Specifies the user password. |
| daily-access-interval | Specifies the day interval during which the user can access the switch. The default interval is 0-24. |
| inactive-period | Specifies the period during which the user must access the switch in order to not be locked out. The default value is 360 days. |
| max-number-of-sessions | Specifies the number of concurrent sessions allowed for a user. The default value is 12. |
| role-name <role_name> | Specifies the role for the new user. |

Default

None

Command Mode

Global Configuration

vlapc (Global Configuration)

Modifies VLACP configuration.

Syntax

- `default vlapc {enable | hold_time <0-60> | macaddress <H.H.H>}`
- `no vlapc {enable | hold_time <0-60> | macaddress <H.H.H>}`
- `vlapc {enable | hold_time <0-60> | macaddress <H.H.H>}`

Command Parameters

- <H.H.H>** VLACP multicast address (i.e. H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx)
- enable** Enable VLACP for the system
- macaddress** Set the multicast address used for VLACPDU

Default

None

Command Mode

Global Configuration

vlan configcontrol

Configures the VLAN control mode.

Syntax

- `default vlan configcontrol`
- `vlan configcontrol {automatic | autopvid | flexible | strict}`

Command Parameters

- automatic** AutoPVID and automatic change to membership of port-based VLANs
- autopvid** Automatic change to PVID
- flexible** No restricts or automatic changes
- strict** AutoPVID and restrictions imposed on adding port to VLAN and changing tagging

Default

None

Command Mode

Global Configuration

vlan create

Creates new VLAN.

Syntax

- `vlan create` [`<2-4094>`] [`<LINE>`] [`name <LINE>`] [`type`] [`private-vlan` | `secondary <2-4094>`] [`{<1-8> | cist | msti <1-7>}`] [`port`] [`protocol-decEther2`] [`protocol-decOtherEther2`] [`protocol-ipEther2`] [`protocol-ipv6Ether2`] [`protocol-ipx802.2`] [`protocol-ipx802.3`] [`protocol-ipxEther2`] [`protocol-ipxSnap`] [`protocol-Netbios`] [`protocol-RarpEther2`] [`protocol-sna802.2`] [`protocol-snaEther2`] [`protocol-vinesEther2`] [`protocol-xnsEther2`] [`protocol-Userdef {ether <4096-65534> | llc <1-65534> | snap <1-65534>}`] [`spbm-bvlan`] [`spbm-switchedUni`] [`<1-8>`] [`remote-span`] [`voice-vlan`]

Command Parameters

| | |
|---------------------------------------|---|
| <code><1-7></code> | Specifies the MSTI ID. |
| <code><1-8></code> | Spanning Tree Group ID |
| <code><1-8></code> | Specifies the Spanning Tree Group ID. |
| <code><2-4094></code> | Specifies the VLAN ID. |
| <code><4094-65534></code> | Creates the Ethernet II Userdef VLAN with this Protocol ID. |
| <code><LINE></code> | Specifies the VLAN List. |
| <code>cist</code> | Adds VLAN to CIST. |
| <code>ether <4096-65534></code> | Create Ethernet II Userdef VLAN |
| <code>llc <1-65534></code> | Create LLC Userdef VLAN |
| <code>msti</code> | Adds vlan to MSTI. |
| <code>name <LINE></code> | Specify name of new VLAN |
| <code>port</code> | Creates the port-based VLAN. |
| <code>private-vlan</code> | Creates a private VLAN. |
| <code>protocol-decEther2</code> | Creates the decEther2 VLAN. |
| <code>protocol-decOtherEther2</code> | Display decOtherEther2 VLANs. |
| <code>protocol-ipEther2</code> | Creates the ipEther2 VLAN. |
| <code>protocol-ipv6Ether2</code> | Creates the ipv6Ether2 VLAN. |
| <code>protocol-ipx802.2</code> | Creates the ipx802.2 VLAN. |
| <code>protocol-ipx802.3</code> | Creates the ipx802.3 VLAN. |

| | |
|-----------------------------|----------------------------------|
| protocol-ipxEther2 | Creates the ipxEther2 VLAN. |
| protocol-ipxSnap | Creates the ipxSnap VLAN. |
| protocol-Netbios | Creates the Netbios VLAN. |
| protocol-RarpEther2 | Creates the RarpEther2 VLAN. |
| protocol-sna802.2 | Creates the sna802.2 VLAN. |
| protocol-snaEther2 | Creates the snaEther2 VLAN. |
| protocol-Userdef | Creates the Userdef VLAN. |
| protocol-vinesEther2 | Creates the vinesEther2 VLAN. |
| protocol-xnsEther2 | Creates the xnsEther2 VLAN. |
| remote-span | Creates the RSPAN VLAN. |
| secondary | Specifies the secondary VLAN ID. |
| snap <1-65534> | Creates the SNAP Userdef VLAN. |
| spbm-bvlan | Creates the SPBM B-VLAN. |
| spbm-switchedUni | Creates the SPBM switched UNI. |
| type | Specify type of new VLAN. |
| voice-vlan | Creates the Voice VLAN. |

Default

None

Command Mode

Global Configuration

vlan delete

Deletes a VLAN.

Syntax

- **vlan delete <LINE>**

Command Parameters**<LINE>** VLAN list**Default**

None

Command Mode

Global Configuration

vlan igmp

Modifies IGMP snoop settings.

Syntax

- `default vlan igmp <1-4094>`
- `vlan igmp [<1-4094>] [snooping {disable | enable}] [proxy {disable | enable}] [robust-value <2-255>] [query-interval <1-65535>] [v1-members {[add | remove] <LINE>}] [v2-members {[add | remove] <LINE>}]`

Command Parameters

| | |
|---------------------------------------|---------------------------------------|
| <1-4094> | VLAN ID |
| add | Add port members |
| LINE | Port list |
| proxy {disable enable} | Enable/disable VLAN proxy |
| query-interval <1-65535> | Set the IGMP query interval |
| remove | Remove port members |
| robust-value <2-255> | Set the IGMP robust value |
| snooping {disable enable} | Enable/disable IGMP snooping |
| v1-members | Specify IGMPv1 static port membership |
| v2-members | Specify IGMPv2 static port membership |

Default

None

Command Mode

Global Configuration

vlan i-sid

Creates a C-VLAN.

Syntax

- `default vlan i-sid <1-4094>`
- `no vlan i-sid <1-4094>`
- `vlan i-sid <1-4094> <0-16777214>`

Command Parameters

| | |
|---------------------------------|---------|
| <code><1-16777214></code> | I-SID |
| <code><1-4094></code> | VLAN ID |

Default

None

Command Mode

Global Configuration

vlan members

Modifies VLAN port membership.

Syntax

- `vlan members {[add] [<VLANlist>] [remove]} <LINE>`

Command Parameters

| | |
|-------------------------------|--------------------------|
| <code><LINE></code> | Port list |
| <code><VLANlist></code> | VLAN list |
| <code>add</code> | Add ports to a VLAN |
| <code>remove</code> | Remove ports from a VLAN |

Default

None

Command Mode

Global Configuration

vlan mgmt

Sets management VLAN.

Syntax

- `default vlan mgmt`
- `vlan mgmt <1-4094>`

Command Parameters

`<1-4094>` VLAN ID

Default

None

Command Mode

Global Configuration

vlan name

Changes the name of a VLAN.

Syntax

- `default vlan name <LINE>`
- `no vlan name <LINE>`
- `vlan name <1-4094> <LINE>`

Command Parameters

`<1-4094>` VLAN ID

`<LINE>` New name for VLAN

Default

None

Command Mode

Global Configuration

vlan ports

Modifies VLAN port settings.

Syntax

- `default vlan ports {name <LINE> | private-vlan <LINE>}`
- `no vlan ports {private-vlan | name <LINE>}`
- `vlan ports <LINE> [tagging {disable | enable | tagAll | tagPvidOnly | untagAll | untagPvidOnly}] [pvid <1-4094>] [filter-untagged-frame {disable | enable}] [filter-unregistered-frames {disable | enable}] [priority <0-7>] [name <LINE>] [private-vlan {isolated | promiscuous | trunk}]`

Command Parameters

| | |
|---|--|
| <LINE> | Port list |
| disable | Disable tagging on this port |
| enable | Enable tagging on this port |
| filter-unregistered-frames {disable enable} | Enable/disable filtering of unregistered frames |
| filter-untagged-frame {disable enable} | Enable/disable filtering of untagged frames |
| isolated | Specifies the port type. An Isolated port can belong only to one private VLAN. |
| name <LINE> | Set VLAN port name |
| priority <0-7> | Set VLAN port priority |
| promiscuous | A Promiscuous port can belong to many private VLANs |
| pvid <1-4094> | Change PVID |
| tagAll | Enable tagging on this port |
| tagging {disable enable tagAll tagPvidOnly untagAll untagPvidOnly} | Enable/disable tagging |
| tagPvidOnly | Enable tagging of packets matching the |
| trunk | A Trunk port can belong to many private VLANs, is tagged, and can also belong to non-private VLANs |
| untagAll | Disable tagging on this port |
| untagPvidOnly | Disable tagging of packets matching the Pv |

Default

None

Command Mode

Global Configuration

vlan remote-span

Enables RSPAN VLAN.

Syntax

- `vlan remote-span <LINE>`

Command Parameters

<LINE> List of VLANs to be enabled

Default

None

Command Mode

Global Configuration

vlan voice-vlan

Changes to voice VLAN.

Syntax

- `no vlan <LINE> {remote-span | voice-vlan}`
- `vlan voice-vlan <LINE>`

Command Parameters

<LINE> The VLAN id

Default

None

Command Mode

Global Configuration

web-server

Modifies WEB server parameters.

Syntax

- `no web-server`
- `web-server {disable | enable}`

Command Parameters

disable Disable HTTP access

enable Enable HTTP access

Default

None

Command Mode

Global Configuration

Chapter 7: ISIS Router Configuration

This chapter provides information related to the ISIS Router configuration commands.

csnp-interval

Specifies the Complete Sequence Number Packet (CSNP) interval in seconds.

Syntax

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

Command Parameters

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

Default

10

Command Mode

ISIS Router Configuration

end (ISIS Router Configuration)

Exits from router configure mode.

Syntax

- `end`

Default

None

Command Mode

ISIS Router Configuration

exit (ISIS Router Configuration)

Exits from router configuration mode.

Syntax

- `exit`

Default

None

Command Mode

ISIS Router Configuration

ip-source-address

Configures the source address for SPBM IP shortcuts

Syntax

- `ip-source-address <A.B.C.D>`
- `no ip-source-address`

Command Parameters

`<A.B.C.D>` Specify ISIS Source IP Address

Default

None

Command Mode

ISIS Router Configuration

is-type

Configures the router type globally.

Syntax

- `is-type {11}`

- `no is-type`

Command Parameters

{I1} Sets the router type globally: I1: Level-1 router type

Default

None

Command Mode

ISIS Router Configuration

manual-area

Configures an IS-IS manual area.

Syntax

- `manual-area <xx.xxxx.xxxx...xxx>`
- `no manual-area`

Command Parameters

<xx.xxxx.xxxx...xxx> Specifies the IS-IS manual-area (1–13 bytes in the format <xx.xxxx.xxxx...xxx>. In this release, only one manual area is supported. For IS-IS to operate, you must configure at least one area.

Default

None

Command Mode

ISIS Router Configuration

max-lsp-gen-interval

Configures the maximum level, in seconds, between generated LSPs by this Intermediate System.

Syntax

- `default max-lsp-gen-interval`
- `max-lsp-gen-interval <30-900>`
- `no max-lsp-gen-interval`

Command Parameters

<30-900> Specifies the maximum interval, in seconds, between generated LSPs by this Intermediate System.

Default

None

Command Mode

ISIS Router Configuration

metric

Configures the IS-IS metric type.

Syntax

- `default metric`
- `metric wide`
- `no metric`

Command Parameters

wide Specifies the IS-IS metric type. Only wide is supported in this release. The default value is wide. Use the no or default options to set this parameter to the default value of wide.

Default

wide

Command Mode

ISIS Router Configuration

min-lsp-gen-interval

Sets minimum time between successive generation of LSPs with the same LSPID (in seconds).

Syntax

- `default min-lsp-gen-interval`
- `min-lsp-gen-interval <1-900>`
- `no min-lsp-gen-interval`

Command Parameters

<1-900> Specifies the number of seconds

Default

None

Command Mode

ISIS Router Configuration

overload

Sets overload condition

Syntax

- `default overload`
- `no overload`
- `overload`

Default

None

Command Mode

ISIS Router Configuration

overload-on-startup

Sets IS-IS overload-on-startup value (in seconds)

Syntax

- `default overload-on-startup`
- `no overload-on-startup`
- `overload-on-startup <15-3600>`

Command Parameters

<15-3600> Specifies the overload-on-startup value (in seconds).

Default

None

Command Mode

ISIS Router Configuration

psnp-interval

Configures the Partial Sequence Number Packet (PSNP) in seconds.

Syntax

- `default psnp-interval`
- `no psnp-interval`
- `psnp-interval <1-120>`

Command Parameters

<1-120> Specifies the PSNP interval in seconds. This is a system level parameter that applies for level 1 PSNP generation on all interfaces. A longer interval reduces overhead, while a shorter interval speeds up convergence. The default value is 2. Use the `no` or `default` options to set this parameter to the default value of 2.

Default

None

Command Mode

ISIS Router Configuration

redistribute (ISIS Router Configuration)

Configures isis redistribution policies.

Syntax

- `default redistribute {direct | ospf | rip | static} enable`
- `no redistribute {ospf [route-policy] | rip[route-policy] } enable`
- `redistribute {direct | static} enable`

Command Parameters

direct Configures isis redistribution policies for direct routes.

no Deletes isis redistribution policies.

static Configures isis redistribution policies for static routes.

Default

None

Command Mode

ISIS Router Configuration

retransmit-lsp-interval

Configures the minimum time between retransmission of an LSP.

Syntax

- `default retransmit-lsp-interval`
- `no retransmit-lsp-interval`
- `retransmit-lsp-interval <1-300>`

Command Parameters

<1-300> Specifies the minimum time between retransmission of an LSP. This defines how fast the switch resends the same LSP. This is a system level parameter that applies for Level1 retransmission of LSPs. The default value is 5 seconds. Use the `no` or `default` options to set this parameter to the default value of 5.

Default

5

Command Mode

ISIS Router Configuration

spbm (ISIS Router Configuration)

Enables SPBM.

Syntax

- `default spbm <1-100> b-vid {<vlan-id> [-<vlan-id>][,...]} [primary <1-4094>]`
- `default spbm <1-100> ip enable`
- `no spbm <1-100> b-vid {<vlan-id> [-<vlan-id>][,...]} [primary <1-4094>]`
- `no spbm <1-100> ip enable`
- `spbm <1-100> b-vid {<vlan-id> [-<vlan-id>][,...]} [primary <1-4094>]`
- `spbm <1-100> ip enable`

Command Parameters

<1-100> Creates the SPBM instance. In this release, only one SPBM instance is supported.

b-vid {<vlan-id> [-<vlan-id>] [,...]} Sets the ISIS SPBM instance data VLANs. Use the `no` option to remove the specified BVLAN from the SPBM instance.

- ip** Enable IP Shortcut
- nick-name <x.xx.xx>** Specifies a nickname for the SPBM instance globally. The value is 2.5 bytes in the format <x.xx.xx>. Use the no or default options to delete the configured nickname.
- primary <1-4094>** Sets the IS-IS instance primary data VLAN

Default

None

Command Mode

ISIS Router Configuration

spf-delay

Configures the SPF delay in milliseconds.

Syntax

- `default spf-delay`
- `no spf-delay`
- `spf-delay <0-5000>`

Command Parameters

<0-5000> Configures the delay, in milliseconds, to pace successive Shortest Path First (SPF) runs. The timer prevents more than two SPF runs from being scheduled back-to-back. The mechanism for pacing SPF allows two back-to-back SPF runs. The default value is 100 milliseconds. Use the no or default options to set this parameter to the default value of 100 milliseconds.

Default

100

Command Mode

ISIS Router Configuration

sys-name

Configures the name for the system.

Syntax

- `default sys-name`
- `no sys-name`
- `sys-name <WORD> <0-255>`

Command Parameters

<WORD> Specifies a name for the system. This may be used as the host name for dynamic host name exchange in accordance with RFC 2763. By default, the system name comes from the host name configured at the system level. Use the `no` or `default` options to set this parameter to the default value (host name).

<0-255>

Default

host name

Command Mode

ISIS Router Configuration

system-id

Configures the IS-IS system ID for the switch.

Syntax

- `system-id <xxxx.xxxx.xxxx>`

Command Parameters

<xxxx.xxxx.xxxx> Specifies the IS-IS system ID for the switch. Use the `no` or `default` options to set this parameter to the default value (node BMAC).

Default

node BMAC

Command Mode

ISIS Router Configuration

Chapter 8: Loopback Interface Configuration

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

end (Loopback Interface Configuration)

Exits from Loopback Configuration mode.

Syntax

- **end**

Default

None

Command Mode

Loopback Interface Configuration

exit (Loopback Interface Configuration)

Exits from Loopback Interface Configuration mode.

Syntax

- **exit**

Default

None

Command Mode

Loopback Interface Configuration

ip address (Loopback Interface Configuration)

Assigns an IP address to a Loopback Interface.

Syntax

- `ip address <A.B.C.D> <A.B.C.D> [<1-256>]`
- `no ip address <A.B.C.D> <A.B.C.D>`

Command Parameters

- <1-256>** Specifies the MAC offset value. Note: 1 is for the management VLAN only.
- <A.B.C.D><A.B.C.D>** The first <A.B.C.D> specifies the IP address and the second <A.B.C.D> specifies the subnet mask.

Default

None

Command Mode

Loopback Interface Configuration

ip area (Loopback Interface Configuration)

Assigns a Loopback Interface to an area.

Syntax

- `default ip area`
- `ip area <A.B.C.D>`
- `no ip area <A.B.C.D>`

Command Parameters

- <A.B.C.D>** Specifies an area IP address.

Default

None

Command Mode

Loopback Interface Configuration

ip ospf (Loopback Interface Configuration)

Enables Open Shortest Path First (OSPF) on an interface.

Syntax

- `default ip ospf`
- `ip ospf`
- `no ip ospf`

Default

None

Command Mode

Loopback Interface Configuration

ipv6 interface (Loopback Interface Configuration)

Creates and configures a Loopback IPv6 interface.

Syntax

- `default ipv6 interface [enable]`
- `ipv6 interface [clip] [address <WORD>][enable]`
- `no ipv6 interface [address <WORD>][enable]`

Command Parameters

| | |
|-----------------------------|-----------------------------|
| address <WORD> | Specifies the IPv6 address. |
| clip | Circuitless IPv6 interface. |
| enable | Enables the address. |

Default

None

Command Mode

Loopback Interface Configuration

Chapter 9: OSPF Router Configuration

This chapter provides information related to the OSPF Router configuration commands.

accept adv-rtr

Configures the OSPF accept-advertisements router policy.

Syntax

- `accept adv-rtr <router_ip_address> [enable] [metric-type {any | type1 | type2}] [route-policy <rmap_name>]`
- `default accept adv-rtr <router_ip_address> [enable] [metric-type {any | type1 | type2}] [route-policy <rmap_name>]`
- `no accept adv-rtr <router_ip_address> [enable] [metric-type {any | type1 | type2}] [route-policy <rmap_name>]`

Command Parameters

| | |
|--|---|
| <router_ip_address> | Represents the IP address of the router from which advertisements are to be accepted. The value 0.0.0.0 denotes that advertisements from all routers are accepted. |
| any | Specifies match as any metric type. |
| enable | Enables the accept entry for the router specified in the <ip_address> parameter. |
| metric-type {any type1 type2} | Indicates the type of OSPF external routes that will be accepted from this router. |
| route-policy <rmap_name> | Specifies the name of a previously configured route map to be used for filtering external routes advertised by the specified advertising router before accepting them into the routing table. |
| type1 | Specifies match as type-1 metric type. |
| type2 | Specifies match as type-2 metric type. |
| Default | |
| None | |

Command Mode

OSPF Router Configuration

area

Configures area.

Syntax

- `area <area-id> [default-cost {0-16777215}] [import {external | noexternal | nssa}] [import-summaries {enable}] [range {ip_addr/subnet_mask} {nssa-extlink {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} } | summary-link {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} }]`
- `default area <area-id> [default-cost {0-16777215}] [import {external | noexternal | nssa}] [import-summaries {enable}] [range {ip_addr/subnet_mask} {nssa-extlink {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} } | summary-link {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} }]`
- `no area <area-id> [default-cost {0-16777215}] [import {external | noexternal | nssa}] [import-summaries {enable}] [range {ip_addr/subnet_mask} {nssa-extlink {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} } | summary-link {advertise-metric <0-65535> | advertise-mode {no-summarize | summarize | suppress} }]`

Command Parameters

| | |
|---|--|
| advertise-metric <0-65535> | Configure metric to be advertised for area range |
| advertise-mode {no-summarize summarize suppress} | Select advertise mode for area range |
| area-id | Specifies the Area ID in dotted decimal notation (A.B.C.D) |
| default-cost {0-16777215} | Specifies the default cost associated with an OSPF stub area |
| external | Specifies a normal area |
| import {external noexternal nssa} | Specifies the area type by defining the area's support for importing Autonomous System external link state advertisements: external: specifies a normal area ;noexternal: specifies a stub area ; nssa: specifies an NSSA. |

| | |
|---|--|
| import-summaries {enable} | Controls the import of summary link state advertisements into stub areas. This setting has no effect on other areas. |
| noexternal | Specifies a stub area |
| nssa | Specifies a not-so-stubby area |
| nssa-extlink | Not-so-stubby area link summary (Type 7) |
| range {ip_addr/ subnet_mask} [{nssa-entlink summary-link}] | Specifies range parameters for the OSPF area |
| summary-link | Aggregated summary (Type 3) |

Default

None

Command Mode

OSPF Router Configuration

area virtual-link

Creates a virtual link.

Syntax

- `area virtual-link <area-id> <nghbr-router-id> {[authentication-key <WORD>] [authentication-type {none| simple|message-digest}] [primary-md5-key <1-255>] [dead-interval <1-2147483647>] [hello-interval <1-65535>] [retransmit-interval <1-3600>] [transit-delay <1-3600>]}`
- `default area virtual-link <area-id> <nghbr-router-id> {[authentication-key <WORD>] [authentication-type {none| simple| message-digest}] [primary-md5-key <1-255>] [dead-interval <1-2147483647>] [hello-interval <1-65535>] [retransmit-interval <1-3600>] [transit-delay <1-3600>]}`
- `no area virtual-link <area-id> <nghbr-router-id> {[authentication-key <WORD>] [authentication-type {none| simple|message-digest}] [primary-md5-key <1-255>] [dead-interval <1-2147483647>] [hello-interval <1-65535>] [retransmit-interval <1-3600>] [transit-delay <1-3600>]}`

Command Parameters

| | |
|-------------------------------|--|
| <area_id> | Specifies the transit area ID in dotted decimal notation (A.B.C.D) |
| <nghbr-routerid> | Specifies the transit area ID in dotted decimal notation (A.B.C.D) |

| | |
|--|---|
| authentication-key <WORD> | Specifies the unique identifier assigned to the authentication key |
| authentication-type | Specifies one of the following authentication types: none; simple; password; message; digest MD5 |
| dead-interval | Specifies the time interval, in seconds, that a Hello packet has not been transmitted from the virtual interface before its neighbors declare it down. Expressed as an integer from 1-2147483647, the default dead interval value is 60 seconds |
| hello-interval | Specifies the time interval, in seconds, between transmission of Hello packets from the virtual interface. Expressed as an integer from 1-65535, the hello-interval default value is 10 seconds |
| primary-md5-key | Specifies the user-selected key used to encrypt OSPF protocol packets for transmission. |
| retransmit-interval | Specifies the time interval, in seconds, between link stage advertisement retransmissions for adjacencies belonging to the virtual interface. Expressed as an integer from 1-3600, the default value is 5 seconds. |
| transit-delay | Specifies the estimated number of seconds required to transmit a link state update packet over the virtual interface. Expressed as an integer from 1-3600, the default value is 1 second. |

Default

None

Command Mode

OSPF Router Configuration

area virtual-link message-digest-key

Creates a virtual interface message digest key.

Syntax

- **area virtual-link message-digest-key** <area_id> <neighbor_id> <1-255> md5-key <WORD>
- **default area virtual-link message-digest-key** <area_id> <neighbor_id> <1-255> md5-key <WORD>
- **no area virtual-link message-digest-key** <area_id> <neighbor_id> <1-255> md5-key <WORD>

Command Parameters

| | |
|-----------------------------|---|
| <1-255> | Specifies the primary MD5 key value, expressed as an integer from 1-255. |
| <area_id> | Specifies the transit area Id expressed as an IP address |
| <neighbor_id> | Specifies the neighbor router ID expressed as an IP address |
| md5-key <WORD> | Specifies the user-selected key used to encrypt OSPF protocol packets for transmission. |

Default

None

Command Mode

OSPF Router Configuration

as-boundary-router

Configures a router as an ASBR.

Syntax

- `as-boundary-router enable`
- `default as-boundary-router enable`
- `no as-boundary-router enable`

Command Parameters**enable** Disable ASBR on the switch**Default**

Disabled

Command Mode

OSPF Router Configuration

auto-vlink

Enables global automatic Virtual Link creation.

Syntax

- `auto-vlink`

- `default auto-vlink`
- `no auto-vlink`

Default

None

Command Mode

OSPF Router Configuration

default-cost

Configures the OSPF default cost metric.

Syntax

- `default default-cost {ethernet | fast-ethernet | gig-ethernet | two-gig-ethernet | ten-gig-ethernet} <metric_value>`
- `default-cost {ethernet | fast-ethernet | gig-ethernet | ten-gig-ethernet} <metric_value>`
- `no default-cost {ethernet | fast-ethernet | gig-ethernet | two-gig-ethernet | ten-gig-ethernet} <metric_value>`

Command Parameters

| | |
|-----------------------------|--|
| <metric_value> | Specifies the default cost metric to assign to the specified port type. The metric value is an integer between 1 and 65535. |
| default | Sets the OSPF default cost metric to factory default values. The default values are as follows: ethernet (10 Mb/s): 100; fast-ethernet (100 Mb/s): 10; gig-ethernet (1000 Mb/s): 1; two-gig-ethernet (2500 Mbps/s): 1; ten-gig-ethernet (10000 Mb/s): 1. |
| ethernet | Set default cost for ethernet interfaces |
| fast-ethernet | Set default cost for fast-ethernet interfaces |
| gig-ethernet | Set default cost for gigabit-ethernet interfaces |
| ten-gig-ethernet | Set default cost for ten-gigabit-ethernet interfaces |

Default

None

Command Mode

OSPF Router Configuration

end (OSPF Router Configuration)

Exits from router configure mode.

Syntax

- `end`

Default

None

Command Mode

OSPF Router Configuration

exit (OSPF Router Configuration)

Exits from router configuration mode.

Syntax

- `exit`

Default

None

Command Mode

OSPF Router Configuration

host-route

Adds a host to a router.

Syntax

- `default host-route {A.B.C.D} metric <0-65535>`
- `host-route {A.B.C.D} metric <0-65535>`
- `no host-route {A.B.C.D} metric <0-65535>`

Command Parameters

{A.B.C.D} Specifies the host IP address

metric <0-65535> Specifies an integer between 0 and 65535 representing the configured cost of the host route.

Default

None

Command Mode

OSPF Router Configuration

network (OSPF Router Configuration)

Enables OSPF on an interface.

Syntax

- `default network <ip_address>`
- `network <ip_address> [area <area_id>]`
- `no network <ip_address>`

Command Parameters

<ip_address> Specifies the IP address of interface to be enabled for OSPF routing

area <area_id> Specifies the ID of the area assigned to the interface in dotted decimal notation (A.B.C.D)

Default

None

Command Mode

OSPF Router Configuration

redistribute

Configures OSPF route redistribution.

Syntax

- `default redistribute {direct | rip | static} enable metric metric-type route-policy subnets`
- `no redistribute {direct | isis | rip | static} enable route-policy`
- `redistribute {direct | rip | static} [enable] [metric <0-65535>] [metric-type {type1 | type2}] [route-policy <WORD>] [subnets {allow | suppress}]`

Command Parameters

| | |
|------------------------------------|---|
| direct | Configure OSPF redistribution policies for direct routes |
| enable | Enable this ospf redistribute policy |
| isis | Configure OSPF redistribution policies for ISIS routes |
| metric <0-65535> | Specifies the metric value to associate with the route redistribution. |
| metric-type {type1 type2} | Specifies the metric type to associate with the route redistribution. |
| rip | Configure OSPF redistribution policies for RIP routes |
| route-policy <WORD> | Specifies the route policy to associate with route redistribution. This is the name of a previously configured route map. |
| static | Configure OSPF redistribution policies for static routes |
| subnets {allow suppress} | Specifies the subnet advertisement setting of this route redistribution. This determines whether individual subnets are advertised. |

Default

None

Command Mode

OSPF Router Configuration

rfc1583-compatibility

Configures OSPF RFC 1583 compatibility.

Syntax

- **default rfc1583-compatibility enable**
- **no rfc1583-compatibility enable**
- **rfc1583-compatibility enable**

Command Parameters

| | |
|---------------|------------------------------------|
| enable | Enable RFC-1583 compatibility mode |
|---------------|------------------------------------|

Default

None

Command Mode

OSPF Router Configuration

router-id

Configures the router ID.

Syntax

- `default router-id`
- `no router-id [<router_id>]`
- `router-id <router_id>`

Command Parameters

- <router_id>** Specifies the unique identifier for the router
- no** Resets the router ID to 0.0.0.0

Default

None

Command Mode

OSPF Router Configuration

timers basic holddown

Configures the OSPF hold own timer.

Syntax

- `default timers basic holddown <timer_value>`
- `timers basic holddown <timer_value>`

Command Parameters

- <timer_value>** Specifies a hold down timer value between 3 and 60 seconds

Default

None

Command Mode

OSPF Router Configuration

Chapter 10: Privileged Executive

This chapter provides information related to the Privileged Executive commands.

blink-leds

Blinks the LEDs on the display panel to identify the unit.

Syntax

```
• blink-leds [unit <1-8>] { time <1-10> | off}
```

Command Parameters

| | |
|--------------------------|----------------------------|
| off | Stop blinking the LEDs |
| time <1-10> | How long to blink the LEDs |
| unit <1-8> | Unit number |

Default

None

Command Mode

Privileged Executive

boot

Resets the switch/stack.

Syntax

```
• boot {default unit <1-8> | {nvram | script} block <1-2> | partial-  
  default | primary | secondary | unit <1-8>}
```

Command Parameters

| | |
|--------------------------|---|
| block <1-2> | Select block from which ascii cfg file should be copied |
|--------------------------|---|

| | |
|-------------------------|--|
| default | Reboot the stack/switch and use the factory default configurations |
| nvr | Boot with binary cfg in nvr |
| partial-default | Reboot the stack/switch and use partial factory default configurations |
| primary | Reboot the stack/switch and use primary factory default configurations |
| script | Boot with script |
| secondary | Reboot the stack/switch and use secondary factory default configurations |
| unit <1-8> | Unit number |

Default

None

Command Mode

Privileged Executive

clear app-telemetry counters

Clear the Application Telemetry status counters.

Syntax

- `clear app-telemetry counters [id <1-256>] [name <LINE>]`

Command Parameters

- id <1-256>** Clears the Application Telemetry counters for the filter identified by ID.
- name <LINE>** Clears the Application Telemetry counters for the filter identified by name.

Default

None

Command Mode

Privileged Executive

clear arp-cache

Clears the Layer 3 ARP cache.

Syntax

- `clear arp-cache`

Default

None

Command Mode

Privileged Executive

clear eapol

Clears authenticated clients.

Syntax

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

Command Parameters

| | |
|------------------------------|----------------------------------|
| <LINE> | List of ports |
| address <H.H.H> | Non-EAP MAC address |
| non-eap | Clear NEAP authenticated clients |

Default

None

Command Mode

Privileged Executive

clear ip dhcp-snooping

Clears DHCP snooping data.

Syntax

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

Command Parameters

| | |
|----------------|--------------------------------------|
| binding | Clear DHCP snooping bindings |
| dynamic | Clear DHCP snooping dynamic bindings |
| static | Clear DHCP snooping static bindings |

Default

None

Command Mode

Privileged Executive

clear ip forward-protocol

Clears broadcast protocols counters.

Syntax

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

Command Parameters

<LINE> Clear counters for specific VLAN

udp counters Clear UDP broadcast counters

Default

None

Command Mode

Privileged Executive

clear ip igmp

Clears IGMP data.

Syntax

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

Command Parameters

<1-65535> Profile ID

profile Clear IGMP profile data

stats Clear IGMP profile statistics

Default

None

Command Mode

Privileged Executive

clear ip ospf

Clears OSPF-related data.

Syntax

- `clear ip ospf counters <1-4094>`

Command Parameters

| | |
|-----------------------|---------------------|
| <1-4094> | VLAN ID |
| counters | Clear OSPF counters |

Default

None

Command Mode

Privileged Executive

clear ip verify

Clears IP Source Guard statistics.

Syntax

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

Command Parameters

| | |
|---------------------|----------------------------------|
| <WORD> | ports line |
| Ethernet | Select Ethernet interfaces |
| interface | select interfaces |
| source | Clear IP Source Guard statistics |
| statistics | Clear IP Source Guard statistics |

Default

None

Command Mode

Privileged Executive

clear ipv6 destinationcache

Clear the IPv6 destination cache.

Syntax

- `clear ipv6 destinationcache`

Default

None

Command Mode

Privileged Executive

clear ipv6 dhcp-relay

Clear IPv6 DHCP-relay parameters.

Syntax

- `clear ipv6 dhcp-relay counters [vlan <1-4094>]`

Command Parameters

counters Clear IPv6 DHCP-relay counters.

vlan Clear counters for specific vlan.

Default

None

Command Mode

Privileged Executive

clear ramdisk-files

Clears all files in the ramdisk.

Syntax

- `clear ramdisk-files`

Default

None

Command Mode

Privileged Executive

clear ssh banner

Clears the SSH banner.

Syntax

- `clear ssh banner`

Default

None

Command Mode

Privileged Executive

configure

Configures setting.

Syntax

- `configure [network] [terminal] [usb]`

Command Parameters

| | |
|-----------------|------------------------------------|
| network | Configure from a TFTP network host |
| terminal | Configure from the terminal |
| usb | Configure from USB |

Default

None

Command Mode

Privileged Executive

configure network

Configure from a TFTP network host

Syntax

```
• configure {[address] [filename] [load-on-boot]}
```

Command Parameters

| | |
|---------------------|---|
| address | Specify address of TFTP server |
| filename | Specify filename of config file |
| load-on-boot | Specify settings for loading config file at boot time |

Default

None

Command Mode

Privileged Executive

configure network address

Specifies address of TFTP server.

Syntax

```
• configure network address {[A.B.C.D | <WORD>] [filename <WORD>]}
```

Command Parameters

| | |
|------------------------------|---------------------------------|
| <WORD> | TFTP Server IPv6 address |
| A.B.C.D | TFTP Server IP address |
| filename <WORD> | Specify filename of config file |

Default

None

Command Mode

Privileged Executive

configure network filename

Specifies filename of config file.

Syntax

- `configure network filename { [<WORD>] [address] [<A.B.C.D> | WORD] }`

Command Parameters

| | |
|---|--|
| <code><A.B.C.D> <WORD></code> | TFTP Server IP address or TFTP Server IPv6 address |
| <code><WORD></code> | Config file name |
| <code>address</code> | Specify address of TFTP server |

Default

None

Command Mode

Privileged Executive

configure network load-on-boot

Specifies settings for loading config file at boot time.

Syntax

- `configure network load-on-boot { [disable] [use-config] { { [address { A.B.C.D | <WORD> | filename <WORD> } | [filename <WORD>] } } | [use-bootp] }`

Command Parameters

| | |
|------------------------------------|---|
| <code>[A.B.C.D]</code> | TFTP Server IP address |
| <code><WORD></code> | TFTP Server IPv6 address |
| <code>disable</code> | Disable loading of config file at boot time |
| <code>filename <word></code> | Specify filename of config file |
| <code>use-bootp</code> | Load config file at boot time using BOOTP |
| <code>use-config</code> | Load config file at boot time using configured parameters |

Default

None

Command Mode

Privileged Executive

configure ramdisk

Configures from ramdisk.

Syntax

- `configure ramdisk filename <WORD>`

Command Parameters

filename <WORD> Specifies the name of the configuration file on ramdisk.

Default

None

Command Mode

Privileged Executive

configure sftp

Configures from an SFTP network host.

Syntax

- `configure sftp {[address {<A.B.C.D> | <ipv6addr>}] [filename <WORD>]} [username <WORD>]`

Command Parameters

address {<A.B.C.D> | <ipv6addr> Specifies the address of the SFTP server as an IPv4 address or IPv6 address.

filename <WORD> Specifies the name of the configuration file on the SFTP server.

username <WORD> Specifies the username.

Default

None

Command Mode

Privileged Executive

configure terminal

Configures from the terminal.

Syntax

- `configure terminal`

Default

None

Command Mode

Privileged Executive

configure usb

Configures from USB.

Syntax

- `configure usb filename <WORD> unit <1-8>`

Command Parameters

filename <WORD> Specifies the filename of a config file.

unit <1-8> Configure from USB of another unit in a stack

Default

None

Command Mode

Privileged Executive

copy config nvram

Copies to local NV storage.

Syntax

- `copy config nvram block <1-2> name <WORD>`

Command Parameters

block <1-2> Specify configuration block number

name <WORD> Specify configuration block name

Default

None

Command Mode

Privileged Executive

copy config ramdisk

Copies to ramdisk.

Syntax

- `copy config ramdisk filename <WORD>`

Command Parameters

filename <WORD> Specifies the name of the configuration file on ramdisk.

Default

None

Command Mode

Privileged Executive

copy config sftp

Copy configuration in a binary file to an SFTP server.

Syntax

- `copy config sftp {[address {<A.B.C.D> | <ipv6addr>}] [filename <WORD>] [username <WORD>] [password]}`

Command Parameters

address {<A.B.C.D> | <ipv6addr> Specifies the address of the SFTP server as IPv4 address or IPv6 address.

filename <WORD> Specifies the name of the configuration file on the SFTP server.

password Specifies the password which is mandatory when password authentication is enabled.

username <WORD> Specifies the username.

Default

None

Command Mode

Privileged Executive

copy config tftp

Copies to TFTP server.

Syntax

- `copy config tftp [filename <word>] address {A.B.C.D | <WORD>} filename <word>`

Command Parameters

{A.B.C.D} TFTP Server IP address

<WORD> TFTP Server IPv6 address

address {A.B.C.D | <WORD>} Specify address of the TFTP server

filename <word> Specify filename in which to store configuration on TFTP server

Default

None

Command Mode

Privileged Executive

copy config usb

Copies to USB.

Syntax

- `copy config usb filename <word> unit <1-8>`

Command Parameters

filename <word> Specify filename in which to store configuration on USB

unit <1-8> Copies to USB of another unit in a stack

Default

None

Command Mode

Privileged Executive

copy nvram

Loads the configuration from the specified NV storage configuration block.

Syntax

• `copy nvram config block <1-2>`

Command Parameters

block <1-2> Specify configuration block number

config Load the configuration from the specified NV storage configuration block

Default

None

Command Mode

Privileged Executive

copy ramdisk

Copy configuration from ramdisk.

Syntax

• `copy ramdisk {[config <filename>] | [license <filename>]}`

Command Parameters

config Specifies the file to copy to local configuration.

filename <WORD> Specifies the name of the configuration file or license.

license Specifies the license to copy from ramdisk.

Default

None

Command Mode

Privileged Executive

copy running-config ramdisk

Copies to ramdisk.

Syntax

- `copy running-config ramdisk [verbose] [module [802.1ab] [aaa] [aaur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [igmp] [ike] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [ipv6-fhs] [l3] [l3-protocols] [lacp] [link-state] [logging] [mac-security] [macsec] [mld] [mlt] [mvr] [pim] [port-mirroring] [qos] [radius] [rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp] [spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [strom-control] [stp] [tacacs] [vlacp] [vlan]] filename <file-name> address {A.B.C.D | <WORD>}} [filename <file-name>]`

Command Parameters

- filename <file-name>** Specifies the filename in which to store the configuration on the SFTP server.
- module <module>** Copies the application configuration.
- verbose** Copies the entire configuration (defaults and non-defaults).

Default

None

Command Mode

Privileged Executive

copy running-config sftp

Copies to SFTP server.

Syntax

- `copy running-config tftp [verbose] [module [802.1ab] [aaa] [aaur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm]`

```
[core] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [igmp] [ike]
[interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [ipv6-fhs]
[l3] [l3-protocols] [lacp] [link-state] [logging] [mac-security]
[macsec] [mld] [mlt] [mvr ] [pim] [port-mirroring] [qos] [radius]
[rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp]
[spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [strom-control] [stp]
[tacacs] [vlacp] [vlan]] filename <file-name> address {A.B.C.D |
<WORD>}
```

Command Parameters

| | |
|-----------------------------------|--|
| address {<A.B.C.D> <WORD>} | Specifies the address of the SFTP server. |
| filename <file-name> | Specifies the filename in which to store the configuration on ramdisk. |
| module <module> | Copies the application configuration. |
| verbose | Copies the entire configuration (defaults and non-defaults). |

Default

None

Command Mode

Privileged Executive

copy running-config tftp

Copy to a Trivial File Transfer Protocol (TFTP) server.

Syntax

- `copy running-config tftp [verbose] [module [802.1ab] [aaa] [aur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [igmp] [ike] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [ipv6-fhs] [l3] [l3-protocols] [lacp] [link-state] [logging] [mac-security] [macsec] [mld] [mlt] [mvr] [pim] [port-mirroring] [qos] [radius] [rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp] [spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [strom-control] [stp] [tacacs] [vlacp] [vlan]] filename <file-name> address {A.B.C.D | <WORD>}] filename <file-name> address {A.B.C.D | <WORD>}`

Command Parameters

| | |
|-----------------------------------|---|
| address {<A.B.C.D> <WORD>} | Specifies the TFTP server IP address. <A.B.C.D> specifies an IPv4 address and <WORD> specifies an IPv6 address. |
|-----------------------------------|---|

| | |
|------------------------------|--|
| filename <WORD> | Specifies the filename in which to store configuration on TFTP server. |
| module <module> | Copies application configuration. |
| verbose | Copy entire configuration (defaults and non-defaults). |

Default

None

Command Mode

Privileged Executive

copy running-config usb

Copies to USB.

Syntax

- `copy running-config usb [verbose] [module [802.1ab] [aaa] [aaur] [adac] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [dhcp-relay] [dhcp-snooping] [eap] [energy-saver] [igmp] [ike] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipv6] [ipv6-fhs] [l3] [l3-protocols] [lACP] [link-state] [logging] [mac-security] [macsec] [mld] [mlt] [mvr] [pim] [port-mirroring] [qos] [radius] [rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp] [spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [strom-control] [stp] [tacacs] [vlACP] [vlan]] filename <file-name> address {A.B.C.D | <WORD>}] [filename <file-name>] [unit <1-8>]`

Command Parameters

| | |
|-----------------------------------|---|
| filename <file-name> | Specifies the filename in which to store the configuration on the USB server. |
| module <module> | Copies application configuration. |
| verbose | Copy entire configuration (defaults and non-defaults). |

Default

None

Command Mode

Privileged Executive

copy sftp

Copies configuration from SFTP server.

Syntax

- `copy sftp`

Default

None

Command Mode

Privileged Executive

copy sftp config

Copies the configuration from a binary file from a SFTP server.

Syntax

- `copy sftp config {[address {<A.B.C.D> | <ipv6addr>}] [unit {all | <1-8>}]} [filename <WORD>] [username <WORD>] [password]}`

Command Parameters

| | |
|---|---|
| address {<A.B.C.D> <ipv6addr>} | Specifies the address of the SFTP server as IPv4 address or IPv6 address. |
| filename <WORD> | Specifies the name of the file to be retrieved. |
| password | Specifies the password. |
| unit {all <1-8>} | Selects units from which to copy the configuration. You can specify all units or a unit number from 1 to 8. |
| username <WORD> | Specifies the username. |

Default

None

Command Mode

Privileged Executive

copy sftp license

Copy the license from SFTP server.

Syntax

- `copy sftp license` {[address {<A.B.C.D> | <ipv6addr>}] [filename <WORD>] [username <WORD>]}

Command Parameters

- address** {<A.B.C.D> | <WORD>} Specifies the address of the SFTP server as an IPv4 address or an IPv6 address. A.B.C.D specifies an IPv4 address and <WORD> specifies an IPv6 address.
- filename** <WORD> Specifies the name of the file to be retrieved.
- username** <WORD> Specifies the username.

Default

None

Command Mode

Privileged Executive

copy tftp config

Copies to local configuration.

Syntax

- `copy tftp config` [filename <word>] [address {A.B.C.D | <WORD>}] [filename <word>]] unit {<1-8> | all}

Command Parameters

- {A.B.C.D}** TFTP server IP address
- <WORD>** TFTP server IPv6 address
- address** Specify address of the TFTP server
- filename** Specify filename on TFTP server from which to Copies the configuration
- unit** {<1-8> | all} Select units from which config should be copied

Default

None

Command Mode

Privileged Executive

copy tftp license

Copies license from TFTP server.

Syntax

- `copy tftp license {address {A.B.C.D | <WORD>} filename <file-name> | filename <file-name> address {A.B.C.D | <WORD>}}`

Command Parameters

| | |
|--------------------------|--|
| <file-name> | License file name on TFTP server |
| <WORD> | TFTP server IPv6 address |
| A.B.C.D | TFTP server IP address |
| address | Specify address of the TFTP server |
| filename | Specify filename on TFTP server from which to license file |

Default

None

Command Mode

Privileged Executive

copy tftp script

Copies to local script

Syntax

- `copy tftp script {address {A.B.C.D | <WORD>} filename <file-name>} block <1-2> name<WORD>`

Command Parameters

| | |
|---------------------|------------------------------------|
| <WORD> | TFTP server IPv6 address |
| A.B.C.D | TFTP server IP address |
| address | Specify address of the TFTP server |

| | |
|--------------------------|--|
| block <1-2> | Select block from which ascii cfg file should be copied |
| filename | Specify target filename on TFTP server to copy configuration |
| name <WORD> | Specify the block name |

Default

None

Command Mode

Privileged Executive

copy usb

Copies from USB memory stick.

Syntax

- `copy usb {config | license | script} [filename <WORD>] [block <1-2> name <WORD>]`

Command Parameters

| | |
|--------------------------|--|
| <WORD> | Config file name on USB |
| block <1-2> | Selects block from which ascii cfg file should be copied |
| config | Copies the configuration from usb |
| filename | Specify filename from which to Copies the configuration from USB |
| license | Copies the license file from USB |
| name <WORD> | Specifies the block name |
| script | Copies ascii config file from USB |
| unit <1-8> | Unit number |

Default

None

Command Mode

Privileged Executive

disable

Turns off privileged commands.

Syntax

- `disable`

Default

None

Command Mode

Privileged Executive

download

Downloads and run new image.

Syntax

- `download` {[address {A.B.C.D | <WORD>}] [diag <image-name>] [image <image-name>] [image-if-newer <image-name>] no-reset} [poe_module_image <image-name>] [primary {image <image-name> | image-if-newer <image-name>}] [secondary {image <image-name> | image-if-newer <image-name>}] [usb {[diag <image-name>] | [image {<image-name>] | [poe_module_image <image-name>] | [primary {image <image-name> | image-if-newer <image-name>}] | [secondary {image <image-name> | image-if-newer <image-name>}]}
- `download sftp` [address {A.B.C.D | <WORD>}] [diag <image-name> | image <image-name>] [no-reset] [username <WORD>] [password]

Command Parameters

| | |
|--|---|
| <code>address {A.B.C.D <WORD></code> | Specify IP address of TFTP server |
| <code>diag <image-name></code> | Diagnostics image file name |
| <code>image <image-name></code> | Software image |
| <code>image-if-newer <image-name></code> | Software image if version newer |
| <code>no-reset</code> | Do not reset the switch after downloading |
| <code>poe_module_image <image-name></code> | PoE image file name |
| <code>primary</code> | Download the primary agent image |
| <code>ramdisk</code> | Download image from ramdisk. |

| | |
|------------------------------|------------------------------------|
| secondary | Download the secondary agent image |
| sftp | Download image from SFTP. |
| usb | Download image from USB |
| username <WORD> | Specify the username |

Default

None

Command Mode

Privileged Executive

energy-saver

Manually activates or deactivate energy saver.

Syntax

- `energy-saver {activate | deactivate}`

Command Parameters

| | |
|-------------------|----------------------------------|
| activate | Manually activate energy saver |
| deactivate | Manually deactivate energy saver |

Default

None

Command Mode

Privileged Executive

install

Quick Install & Setup Script.

Syntax

- `install`

Default

None

Command Mode

Privileged Executive

ip dhcp-snooping

Configures DHCP snooping settings.

Syntax

- `ip dhcp-snooping external-save restore`

Command Parameters

external-save Control the external DHCP snooping binding table saving

restore Restore previously saved DHCP snooping binding table

Default

None

Command Mode

Privileged Executive

ip ipfix

Exports/Flushes IPFIX.

Syntax

- `ip ipfix flush port <LINE> export-and-flush`

Command Parameters

export-and-flush Export and flush ipfix data

flush Flush ipfix port data

port<LINE> Specify ports

Default

None

Command Mode

Privileged Executive

ip ospf apply

Applies OSPF policy/redistribute configuration.

Syntax

```
• ip ospf apply {accept | redistribute <direct | rip | isis| static>}
```

Command Parameters

| | |
|---------------------|--|
| accept | Apply OSPF accept policies |
| direct | Only apply direct redistribute configuration |
| isis | Only apply isis redistribute configuration |
| redistribute | Apply OSPF redistribute configurations |
| rip | Only apply RIP redistribute configuration |
| static | Only apply static redistribute configuration |

Default

None

Command Mode

Privileged Executive

ip ospf spf-run

Initiates SPF run to immediately update OSPF LSDB.

Syntax

```
• ip ospf spf-run
```

Default

None

Command Mode

Privileged Executive

manualtrigger

Triggers RIP update manually.

Syntax

- `manualtrigger ip rip interface vlan <1-4094>`

Command Parameters

| | |
|----------------------------|-------------------------------------|
| interface | Trigger per-interface RIP update |
| ip | Global IP configuration subcommands |
| rip | Trigger RIP update |
| vlan <1-4094> | VLAN interface |

Default

None

Command Mode

Privileged Executive

quickconfig

New unit quick configuration

Syntax

- `quickconfig start-recording`

Command Parameters

| | |
|------------------------|--------------------------------------|
| start-recording | Start recording the command template |
|------------------------|--------------------------------------|

Default

None

Command Mode

Privileged Executive

reload

Reloads the switch/stack.

Syntax

- `reload {cancel | force minutes-to-wait <1-60> | minutes-to-wait <1-60>}`

Command Parameters

| | |
|-------------------------------------|------------------------------------|
| cancel | Cancel a previous scheduled reload |
| force | Do not ask for confirmation |
| minutes-to-wait <1-60> | Minutes to wait before reboot |

Default

None

Command Mode

Privileged Executive

renew

Renews DHCP lease.

Syntax

- `renew dhcp`

Command Parameters

| | |
|-------------|------------------|
| dhcp | Renew DHCP lease |
|-------------|------------------|

Default

None

Command Mode

Privileged Executive

restore

Resets the switch/stack to factory default.

Syntax

- `restore factory-default [-y]`

Command Parameters

| | |
|------------------------|--|
| factory-default | Reset stack/switch to factory default configurations |
| -y | Do not prompt |

Default

None

Command Mode

Privileged Executive

save

Writes configuration to nvram.

Syntax

- `save config`

Command Parameters

config Save configuration to local NV storage

Default

None

Command Mode

Privileged Executive

script run

Runs an ASCII configuration script.

Syntax

- `script run {<1-127> | tftp {{<hostname> | {A.B.C.D}} | sftp {<hostname> | {A.B.C.D}} | <ipv6address>} | usb [unit <1-8> <filename>]}`

Command Parameters

<1-127> Specify index in ASCII configuration script table of the script to be loaded

<file-name> Specify filename

<Hostname> or {A.B.C.D} Specify hostname or IP address of TFTP server

A.B.C.D <WORD> Specify IPv6 address of TFTP server

<ipv6address> Specify IPv6 address of TFTP server

| | |
|-------------------------|------------------------------|
| sftp | Load script from SFTP server |
| tftp | Load script from TFTP server |
| unit <1-8> | Specify unit number |
| usb | Load script from USB |

Default

None

Command Mode

Privileged Executive

script upload

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

Syntax

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

Command Parameters

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

Default

None

Command Mode

Privileged Executive

show adac

Displays ADAC configuration.

Syntax

- `show adac`

Default

None

Command Mode

Privileged Executive

show adac detection

Displays detection mechanisms.

Syntax

- `show adac detection interface [ethernet] <LINE>`

Command Parameters

<LINE> List of ports

Ethernet Ethernet IEEE 802.3

interface Select interfaces for which to display detection mechanisms

Default

None

Command Mode

Privileged Executive

show adac interface

Displays configuration for specified interfaces.

Syntax

- `show adac interface [ethernet] <LINE>`

Command Parameters

<LINE> List of ports

Ethernet Ethernet IEEE 802.3

Default

None

Command Mode

Privileged Executive

show adac mac-range-table

Displays the supported MAC address ranges.

Syntax

- `show adac mac-range-table`

Default

None

Command Mode

Privileged Executive

show app-telemetry counters

Displays the Application Telemetry counters.

Syntax

- `show app-telemetry counters [id <1-256>] [name <LINE>]`

Command Parameters

- id <1-256>** Displays Application Telemetry counters for the filter identified by ID.
- name <LINE>** Displays Application Telemetry counters for the filter identified by name.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show app-telemetry counters` command output.

| Field | Description |
|----------------|---|
| Filter Number | Indicates the counter ID. |
| Filter Name | Indicates the counter name. |
| No. of Packets | Indicates the number of counter packets received. |
| No. of Bytes | Indicates the number of counter bytes used. |

Example

The following is an example for the **show app-telemetry counters** command output:

```
Switch:1>enable
Switch:1#show app-telemetry counters
=====
Filter | Filter | No. of | No. of
Number | Name   | Packets | Bytes
=====
1      | ssh    | 1258    | 72145
2      | sslclient | 457     | 27000
```

show app-telemetry status

Displays whether Application Telemetry is enabled or disabled and whether or not the collector is reachable.

Syntax

- **show app-telemetry status**

Default

None

Command Mode

Privileged Executive

Example

The following is an example for the **show app-telemetry status** command output:

```
Switch:1>enable
Switch:1#show app-telemetry status
APPTEL is disabled
The collector's address is: 0.0.0.0
```

The following is an example for the **show app-telemetry status** command output, when the Application Telemetry is enabled:

```
Switch:1>enable
Switch:1#show app-telemetry status
APPTEL is enabled
Current set of ports: ALL
The collector's address is: 10.10.10.2
```



```
The collector is reachable via:  
    U 0/P 1/NH 0-9-f-9-0-6/172.16.120.1  
Policy file in use: apptel_default.pol
```

show audit

Displays audit settings.

Syntax

- `show audit log {asccfg | config | serial | telnet}`

Command Parameters

| | |
|---------------|---|
| asccfg | Display audit log for ASCII configuration |
| config | Display audit log save config |
| log | Display audit log |
| serial | Display audit log for serial connection |
| telnet | Display audit log for telnet/ssh |

Default

None

Command Mode

Privileged Executive

show auto-negotiation-advertisements

Displays current auto-negotiation advertisement settings.

Syntax

- `show auto-negotiation-advertisements port <LINE>`

Command Parameters

| | |
|---------------------|---|
| <LINE> | List of ports |
| port | Display auto-negotiation-advertisements configuration for specified ports |

Default

None

Command Mode

Privileged Executive

show auto-negotiation-capabilities

Displays current auto-negotiation advertisement capabilities.

Syntax

- `show auto-negotiation-capabilities port <LINE>`

Command Parameters

<LINE> List of ports

port Display auto-negotiation-capabilities for specified ports

Default

None

Command Mode

Privileged Executive

show autosave

Displays current autosave setting.

Syntax

- `show autosave`

Default

None

Command Mode

Privileged Executive

show autotopology

Displays autotopology information.

Syntax

- `show autotopology {nmm-table | settings}`

Command Parameters

| | |
|------------------|--------------------------------------|
| nmm-table | Display autotopology NMM table |
| settings | Display autotopology global settings |

Default

None

Command Mode

Privileged Executive

show banner

Shows banner information.

Syntax

- `show banner {custom | static | usg}`

Command Parameters

| | |
|---------------|------------------------------------|
| custom | Display custom banner |
| static | Display static banner |
| usg | Display the U.S. Government banner |

Default

None

Command Mode

Privileged Executive

show cli info

Displays general Console settings.

Syntax

- `show cli info`

Default

None

Command Mode

Privileged Executive

show cli mode

Displays information about current CLI mode.

Syntax

- `show cli mode`

Default

None

Command Mode

Privileged Executive

show cli password

Displays CLI usernames and passwords.

Syntax

- `show cli password type`

Command Parameters

type Display passwords types

Default

None

Command Mode

Privileged Executive

show clock

Displays current time.

Syntax

- `show clock {detail | summer-time | time-zone}`

Command Parameters

- detail** Addition to displaying current time, display all time source current value and RTC configuration
- summer-time** Displays daylight saving time settings
- time-zone** Displays local time zone settings

Default

None

Command Mode

Privileged Executive

show config-network

Shows settings for downloading config files.

Syntax

- `show config-network`

Default

None

Command Mode

Privileged Executive

show eapol

Displays current settings of the EAPoL protocol.

Syntax

- `show eapol [acct-session-id | auth-stats interface <LINE> | guest-vlan interface <LINE> | multihost [fail-open-vlan interface <LINE> | interface <LINE> | non-eap-mac {interface <LINE>|status <LINE>} | non-eap-pwd-fmt key | status <LINE>|verbose | voip-vlan] | port <LINE> | sessions [dhcp-phones|eap|non-eap|port<LINE>|unauthenticated] summary [interface <LINE>|verbose]]`

Command Parameters

| | |
|---|--|
| acct-session-id | Displays the accounting session ID format. |
| auth-stats | Displays EAPoL statistics. |
| guest-vlan | Displays EAPoL guest VLAN settings. |
| multihost [fail-open-vlan interface <LINE> interface <LINE> non-eap-mac { interface <LINE> status <LINE>} non-eap-pwd-fmt key status <LINE> verbose voip-vlan] | Displays EAPoL multihost settings. |
| fail-open-vlan interface <LINE> | Displays EAPoL multihost Fail Open VLAN settings. |
| interface <LINE> | Displays EAPoL multihost configuration on the specified port(s). |
| non-eap-mac { interface <LINE> status <LINE>} | Displays the allowed non-EAP MAC addresses. |
| non-eap-pwd-fmt { key } | Displays Non-EAP password format. |
| status <LINE> verbose | Displays EAPoL multihost port status. |
| voip-vlan | Displays EAPoL multihost VoIP VLAN settings. |
| summary interface <LINE> verbose | Displays a summary of authenticated clients. |
| verbose | Displays detailed output. |

Default

None

Command Mode

Privileged Executive

Command Output

The **show eapool** command displays the following information:

| Output field | Description |
|-----------------------------|---|
| EAP Administrative State | Specifies the EAPoL administrative state. |
| Protocol Version | Specifies the protocol version. |
| Port-mirroring on EAP ports | Specifies whether port mirroring is enabled on the EAPoL ports. |
| EAP User Based Policies | Specifies if EAPoL User Based Policy settings are enabled. |

Table continues...

| Output field | Description |
|---|---|
| EAP User Based Policies Filter On MAC Addresses | Specifies whether MAC filtering is enabled on EAPoL User Based Policies. |
| EAP Dynamic User Based Policies | Specifies whether the creation of dynamic User Based Policies is enabled. |
| Admin Status | Specifies the EAPoL administrative status. |
| Authorized | Specifies whether the EAPoL client is authorized to access the port. |
| Admin Directions | Specifies the administrative direction. Options are: <ul style="list-style-type: none"> • both—Specifies both ingress and egress traffic. • in—Specifies ingress traffic. • out—Specifies egress traffic. The default is both. |
| Oper Directions | Specifies the operational direction. Options are: <ul style="list-style-type: none"> • both—Specifies both ingress and egress traffic. • in—Specifies ingress traffic. • out—Specifies egress traffic. The default is both. |
| ReAuth Enable | Specifies whether re-authentication is enabled. |
| ReAuth Period | Specifies the re-authentication period. |
| Quiet Period | Specifies the quiet period. |
| Supplicant Timeout | Specifies the timeout period for the supplicant. |
| Server Timeout | Specifies the server timeout period. |
| Max Requests | Specifies the maximum number of EAP requests. |
| Dynamic RADIUS Server | Specifies whether the dynamic RADIUS server is configured. |

Example

The following is an example output of the **show eapol** command:

```
Switch:1#show eapol

EAP Administrative State      : Disabled
Protocol Version             : 2
Port-mirroring on EAP ports  : Disabled
EAP User Based Policies      : Enabled
EAP User Based Policies Filter On MAC Addresses : Enabled
EAP Dynamic User Based Policies : Enabled

Port: 1
  Admin Status                : Force Authorized
  Authorized                  : Yes
  Admin Directions            : Both
  Oper Directions             : Both
  ReAuth Enable               : No
  ReAuth Period               : 3600
  Quiet Period                : 60
```

```

Supplicant Timeout      : 30
Server Timeout         : 30
Max Requests           : 2
Dynamic RADIUS Server  : No
Port: 2
Admin Status           : Force Authorized
Authorized              : Yes
Admin Directions       : Both
Oper Directions        : Both
ReAuth Enable          : No
ReAuth Period          : 3600
Quiet Period           : 60
Supplicant Timeout     : 30
Server Timeout         : 30
Max Requests           : 2
Dynamic RADIUS Server  : Yes

```

show eapol multihost

Displays EAPoL multi-host information.

Syntax

- **show eapol multihost** [**fail-open-vlan interface <LINE>** | **interface <LINE>** | **non-eap-mac {interface <LINE> | status <LINE>}**] | **non-eap-pwd-fmt key** | **status {<LINE> | verbose}** | **voip-vlan**]

Command Parameters

| | |
|---|--|
| fail-open-vlan | Display EAPoL multihost Fail Open VLAN settings. |
| interface <LINE> | Displays EAPoL multihost port configuration. |
| non-eap-mac {interface <LINE> Status <LINE>} | Display allowed non-EAPoL MAC addresses. |
| non-eap-pwd-fmt key | Displays the non-EAP password format. |
| status {<LINE> verbose} | Display EAPoL multihost status |
| interface <LINE> | Select interfaces to be displayed |
| key | Displays Non-EAP Password Key |
| verbose | Displays detailed output. |
| voip-vlan | Display EAPoL multihost voip-vlan settings |

Default

None

Command Mode

Privileged Executive

Command OutputThe `show eapol multihost` command displays the following information:

| Output field | Description |
|---|---|
| Allow Local Non-EAP Clients | Specifies whether support is enabled or disabled for Non-EAP clients using local authentication. |
| Non-EAP RADIUS Authentication | Specifies whether Non-EAP RADIUS authentication is enabled or disabled. |
| Non-EAP RADIUS Authentication Delay | Specifies the Non-EAP RADIUS authentication delay. |
| Non-EAP AutoLearned After Single Authnt (MHSA) | Specifies whether auto-authentication of non-EAP clients in the Multiple Host with Single Authentication (MHSA) mode is enabled. |
| Non-EAP DHCP Phone Authentication | Specifies whether non-EAP DHCP phone authentication is enabled. |
| EAPoL Request Packet Generation Mode | Indicates the packet generation mode. It can be unicast, multicast, or broadcast. |
| EAP RADIUS Assigned VLANs | Specifies whether support for RADIUS-assigned VLANs in multihost-EAP mode for EAPoL clients is enabled. |
| Non-EAP RADIUS Assigned VLANs | Specifies whether support for RADIUS-assigned VLANs in multihost-EAP mode for non-EAP clients is enabled. |
| Non-EAP RADIUS Password Attribute Format | Specifies the format of the RADIUS server password attribute for Non-EAP clients. <ul style="list-style-type: none"> • ipAddr — include switch IP address string • macAddr — include MAC address string • portNumber — include port string • key — include configurable key string • padding — With the padding option unchecked, the RADIUS password uses dots only to separate fields. This is the default setting. With the option checked, the RADIUS password uses dots for every missing parameter |
| Non-EAP User Based Policies | Specifies if Non-EAP User Based Policies are enabled. |
| Non-EAP User Based Policies Filter On MAC Addresses | Specifies whether filtering of user based policies based on MAC address is enabled. |
| Non-EAP Dynamic User Based Policies | Specifies whether the creation of Non-EAP dynamic user based policies is enabled. |
| EAP Protocol | Specifies whether the EAPoL protocol is enabled on the port. |

Table continues...

| Output field | Description |
|-----------------------------------|--|
| Non-EAP ReAuthentication | Specifies whether Non-EAP re-authentication is enabled. |
| ADAC Non-EAP Phone Authentication | Specifies whether Non-EAP phone authentication using ADAC mode is enabled. |
| Fail Open VLAN | Specifies whether Fail Open VLAN is enabled. |
| Fail Open VLAN ID | Specifies the Fail Open VLAN ID |
| Fail Open VLAN Continuity Mode | Specifies whether Fail Open VLAN continuity mode is enabled. |

Example

The following is an example output of the `show eapol multihost` command:

```
Switch:1#show eapol multihost

Allow Local Non-EAP Clients                : Disabled
Non-EAP RADIUS Authentication              : Disabled
Non-EAP RADIUS Authentication Delay        : 4
Non-EAP AutoLearned After Single Authent (MHSA) : Disabled
Non-EAP DHCP Phone Authentication         : Disabled
EAPoL Request Packet Generation Mode     : Unicast
EAP RADIUS Assigned VLANs                 : Enabled
Non-EAP RADIUS Assigned VLANs            : Enabled
Non-EAP RADIUS Password Attribute Format   : MACAddr
Non-EAP User Based Policies               : Disabled
Non-EAP User Based Policies Filter On MAC Addresses : Disabled
Non-EAP Dynamic User Based Policies      : Enabled
EAP Protocol                              : Enabled
Non-EAP ReAuthentication                  : Disabled
ADAC Non-EAP Phone Authentication         : Disabled
Fail Open VLAN                            : Disabled
Fail Open VLAN ID                         : 1
Fail Open VLAN Continuity Mode            : Disabled
```

show eapol sessions

Displays information on MACs for EAP sessions.

Syntax

```
• show eapol sessions {[port <portmask>] | [dhcp-phones] | [[eap] |
  [non-eap [radius] [local] [adac-lldp] [adac-mac-range] [held] [mhsa]]
  | [[unauthenticated [intruder] [guest-vlan] [fail-open-vlan] [mhsa-no-
  limit]]]}
```

Command Parameters

- adac-lldp** Displays non-EAPOL clients authenticated through ADAC.
- adac-mac-range** Displays neap sessions with macs in the adac mac range list.

| | |
|-----------------------------------|---|
| dhcp-phones | Displays MACs of DHCP Phones. |
| eap | Displays authenticated EAPOL sessions. |
| fail-open-vlan | Displays MACs of clients in Fail Open VLAN. |
| guest-vlan | Displays unauthenticated clients in Guest VLAN. |
| held | Displays unauthenticated clients held by RADIUS. |
| interface <portlist> | Specifies the interfaces for which to display information. Select a port or a list of ports for which to display information. |
| intruder | Displays intruder MACs. |
| local | Displays locally authenticated non-EAPOL clients. |
| mhsa | Displays non-EAP sessions for MHSa. |
| mhsa-no-limit | Displays non-EAP sessions for MHSa when no-limit is enabled. |
| non-eap | Displays authenticated non-EAPOL clients. |
| port <portmask> | Specifies the numeric slot/port format. |
| radius | Displays non-EAPOL clients authenticated by RADIUS. |
| unauthenticated | Displays unauthenticated EAPOL and non-EAPOL clients. |

Default

None

Command Mode

Privileged Executive

show http-port

Displays the TCP port on which web server will listen.

Syntax

- `show http-port`

Default

None

Command Mode

Privileged Executive

show ip fwd-nh

Display IP forwarding next-hop settings

Syntax

- `show ip fwd-nh [policy [<WORD>][interface [vlan <1-4094>]]`

Command Parameters

| | |
|------------------------------|---|
| interface | Display IP forwarding next-hop per-interface settings |
| policy [<WORD>] | Display IP forwarding next-hope policies |
| vlan <1-4094> | Select a VLAN interface |

Default

None

Command Mode

Privileged Executive

show ip igmp cache

Displays IGMP cache details.

Syntax

- `show ip igmp cache`

Default

None

Command Mode

Privileged Executive

Command OutputThe following table shows the field descriptions for the `show ip igmp cache` command.

| Field | Description |
|---------------|---------------------------------------|
| Group Address | Indicates the multicast group address |

Table continues...

| Field | Description |
|---------------|--|
| Vlan ID | Indicates the VLAN interface on which the group exists. |
| Last Reporter | Indicates the last IGMP host to join the group. |
| Expiration | Indicates the group expiration time (in seconds). |
| V1 Host Timer | Indicates the time remaining until the local router assumes that no IGMP version 1 members exist on the IP subnet attached to the interface. Upon hearing an IGMPv1 membership report, this value is reset to the group membership timer. When the time remaining is nonzero, the local interface ignores IGMPv2 Leave messages that it receives for this group. |
| Type | Indicates whether the entry is learned dynamically or is added statically. |

Example

The following is an example for the `show ip igmp cache` command output:

```
Switch#show ip igmp cache
Group Address  Vlan ID Last Reporter  Expiration V1 Host Timer Type
-----
239.255.255.250 1          172.16.120.253 160         0           Dynamic
```

show ip igmp group

Displays IGMP group details.

Syntax

- `show ip igmp group [count] [member-subnet A.B.C.D/<0-32>] [group {A.B.C.D}]`

Command Parameters

| | |
|---|--------------------------|
| count | Display count of entries |
| group {A.B.C.D} | Select group |
| member-subnet A.B.C.D/<0-32> | Select member subnet |

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip igmp group` command.

| Field | Description |
|----------------|---|
| Group Address | Indicates the multicast group address. |
| VLAN | Indicates the VLAN interface on which the group exists. |
| Member Address | Indicates the IP address of the IGMP receiver (host or IGMP reporter). The IP address is 0.0.0.0 if the type is static. |
| Expiration | Indicates the time left before the group report expires. This variable is updated upon receiving a group report. |
| Type | Indicates the type of membership: static or dynamic |
| In Port | Identifies the member port for the group. This is the port on which group traffic is forwarded and in those case where the type is dynamic, it is the port on which the IGMP join was received. |

Example

The following is an example for the `show ip igmp group` command output:

```
Switch#show ip igmp group
Group Address  VLAN Member Address  Expiration Type      In Port
-----
239.255.255.250 1      172.16.120.253  188      Dynamic  1
```

show ip igmp group-ext

Displays IGMP extended group details.

Syntax

- `show ip igmp group-ext [count] [member-subnet A.B.C.D/<0-32>] [group {A.B.C.D}] [source {A.B.C.D}]`

Command Parameters

| | |
|---|--------------------------|
| count | Display count of entries |
| group {A.B.C.D} | Select group |
| member-subnet A.B.C.D/<0-32> | Select member subnet |
| source {A.B.C.D} | Select source address |

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip igmp group-ext` command.

| Field | Description |
|----------------|---|
| Group Address | Indicates the multicast group address |
| Source Address | Indicates the source address specified in the Source Address field of the group record(s). |
| Mode | Indicates the group record type of the IGMP entry. |
| VLAN | Indicates the VLAN interface on which the group exists. |
| Member Address | Indicates the IP address of the IGMP receiver (host or IGMP reporter). The IP address is 0.0.0.0 if the type is static. |
| Expiration | Indicates the time left before the group report expires. This variable is updated upon receiving a group report. |
| Type | Specifies the type of membership: static or dynamic |
| In Port | Identifies the member port for the group. This is the port on which group traffic is forwarded and in those case where the type is dynamic, it is the port on which the IGMP join was received. |

Example

The following is an example for `show ip igmp group-ext` command output:

```
Switch#show ip igmp group-ext
Group Address  Source Address  Mode    VLAN Member Address  Expiration  InPort
-----
239.255.255.250  0.0.0.0        Include 1    172.16.120.253  136        1
```

show ip igmp interface

Displays IGMP interface information.

Syntax

- `show ip igmp interface vlan <1-4094>`

Command Parameters

`vlan <1-4094>` Display VLAN interfaces

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip igmp interface` command output.

| Field | Description |
|---------------|--|
| VLAN | Indicates the VLAN on which IGMP is configured. |
| Query Intvl | Indicates the frequency (in seconds) at which host query packets are transmitted on the interface. |
| Vers | Indicates the version of IGMP configured on this interface. |
| Oper Vers | Indicates the version of IGMP running on this interface. |
| Querier | Indicates the IP address of the IGMP querier on the IP subnet to which this interface is attached. |
| Query MaxRspT | Indicates the maximum query response time (in tenths of a second) advertised in IGMPv2 queries on this interface. |
| Wrong Query | Indicates the number of queries received whose IGMP version does not match the Interface version. You must configure all routers on a LAN to run the same version of IGMP. Thus, if queries are received with the wrong version, a configuration error occurs. |
| Joins | Indicates the number of times a group membership was added on this interface. |
| Robust | Indicates the robust value configured for expected packet loss on the interface. |
| LastMbr Query | Indicates the maximum response time (in tenths of a second) inserted into group-specific queries sent in response to leave group messages, and is also the amount of time between group specific query messages. Use this value to modify the leave latency of the network. A reduced value results in reduced time to detect the loss of the last member of a group. This does not apply if the interface is configured for IGMPv1. |
| Send Query | Indicates whether the ip igmp send-query feature is enabled or disabled. Values are YES or NO. Default is disabled. |

Example

The following is an example for the `show ip igmp interface` command output:

```
Switch>enable
Switch#show ip igmp interface vlan 1
```


| VLAN | Query Intvl | Oper Vers | Querier | Query MaxRspT | Wrong Query | Joins | Robust | LastMbr Query | Send Query |
|------|-------------|-----------|---------|---------------|-------------|-------|--------|---------------|------------|
| 1 | 125 | 2 | 0.0.0.0 | 100 | 0 | 0 | 2 | 10 | No |

show ip igmp profile

Displays IGMP filter profiles.

Syntax

- `show ip igmp profile <1-65535>`

Command Parameters

`<1-65535>` profile ID

Default

None

Command Mode

Privileged Executive

show ip igmp router-alert

Displays router-alert settings.

Syntax

- `show ip igmp router-alert vlan <1-4094>`

Command Parameters

`vlan <1-4094>` Display VLAN interfaces

Default

None

Command Mode

Privileged Executive

show ip igmp sender

Displays IGMP sender details.

Syntax

- `show ip igmp sender{count | group <A.B.C.D> | member-subnet <A.B.C.D>/<0-32> | vlan <1-4094>}`

Command Parameters

| | |
|---|--------------------------------|
| <code>vlan <1-4094></code> | Selects a VLAN interface |
| <code>count</code> | Display count of entries |
| <code>group <A.B.C.D></code> | Display selected destination |
| <code>member-subnet <A.B.C.D>/<0-32></code> | Display selected member subnet |

Default

None

Command Mode

Privileged Executive

show ip igmp snooping

Displays IGMP snooping information.

Syntax

- `show ip igmp snooping`

Default

None

Command Mode

Privileged Executive

show ip igmp snoop-querier-addr

Displays IGMP information.

Syntax

- `show ip igmp snoop-querier-addr`

Default

None

Command Mode

Privileged Executive

show ip igmp ssm

Displays global SSM settings.

Syntax

- `show ip igmp ssm`

Default

None

Command Mode

Privileged Executive

show ip igmp ssm-map

Displays SSM map/channel settings.

Syntax

- `show ip igmp ssm-map`

Default

None

Command Mode

Privileged Executive

show ip mgmt address source

Displays the DHCP-OOB status.

Syntax

- `show ip mgmt address source`

Default

None

Command Mode

Privileged Executive

Example

The following is an example output of the `show ip mgmt address source` command:

```
Switch(config)#ip mgmt address source configured-address
Switch#show ip mgmt address source
*****
Command Execution Time: 1970-01-01 23:05:30 GMT+00:00
*****
DHCP Mode:Disabled

Switch(config)#ip mgmt address source dhcp-when-needed
Switch#show ip mgmt address source
*****
Command Execution Time: 1970-01-01 23:06:06 GMT+00:00
*****
DHCP Mode: DHCP When Needed
```

show ip mroute interface

Display general multicast information.

Syntax

- `show ip mroute interface [vlan <1-16>]`

Command Parameters

vlan <1-4094> Displays VLAN interfaces.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip mroute interface` command.

| Field | Description |
|-----------|---|
| Interface | Indicates the interface. |
| Ttl | Indicates the datagram TTL threshold for the interface. IP multicast datagrams with a TTL less than this threshold are not forwarded out of the interface. The default value of 0 means all multicast packets are forwarded out of the interface. |
| Protocol | Indicates the routing protocol running on this interface. |

Example

The following is an example for the `show ip mroute interface` command output:

```
Switch#show ip mroute interface
Interface      Ttl Protocol
-----
Vlan 1         1   Other
```

show ip mroute next-hop

Display multicast next-hop information.

Syntax

- `show ip mroute next-hop`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip mroute next-hop` command.

| Field | Description |
|-----------|---|
| Interface | Indicates the interface identity. |
| Group | Indicates the IP multicast group for which this entry specifies a next hop on an outgoing interface. |
| Source | Indicates the network address, which when combined with the corresponding value of Srcmask identifies the sources for which this entry specifies a next hop on an outgoing interface. |
| Srcmask | Indicates the network mask, which when combined with the corresponding value of Source identifies the sources for which this entry specifies a next hop on an outgoing interface. |
| Address | Indicates the address of the next hop specific to this entry. For most interfaces, this address is identical to Group. |
| State | Indicates whether the outgoing interface and next hop represented by this entry are currently forwarding IP datagrams. The value forwarding indicates the information is currently used. The value pruned indicates it is not used. |
| Exptime | Indicates the minimum amount of time remaining before this entry ages out. The value 0 indicates that the entry is not subject to aging. |
| Closehop | Indicates the minimum number of hops between this router and members of this IP multicast group reached through this next hop on |

Table continues...

| Field | Description |
|----------|---|
| | this outgoing interface. IP multicast datagrams for the group that use a TTL less than this number of hops are forwarded to the next hop. |
| Protocol | Indicates the routing mechanism through which this next hop was learned. |

Example

The following is an example for the `show ip mroute next-hop` command output:

```
Switch#show ip mroute next-hop
Interface Group Source Srcmask Address State Exptime Closehop Protocol
-----
Total: 0
```

show ip mroute route

Display multicast route information.

Syntax

- `show ip mroute route`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip mroute route` command.

| Field | Description |
|--------------|---|
| Group | Indicates the IP multicast group for which this entry specifies a next hop on an outgoing interface. |
| Source | Indicates the network address that, when combined with the corresponding value of Srcmask, identifies the sources for which this entry specifies a next hop on an outgoing interface. |
| Srcmask | Indicates the network mask that, when combined with the corresponding value of Source, identifies the sources for which this entry specifies a next hop on an outgoing interface. |
| Upstream_nbr | Indicates the address of the upstream neighbor from which IP datagrams from these sources to this multicast address are received, or 0.0.0.0 if the upstream neighbor is unknown. |

Table continues...

| Field | Description |
|-------|--|
| If | Indicates the value of ifIndex for the interface on which IP datagrams sent by these sources to this multicast address are received. A value of 0 indicates that datagrams are not subject to an incoming interface check, but can be accepted on multiple interfaces (for example, in CBT). |
| Expir | Indicates the minimum amount of time remaining before this entry ages out. The value 0 indicates that the entry is not subject to aging. |
| Prot | Indicates the outgoing mechanism through which this route was learned. |

Example

The following is an example for the `show ip mroute route` command output:

```
Switch#show ip mroute route
Group Source Srcmask Upstream_nbr If Expir Prot
-----
0 out of 0 Total mroute Entries displayed.
```

show ip pim

Display the global Protocol Independent Multicast-Sparse Mode (PIM-SM) properties.

Syntax

- `show ip pim`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim` command.

| Field | Description |
|------------------------------------|---|
| PIM Admin Status | Indicates the status of PIM-SM. |
| PIM Oper Status | Indicates the operational status of PIM-SM. |
| PIM Boot Strap Period | Indicates the interval between originating bootstrap messages at the elected BSR. |
| PIM C-RP-Adv Message Send Interval | Indicates the candidate RPs timer (in seconds) for sending C-RP advertisement messages. |

Table continues...

| Field | Description |
|--------------------------------|---|
| PIM Discard Data Timeout | After the router forwards the first source packet to the RP, this value indicates how long (in seconds) the router discards subsequent source data while waiting for a join from the RP. An IPMC discard record is created and deleted after the timer expires or after a join is received. |
| PIM Join Prune Interval | Indicates the join/prune interval in seconds. |
| PIM Register Suppression Timer | Indicates the register suppression timer in seconds. |
| PIM Uni Route Change Timeout | Indicates how often (in seconds) the switch polls the routing table manager (RTM) for unicast routing information updates to be used by PIM. |
| PIM Mode | Indicates the PIM mode (sparse mode). |
| PIM Static-RP | Indicates the status of static RP. |
| Forward Cache Timeout | Indicates the PIM-SM forward cache expiry value in seconds. This value is used in aging PIM-SM mroutes. |

Example

The following is an example for the `show ip pim` command output:

```
Switch#show ip pim
PIM Admin Status: Disabled
PIM Oper Status: Disabled
PIM Boot Strap Period: 60
PIM C-RP-Adv Message Send Interval: 60
PIM Discard Data Timeout: 60
PIM Join Prune Interval: 60
PIM Register Suppression Timer: 60
PIM Uni Route Change Timeout: 5
PIM Mode: Sparse
PIM Static-RP: Disabled
Forward Cache Timeout: 210
```

show ip pim active-rp

Display the active rendezvous points for Protocol Independent Multicast (PIM).

Syntax

- `show ip pim active-rp [group <A.B.C.D>]`

Command Parameters

group <A.B.C.D> Specifies the group to display.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim active-rp` command.

| Field | Description |
|---------------|--|
| Group Address | Indicates the IP address of the multicast group. |
| Group Mask | Indicates the address mask of the multicast group. |
| Active RP | Indicates the IP address of the active RP. |
| Priority | Indicates the RP priority. |

Example

The following is an example for the `show ip pim active-rp` command output:

```
Switch#show ip pim active-rp
Group Address  Group Mask      Active RP      Priority
-----
Total active RP flows: 0
```

show ip pim bsr

Display the bootstrap router settings for Protocol Independent Multicast (PIM).

Syntax

- `show ip pim bsr`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim bsr` command.

| Field | Description |
|----------------------|---|
| Current BSR Address | Indicates the IP address of the current BSR for the local PIM-SM domain. |
| Current BSR Priority | Indicates the priority of the current BSR. The Candidate BSR (C-BSR) with the highest BSR priority and address (referred to as the preferred BSR) is elected as the BSR for the domain. |

Table continues...

| Field | Description |
|------------------------------|---|
| Current BSR Hash Mask | Indicates the mask used in the hash function to map a group to one of the C-RPs from the RP-Set. With the hash-mask, a small number of consecutive groups (for example, four) can always hash to the same RP. |
| Current BSR Fragment Tag | Indicates the randomly generated number that distinguishes fragments belonging to different bootstrap messages. Fragments belonging to the same bootstrap message carry the same Fragment Tag. |
| Current BSR Boot Strap Timer | Indicates the time the BSR waits between sending bootstrap messages. |

Example

The following is an example for the `show ip pim bsr` command output:

```
Switch#show ip pim bsr
Current BSR Address: 0.0.0.0
Current BSR Priority: -1
Current BSR Hash Mask: 255.255.255.252
Current BSR Fragment Tag: 0
Current BSR Boot Strap Timer: 0
```

show ip pim interface

Display Protocol Independent Multicast (PIM) for each interface setting.

Syntax

- `show ip pim interface [enabled][vlan <1-4094>]`

Command Parameters

- enabled** Displays only admin enabled Protocol Independent Multicast (PIM) interfaces.
- vlan <1-4094>** Displays VLAN interfaces.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim interface vlan` command.

| Field | Description |
|---------------------|---|
| Vlan | Identifies the VLAN. |
| State | Indicates the state of PIM-SM on the VLAN. |
| Address | Indicates the VLAN IP address. |
| Mask | Indicates the VLAN subnet mask. |
| Mode | Indicates the PIM mode of this VLAN: sparse mode. |
| DR | Indicates the Designated Router for this interface. |
| Hello Interval | Indicates how long the switch waits (in seconds) between sending out a hello message to neighboring switches. The default hello interval is 30 seconds. |
| Join Prune Interval | Indicates how long the switch waits (in seconds) between sending out a join/prune message to the upstream neighbors. The default join/prune interval is 60 seconds. |
| CBSPR | Indicates the priority for this local interface to become a Candidate BSR. The Candidate BSR with the highest BSR priority and address is referred to as the preferred BSR. The default is -1, which indicates that the current interface is not a Candidate BSR. |
| Oper State | Indicates the status of PIM-SM on this interface: up or down. |
| Interface Type | Indicates whether the PIM-SM interface is active or passive. |

Example

The following is an example for the `show ip pim interface vlan` command output:

```
Switch#show ip pim interface
Vlan: 1
  State: Disabled
  Address: 172.16.120.161
  Mask: 255.255.255.0
  Mode: Sparse
  DR: 0.0.0.0
  Hello Interval: 30
  Join Prune Interval: 60
  CBSPR: Disabled
  Oper State: Down
  Interface Type: Active
```

show ip pim mode

Display the Protocol Independent Multicast (PIM) mode.

Syntax

- `show ip pim mode`

Default

None

Command Mode

Privileged Executive

show ip pim mroute

Display the Protocol Independent Multicast (PIM) multicast routes.

Syntax

- `show ip pim mroute [count] [group <A.B.C.D>] [source <A.B.C.D>] [summary]`

Command Parameters

| | |
|-------------------------------|--|
| count | Displays the count of entries. |
| group <A.B.C.D> | Displays specific groups by IP address. |
| source <A.B.C.D> | Displays specific sources by IP address. |
| summary | Displays summary information of Protocol Independent Multicast (PIM) multicast routes. |

Default

None

Command Mode

Privileged Executive

show ip pim neighbor

Display the global Protocol Independent Multicast-Sparse Mode (PIM-SM) neighbors.

Syntax

- `show ip pim neighbor`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim neighbor` command.

| Field | Description |
|---------------------|---|
| Address | Indicates the IP address of the PIM-SM neighbor. |
| Vlan | Indicates the local interface. |
| Uptime | Indicates the elapsed time since the PIM-SM neighbor last became a neighbor of the local interface. |
| Expiry Time | Indicates the time remaining before this PIM-SM neighbor times out. |
| Total PIM Neighbors | Indicates the total number of PIM neighbors on the switch. |

Example

The following is an example for the `show ip pim neighbor` command output:

```
Switch#show ip pim neighbor
Address          Vlan      Uptime          Expiry Time
-----
Total PIM Neighbors: 0
```

show ip pim rp-candidate

Display the Protocol Independent Multicast (PIM) candidate rendezvous points.

Syntax

- `show ip pim rp-candidate [group <A.B.C.D>]`

Command Parameters

group <A.B.C.D> Displays specific groups by IP address.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim rp-candidate` command.

| Field | Description |
|---------------|--|
| Group Address | Indicates the IP address of the multicast group. When combined with the group mask, it identifies the prefix that the local router uses to advertise itself as a C-RP router. |
| Group Mask | Indicates the address mask of the multicast group. When combined with the group address, it identifies the prefix that the local router uses to advertise itself as a C-RP router. |
| RP Address | Indicates the IP address of the C-RP. |

Example

The following is an example for the `show ip pim rp-candidate` command output:

```
Switch#show ip pim rp-candidate
Group Address   Group Mask      RP Address
-----
Total candidate RPs:  0
```

show ip pim rp-hash

Display the Protocol Independent Multicast rendezvous point set and hash.

Syntax

- `show ip pim rp-hash`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim rp-hash` command.

| Field | Description |
|---------------|--|
| Group Address | Indicates the IP address of the multicast group. |
| Group Mask | Indicates the address mask of the multicast group. |
| Address | Indicates the IP address of the C-RP for the specified group. |
| Hold Time | Indicates the time specified in a C-RP advertisement that the BSR uses to time out the RP. After the BSR receives an advertisement for the RP, it restarts the timer. If no advertisement arrives before the timer expires, the BSR removes that RP from the RP set. |
| Expiry Time | Indicates the time remaining before this C-RP times out. |

Example

The following is an example for the `show ip pim rp-hash` command output:

```
Switch#show ip pim rp-hash
Group Address   Group Mask      Address          Hold Time Expiry Time
-----
Total RP sets:  0
```

show ip pim static-rp

Display the statically configured Protocol Independent Multicast rendezvous point.

Syntax

- `show ip pim static-rp`

Default

None

Command Mode

Privileged Executive

show ip pim virtual-neighbor

Display the Protocol Independent Multicast virtual neighbor.

Syntax

- `show ip pim virtual-neighbor`

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ip pim virtual-neighbor` command.

| Field | Description |
|------------------|---|
| Vlan | Indicates the VLAN interface. |
| Neighbor address | Indicates the IP address of the virtual neighbor. |

Example

The following is an example for the `show ip pim virtual-neighbor` command output:

```
Switch#show ip pim virtual-neighbor
Vlan      Neighbor Address
-----
```

show ip source

Displays IP Source Guard address bindings.

Syntax

```
• show ip source binding {{A.B.C.D} | interface [ethernet] <WORD>}
```

Command Parameters

| | |
|---------------------|---|
| <WORD> | port list |
| A.B.C.D | specify ip address for which to display binding entries |
| binding | Display IP Source Guard address bindings |
| Ethernet | Select Ethernet interfaces |
| interface | select interfaces |

Default

None

Command Mode

Privileged Executive

show ip verify

Displays IP Source Guard settings.

Syntax

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

Command Parameters

| | |
|---------------------|------------------------------------|
| <WORD> | port list |
| Ethernet | Select Ethernet interfaces |
| interface | select interfaces |
| source | Display IP Source Guard settings |
| statistics | Display IP Source Guard Statistics |

Default

None

Command Mode

Privileged Executive

show ipmgr

Displays IP Manager settings.

Syntax

- `show ipmgr {IPv4 | IPv6}`

Command Parameters**IPv4** Displays only IPv4 information.**IPv6** Displays only IPv6 information.**Default**

None

Command Mode

Privileged Executive

show ipv6 mld group

Displays the learned multicast groups information.

Syntax

- `show ipv6 mld group [count] [group <WORD>] [interface vlan <1-4094>] [member-subnet <WORD>] [port <LINE>]`

Command Parameters**count** Displays the count of entries.**group <WORD>** Displays the group by IPv6 address. <WORD> specifies the IPv6 address.**interface vlan <1-4094>** Displays the VLAN interfaces.**member-subnet <WORD>** Displays the subnet-mask for group member network by IPv6 address. <WORD> specifies the IPv6 address.

port <LINE> Filters information by port number or a list of ports. <LINE> specifies the port or list of ports.

Default

None

Command Mode

Privileged Executive

show ipv6 mld interface

Displays the learned multicast groups interface.

Syntax

- `show ipv6 mld interface [vlan <1-4094>]`

Command Parameters

vlan <1-4094> Displays by VLAN.

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show ipv6 mld interface` command.

| Field | Description |
|---------|---|
| VID | Indicates the VLAN ID. |
| Q-INT | Indicates the query interval, the frequency at which IPv6 MLD snooping host-query packets are transmitted on this interface. |
| VR | Indicates the version. |
| OVR | Indicates the operational version. |
| QUERIER | Indicates the IPv6 MLD snooping querier on the IPv6 subnet to which this interface is attached. |
| Q-M-R | Indicates the maximum query response time advertised in IPv6 MLD snooping queries on this interface. |
| ROB | Indicates the robustness value. |
| L-M-Q | Indicates the last member query interval. The last member query interval is the maximum response delay inserted into group-specific |

Table continues...

| Field | Description |
|-------|--|
| | queries sent in response to leave group messages, and it is also the amount of time between group-specific query messages. |
| S-Q | Indicates the send-query status. |

Example

The following is an example for the **show ipv6 mld interface** command output:

```
Switch#show ipv6 mld interface
=====
                        MLD Interface Information
=====
VID  Q-INT VR  OVR  QUERIER                               Q-M-R  ROB  L-M-Q  S-Q
-----
430  125   2   2   ::                               10     2   1     Yes

1 out of 1 Total Num of MLD Interface Entries displayed.

Legend: VID: vlan id  Q-INT: query-interval VR: admin version OVR: operational version
        QUERIER: querier address  Q-M-R: query-max-resp ROB: robust-value
        L-M-Q: last-memb-query-int S-Q: send-query
```

show ipv6 mld snooping

Displays the learned multicast groups snooping information.

Syntax

- **show ipv6 mld snooping**

Default

None

Command Mode

Privileged Executive

Command Output

The **show ipv6 mld snooping** command displays the following information:

| Variable | Description |
|----------------------|---|
| Vlan | Identifies the VLAN ID. |
| Snoop Enable | Identifies whether snoop is enabled (true) or disabled (false). |
| Proxy Enable | Identifies whether MLD Proxy is enabled (true) or disabled (false). |
| Static Mrouter Ports | Identifies the static mrouter ports in this VLAN that provide connectivity to an IP multicast router. |

Table continues...

| Variable | Description |
|-------------------------|--|
| Active Mrouter Ports | Displays all dynamic (querier port) and static mrouter ports that are active on the interface. |
| Mrouter Expiration Time | Specifies the time remaining before the multicast router is aged out on this interface. If the switch does not receive queries before this time expires, it flushes out all group memberships known to the VLAN. The Query Max Response Interval (obtained from the queries received) is used as the timer resolution. |

Example

The following is an example for the `show ipv6 mld snooping` command output:

```
Switch#show ipv6 mld snooping
Vlan Snoop Proxy Static Active Mrouter Mrouter
      Enable Enable Mrouter Ports Ports Expiration
-----
1     True  True  NONE  NONE 0
```

show ipv6 mld stream

Displays MLD sender details.

Syntax

- `show ipv6 mld stream vlan <1-4094>`

Command Parameters

vlan <1-4094> Select VLAN.

Default

None

Command Mode

Privileged Executive

show jumbo-frames

Displays jumbo-frames support.

Syntax

- `show jumbo-frames`

Default

None

Command Mode

Privileged Executive

show lacp aggr

Displays LACP aggregator information.

Syntax

- `show lacp aggr <1-65535>`

Command Parameters

`<1-65535>` Aggr ID

Default

None

Command Mode

Privileged Executive

show lacp debug

Displays LACP port debug information.

Syntax

- `show lacp debug member <WORD>`

Command Parameters

`<WORD>` List of ports

`member` Display LACP port debug information for specified port(s)

Default

None

Command Mode

Privileged Executive

show lacp key

Displays MLTs or MLTs/SMLTs reserved for LACP key values.

Syntax

- `show lacp key <1-4095>`

Command Parameters

`<1-4095>` LACP key value

Default

None

Command Mode

Privileged Executive

show lacp port

Displays LACP port information.

Syntax

- `show lacp port {aggr <1-65535> | key <1-4095> | <WORD>}`

Command Parameters

`<WORD>` List of ports

`aggr <1-65535>` select ports that are members of an aggregator

`key <1-4095>` Select ports that have a specific key

Default

None

Command Mode

Privileged Executive

show lacp port-mode

Displays LACP port mode information.

Syntax

- `show lacp port-mode`

Default

None

Command Mode

Privileged Executive

show lacp stats

Displays LACP statistics information.

Syntax

- `show lacp stats`

Default

None

Command Mode

Privileged Executive

show lacp system

Displays LACP system settings.

Syntax

- `show lacp system`

Default

None

Command Mode

Privileged Executive

show license

Displays licenses.

Syntax

• `show license {<1-10> | all} verbose`

Command Parameters

<1-10> Select license to be displayed

all Display all licenses

verbose Display verbose license info

Default

None

Command Mode

Privileged Executive

show logging

Shows the contents of logging buffers.

Syntax

• `show logging [critical] [serious] [informational] [sort-reverse] [unit <1-8>] [config]`

Command Parameters

config Display configuration of event logging.

critical Critical event

informational Informational message

serious Serious event message

sort-reverse display log messages in reverse order

unit <1-8> Unit number

Default

None

Command Mode

Privileged Executive

show mac-address-table address

Displays specific address.

Syntax

- `show mac-address-table address <H.H.H>`

Command Parameters

<H.H.H> Address to be displayed (i.e. H.H.H or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx or xx:xx:xx:xx:xx:xx)

Default

None

Command Mode

Privileged Executive

show mac-address-table aging-time

Displays forwarding database aging time.

Syntax

- `show mac-address-table aging-time`

Default

None

Command Mode

Privileged Executive

show mac-address-table dynamic

Displays only dynamically learned addresses.

Syntax

- `show mac-address-table dynamic {mlt <1-64> | vid <1-4094>} [port <LINE>] address <H.H.H>`

Command Parameters

address <H.H.H> Display specific address

| | |
|---------------------------|--|
| mlt <1-64> | Display mac-address-table for specified trunk id |
| port | Display mac-address-table for specified ports |
| vid <1-4094> | Display mac-address-table for specified VLAN ID |

Default

None

Command Mode

Privileged Executive

show mac-address-table mlt

Displays mac-address-table for specified trunk id.

Syntax

- `show mac-address-table mlt <1-64> address`

Command Parameters

| | |
|---------------------|--------------------------|
| <1-64> | Trunk number |
| address | Display specific address |

Default

None

Command Mode

Privileged Executive

show mac-address-table port

Displays mac-address-table for specified ports.

Syntax

- `show mac-address-table port <LINE> address <H.H.H>`

Command Parameters

| | |
|----------------------|---|
| <H.H.H> | Address to be displayed (i.e. H.H.H or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx or xx:xx:xx:xx:xx:xx) |
|----------------------|---|

<LINE> List of port(s)
address <H.H.H> Display specific address

Default

None

Command Mode

Privileged Executive

show mac-address-table spbm

Displays SPBM MAC entries.

Syntax

- `show mac-address-table spbm i-sid <1-16777215>`

Command Parameters

i-sid <1-16777215> Display SPBM MAC entries for specified i-sid

Default

None

Command Mode

Privileged Executive

show mac-address-table static

Displays only statically inserted addresses.

Syntax

- `show mac-address-table static [vid <1-4094>] [port <LINE>] [mlt <1-64>] address <H.H.H>`

Command Parameters

address <H.H.H> Display specific address

mlt <1-64> Display mac-address-table for specified trunk id

port <LINE> Display mac-address-table for specified ports

vid <1-4094> Display mac-address-table for specified VLAN ID

Default

None

Command Mode

Privileged Executive

show mac-address-table vid

Displays mac-address-table for specified VLAN ID.

Syntax

• `show mac-address-table vid <1-4094> [port <LINE>] address <H.H.H>`

Command Parameters

<1-4094> VLAN ID

address <H.H.H> Display specific address

port <LINE> Display mac-address-table for specified ports

Default

None

Command Mode

Privileged Executive

show mac-security

Displays current MAC address security settings.

Syntax

• `show mac-security {config | mac-address-table {address <H.H.H> | port <LINE>}} | mac-da-filter | port <LINE> | security-lists <LINE>}`

Command Parameters

address <H.H.H> Display the accessible port for specific MAC address.

config Display the stack/switch MAC security configuration.

| | |
|------------------------------------|--|
| mac-address-table | Display the accessible MAC addresses on each port. |
| mac-da-filter | Display MAC DA filtering addresses |
| port | Display ports' MAC security status. |
| port <LINE> | Display MAC addresses from specific port |
| security-lists <LINE> | Display port membership of security lists |

Default

None

Command Mode

Privileged Executive

show mlt

Displays Multi-Link Trunking (MLT) configuration.

Syntax

- `show mlt {all-members | disabled | enabled | <LINE> | shutdown-ports-on-disable | spanning-tree <1-64> | utilization <1-64>}`

Command Parameters

| | |
|-----------------------------------|---|
| <LINE> | List of Trunk Groups |
| all-members | Display all members of the selected trunk |
| disabled | Display disabled MLTs |
| enabled | Display enabled MLTs |
| shutdown-ports-on-disable | Display disabled trunk loop prevention status |
| spanning-tree <1-64> | Display multi-link trunk spanning-tree settings |
| utilization <1-64> | Display multi-link trunk utilization |

Default

None

Command Mode

Privileged Executive

show mlt hash-calc

Displays MLT hash calculations.

Syntax

- `show mlt hash-calc <1-64> {dest-ip {A.B.C.D} src-ip {A.B.C.D} tcp-udp-dport <0-65535> tcp-udp-sport <0-65535>} | [WORD src-ip {A.B.C.D} tcp-udp-dport <0-65535> tcp-udp-sport <0-65535> | {dest-mac <H.H.H> src-mac <H.H.H> vlan <1-4094> ethertype <0x0600-0xffff> src-port <WORD>}`
- `show mlt hash-calc MLT ID <1-64> dest-ip <A.B.C.D> src-ip <A.B.C.D> tcp-udp-dport <0-65535> tcp-udp-sport <0-65535>`
- `show mlt hash-calc MLT ID <1-64> dest-mac <H.H.H> src-mac <H.H.H> vlan <1-4094> ethertype <0x0600-0xffff> src-port <WORD>`
- `show mlt hash-calc MLT ID <1-64> non-unicast dest-mac <dest-mac> src-mac <src-mac> src-port < unit / port>`

Command Parameters

| | |
|--|-------------------------------------|
| <code><1-64></code> | MLT ID |
| <code><WORD></code> | Unit/Port |
| <code>dest-ip {A.B.C.D}</code> | Destination IP address |
| <code>dest-mac <H.H.H></code> | Destination MAC address |
| <code>ethertype <0x0600-0xffff></code> | Ethernet Type |
| <code>non-unicast</code> | Displays non-unicast hash algorithm |
| <code>src-ip {A.B.C.D}</code> | Source IP address |
| <code>src-mac <H.H.H></code> | Source MAC address |
| <code>src-port <WORD></code> | Source Port |
| <code>tcp-udp-dport <0-65535></code> | TCP/UDP Destination Port Number |
| <code>tcp-udp-sport <0-65535></code> | TCP/UDP Source Port Number |
| <code>vlan <1-4094></code> | Vlan ID |

Default

None

Command Mode

Privileged Executive

show poe-main-status

Shows PoE main configuration.

Syntax

- `show poe-main-status unit <1-8>`

Command Parameters

unit <1-8> Display main configuration of an unit in stack

Default

None

Command Mode

Privileged Executive

show poe-port-status

Shows PoE port configuration.

Syntax

- `show poe-port-status <LINE>`

Command Parameters

<LINE> List of ports

Default

None

Command Mode

Privileged Executive

show poe-power-measurement

Shows port power measurement.

Syntax

- `show poe-power-measurement <LINE>`

Command Parameters

<LINE> List of ports

Default

None

Command Mode

Privileged Executive

show port-mirroring

Displays port mirroring configuration.

Syntax

• `show port-mirroring {<1-4> | rspan}`

Command Parameters

<1-4> Instance number

rspan Display RSPAN settings

Default

None

Command Mode

Privileged Executive

show port-statistics

Displays the port counter for a port.

Syntax

• `show port-statistics port <LINE> [mgmt]`

Command Parameters

<LINE> List of ports

mgmt Display management port statistics

port Display port-statistics for specified ports

Default

None

Command Mode

Privileged Executive

show qos acl-assign

Displays access-list assignments.

Syntax

- `show qos acl-assign <1-65535>`

Command Parameters

<1-65535> Display the specified access-list assignment entry

Default

None

Command Mode

Privileged Executive

show qos action

Displays the base action entries.

Syntax

- `show qos action {<1-65535> | all | system | user}`

Command Parameters

<1-65535> Display the specified base action entry

all Display all user-created, default, and system entries

system Display only system entries

user Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos agent

Displays the global QoS parameters.

Syntax

- `show qos agent details`

Command Parameters

details Display QoS agent details

Default

None

Command Mode

Privileged Executive

show qos capability

Displays QoS port capabilities.

Syntax

- `show qos capability {meter | shaper} port <LINE>`

Command Parameters

meter Display QoS port meter capabilities

port <LINE> Specify list of ports

shaper Display QoS port shaper capabilities

Default

None

Command Mode

Privileged Executive

show qos classifier

Displays the classifier entries.

Syntax

```
• show qos classifier {<1-65535> | all | system | user}
```

Command Parameters

| | |
|------------------------|---|
| <1-65535> | Display the specified classifier entry |
| all | Display all user-created, default, and system entries |
| system | Display only system entries |
| user | Display only user-created and default entries |

Default

None

Command Mode

Privileged Executive

show qos classifier-block

Displays the classifier block entries.

Syntax

```
• show qos classifier-block {<1-65535> | all | system | user}
```

Command Parameters

| | |
|------------------------|---|
| <1-65535> | Display the specified classifier block entry |
| all | Display all user-created, default, and system entries |
| system | Display only system entries |
| user | Display only user-created and default entries |

Default

None

Command Mode

Privileged Executive

show qos diag

Displays the diagnostics entries.

Syntax

- `show qos diag unit <1-8>`

Command Parameters

unit <1-8> Display the diagnostics entries for specific unit

Default

None

Command Mode

Privileged Executive

show qos diag egress

Displays QoS egress precedence information on all units.

Syntax

- `show qos diag egress`

Default

None

Command Mode

Privileged Executive

show qos egressmap

Displays the association between the DSCP and the 802.1p priority and drop precedence.

Syntax

- `show qos egressmap ds <0-63>`

Command Parameters

ds <0-63> Displays mapping for one DSCP value

Default

None

Command Mode

Privileged Executive

show qos if-action-extension

Displays the interface action extension entries.

Syntax

- `show qos if-action-extension {<1-65535> | all | system | user}`

Command Parameters

| | |
|------------------------|--|
| <1-65535> | Display the specified interface action extension entry |
| all | Display all user-created, default, and system entries |
| system | Display only system entries |
| user | Display only user-created and default entries |

Default

None

Command Mode

Privileged Executive

show qos if-assign

Displays the list of interface assignments.

Syntax

- `show qos if-assign port <LINE>`

Command Parameters

| | |
|--------------------------|-----------------------|
| port <LINE> | Specify list of ports |
|--------------------------|-----------------------|

Default

None

Command Mode

Privileged Executive

show qos if-group

Displays the interface groups.

Syntax

- `show qos if-group`

Default

None

Command Mode

Privileged Executive

show qos if-queue-shaper

Displays the interface egress queue shaping parameters.

Syntax

- `show qos if-queue-shaper port <LINE>`

Command Parameters

`port <LINE>` Specify list of ports

Default

None

Command Mode

Privileged Executive

show qos if-shaper

Displays the interface shaping parameters.

Syntax

- `show qos if-shaper port <LINE>`

Command Parameters

`port <LINE>` Specify list of ports

Default

None

Command Mode

Privileged Executive

show qos ingressmap

Displays the 802.1p priority to DSCP mapping.

Syntax

- `show qos ingressmap`

Default

None

Command Mode

Privileged Executive

show qos ip-acl

Displays IP access-lists.

Syntax

- `show qos ip-acl <1-65535>`

Command Parameters

<1-65535> The identifier of the IP access list

Default

None

Command Mode

Privileged Executive

show qos ip-element

Displays the IP classifier element entries.

Syntax

- `show qos ip-element {<1-65535> | all | system | user}`

Command Parameters

| | |
|------------------------|---|
| <1-65535> | Display the specified IP classifier element entry |
| all | Display all user-created, default, and system entries |
| system | Display only system entries |
| user | Display only user-created and default entries |

Default

None

Command Mode

Privileged Executive

show qos l2-acl

Displays L2 access-lists.

Syntax

- `show qos l2-acl <1-65535>`

Command Parameters

| | |
|------------------------|--------------------------------------|
| <1-65535> | The identifier of the L2 access list |
|------------------------|--------------------------------------|

Default

None

Command Mode

Privileged Executive

show qos l2-element

Displays the Layer2 classifier element entries.

Syntax

- `show qos l2-element {<1-65535> | all | system | user}`

Command Parameters

| | |
|------------------------|---|
| <1-65535> | Display the specified Layer2 classifier element entry |
|------------------------|---|

| | |
|---------------|---|
| all | Display all user-created, default, and system entries |
| system | Display only system entries |
| user | Display only user-created and default entries |

Default

None

Command Mode

Privileged Executive

show qos meter

Displays the meter entries.

Syntax

- `show qos meter {<1-65535> | all | system | user}`

Command Parameters

| | |
|------------------------|---|
| <1-65535> | Display the specified meter entry |
| all | Display all user-created, default, and system entries |
| system | Display only system entries |
| user | Display only user-created and default entries |

Default

None

Command Mode

Privileged Executive

show qos policy

Displays the policy entries.

Syntax

- `show qos policy {<1-65535> | all | system | user}`

Command Parameters

| | |
|------------------------|---|
| <1-65535> | Display the specified policy entry |
| all | Display all user-created, default, and system entries |
| port | Specify list of ports |
| system | Display only system entries |
| user | Display only user-created and default entries |

Default

None

Command Mode

Privileged Executive

show qos port

Displays QoS port configuration.

Syntax

- `show qos port <LINE>`

Command Parameters

| | |
|-------------|---------------|
| LINE | List of ports |
|-------------|---------------|

Default

None

Command Mode

Privileged Executive

show qos queue-set

Displays the queue set configuration.

Syntax

- `show qos queue-set <1-8>`

Command Parameters

<1-8> Displays the specified queue-set.

Default

None

Command Mode

Privileged Executive

show qos queue-set-assignment

Displays the association between the 802.1p priority to that of a specific queue.

Syntax

- `show qos queue-set-assignment queue-set <1-8>`

Command Parameters

queue-set <1-8> Displays the specified queue-set.

Default

None

Command Mode

Privileged Executive

show qos queue-statistics

Display the queue-statistics values.

Syntax

- `show qos queue-statistics [non-zero] [port <LINE>] [queue <1-8>]`

Command Parameters

non-zero Displays only queues with non-zero statistics.

port <LINE> Displays the queue statistics for the specified port.

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

Default

None

Command Mode

Privileged Executive

show qos statistics

Displays the statistics values.

Syntax

- `show qos statistics <1-65535> port <LINE>`

Command Parameters

- <1-65535>** Specifies the policy ID.
- port <LINE>** Display the port statistics for the specified policy.

Default

None

Command Mode

Privileged Executive

show qos system-element

Displays the system classifier element entries.

Syntax

- `show qos system-element {<1-65535> | all | system | user}`

Command Parameters

- <1-65535>** Display the specified system classifier element entry.
- all** Display all user-created, default, and system entries.
- system** Display only system entries.
- user** Display only user-created and default entries

Default

None

Command Mode

Privileged Executive

show qos traffic-profile

Displays QoS Traffic Profile entries.

Syntax

- `show qos traffic-profile {classifier name <WORD> eval-order <1-255>} | interface | {set [port <LINE> name <WORD>} | {statistics port <LINE> name <WORD> precedence <1-15>}`

Command Parameters

| | |
|---------------------------------|--|
| <1-15> | Specifies the range of precedence. |
| classifier | Displays Quality of Service (QoS) Traffic Profile classifier entries. |
| eval-order <1-255> | Specifies the evaluation order to reference a specific Traffic Profile classifier entry. |
| interface | Displays Quality of Service (QoS) Traffic Profile interface entries |
| name <WORD> | Specifies the label to display a specific Traffic Profile classifier entry. |
| port <LINE> | Specifies the port(s) used to reference the Traffic Profile entry. |
| precedence | Specifies the precedence used to reference the Traffic Profile entry. |
| set | Displays Quality of Service (QoS) Traffic Profile set entries. |
| statistics | Displays Quality of Service (QoS) Traffic Profile statistics. |

Default

None

Command Mode

Privileged Executive

show qos traffic-profile statistics

Displays QoS traffic profile statistics.

Syntax

- `show qos traffic-profile statistics port <LINE> precedence <1-15>`

Command Parameters

| | |
|--------------------------|--|
| name <WORD> | Specifies the label used to reference the Traffic Profile entry. |
|--------------------------|--|

- port <LINE>** Specifies a port to reference Traffic Profile entry.
- precedence <1-15>** Specify the precedence used to reference the Traffic Profile entry.

Default

None

Command Mode

Privileged Executive

show qos ubp interface

Displays QoS UBP entries.

Syntax

- `show qos ubp interface | [classifier] name <WORD> | statistics port <LINE> name <WORD> precedence <1-7>`

Command Parameters

- classifier** Display QoS UBP classifier entries
- interface** Display QoS UBP interface entries
- name** Specify the label to display a particular UBP template entry
- name <WORD>** Specify the label to display a specific UBP classifier entry
- port <LINE>** Specify a port to reference UBP entry
- precedence <1-7>** Specify the precedence used to reference the UBP entry
- statistics** Display QoS UBP statistics.

Default

None

Command Mode

Privileged Executive

show qos ubp statistics

Displays QoS UBP statistics.

Syntax

- `show qos ubp statistics [port <LINE>] [name <WORD>] [precedence]`

Command Parameters

- name <WORD>** Specifies the label used to reference the UBP entry.
- port <LINE>** Specifies a port to reference the UBP entry.
- precedence** Specifies the precedence use to reference the UBP entry.

Default

None

Command Mode

Privileged Executive

show qos user-policy

Displays Quality of Service (QoS) user policy entries.

Syntax

- `show qos user-policy [port <LINE>] [user <WORD>]`

Command Parameters

- port <LINE>** Specifies the port(s) used to reference the User Policy entries.
- user <WORD>** Specifies the user for whom the user policy must be displayed.

Default

None

Command Mode

Privileged Executive

show radius

Displays RADIUS settings.

Syntax

- `show radius {accounting interim-updates | dynamic-server {client {A.B.C.D} | replay-protection | statistics client {A.B.C.D}} | reachability | use-management-ip}`

Command Parameters

| | |
|--------------------------|---|
| accounting | Display the configuration of RADIUS Accounting Interim-Updates |
| client {A.B.C.D} | Display the configuration of RADIUS Dynamic Authorization Client |
| dynamic-server | Display the configuration of RADIUS Dynamic Authorization Clients |
| interim-updates | Display the parameters of interim-updates |
| reachability | Display RADIUS reachability settings |
| replay-protection | Display status of RADIUS dynamic server replay protection |
| statistics | Display the statistics for RADIUS Dynamic Authorization Client |
| use-management-ip | Display RADIUS use-management-ip setting |

Default

None

Command Mode

Privileged Executive

show radius-server

Displays current RADIUS server/port/key configuration.

Syntax

- `show radius-server`

Default

None

Command Mode

Privileged Executive

show rate-limit

Displays rate-limiting settings and statistics.

Syntax

- `show rate-limit port <LINE>`

Command Parameters

port <LINE> Display rate-limit configuration for specified ports

Default

None

Command Mode

Privileged Executive

show rmon alarm

Displays RMON Alarm entries.

Syntax

- `show rmon alarm sort-reverse`

Command Parameters

sort-reverse Display RMON Alarm entries in reversed order

Default

None

Command Mode

Privileged Executive

show rmon ethernet history

Displays RMON ethernet history data.

Syntax

- `show rmon ethernet history [sample-set <1-65535>] [sample-range <1-2147483647> <1-2147483647>] [interval-range <hh:mm:ss> <hh:mm:ss>] [port <LINE>]delta`

Command Parameters

<hh:mm:ss> First or second history interval-range value

<1-2147483647> First or second history sample index value

delta Display deltas of consecutive history data

| | |
|-----------------------------------|--|
| interval-range | Display history data for specific interval range |
| port <LINE> | Display history data for specific ports |
| sample-range | Display history data for specific sample range |
| sample-set <1-65535> | Display history data for specific index |

Default

None

Command Mode

Privileged Executive

show rmon ethernet packets

Displays rmon ethernet packets according to their size.

Syntax

- `show rmon ethernet packets port <LINE>`

Command Parameters

port <LINE> Display rmon ethernet packets specific to port

Default

None

Command Mode

Privileged Executive

show rmon ethernet statistics

Displays rmon ethernet statistics.

Syntax

- `show rmon ethernet statistics port <LINE>`

Command Parameters

port <LINE> Display ethernet statistics for specific ports

Default

None

Command Mode

Privileged Executive

show rmon event

Displays RMON Event entries.

Syntax

- `show rmon event`

Default

None

Command Mode

Privileged Executive

show rmon history

Displays RMON History entries.

Syntax

- `show rmon history port <LINE>`

Command Parameters

`port <LINE>` Display rmon history for specific ports

Default

None

Command Mode

Privileged Executive

show rmon stats

Displays RMON Stats entries.

Syntax

- `show rmon stats`

Default

None

Command Mode

Privileged Executive

show running-config

Displays current configuration of system as a series of CLI commands.

Syntax

- `show running-config [verbose] [module [802.1ab] [aaa] [aaur] [adac] [apptel] [arp-inspection] [asset-id] [aur] [banner] [brouter] [cfm] [core] [dhcp-relay] [dhcp-snooping] [digicert] [eap] [energy-saver] [fa][igmp] [ike] [interface] [ip] [ip-source-guard] [ipfix] [ipmgr] [ipsec] [ipv6] [ipv6-fhs] [l3] [l3-protocols] [lACP] [link-state] [logging] [mac-security] [macsec] [mld] [mlt] [mvr] [pim] [port-mirroring] [qos] [radius] [rate-limit] [ripng] [rmon] [rtc] [sflow] [slamon] [slpp] [snmp] [spbm] [ssh] [sshc] [ssl] [stack] [stkmon] [storm-control][stp] [tacacs] [vlACP] [vlan]]`

Command Parameters

| | |
|-----------------------|---|
| 802.1ab | Displays the 802.1ab configuration. |
| aaa | Display the AAA configuration. |
| aaur | Displays the AAUR configuration. |
| adac | Displays the ADAC configuration. |
| apptel | Displays the Application Telemetry configuration. |
| arp-inspection | Displays the ARP Inspection configuration. |
| asset-id | Displays the Asset ID configuration. |
| aur | Displays the AUR configuration. |
| banner | Displays the Custom Banner configuration. |
| brouter | Displays the Brouter configuration. |
| cfm | Displays the CFM configuration. |

| | |
|------------------------|---|
| core | Displays the Core configuration. |
| dhcp-relay | Displays the DHCP Relay configuration. |
| dhcp-snooping | Displays the DHCP Snooping configuration. |
| digicert | Displays the Digital Certificate configuration. |
| eap | Displays the EAP configuration. |
| energy-saver | Displays the Energy Saver configuration. |
| fa | Displays the Fabric Attach configuration. |
| igmp | Displays the IGMP configuration. |
| ike | Displays the IKE configuration. |
| interface | Displays the Interface configuration. |
| ip | Displays the IP configuration. |
| ipfix | Displays the IPFIX configuration. |
| ipmgr | Displays the IP Manager configuration. |
| ip-source-guard | Displays the IP Source Guard configuration. |
| ipsec | Displays the IPSEC configuration. |
| ipv6 | Displays the IPv6 configuration. |
| ipv6-fhs | Displays the IPv6 first hop security (FHS) configuration. |
| I3 | Displays the Layer 3 configuration. |
| I3-protocols | Displays the Layer 3 protocols configuration. |
| lACP | Displays the LACP configuration. |
| link-state | Displays the Link State Tracking configuration. |
| logging | Displays the System Logging configuration. |
| mac-security | Displays the MAC Security configuration. |
| macsec | Displays the MACsec configuration. |
| mld | Displays the MLD configuration. |

| | |
|-----------------------|--|
| mlt | Displays the MLT configuration. |
| module | Displays the configuration of an application. |
| mvr | Displays the MVR configuration. |
| PIM | Displays the Protocol Independent Multicast (PIM) configuration. |
| poe | Displays the PoE configuration. |
| port-mirroring | Displays the Port Mirroring configuration. |
| qos | Displays the QoS configuration. |
| radius | Displays the RADIUS configuration. |
| rate-limit | Displays the Rate Limiting configuration. |
| ripng | Displays the RIPng configuration. |
| rmon | Displays the RMON configuration. |
| rtc | Displays the RTC configuration. |
| sflow | Displays the sFlow configuration. |
| slamon | Displays the SLAMon configuration. |
| slpp | Displays the SLPP configuration. |
| snmp | Displays the SNMP configuration. |
| spbm | Displays the SPBM configuration. |
| ssh | Displays the SSH configuration. |
| sshc | Displays the SSHC configuration. |
| ssl | Displays the SSL configuration. |
| stack | Displays the Stack configuration. |
| stkmon | Displays the Stack Monitor configuration. |
| storm-control | Displays the storm-control configuration. |
| stp | Displays the STP configuration. |
| tacacs | Displays the TACACS+ configuration. |

| | |
|----------------|--|
| verbose | Displays the entire configuration. (defaults and non-defaults) |
| vlacp | Displays the VLACP configuration. |
| vlan | Displays the VLAN configuration. |

Default

None

Command Mode

Privileged Executive

show script

Displays ASCII configuration script table entries.

Syntax

- `show script [status] <1-127> [block]`

Command Parameters

| | |
|----------------------|---|
| <1-127> | Index of the ASCII configuration script table entry |
| block | Display script block |
| status | Display script status |

Default

None

Command Mode

Privileged Executive

show serial-console

Displays current serial console port access.

Syntax

- `show serial-console unit <1-8>`

Command Parameters

| | |
|-------------------------|-------------|
| unit <1-8> | Unit number |
|-------------------------|-------------|

Default

None

Command Mode

Privileged Executive

show snmp-server

Displays the SNMP configuration.

Syntax

- `show snmp-server {community | engine-id <WORD>|host | notification-control <WORD> | notify-filter | user | view}`

Command Parameters

| | |
|--|--|
| community | Displays the SNMP community strings. |
| engine-id <WORD> | Displays the Engine-ID information. |
| host | Displays the SNMP trap destinations. |
| notification-control <WORD> | Displays the notification control table. |
| notify-filter | Displays the SNMP notify filter configuration. |
| user | Displays the SNMP users. |
| view | Displays the SNMP views. |

Default

None

Command Mode

Privileged Executive

show sntp

Displays Simple Network Time Protocol (SNTP).

Syntax

- `show sntp`

Default

None

Command Mode

Privileged Executive

show spanning-tree 802dot1d-port-compliance

Displays 802dot1d port compliance mode.

Syntax

- `show spanning-tree 802dot1d-port-compliance`

Default

None

Command Mode

Privileged Executive

show spanning-tree bpdu-filtering

Displays BPDU filtering configuration.

Syntax

- `show spanning-tree bpdu-filtering {[ethernet] port <LINE> | ignore-self}`

Command Parameters

| | |
|--------------------------|---|
| Ethernet | Ethernet IEEE 802.3 |
| ignore-self | Ignore bridge's own BPDUs |
| port <LINE> | The port list whose BPDU filtering settings will be displayed |

Default

None

Command Mode

Privileged Executive

show spanning-tree config

Displays Spanning Tree configuration.

Syntax

- `show spanning-tree config [port <LINE> | vlans] vlans`

Command Parameters

| | |
|---------------------|---|
| <LINE> | List of ports |
| port | Display spanning tree status of each port |
| vlans | Display spanning-tree group VLAN members |

Default

None

Command Mode

Privileged Executive

show spanning-tree cost-calc-mode

Displays pathcost type.

Syntax

- `show spanning-tree cost-calc-mode`

Default

None

Command Mode

Privileged Executive

show spanning-tree mode

Displays Spanning Tree operation mode.

Syntax

- `show spanning-tree mode`

Default

None

Command Mode

Privileged Executive

show spanning-tree port

Displays spanning tree status of each port.

Syntax

- `show spanning-tree port {<LINE> | vlans}`

Command Parameters**<LINE>** List of ports**vlans** Display spanning-tree group VLAN members**Default**

None

Command Mode

Privileged Executive

show spanning-tree port-mode

Displays spanning-tree port membership mode.

Syntax

- `show spanning-tree port-mode`

Default

None

Command Mode

Privileged Executive

show spanning-tree stp

Displays spanning-tree configuration for specified group ID.

Syntax

- `show spanning-tree stp <1-8> {config vlans | {port <LINE>|vlans} | vlans}`

Command Parameters

| | |
|---------------------|---|
| <LINE> | List of ports |
| config | Display Spanning Tree configuration |
| port | Display spanning tree status of each port |
| vlans | Display spanning-tree group VLAN members |

Default

None

Command Mode

Privileged Executive

show spanning-tree vlans

Displays spanning-tree group VLAN members.

Syntax

- `show spanning-tree vlans`

Default

None

Command Mode

Privileged Executive

show ssh banner

Displays the SSH Banner.

Syntax

- `show ssh banner`

Default

None

Command Mode

Privileged Executive

show ssh download-auth-key

Display auth key TFTP download info

Syntax

- `show ssh download-auth-key`

Default

None

Command Mode

Privileged Executive

show ssh global

Display general SSH settings

Syntax

- `show ssh global`

Default

None

Command Mode

Privileged Executive

show ssh session

Display SSH session info

Syntax

- `show ssh session`

Default

None

Command Mode

Privileged Executive

show ssl

Displays SSL configuration

Syntax

- `show ssl [certificate]`

Command Parameters

certificate Displays digital certificate information

Default

None

Command Mode

Privileged Executive

show stack health

Displays the status of each stacking link.

Syntax

- `show stack health`

Default

None

Command Mode

Privileged Executive

show stack-info

Displays stack information.

Syntax

- `show stack-info uptime`

Command Parameters

uptime Display stack up-time for each unit

Default

None

Command Mode

Privileged Executive

show stack-monitor

Displays stack-monitor configuration.

Syntax

- `show stack-monitor`

Default

None

Command Mode

Privileged Executive

show storm-control

Display the storm-control configuration.

Syntax

- `show storm-control [all] [broadcast] [multicast] [unicast]`

Command Parameters

all Displays storm control settings for all types of traffic.

broadcast Displays storm control settings for broadcast traffic.

multicast Displays storm control settings for multicast traffic.

unicast Displays storm control settings for unicast traffic.

Default

None

Command Mode

Privileged Executive

show storm-control interface

Display the storm-control configuration for the interface selected.

Syntax

- `show storm-control interface Ethernet <LINE>`

Command Parameters

<LINE> Displays storm control settings for a port or list of ports.

Ethernet Displays storm control settings for the Ethernet interface.

Default

None

Command Mode

Privileged Executive

show sys-info

Displays system information.

Syntax

- `show sys-info`

Default

None

Command Mode

Privileged Executive

show system

Displays consolidated system information.

Syntax

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

Command Parameters

| | |
|-----------------------------|--|
| last-exception | Display last software exception information. |
| unit <1-8> all | Display last exception for a specified unit |
| verbose | Display verbose system information |

Default

None

Command Mode

Privileged Executive

show tacacs

Displays current TACACS+ server/port/key configuration.

Syntax

- `show tacacs`

Default

None

Command Mode

Privileged Executive

show tdr

Displays TDR test results.

Syntax

- `show tdr <WORD>`

Command Parameters

<WORD> List of ports

Default

None

Command Mode

Privileged Executive

show telnet

Shows telnet active sessions.

Syntax

- `show telnet sessions`

Command Parameters

sessions Displays telnet active sessions

Default

None

Command Mode

Privileged Executive

show telnet-access

Displays configuration of telnet access.

Syntax

- `show telnet-access`

Default

None

Command Mode

Privileged Executive

show tftp-server

Shows the TFTP Server IP address.

Syntax

- `show tftp-server`

Default

None

Command Mode

Privileged Executive

show trace

Displays trace information.

Syntax

```
• show trace {level | modid-list | status}
```

Command Parameters

| | |
|---------------|--------------------------------------|
| level | Display info for active trace module |
| list | Display info for all trace modules |
| status | Display trace status |

Default

None

Command Mode

Privileged Executive

show usb-files

Shows USB files.

Syntax

```
• show usb-files {ascii <WORD> unit <1-8> | binary <WORD> unit <1-8> |
  dir <WORD> {tree unit<1-8>|unit<1-8> tree} | unit <1-8> {tree
  dir<WORD>|dir<WORD> tree}
```

Command Parameters

| | |
|---------------------|--|
| <WORD> | The filename which will be displayed |
| ascii | Display the ASCII contents of a file. |
| binary | Display the binary contents of a file. |

| | |
|-------------------------|--|
| dir | Displays files from a specific directory |
| tree | List subdirectories recursively |
| unit <1-8> | Unit |

Default

None

Command Mode

Privileged Executive

show usb-host-port

Shows USB host port info.

Syntax

- `show usb-host-port {all | unit <1-8>}`

Command Parameters

| | |
|-------------------------|--|
| all | Display USB host port info for all units |
| unit <1-8> | Display USB host port info of an unit in stack |

Default

None

Command Mode

Privileged Executive

show vlacp

Displays VLACP configuration.

Syntax

- `show vlacp interface <LINE>`

Command Parameters

| | |
|---------------------|--|
| <LINE> | List of ports |
| interface | Display VLACP configuration for specified interfaces |

Default

None

Command Mode

Privileged Executive

show vlan

Displays VLAN information.

Syntax

- `show vlan [configcontrol] [dhcp-relay] [i-sid] [id] [igmp] [interface] [ip] [mgmt] [multicast] [remote-span] [summary] [type] [voice-vlan]`

Default

None

Command Mode

Privileged Executive

show vlan configcontrol

Displays VLAN control mode.

Syntax

- `show vlan configcontrol`

Default

None

Command Mode

Privileged Executive

show vlan dhcp-relay

Displays DHCP relay info for a particular VLAN.

Syntax

- `show vlan dhcp-relay <LINE>`

Command Parameters

<LINE> VLAN list

Default

None

Command Mode

Privileged Executive

Command Output

The following table shows the field descriptions for the `show vlan dhcp-relay` command.

| Field | Description |
|------------------|--|
| IfIndex | Indicates the VLAN interface index. |
| MIN_SEC | Indicates the min-sec value. The switch immediately forwards a BootP/DHCP packet if the secs field in the BootP/DHCP packet header is greater than the configured min-sec value; otherwise, the packet is dropped. |
| ENABLED | Indicates whether DHCP relay is enabled on the VLAN. |
| MODE | Indicates the type of DHCP packets this interface supports. Options include none, BootP, DHCP, and both. |
| ALWAYS_BROADCAST | Indicates whether DHCP reply packets are broadcast to the DHCP client on this VLAN interface. |
| OPTION_82 | Indicates if Option 82 for DHCP Relay is enabled or disabled on the VLAN. |

Example

The following is an example for the `show vlan dhcp-relay` command output:

```
Switch#show vlan dhcp-relay
=====
DHCP Relay Interface VLAN
=====
IfIndex  MIN_SEC  ENABLED  MODE    ALWAYS_BROADCAST  OPTION_82
-----
10001    0        True     Both    Disabled           Disabled
```

show vlan id

Displays specific VLAN.

Syntax

- `show vlan id line type {port | protocol-decEther2 | protocol-decOtherEther2 | protocol-ipEther2 | protocol-ipv6Ether2 | protocol-ipx802.2 | protocol-ipx802.3 | protocol-ipxEther2 | protocol-ipxSnap | protocol-Netbios | protocol-RarpEther2 | protocol-sna802.2 | protocol-snaEther2 | protocol-Userdef {all | ether | llc | snap} | protocol-`

```
vinesEther2 | protocol-xnsEther2 | spbm-bvlan | spbm-switchedUni |
voice-vlan}
```

Command Parameters

| | |
|--------------------------------|-----------------------------------|
| all | Display All Userdef VLANs |
| ether | Display Ethernet II Userdef VLANs |
| LINE | VLAN list |
| llc | Display LLC Userdef VLANs |
| port | Display port-based VLANs |
| protocol-decEther2 | Display decEther2 VLANs |
| protocol-decOtherEther2 | Display decOtherEther2 VLANs |
| protocol-ipEther2 | Display ipEther2 VLANs |
| protocol-ipv6Ether2 | Display ipv6Ether2 VLANs |
| protocol-ipx802.2 | Display ipx802.2 VLANs |
| protocol-ipx802.3 | Display ipx802.3 VLANs |
| protocol-ipxEther2 | Display ipxEther2 VLANs |
| protocol-ipxSnap | Display ipxSnap VLANs |
| protocol-Netbios | Display Netbios VLANs |
| protocol-RarpEther2 | Display RarpEther2 VLANs |
| protocol-sna802.2 | Display sna802.2 VLANs |
| protocol-snaEther2 | Display snaEther2 VLANs |
| protocol-Userdef | Display Userdef VLANs |
| protocol-vinesEther2 | Display vinesEther2 VLANs |
| protocol-xnsEther2 | Display xnsEther2 VLANs |
| snap | Display SNAP Userdef VLANs |
| spbm-bvlan | Display SPBM B-VLANs |
| spbm-switchedUni | Display SPBM switched UNI VLANs |

type Display specific type of VLAN

voice-vlan Display voice VLANs

Default

None

Command Mode

Privileged Executive

show vlan igmp

Displays IGMP snoop settings.

Syntax

- `show vlan igmp {<LINE> | unknown-mcast-allow-flood <1-4094> | unknown-mcast-no-flood}`

Command Parameters

<1-4094> Vlan ID

<LINE> VLAN list

unknown-mcast-allow-flood Display list of multicast MAC addresses for which flooding is allowed

unknown-mcast-no-flood Display setting for flooding packets with unknown multicast addresses

Default

None

Command Mode

Privileged Executive

show vlan interface

Displays VLAN configuration for specified interfaces.

Syntax

- `show vlan interface {info | verbose | private-vlan | vids} <LINE>`

Command Parameters

| | |
|---------------------|---|
| <LINE> | Port list |
| info | Display VLAN-related settings of ports |
| private-vlan | Displays the Private VLAN configuration. |
| verbose | Display VLAN-related settings and membership of ports |
| vids | Display VLAN membership of ports |

Default

None

Command Mode

Privileged Executive

show vlan ip

Displays IP info for VLANs.

Syntax

- **show vlan ip [id <LINE>] summary**

Command Parameters

| | |
|------------------------|------------------------------|
| id <LINE> | display for specific VLAN ID |
| summary | Display vlan ip summary |

Default

None

Command Mode

Privileged Executive

Command OutputThe following table shows the field descriptions for the **show vlan ip** command.

| Field | Description |
|---------|--|
| Vid | Specifies the VLAN ID. |
| ifIndex | Specifies an Index entry for the interface. |
| Address | Specifies the IP address associated with the VLAN. |

Table continues...

| Field | Description |
|------------|--|
| Mask | Specifies the mask. |
| MacAddress | Specifies the MAC address associated with the VLAN. |
| Offset | Specifies the value used to calculate the VLAN MAC address, which is offset from the switch MAC address. |
| Routing | Specifies the status of routing on the VLAN: enabled or disabled. |

Example

The following example displays the IP information for VLAN ID 1:

```
Switch#show vlan ip id 1
=====
Vid  ifIndex Address          Mask           MacAddress      Offset Routing
=====
Primary Interfaces
-----
1    10001  172.16.120.20  255.255.255.0  D4:EA:0E:1C:24:40 1    Enabled
Total VLAN IP entries: 1
```

show vlan i-sid

Displays the C-VLAN to I-SID associations.

Syntax

- `show vlan i-sid <1-4094>`

Command Parameters

<1-4094> Specifies the VLAN ID.

Default

None

Command Mode

Privileged Executive

Command Output

The `show vlan i-sid` command displays the following information:

| Output field | Description |
|--------------|--|
| VLAN_ID | Indicates the VLAN IDs. |
| I-SID | Indicates the I-SIDs associated with the specified CVLANs. |

Example

The following example displays the output for this command.

```
Switch#show vlan i-sid
=====
                                Vlan I-SID
=====
VLAN_ID    I-SID
-----
1
2
5           5
10
20
```

show vlan mgmt

Displays mgmt vlan ID.

Syntax

- **show vlan mgmt**

Default

None

Command Mode

Privileged Executive

show vlan multicast

Displays VLAN multicast configuration.

Syntax

- **show vlan multicast membership <1-4094>**

Command Parameters

- <1-4094>** Specifies the VLAN ID.
- membership** Displays VLAN multicast membership.

Default

None

Command Mode

Privileged Executive

show vlan private-vlan

Displays the Private VLAN configuration.

Syntax

- `show vlan private-vlan`

Default

None

Command Mode

Privileged Executive

show vlan remote-span

Displays Rspan VLANs.

Syntax

- `show vlan remote-span`

Default

None

Command Mode

Privileged Executive

show vlan summary

Displays a summary of VLANs.

Syntax

- `show vlan summary`

Default

None

Command Mode

Privileged Executive

show vlan type

Displays specific type of VLAN.

Syntax

- `show vlan type {port | protocol-decEther2 | protocol-ipEther2 | protocol-ipv6Ether2 | protocol-ipx802.2 | protocol-ipx802.3 | protocol-ipxEther2 | protocol-ipxSnap | protocol-Netbios | protocol-RarpEther2 | protocol-sna802.2 | protocol-snaEther2 | protocol-Userdef {all | ether | llc | snap} | protocol-vinesEther2 | protocol-xnsEther2 | spbm-bvlan | spbm-switchedUni | voice-vlan}`

Command Parameters

| | |
|-----------------------------|-----------------------------------|
| all | Display All Userdef VLANs |
| ether | Display Ethernet II Userdef VLANs |
| llc | Display LLC Userdef VLANs |
| port | Display port-based VLANs |
| protocol-decEther2 | Display decEther2 VLANs |
| protocol-ipEther2 | Display ipEther2 VLANs |
| protocol-ipv6Ether2 | Display ipv6Ether2 VLANs |
| protocol-ipx802.2 | Display ipx802.2 VLANs |
| protocol-ipx802.3 | Display ipx802.3 VLANs |
| protocol-ipxEther2 | Display ipxEther2 VLANs |
| protocol-ipxSnap | Display ipxSnap VLANs |
| protocol-Netbios | Display Netbios VLANs |
| protocol-RarpEther2 | Display RarpEther2 VLANs |
| protocol-sna802.2 | Display sna802.2 VLANs |
| protocol-snaEther2 | Display snaEther2 VLANs |
| protocol-Userdef | Display Userdef VLANs |
| protocol-vinesEther2 | Display vinesEther2 VLANs |
| protocol-xnsEther2 | Display xnsEther2 VLANs |

| | |
|-------------------------|---------------------------------|
| snap | Display SNAP Userdef VLANs |
| spbm-bvlan | Display SPBM B-VLANs |
| spbm-switchedUni | Display SPBM switched UNI VLANs |
| voice-vlan | Display voice VLANs |

Default

None

Command Mode

Privileged Executive

show vlan voice-vlan

Displays voice VLANs.

Syntax

- `show vlan voice-vlan`

Default

None

Command Mode

Privileged Executive

show web-server

Displays web server status.

Syntax

- `show web-server`

Default

None

Command Mode

Privileged Executive

shutdown

Saves configuration and shutdown the switch/stack.

Syntax

- `shutdown {cancel | [force] minutes-to-wait <1-60>}`

Command Parameters

| | |
|-------------------------------------|--|
| cancel | Cancel a previous scheduled shutdown |
| force | Do not ask for confirmation |
| minutes-to-wait <1-60> | Number of minutes to wait before reset |

Default

None

Command Mode

Privileged Executive

stack auto-unit-replacement config

Modifies AUR operational settings.

Syntax

- `stack auto-unit-replacement config {restore unit <1-8>} | save {disable |enable |unit <1-8>}`

Command Parameters

| | |
|-------------------------|---|
| disable | Disable AUR auto-save |
| enable | Enable AUR auto-save |
| restore | Restore configuration of a unit from the saved configuration on the base unit |
| save | Enable/disable auto-save of unit configuration to base unit |
| unit | Force immediate save of NBU config to BU |
| unit <1-8> | select unit |

Default

None

Command Mode

Privileged Executive

stack auto-unit-replacement remove-mac-address

Removes a unit's MAC address from the AUR cache.

Syntax

- `stack auto-unit-replacement remove-mac-address unit <1-8>`

Command Parameters

`unit <1-8>` select unit

Default

None

Command Mode

Privileged Executive

stack loopback-test

Stacks ports loopback test.

Syntax

- `stack loopback-test {external | internal}`

Command Parameters

`external` External loopback test for the stack ports

`internal` Internal loopback test for the stack ports

Default

None

Command Mode

Privileged Executive

tdr

TDR test commands

Syntax

- `tdr test <WORD>`

Command Parameters

| | |
|---------------------|-----------------|
| <WORD> | List of ports |
| test | Start TDR tests |

Default

None

Command Mode

Privileged Executive

toggle-next-boot-image

Toggles next boot image.

Syntax

- `toggle-next-boot-image`

Default

None

Command Mode

Privileged Executive

write

Writes configuration in nvram.

Syntax

- `write memory`

Command Parameters

| | |
|---------------|---|
| memory | Write configuration to local NV storage |
|---------------|---|

Privileged Executive

Default

None

Command Mode

Privileged Executive

Chapter 11: RA Guard Configuration

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

device-role (RA Guard Configuration)

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

Syntax

- `default device-role`
- `device-role {router|host}`

Command Parameters

- host** Configures a device as host.
- router** Configures a device as router.

Default

The default is router.

Command Mode

RA Guard Configuration

hop-limit

Enables verification of the advertised hop count limit. By default the minimum and maximum limit will be 0. If the limit is 0, the hop-limit check is bypassed. If maximum and minimum value are 0, then hop-limit check is ignored.

Syntax

- `default hop-limit [maximum] [minimum]`
- `hop-limit {[maximum <0-255>] | [minimum <0-255>]}`

Default

The default is 0.

Command Mode

RA Guard Configuration

managed-config-flag

Enables verification of the managed address configuration flag in the advertised router advertisement (RA) packet. By default the value is none. If configured to none, the check is bypassed.

Syntax

- `default managed-config-flag`
- `managed-config-flag {none|on|off}`

Command Parameters

none Specifies the managed config flag to none, which means this check is bypassed.

off Specifies the managed config flag as off.

on Specifies the managed config flag as on.

Default

The default is none.

Command Mode

RA Guard Configuration

match ipv6 access-list

Configure source IP access list to allow only router advertisement (RA) packets that originate from the source IP address you specify.

Syntax

- `default match ipv6 access-list <WORD>`
- `match ipv6 access-list <WORD>`
- `no match ipv6 access-list <WORD>`

Command Parameters

<WORD> Specifies the IPv6 address.

Default

The default is disabled.

Command Mode

RA Guard Configuration

match mac-access-list

Configure the device to verify the source MAC of the received router advertisement (RA) packet.

Syntax

- `default match mac-access-list <WORD>`
- `match mac-access-list <WORD>`
- `no match mac-access-list <WORD>`

Command Parameters

<WORD> Specifies the IPv6 address.

Default

The default is disabled.

Command Mode

RA Guard Configuration

match ra prefix-list

Configure the device to verify the prefixes sent in the router advertisement (RA) packets.

Syntax

- `default match ra prefix-list <WORD>`
- `match ra prefix-list <WORD>`
- `no match ra prefix-list <WORD>`

Command Parameters

<WORD> Specifies the IPv6 address.

Default

The default is disabled.

Command Mode

RA Guard Configuration

match reply prefix-list

Enables verification of the advertised prefixes in DHCP reply messages from the configured authorized prefix list. If not configured, this check is bypassed. An empty prefix list is treated as permit.

Syntax

- `default match reply prefix-list <WORD>`
- `match reply prefix-list <WORD>`
- `no match reply prefix-list <WORD>`

Command Parameters

<WORD> Specifies the prefix list name.

Default

The default is disabled.

Command Mode

RA Guard Configuration

match server access-list

Enables verification of the IPv6 address of the sender in inspected messages from the configured authorized device source access list.

Syntax

- `default match server access-list <WORD>`
- `match server access-list <WORD>`
- `no match server access-list <WORD>`

Command Parameters

<WORD> Specifies the IPv6 access list name.

Default

The default is disabled.

Command Mode

RA Guard Configuration

router-preference maximum

Enables verification of the advertised default router-preference parameter value is lower than or equal to the specified limit.

Syntax

- `default router-preference maximum`
- `router-preference maximum {none|high|low|medium}`

Command Parameters

- high** Specifies the router-preference to high.
- low** Specifies the router-preference to low.
- medium** Specifies the router-preference to medium.
- none** Specifies the router-preference to none, which means the verification is bypassed.

Default

By default the value is none.

Command Mode

RA Guard Configuration

Chapter 12: RIP Router Configuration

This chapter provides information related to the RIP Router configuration commands.

default-metric

Configures the default RIP metric value.

Syntax

- `default default-metric`
- `default-metric <metric_value>`

Command Parameters

`<metric_value>` Specifies a metric value between 0 and 15

Default

None

Command Mode

RIP Router Configuration

end (RA Guard Configuration)

Exits from RA Guard configure mode.

Syntax

- `end`

Default

None

Command Mode

RIP Router Configuration

end (RIP Router Configuration)

Exits from router configure mode.

Syntax

- `end`

Default

None

Command Mode

RIP Router Configuration

exit (RA Guard Configuration)

Exits from RA Guard configuration mode.

Syntax

- `exit`

Default

None

Command Mode

RIP Router Configuration

exit (RIP Router Configuration)

Exits from router configuration mode.

Syntax

- `exit`

Default

None

Command Mode

RIP Router Configuration

network (RIP Router Configuration)

Enables RIP on an IP interface.

Syntax

- `network {A.B.C.D}`
- `no network {A.B.C.D}`

Command Parameters

{A.B.C.D} IP address of the interface

Default

None

Command Mode

RIP Router Configuration

timers basic

Sets the RIP global timeout, holddown timer, and update timer.

Syntax

- `default timers basic [holddown] [timeout][update]`
- `timers basic holddown <holddown-timer> timeout <global-timeout> update <update-timer>`

Command Parameters

| | |
|-------------------------------|---|
| <global-timeout> | Specifies the global timeout interval parameter. If a RIP router does not receive an update from another RIP router within the configured timeout period, it moves the routes advertised by the nonupdating router to the garbage list. The timeout interval must be greater than the update timer. Range is 15–259200 seconds. Default is 180 seconds. |
| <holddown-timer> | Specifies the global holddown timer, which is the length of time (in seconds) that RIP maintains a route in the garbage list after determining that it is unreachable. During this period, RIP continues to advertise the garbage route with a metric of infinity (16). If a valid update for a garbage route is received within the holddown period, the router adds the route back into its routing table. If no update is received, the router deletes the garbage list entry. Range is 0–360 seconds. Default is 120 seconds. |
| <update-timer> | Specifies a value for the RIP update timer, which is the time interval (in seconds) between regular RIP updates. The update timer value must be less than the timeout interval. Range is 0–360 seconds. Default is 30 seconds. |

default Returns the parameters to the factory default timer values: holddown timer: 120 seconds; global timeout: 180 seconds; update timer: 30 seconds.

Default

None

Command Mode

RIP Router Configuration

trap (RIP Router Configuration)

Enable RIP traps.

Syntax

- `default trap`
- `no trap`
- `trap`

Default

None

Command Mode

RIP Router Configuration

Chapter 13: User Executive

This chapter provides information related to the User Executive commands.

enable

Turns on privileged commands.

Syntax

- `enable`

Default

None

Command Mode

User Executive

exit

Exits from the EXEC.

Syntax

- `exit`

Default

None

Command Mode

User Executive

help

Description of the interactive help system.

Syntax

```
• help [commands] [mode] {application | config | current | dhcp-guard |
  exec | ifconfig | interface {Ethernet | loopback | mgmt | vlan} |
  privExec | ra-guard | router {isis | ospf | rip | vrrp}} [modes]
```

Command Parameters

| | |
|--------------------|--|
| application | Displays commands available in Application Configuration mode |
| commands | Displays commands available |
| config | Displays commands available in Global Configuration mode |
| current | Displays commands available in current configuration mode |
| dhcp-guard | Shows commands available in DHCP-Guard mode |
| Ethernet | Displays commands available in Ethernet Interface Configuration mode |
| exec | Displays commands available in executive mode |
| ifconfig | Displays commands available in Interface Configuration mode |
| interface | Displays commands available in Interface Configuration modes |
| isis | Displays commands available in ISIS Router Configuration mode |
| loopback | Displays commands available in interface Loopback Configuration mode |
| mgmt | Displays commands available in Management Interface Configuration mode |
| mode | Displays commands available on specific mode |
| modes | Displays available modes |
| ospf | Displays commands available in OSPF Router Configuration mode |
| privExec | Displays commands available in Privileged Executive mode |
| ra-guard | Displays commands available in RA-Guard mode |
| rip | Displays commands available in RIP Router Configuration mode |
| router | Displays commands available in Router Configuration modes |
| vlan | Displays commands available in VLAN Interface Configuration mode |
| vrrp | Displays commands available in VRRP Router Configuration mode |

Default

None

Command Mode

User Executive

I2 ping

Trigger a Connectivity Fault Management (CFM) loopback message (LBM).

Syntax

- `i2 ping [vlan <1-4094> | ip-address {A.B.C.B}] [mac <H.H.H> | routernodename <WORD>] [burst-count <1-200>] [data-tlv-size <0-400>] [frame-size <64-1500>] [priority <0-7>][source-mode {nodal|smltVirtual}] [testfill {allZero | allZeroCrc | pseudoRandomBitSequence | pseudoRandomBitSequenceCrc}] [time-out <1-10>]`

Command Parameters

| | |
|---|---|
| burst-count <1-200> | Specifies the number of packets. |
| data-tlv-size <0-400> | Specifies the data TLV size. |
| frame-size <64-1500> | Specifies the packet size. |
| ip-address {A.B.C.D} | Specifies IP address. |
| mac <H.H.H> | Specifies the destination MAC address. |
| priority <0-7> | Specifies the priority |
| routernodename <WORD> | Specifies the destination node name |
| source-mode {nodal smltVirtual} | Specifies the source modes of the transmit loopback service as either nodal or smltVirtual. The default is nodal. |
| testfill-pattern {allZero allZeroCrc pseudoRandomBitSequence pseudoRandomBitSequenceCrc} | Specifies the fill pattern. |
| time-out <1-10> | Specifies the timeout in seconds. |
| vlan <1-4094> | Specifies the destination VLAN. |

Default

None

Command Mode

User Executive

I2 tracemroute source

Verifies SPBM IP multicast routes.

Syntax

- `12 tracemroute {source A.B.C.D <1.2.3.4> group A.B.C.D <1.2.3.4> vlan <1-4096> {priority <0-7> |ttl <1-255>}}`

Command Parameters

| | |
|--------------------------------|---|
| group {A.B.C.D} | Specifies the multicast group address. |
| priority <0-7> | Specifies the priority. The default is 7. |
| source {A.B.C.D} | Specifies the source address. |
| ttl-value <1-255> | Specifies the time-to-live value for the trace. |
| vlan <1-4084> | Specifies the VLAN ID. |

Default

None

Command Mode

User Executive

I2 traceroute

Trigger a Connectivity Fault Management (CFM) linktrace message (LTM).

Syntax

- `12 traceroute [<vlan <1-4094> | ip-address <ip>] [routernodename WORD<0-255>] [mac <H.H.H>] [priority <0-7>] [ttl <1-255>]`

Command Parameters

| | |
|-----------------------------|----------------------------|
| ip-address {A.B.C.D} | Specifies IP address. |
| mac <H.H.H> | Specifies the MAC address. |
| priority <0-7> | Specifies the priority. |

| | |
|------------------------------------|--------------------------------------|
| routernodename <WORD> | Specifies the destination node name. |
| ttl <1-255> | Specifies the time to live (TTL). |
| vlan <1-4094> | Specifies the destination VLAN. |

Default

None

Command Mode

User Executive

I2 tracetree

Trigger a Connectivity Fault Management (CFM) multicast linktrace message (LTM).

Syntax

- `i2 tracetree vlan <1-4094> i-sid <1-16777215> {mac <H.H.H> | routernodname <WORD>} [source-mode {nodal|smltVirtual}] [priority <0-7>] [ttl <1-255>]`

Command Parameters

| | |
|--|---|
| i-sid <1-16777215> | Specifies the Instance identifier (I-SID). |
| mac <H.H.H> | Specifies the destination MAC address. |
| priority <0-7> | Specifies the priority. |
| routernodename <WORD> | Specifies the destination node name. |
| source-mode {nodal smltVirtual} | Specifies the source modes of the transmit loopback service as either nodal or smltVirtual. The default is nodal. |
| ttl <1-255> | Specifies the time to live (TTL). |
| vlan <1-4094> | Specifies the destination VLAN. |

Default

None

Command Mode

User Executive

logout

Exits from the EXEC and end the current session.

Syntax

- `logout`

Default

None

Command Mode

User Executive

ping

Sends echo messages.

Syntax

- `ping {<Host-name> | A.B.C.D | <WORD>} [continuous] [count <1-9999>] [datasize <64-4096>] [debug] [interval <1-60>] [scopeid {<1-4094> | loopback <1-16>} mgmt]} [source {<A.B.C.D>|<WORD>}] [timeout <1-120>] [ttl <0-255>] [-t <1-120>]`

Command Parameters

| | |
|--|--|
| <Host-name> <A.B.C.D> | Specifies the hostname or IP address to ping. |
| <WORD> | Specifies the IPv6 address to ping. |
| continuous | Configures ping in continuous mode. |
| count <1-9999> | Specifies the number of packets. |
| datasize <64-4096> | Specifies the packet size. |
| debug | Enables ping debug. |
| interval <1-60> | Specifies the interval to retransmit in seconds. |
| loopback <1-16> | Specifies the loopback interface. |
| scopeid <1-4094> | Specifies the interface VLAN ID for link-local or multicast addresses. |
| source {A.B.C.D} | Specifies the source address for ping. |
| -t <1-120> | Specifies the timeout in seconds. |

timeout <1-120> Specifies the timeout in seconds.
tll <0-255> Specifies the time to live (TTL) for packet.

Default

None

Command Mode

User Executive

run

Specialized scripted CLI commands for automated configuration.

Syntax

• `run {adac | ipoffice [verbose] | lldp | spbm}`

Command Parameters

adac Scripted CLI commands for ADAC setup
ipoffice Scripted CLI commands for setup with IP Office solutions
lldp Scripted CLI commands for LLDP setup
spbm Scripted CLI commands for SPBM setup
verbose User input prompted CLI command script for IP Office solution setup

Default

None

Command Mode

User Executive

show application

Displays settings for various applications.

Syntax

• `show application slamon agent`

Command Parameters

| | |
|---------------|-------------------------------|
| agent | Display SLAMon agent settings |
| slamon | Display SLAMon settings |

Default

None

Command Mode

User Executive

show arp

Displays ARP entries.

Syntax

- `show arp [A.B.C.D] [add-fail] [dynamic <A.B.C.D>] [<H.H.H>] [static <A.B.C.D>] [summary] [-s <A.B.C.D> <subnet-mask>] [vlan <1-4094>]`

Command Parameters

| | |
|---|---|
| <A.B.C.D> | Specifies the IP address of the ARP entry to be displayed. |
| add-fail | Displays ARP entries not programmed in hardware. |
| dynamic <A.B.C.D> | Includes dynamic ARP entries without a valid route. |
| H.H.H | Specifies the MAC address of the ARP entry to be displayed. Valid formats include: H.H.H or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx or xx-xx-xx-xx-xx-xx). |
| -s <A.B.C.D> <subnet-mask> | Specifies an IP and subnet of ARP entries to be displayed. |
| static <ip-addr> | Includes static ARP entries without a valid route. |
| summary | Displays the summary of ARP entries. |
| vlan <1-4094> | Displays ARP entries for a specific VLAN. |

Default

None

Command Mode

User Executive

show arp-table

Displays system ARP table.

Syntax

- `show arp-table [mgmt-port]`

Command Parameters

mgmt-port Displays the number of ARP entries.

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the `show arp-table` command.

| Field | Description |
|-------------|---|
| Port | Specifies the port of the ARP entry. |
| IP Address | Specifies the IP address of the ARP entry. |
| MAC Address | Specifies the MAC address of the ARP entry. |

Example

The following is an example for the `show arp-table` command output:

```
Switch>show arp-table
Total number of ARP entries: 2

Port IP Address      MAC Address
-----
1    172.16.120.1      00:09:0F:09:00:06
1    172.16.120.25     E4:5D:52:3C:65:00
```

show auto-provision

Displays whether ZTP+ auto-provisioning is enabled on the switch.

Syntax

- `show auto-provision`

Default

None

Command Mode

User EXEC

Command Output

The `show auto-provision` command displays the following information:

| Output field | Description |
|-------------------|--|
| Admin state | Displays whether ZTP+ is enabled on the switch. |
| Operational state | <p>Displays the connectivity state of the switch with the XMC server. The states can be one of:</p> <ul style="list-style-type: none"> • Not Running • Started. Trying to connect • Running • Upgrading firmware • Completed • Error: IP not in use • Error: No DNS server configured • Error: Failed to resolve the XMC hostname • Error: Failed to connect to the XMC server • Error: No XMC address available • Img Upgrade error: Cannot configure the TFTP server address • Img Upgrade error: Cannot configure the SFTP server address • Img Upgrade error: Cannot configure the SFTP server port • Img Upgrade error: Cannot configure the SFTP auth method • Img Upgrade error: Cannot configure the SFTP username • Img Upgrade error: Cannot configure the SFTP password • Img Upgrade error: Cannot configure the firmware image name • Img Upgrade error: XMC protocol for download is not supported • Img Upgrade error: Failed to download the firmware image |

Example

The following is an example output of the `show auto-provision` command:

```
Switch:1>show auto-provision
Admin state      : Enabled
Operational state : Running
```

show auto-pvid

Shows Auto-PVID mode.

Syntax

- `show auto-pvid`

Default

None

Command Mode

User Executive

show boot

Displays boot settings.

Syntax

- `show boot {diag | image [primary] [secondary]}`

Command Parameters

| | |
|------------------|---|
| diag | Display information about the diag images |
| image | Display information about images |
| primary | Display primary image software version |
| secondary | Display secondary image software version |

Default

None

Command Mode

User Executive

show brouter

Displays brouter ports information.

Syntax

- `show brouter port <LINE>`

Command Parameters

port <LINE> Select port for operation

Default

None

Command Mode

User Executive

show cfm

Displays CFM information.

Syntax

- `show cfm spbm`

Command Parameters

spbm Display CFM SPBM information

Default

None

Command Mode

User Executive

show cli list

Display the CLI tree list.

Syntax

- `show cli list [mode {application | config | current | dhcp-guard | exec | ifconfig | interface <Ethernet|loopback|vlan> | privExec | ra-guard router <ospf|rip|vrrp>}] [verbose]`

Command Parameters

application Displays commands available in Application Configuration mode.

config Displays commands available in Global Configuration mode.

current Displays commands available in current configuration mode.

| | |
|-------------------|---|
| dhcp-guard | Displays commands available in DHCP Guard Configuration mode. |
| Ethernet | Displays commands available in Ethernet Interface Configuration mode. |
| exec | Displays commands available in executive mode. |
| ifconfig | Displays commands available in Interface Configuration mode. |
| interface | Displays commands available in Interface Configuration modes. |
| mode | Displays commands available in Loopback Interface Configuration mode. |
| mode | Displays commands available on specific mode. |
| ospf | Displays commands available in OSPF Router Configuration mode. |
| privExec | Displays commands available in Privileged Executive mode. |
| ra-guard | Displays commands available in RA Guard Configuration mode. |
| rip | Displays commands available in RIP Router Configuration mode. |
| router | Displays commands available in Router Configuration mode. |
| verbose | Lists the CLI tree and all commands syntax. |
| vlan | Displays commands available in VLAN Interface Configuration mode. |
| vrrp | Displays commands available in VRRP Router Configuration mode. |

Default

None

Command Mode

User Executive

show cpu-utilization

Displays CPU utilization info.

Syntax

- `show cpu-utilization unit <1-8>`

Command Parameters

| | |
|-------------------------------|-------------|
| <code>unit <1-8></code> | Unit number |
|-------------------------------|-------------|

Default

None

Command ModeUser Executive

show ddi-logging

Displays DDI Logging on ports

Syntax

- `show ddi-logging`

Default

None

Command ModeUser Executive

show ecmp

Displays ECMP settings.

Syntax

- `show ecmp`

Default

None

Command ModeUser Executive

show edm

Displays EDM configuration.

Syntax

- `show edm {help-file-path | inactivity-timeout}`

Command Parameters

| | |
|---------------------------|--------------------------------|
| help-file-path | Display EDM help file path |
| inactivity-timeout | Display EDM inactivity timeout |

Default

None

Command Mode

User Executive

show energy-saver

Displays energy saver settings and status.

Syntax

- `show energy-saver`

Default

None

Command Mode

User Executive

show energy-saver interface

Displays per-port energy saver settings and status.

Syntax

- `show energy-saver interface <LINE>`

Command Parameters

| | |
|---------------------|---------------|
| <LINE> | List of ports |
|---------------------|---------------|

Default

None

Command Mode

User Executive

show energy-saver savings

Displays energy saver power savings.

Syntax

- `show energy-saver savings`

Default

None

Command Mode

User Executive

show energy-saver schedule

Displays energy saver activation/deactivation schedule.

Syntax

- `show energy-saver schedule`

Default

None

Command Mode

User Executive

show enhanced-secure-mode

Displays Enhanced Secure Mode status.

Syntax

- `show enhanced-secure-mode`

Default

None

Command Mode

User Executive

show environmental

Displays environmental information.

Syntax

- `show environmental`

Default

None

Command Mode

User Executive

show fa

Displays Fabric Attach specific settings.

Syntax

- `show fa {agent | assignment <1-16777214> | elements [auth-status {auth-fail | auth-pass | not-auth}] [client-type <6-17>] [element-type {client | proxy | server [auth-status {auth-fail | auth-pass | not-auth}]]} [LINE] [trunk <1-64>] | i-sid <1-16777214> | interface | port-enable {disabled-auth | disabled-port | enabled-auth | enabled-port | LINE} | statistics [summary | <LINE>] | uplink | vlan <LINE> | zero-touch-client | zero-touch-options [client-data]}`

Command Parameters

| | |
|---|---|
| <LINE> | List of ports |
| agent | Displays the Fabric Attach agent status. |
| assignment <1-16777214> | Display Fabric Attach configured UNIs |
| auth-status {auth-fail auth-pass not-auth} | Display only specified authorized status |
| client-data | Display client data |
| client-type | Display only specified client type |
| disabled-auth | Display only disabled authorized ports |
| disabled-port | Display only disabled ports |
| elements | Displays discovered Fabric Attach elements. |

| | |
|---------------------------------|---|
| element-type | Display only specified element type |
| enabled-auth | Display only enabled authorized ports |
| enabled-port | Display only enabled ports |
| interface | Display Fabric Attach port settings |
| i-sid <1-16777214> | Displays the Fabric Attach configured user-to-network interface (UNIs). |
| port-enable <LINE> | Displays the Fabric Attach port settings. |
| statistics | Displays the FA summary and per-port statistics counters. |
| summary | Display Fabric Attach summary statistics |
| trunk | Display based on trunk number |
| uplink | Display Fabric Attach uplink data |
| vlan | Displays Fabric Attach VLANs. |
| zero-touch-client | Displays Fabric Attach Zero Touch Client specifications |
| zero-touch-options | Displays Fabric Attach Zero Touch option settings. |
| Default | |
| None | |
| Command Mode | |
| User Executive | |

show flash

Displays FLASH information.

Syntax

- `show flash [history] unit <1-8>`

Command Parameters

| | |
|-------------------------|----------------------|
| history | Display FLASH writes |
| unit <1-8> | Unit number |

Default

None

Command Mode

User Executive

show https-only

Displays secure only status.

Syntax

- `show https-only`

Default

None

Command Mode

User Executive

show https-port

Display the TCP port on which web server will listen when SSL is enabled

Syntax

- `show https-port`

Default

None

Command Mode

User Executive

show interfaces

Displays interface status and configuration.

Syntax

- `show interfaces [admin-disabled [<LINE>]|admin-enabled [<LINE>]|gbic-info [<LINE>]|<LINE> [config | verbose]|link-down [<LINE>]|link-up [<LINE>]|loopback [<1-16>]|names [<LINE>]] [verbose]`

Command Parameters

| | |
|------------------------------|--|
| <LINE> | Specifies a list of ports. |
| admin-disabled | Displays the admin disabled interfaces. |
| admin-enabled | Displays the admin enabled interfaces. |
| config | Displays interfaces configuration. |
| gbic-info | Displays GBIC details. |
| link-down | Display the interfaces with link down. |
| link-up | Displays the interfaces with link up. |
| loopback <1-16> | Displays loopback interface information. |
| names | Displays interface names. |
| verbose | Displays port status information for several applications. |

Default

None

Command Mode

User Executive

show interfaces gbic-info

Shows the status and configuration of GBIC interfaces.

Syntax

- `show interfaces gbic-info [<LINE>]`

Command Parameters

| | |
|---------------------|----------------------------|
| <LINE> | Specifies a list of ports. |
|---------------------|----------------------------|

Default

None

Command Mode

User Executive

Command OutputThe `show interfaces gbic-info` command displays the following information:

| Output field | Description |
|---------------------|--|
| Port Number | Indicates the active GBIC port. |
| GBIC Type | Indicates the type of SFP or SFP+ connector. |
| Wavelength | Indicates the wavelength in nm of the SFP or SFP+. |
| Vendor Name | Indicates the name of the SFP or SFP+ manufacturer. |
| Vendor OUI | Indicates the vendor ID of the SFP or SFP+ manufacturer. |
| Vendor Part # | Indicates the model of the SFP or SFP+. |
| Vendor Revision | Indicates the manufacturer revision level for the SFP or SFP+. |
| Vendor Serial | Indicates the manufacturer serial number for the SFP or SFP+. |
| HW Options | Indicates hardware options set for the SFP or SFP+. |
| Date Code | Indicates the manufacturer date code for the SFP or SFP+. |
| CLEI Code | Indicates the Telcordia register assignment CLEI code. |
| Product Code | Indicates the part number of the device. |
| Calibration | Indicates if the calibration is internal or external. |
| Rx Power | Measurement Indicates Rx power measurement as average or OMA. |
| Low_AlarmThreshold | Indicates the low alarm threshold |
| High_AlarmThreshold | Indicates the high alarm threshold. |
| High_WarnThreshold | Indicates the high warning threshold |
| Low_WarnThreshold | Indicates the low warning threshold. |
| Status | Indicates if any thresholds were exceeded. |
| Temp(C) | Indicates the current temperature in degrees Celsius of the SFP or SFP+. |
| Voltage(V) | Indicates the voltage of the SFP in volts. |
| Bias(mA) | Indicates the laser bias current in mA. |
| TxPower(dBm) | Indicates the transmit power of the SFP in dBm. |
| RxPower(dBm) | Indicates the receive power of the SFP in dBm. |

Example

The following example displays sample output from the **show interfaces gbic-info** command.

```
Switch>show interfaces gbic-info
  Port Number      3
  GBIC Type        SX
  Wavelength       850 nm
  Vendor Name      EXTREME NETWORKS
  Vendor OUI       00176A
  Vendor Part #    AFBR-5715PZ-NT1
  Vendor Revision  N/A
  Vendor Serial    AVAGCNAS00FV1
  HW Options       TX_DISABLE TX_FAULT RX_LOSS
  Date Code        10/01/2011
  CLEI Code        IPUIAHCWAA
  Product Code     AA1419048-E6
```



```
Digital Diagnostic Interface supported
```

```
Calibration: Internal
Rx Power Measurement: Average
```

| | LOW_ALARM THRESHOLD | LOW_WARN THRESHOLD | ACTUAL VALUE | HIGH_WARN THRESHOLD | HIGH_ALARM THRESHOLD | STATUS |
|---------------|------------------------|-----------------------|-----------------|------------------------|-------------------------|--------|
| Temp (C) | -5.000 | 0.000 | 29.468 | 90.000 | 95.000 | NORMAL |
| Voltage (V) | 2.9700 | 3.0200 | 3.2934 | 3.5800 | 3.6300 | NORMAL |
| Bias (mA) | 2.000 | 3.000 | 8.216 | 15.000 | 16.000 | NORMAL |
| TxPower (dBm) | -9.5000 | -8.9997 | -5.2374 | -1.9997 | -1.0001 | NORMAL |
| RxPower (dBm) | -13.0102 | -11.9997 | -7.3376 | -1.0001 | 0.0000 | NORMAL |

show ip

Displays IP-related information.

Syntax

- `show ip [bootp] [default-gateway] [address] {source | stack | switch | unit <1-8>}`

Command Parameters

| | |
|-------------------------|--|
| address | IP address of switch/stack |
| bootp | Displays bootp settings |
| default-gateway | IP address of default gateway |
| source | Display BOOTP/DHCP settings |
| stack | Display stack ip address |
| switch | Display the ip address of local unit |
| unit <1-8> | To display the IP address of another unit in a stack |

Default

None

Command Mode

User Executive

show ip arp-inspection

Displays ARP inspection VLAN information.

Syntax

- `show ip arp-inspection vlan <LINE>`

Command Parameters

vlan <LINE> Display ARP inspection VLAN information

Default

None

Command Mode

User Executive

show ip arp-inspection interface

Displays ARP inspection port information.

Syntax

- `show ip arp-inspection interface [Ethernet] [<LINE>]`

Command Parameters

<LINE> List of ports

Ethernet Ethernet IEEE 802.3

Default

None

Command Mode

User Executive

show ip arp-proxy interface

Displays Proxy ARP status.

Syntax

- `show ip arp-proxy interface vlan <1-4094>`

Command Parameters

| | |
|----------------------------|---------------------------------|
| interface | Display interface configuration |
| vlan <1-4094> | Layer 3 IP VLAN |

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show ip arp-proxy interface** command.

| Field | Description |
|------------------|--|
| Vlan | Identifies a VLAN. |
| Proxy ARP status | Indicates the status of Proxy ARP on the VLAN. |

Example

The following is an example for the **show ip arp-proxy interface** command output:

```
Switch>show ip arp-proxy interface
=====
                          Proxy ARP Status
=====
Vlan      Proxy ARP status
-----
1         Disabled
```

show ip blocking-mode

Displays the Layer 3 IP blocking mode.

Syntax

- **show ip blocking-mode**

Default

None

Command Mode

User Executive

show ip default-ttl

Displays default TTL.

Syntax

- `show ip default-ttl`

Default

None

Command Mode

User Executive

show ip dhcp

Displays DHCP settings.

Syntax

- `show ip dhcp client lease`

Command Parameters

| | |
|---------------|-------------------|
| client | DHCP client |
| lease | DHCP client lease |

Default

None

Command Mode

User Executive

show ip dhcp-relay

Displays DHCP relay information.

Syntax

- `show ip dhcp-relay`

Default

None

Command Mode

User Executive

show ip dhcp-relay counters

Displays DHCP relay statistics.

Syntax

- `show ip dhcp-relay counters`

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the `show ip dhcp-relay counters` command.

| Field | Description |
|-----------|---|
| INTERFACE | Indicates the interface IP address of the DHCP relay agent. |
| REQUESTS | Indicates the number of DHCP requests. |
| REPLIES | Indicates the number of DHCP replies. |

Example

The following is an example for the `show ip dhcp-relay counters` command output:

```
Switch>show ip dhcp-relay counters
=====
                DHCP Relay Counters
=====
INTERFACE          REQUESTS          REPLIES
-----
172.16.120.161           0                0
```

show ip dhcp-relay fwd-path

Displays DHCP relay global configuration.

Syntax

- `show ip dhcp-relay fwd-path summary`

Command Parameters

summary Display DHCP relay fwd-path summary

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the `show ip dhcp-relay fwd-path` command.

| Field | Description |
|-----------|---|
| VLAN | Indicates the VLAN IP address. |
| INTERFACE | Indicates the interface IP address of the DHCP relay agent. |
| SERVER | Indicates the IP address of the DHCP server. |
| ENABLE | Indicates whether DHCP is enabled. |
| MODE | Indicates the DHCP mode. |

Example

The following is an example for the `show ip dhcp-relay fwd-path` command output:

```
Switch>show ip dhcp-relay fwd-path
=====
                        DHCP Fwd-path
=====
VLAN      INTERFACE      SERVER      ENABLE      MODE
-----
Total fwd-path entries: 0
```

show ip dhcp-relay interface

Displays DHCP relay per-interface configuration.

Syntax

- `show ip dhcp-relay interface {ethernet | vlan<1-4094>} <LINE>`

Command Parameters

Ethernet <LINE> Ethernet IEEE 802.3

vlan <LINE> VLAN interface

Default

None

Command Mode

User Executive

show ip dhcp-snooping

Displays DHCP snooping information.

Syntax

- `show ip dhcp-snooping`

Default

None

Command Mode

User Executive

show ip dhcp-snooping binding

Displays DHCP snooping binding table.

Syntax

- `show ip dhcp-snooping binding {address [<A.B.C.D> | <H.H.H>] | summary [port <LINE> | unit] | port <LINE> | unit <1-8>}`

Command Parameters

| | |
|--|--|
| address <A.B.C.D> <H.H.H> | Display DHCP snooping binding table entry for specific MAC or IP address |
| port <LINE> | Display DHCP snooping binding table entries for specific port |
| summary [port <LINE> unit] | Display DHCP snooping binding table summary |
| unit <1-8> | Display DHCP snooping binding table entries for specific unit |

Default

None

Command Mode

User Executive

show ip dhcp-snooping external-save

Displays current operating state of DHCP snooping external save.

Syntax

- `show ip dhcp-snooping external-save`

Default

None

Command Mode

User Executive

show ip dhcp-snooping interface

Displays DHCP snooping port information.

Syntax

- `show ip dhcp-snooping interface {Ethernet <LINE> | <LINE>}`

Command Parameters

| | |
|-----------------|---------------------|
| <LINE> | List of ports |
| Ethernet <LINE> | Ethernet IEEE 802.3 |

Default

None

Command Mode

User Executive

show ip dhcp-snooping vlan

Displays DHCP snooping VLAN information.

Syntax

- `show ip dhcp-snooping vlan <LINE>`

Command Parameters

| | |
|--------|-----------|
| <LINE> | VLAN list |
|--------|-----------|

Default

None

Command Mode

User Executive

show ip directed-broadcast

Displays directed-broadcast forwarding mode.

Syntax

- `show ip directed-broadcast [interface] [vlan <1-4094>]`

Command Parameters

| | |
|----------------------------|---------------------------------|
| interface | Display interface configuration |
| vlan <1-4094> | Layer 3 IP VLAN |

Default

None

Command Mode

User Executive

show ip dns

Displays DNS configuration.

Syntax

- `show ip dns`

Default

None

Command Mode

User Executive

show ip forward-protocol

Displays broadcast forwarding settings.

Syntax

- `show ip forward-protocol udp {portfwdlist <1-128> | interface [vlan <1-4094>]}`

Command Parameters

| | |
|----------------------------------|----------------------------------|
| interface | Display interface configuration |
| portfwdlist <1-128> | Displays UDP fwdlists configured |
| udp | Displays UDP ports configured |
| vlan <1-4094> | Layer 3 IP VLAN |

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the `show ip forward-protocol udp` command.

| Field | Description |
|---------------|--|
| UDP_PORT | Indicates the UDP ports. |
| PROTOCOL_NAME | Indicates the name of the associated protocol. |

The following table shows the field descriptions for the `show ip forward-protocol udp portfwdlist` command.

| Field | Description |
|---------|--|
| LIST_ID | Indicates the UDP forwarding policy number. |
| NAME | Indicates the name of the UDP forwarding policy. |

The following table shows the field descriptions for the `show ip forward-protocol udp interface` command.

| Field | Description |
|------------|--|
| INTF_ADDR | Indicates the IP address of the interface. |
| FWD LISTID | Identifies the UDP forwarding policy. |
| MAXTTL | Indicates the maximum TTL. |

Table continues...

| Field | Description |
|----------------------|--|
| RXPKTS | Indicates the number of received packets. |
| FWDPKTS | Indicates the number of forwarded packets. |
| DRPDEST UNREACH | Indicates the number of dropped packets that cannot reach the destination. |
| DRP_UNKNOWN PROTOCOL | Indicates the number of packets dropped with an unknown protocol. |
| BDCASTMASK | Indicates the value of the broadcast mask. |

Example

The following is an example for the **show ip forward-protocol udp** command output:

```
Switch>show ip forward-protocol udp
=====
                        UDP Protocol Tbl
=====
UDP_PORT      PROTOCOL_NAME
-----
37            Time Service
49            TACACS Service
53            DNS
69            TFTP
137           NetBIOS NameSrv
138           NetBIOS DataSrv
```

The following is an example for the **show ip forward-protocol udp portfwdlist** command output:

```
Switch>show ip forward-protocol udp portfwdlist
=====
                        UDP Port Forward List Tbl
=====
LIST_ID       NAME
-----
1             udpfwd
```

The following is an example for the **show ip forward-protocol udp interfaces** command output:

```
Switch>show ip forward-protocol udp interface
=====
                        Udp Broadcast Interface Forwarding Tbl
=====
INTF_ADDR     FWD   MAXTTL RXPKTS  FWDPKTS DRPDEST  DRP_UNKNOWN BDCASTMASK
              LISTID
-----
-----
```

show ip ipfix

Displays IPFIX settings.

Syntax

- `show ip ipfix`

Default

None

Command Mode

User Executive

show ip ipfix collector

Displays IPFIX collectors.

Syntax

- `show ip ipfix collector {A.B.C.D}`

Command Parameters

`{A.B.C.D}` Collector address

Default

None

Command Mode

User Executive

show ip ipfix interface

Displays IPFIX per-port settings.

Syntax

- `show ip ipfix interface <LINE>`

Command Parameters

`<LINE>` list of ports

Default

None

Command Mode

User Executive

show ip ipfix slot

Displays IPFIX per-slot/unit settings.

Syntax

- `show ip ipfix slot <LINE>`

Command Parameters

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

Default

None

Command Mode

User Executive

Command Output

The `show ip ipfix slot` command displays the following information:

| Output field | Description |
|-------------------------|---|
| Aging Interval (sec) | Indicates the aging interval of the flow record in seconds. Values range from 0–2147400 seconds. The default is 30 seconds. |
| Active Timeout (min) | Indicates the flow record active timeout value in minutes. This is not a configurable value. |
| Export Interval (sec) | Indicates the frequency of data exports to the collector in seconds. Values range from 10 to 3600 seconds. The default is 50 seconds. |
| ExportState | Indicates the operational state of the exporter. The default is enabled. |
| Template Refresh (sec) | Indicates the template refresh timeout in seconds. Values range from 300 to 3600. The default is 1800 seconds. The template is sent out to the collector either at the configured interval or after the specified template packets refresh number is reached, whichever occurs first. |
| Template Refresh (pkts) | Indicates the template refresh timeout in numbers of packets. Values range from 10000 and 100000 packets. The default is 10000 packets. The template is sent out to the collector either after the configured template packets refresh number is reached or at the specified refresh interval, whichever occurs first. |

Example

The following example displays the IPFIX information for Slot 1.

```
Switch>show ip ipfix slot 1
Slot 1
-----
Aging Interval(sec)      25
Active Timeout(min)      30
Export Interval(sec)     50
```

| | |
|------------------------|---------|
| Export State | enabled |
| Template Refresh(sec) | 1800 |
| Template Refresh(pkts) | 10000 |

show ip ipfix table

Displays IPFIX table.

Syntax

- `show ip ipfix table sort-by {byte-count | dest-addr | first-pkt-time | last-pkt-time | pkt-count | port | protocol | source-addr | TCP-UDP-dest-port | TCP-UDP-scr-port | TOS} sort-order {ascending | descending} display {all | top-10 | top-100 | top-200 | top-25 | top-50}`

Command Parameters

| | |
|--------------------------|------------------------------------|
| all | Display all entries |
| ascending | Ascending order |
| byte-count | Byte number |
| descending | Descending order |
| dest-addr | Destination address |
| display | Enter number of entries to display |
| first-pkt-time | First packet time |
| last-pkt-time | Last packet time |
| pkt-count | Packet number |
| port | Port number |
| protocol | Protocol number |
| sort-by | Select sort rule |
| sort-order | Set sort order |
| source-addr | Source address |
| TCP-UDP-dest-port | TCP/UDP destination port |
| TCP-UDP-scr-port | TCP/UDP source port |

| | |
|----------------|---------------------------|
| top-10 | Display first 10 entries |
| top-100 | Display first 100 entries |
| top-200 | Display first 200 entries |
| top-25 | Display first 25 entries |
| top-50 | Display first 50 entries |
| TOS | TOS |

Default

None

Command Mode

User Executive

show ip isis

Displays IS-IS related information.

Syntax

- `show ip isis redistribute`

Command Parameters

redistribute Display IS-IS redistribute configuration

Default

None

Command Mode

User Executive

show ip mgmt

Displays management information.

Syntax

- `show ip mgmt [switch]`
- `show ip mgmt all`

- `show ip mgmt route`

Command Parameters

- all** Show the mgmt ip address from all the units in the stack
- route** Display management VLAN information
- switch** Show the mgmt switch ip address

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the `show ip mgmt route` command.

| Field | Description |
|----------------|---------------------------------------|
| Destination IP | Identifies the route destination. |
| Subnet Mask | Identifies the route mask. |
| Gateway IP | Identifies the next hop in the route. |

Example

The following is an example for the `show ip mgmt route` command output:

```
Switch>show ip mgmt route
Destination IP      Subnet Mask      Gateway IP      Status
-----
0.0.0.0            0.0.0.0         172.16.120.1   Active
```

show ip netstat

Shows ip tcp/udp connections and services.

Syntax

- `show ip netstat {tcp | udp}`

Command Parameters

- tcp** Displays ip tcp connections and services
- udp** Displays ip udp endpoints

Default

None

Command Mode

User Executive

show ip ospf

Displays global OSPF settings.

Syntax

- `show ip ospf`

Default

None

Command Mode

User Executive

show ip ospf accept

Displays OSPF accept adv-router.

Syntax

- `show ip ospf accept`

Default

None

Command Mode

User Executive

show ip ospf area

Displays OSPF area configuration.

Syntax

- `show ip ospf area {A.B.C.D}`

Command Parameters**{A.B.C.D}**

address

Default

None

Command Mode

User Executive

show ip ospf area-range

Displays OSPF area range configuration.

Syntax

- `show ip ospf area-range {A.B.C.D}`

Command Parameters

`{A.B.C.D}` address

Default

None

Command Mode

User Executive

show ip ospf ase

Displays AS External link state advertisements.

Syntax

- `show ip ospf ase`

Default

None

Command Mode

User Executive

show ip ospf authentication

Displays interface MD5 keys.

Syntax

- `show ip ospf authentication {interface [Ethernet <LINE>] [<LINE>] [vlan <1-4094>] | virtual-links}`

Command Parameters

| | |
|----------------------------|-------------------------------|
| <LINE> | List of ports |
| Ethernet | Ethernet IEEE 802.3 |
| interface | Display interface MD5 keys |
| virtual-links | Display virtual link MD5 keys |
| vlan <1-4094> | Layer 3 IP VLAN |

Default

None

Command Mode

User Executive

show ip ospf default-cost

Displays default metric settings.

Syntax

- `show ip ospf default-cost`

Default

None

Command Mode

User Executive

show ip ospf host-route

Displays OSPF host routes.

Syntax

- `show ip ospf host-route`

Default

None

Command Mode

User Executive

show ip ospf ifstats

Displays interface statistics.

Syntax

- `show ip ospf ifstats {[A.B.C.D] [mismatch] [detail]}`

Command Parameters

| | |
|------------------|------------------------------|
| [A.B.C.D] | Interface IP address |
| detail | Display detailed information |
| mismatch | Area ID not matched |

Default

None

Command Mode

User Executive

show ip ospf int-auth

Displays interface auth type/password.

Syntax

- `show ip ospf int-auth`

Default

None

Command Mode

User Executive

show ip ospf int-timers

Displays timer settings of all interfaces.

Syntax

- `show ip ospf int-timers`

Default

None

Command Mode

User Executive

show ip ospf interface

Displays interface configuration.

Syntax

- `show ip ospf interface {[vlan <1-4094>] [enabled]}`

Command Parameters

| | |
|----------------------------|--|
| enabled | Display only admin enabled OSPF interfaces |
| vlan <1-4094> | Layer 3 IP VLAN |

Default

None

Command Mode

User Executive

show ip ospf lsdb

Displays OSPF link state database.

Syntax

- `show ip ospf lsdb [area {A.B.C.D}] [lsa-type {as-external-link | as-summary-link | multicast-link | network-link | nssa-extlink | router-link | summary-link}] [lsid {A.B.C.D}] [adv-rtr {A.B.C.D}] [detail {A.B.C.D}]`

Command Parameters

| | |
|--------------------------|--------------------|
| adv-rtr {A.B.C.D} | Advertising router |
| area {A.B.C.D} | Area |

| | |
|-------------------------|-----------------------------------|
| as-external-link | AS External LSA |
| as-summary-link | AS Summary LSA |
| detail {A.B.C.D} | Display detailed Isdb information |
| lsa-type | Link state advertisement type |
| lsid {A.B.C.D} | Link state ID |
| multicast-link | Multicast LSA |
| network-link | Network LSA |
| nssa-extlink | NSSA LSA |
| router-link | Router LSA |
| summary-link | Summary LSA |

Default

None

Command Mode

User Executive

show ip ospf neighbor

Displays OSPF neighbors.

Syntax

- `show ip ospf neighbor`

Default

None

Command Mode

User Executive

show ip ospf redistribute

Displays OSPF redistribution policy.

Syntax

- `show ip ospf redistribute`

Default

None

Command Mode

User Executive

show ip ospf stats

Displays global statistics.

Syntax

- `show ip ospf stats`

Default

None

Command Mode

User Executive

show ip ospf timer

Displays interface timer settings.

Syntax

- `show ip ospf timer {interface vlan <1-4094> | virtual-links}`

Command Parameters

| | |
|----------------------------|---|
| interface | Display interface timer settings |
| virtual-links | Display configured OSPF virtual link timer values |
| vlan <1-4094> | Layer 3 IP VLAN |

Default

None

Command Mode

User Executive

show ip ospf virtual-links

Displays virtual links configuration.

Syntax

- `show ip ospf virtual-links`

Default

None

Command Mode

User Executive

show ip ospf virtual-neighbors

Displays OSPF virtual link neighbors.

Syntax

- `show ip ospf virtual-neighbors`

Default

None

Command Mode

User Executive

show ip prefix-list

Displays IP prefix lists.

Syntax

- `show ip prefix-list [<WORD>] [prefix {A.B.C.D}]`

Command Parameters

<WORD> Name of the prefix list

prefix {A.B.C.D} Ip prefix

Default

None

Command Mode

User Executive

show ip rip

Displays global RIP settings.

Syntax

- `show ip rip`

Default

None

Command Mode

User Executive

Command OutputThe following table shows the field descriptions for the `show ip rip` command.

| Field | Description |
|-----------------------|--|
| Default Import Metric | Indicates the value of the default import metric. |
| Domain | Indicates the value inserted into the Routing Domain field of all RIP packets sent on this device. This value is not configurable. |
| HoldDown Time | Indicates the value of the holddown timer. |
| Queries | Indicates the number of responses the router has sent in response to RIP queries from other systems. |
| Rip | Indicates whether RIP is enabled. |
| Route Changes | Indicates the number of route changes the RIP process has made to the routing database. |
| Timeout Interval | Indicates the RIP timeout interval. |
| Update Time | Indicates the value of the RIP update timer. |

ExampleThe following is an example for the `show ip rip` command output:

```
Switch>show ip rip
Default Import Metric: 8
Domain:
HoldDown Time: 120
Queries: 0
Rip: Disabled
Route Changes: 0
Timeout Interval: 180
Update Time: 30
```

show ip rip interface

Displays per-interface RIP configuration.

Syntax

- `show ip rip interface [<1-4094> | ethernet <LINE> | vlan <1-4094>] enabled`

Command Parameters

| | |
|-----------------------|-------------------------------------|
| <1-4094> | Vlan ID |
| enabled | Display only enabled RIP interfaces |
| Ethernet | Ethernet IEEE 802.3 |
| LINE | List of ports |
| vlan | vlan interfaces only |

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the `show ip rip interface` command.

| Field | Description |
|---------------------|---|
| unit/port | Indicates the unit and port of the RIP interface. |
| IP Address | Indicates the IP address of the RIP interface. |
| Enable | Indicates whether RIP is enabled or disabled on the interface. |
| Send | Indicates which send mode is enabled. |
| Receive | Indicates which receive mode is enabled. |
| Advertise When Down | Indicates whether the advertise when down feature is enabled. |
| RIP Cost | Indicates the RIP cost (metric) for this interface. |
| Dflt Supply | Indicates whether the interface sends the default route in RIP updates, if a default route exists in the routing table. |
| Dflt Listen | Indicates whether the interface listens for default routes in RIP updates. |
| Trigger Update | Indicates whether triggered updates are enabled. |
| AutoAgg Enable | Indicates whether auto aggregation is enabled. |
| Supply | Indicates whether the interface is enabled to supply updates for RIP. |
| Listen | Indicates whether the interface is enabled to listen for RIP routes. |

Table continues...

| Field | Description |
|----------------|--|
| Poison | Indicates whether RIP routes on the interface learned from a neighbor are advertised back to the neighbor. |
| Proxy | Indicates whether proxy announcements are enabled. |
| RIP IN Policy | Indicates the RIP policy for inbound filtering on the interface. |
| RIP Out Policy | Indicates the RIP policy for outbound filtering on the interface. |
| Holddown | Indicates the value of the RIP holddown timer for the interface. |
| Timeout | Indicate the RIP timeout interval for the interface. |

Example

The following is an example for the **show ip rip interface** command output:

```
Switch>show ip rip interface
IP Address      Enable Send          Receive          Advertise When Down
-----
172.16.120.161  false  rip1Compatible  rip1OrRip2      false

IP Address      RIP Dflt  Dflt  Trigger AutoAgg
Cost Supply Listen Update  Enable  Supply Listen Poison Proxy
-----
172.16.120.161  1      false  false  false  false  true  true  false  false

IP Address      RIP In Policy
-----
172.16.120.161

IP Address      RIP Out Policy
-----
172.16.120.161

IP Address      Holddown Timeout
-----
172.16.120.161  120      180
```

show ip rip stats

Displays per-interface RIP statistics.

Syntax

- **show ip rip stats**

Default

None

Command Mode

User Executive

show ip route

Displays IP route information.

Syntax

```
• show ip route {[ospf | rip | static] [-s {A.B.C.D} <subnet-mask>]
  [A.B.C.D]} | preference | summary | isis | spbm-nh-as-mac}
```

Command Parameters

| | |
|--------------------------|---|
| <mask-ip> | subnet mask |
| <subnet-ip> | subnet IP |
| A.B.C.D | specify IP addr of route to be displayed |
| isis | Display isis route(s) information |
| ospf | Display IP OSPF route(s) information |
| preference | Displays route preference values. |
| rip | Display IP RIP route(s) information |
| -s | specify subnet(s) of routes to be displayed |
| spbm-nh-as-mac | Displays spbm route next hop as mac. |
| static | Display IP static route(s) information |
| summary | Display summary of IP route information |

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the **show ip route** command.

| Field | Description |
|-------|---------------------------------------|
| DST | Identifies the route destination. |
| MASK | Identifies the route mask. |
| NEXT | Identifies the next hop in the route. |
| COST | Identifies the route cost. |
| VLAN | Identifies the VLAN ID on the route. |

Table continues...

| Field | Description |
|-------|---|
| PORT | Indicates the ports. |
| PROT | Indicates the routing protocols. Options are LOC (local route) or STAT (static route). |
| TYPE | Indicates the type of route as described by the Type Legend in the CLI command display. |
| PREF | Indicates the route preference. |

The following table shows the field descriptions for the **show ip route static** command.

| Field | Description |
|---------|--|
| DEST | Identifies the route destination. |
| MASK | Identifies the route mask. |
| NEXT | Identifies the next hop in the route. |
| COST | Identifies the route cost. |
| PREF | Indicates the route preference. |
| LCLNHOP | Indicates the local next hop status. |
| STATUS | Indicates the static route status. Options are ACTIVE (in use and present in routing table) or INACTV (not in use and not present in routing table). |
| ENABLE | Indicates the administrative state of the static route. Options are TRUE (administratively enabled) or FALSE (administratively disabled). |

The following table shows the field descriptions for the **show ip route preference** command.

| Field | Description |
|----------|--------------------------------|
| PROTOCOL | Displays the protocol. |
| DEFAULT | Displays the default value. |
| CONFIG | Displays the configured value. |

Example

The following is an example for the **show ip route** command output:

```
Switch>show ip route
=====
                        Ip Route
=====
DST          MASK          NEXT          COST   VLAN  PORT  PROT  TYPE  PREF
-----
5.5.5.6      255.255.255.255  5.5.5.6       1      0    ----  C    DB    0
15.15.15.0   255.255.255.0   BEB2           20     40    ----  I    IBS   30
50.50.50.0   255.255.255.0   50.50.50.1    1      1000 ----  C    DB    0
99.99.99.0   255.255.255.0   99.99.99.1    1      2000 ----  C    DB    0
192.168.1.0  255.255.255.0   BEB-2          20     41    16    I    IBSE  30
              BEB-1           40     25
              BEB-1           41     16
              BEB-2           40     25
=====
TYPE Legend:
I=Indirect Route, D=Direct Route, A=Alternative Route, B=Best Route,
```

E=Ecmp Route, S= SPBM Route, U=Unresolved Route, N=Not in HW

The following is an example for the **show ip route static** command output:

```
Switch>show ip route static
=====
                        Ip Static Route
=====
DEST          MASK          NEXT          COST  PREF LCNHOP  STATUS  ENABLE
-----
0.0.0.0       0.0.0.0       172.16.120.1  10    5    TRUE    ACTIVE  TRUE
```

The following is an example for **show ip route preference** command output:

```
Switch>show ip route preference
=====
                        IP Route Preference
=====
PROTOCOL      DEFAULT  CONFIG
-----
LOCAL         0        0
STATIC        5        5
OSPF_INTRA    20       20
OSPF_INTER    25       25
RIP           100      100
OSPF_EXT1     120      120
OSPF_EXT2     125      125
SPBM_L1       7        7
```

The following is an example for the **show ip route spbm-nh-as-mac** command output:

```
Switch>show ip route spbm-nh-as-mac
=====
                        Ip Route
=====
DST          MASK          NEXT          COST  VLAN  PORT  PROT  TYPE  PREF
-----
5.5.5.6      255.255.255.255  5.5.5.6      1     0     ----  C    DB    0
15.15.15.0   255.255.255.0   fc:a8:41:fb:2f:df  20    40    ----  i     30
50.50.50.0   255.255.255.0   50.50.50.1    1     1000  ----  C    DB    0
Total Routes: 3
=====
TYPE Legend:
I=Indirect Route, D=Direct Route, A=Alternative Route, B=Best Route,
E=Ecmp Route, U=Unresolved Route, N=Not in HW
```

The following is an example for the **show ip route summary** command output:

```
Switch>show ip route summary
-----
Connected routes : 0
Static routes    : 0
RIP routes       : 0
OSPF routes      : 0
ISIS routes      : 0
-----
Total routes     : 0
```

show ip routing

Displays global routing enable/disable.

Syntax

- `show ip routing`

Default

None

Command Mode

User Executive

show ip source-interface

Displays source interface configuration

Syntax

- `show ip source-interface`

Default

None

Command Mode

User Executive

show ip static-mroute

Displays Ip static mroute settings

Syntax

- `show ip static-mroute [ip A.B.C.D] [rpf A.B.C.D]`

Command Parameters

`ip {A.B.C.D}` IP Address of the destination network

`rpf {A.B.C.D}` Specifies the type of address for the reverse path forwarding address (ipv4).

Default

None

Command Mode

User Executive

show ip vrrp

Displays global VRRP settings.

Syntax

- `show ip vrrp`

Default

None

Command Mode

User Executive

show ip vrrp address

Shows VRRP associated addresses.

Syntax

- `show ip vrrp address [interface] [vlan] [<1-4094>] [vrid <1-255>]
[addr {A.B.C.D}]`

Command Parameters

| | |
|---------------------------|---|
| <1-4094> | VLAN ID |
| addr {A.B.C.B} | Display specific address |
| interface | Display addresses per interface |
| vlan | Display addresses on VLAN interfaces only |
| vrid <1-255> | Display addresses associated with specific VR |

Default

None

Command Mode

User Executive

show ip vrrp interface

Displays per-interface VRRP configuration.

Syntax

- `show ip vrrp interface [vlan] [<LINE>] [verbose] [vrid <1-255>]`

Command Parameters

| | |
|---------------------------|---|
| <LINE> | VLAN ID |
| verbose | Display additional information |
| vlan | Display addresses on VLAN interfaces only |
| vrid <1-255> | VR ID |

Default

None

Command Mode

User Executive

show ip-blocking

Displays the Layer 3 IP blocking state.

Syntax

- `show ip-blocking`

Default

None

Command Mode

User Executive

show ipv6 address

Displays configured ipv6 addresses.

Syntax

- `show ipv6 address {stack | switch | unit <1-8>}`

Command Parameters

- stack** Display configured stack ipv6 address/prefix
- switch** Display configured IPv6 address/prefix of local unit
- unit <1-8>** Display configured IPv6 address/prefix of another unit in a stack

Default

None

Command Mode

User Executive

show ipv6 address interface

Displays addresses for IPv6 interfaces.

Syntax

- `show ipv6 address interface {loopback <1-16> | mgmt | summary | vlan <1-4094> | <WORD>}`

Command Parameters

- loopback <1-16>** Display ipv6 address per loopback interface
- mgmt** Display ipv6 address for mgmt interface
- summary** Displays IPv6 interfaces summary
- vlan <1-4094>** Displays per vlan addresses for IPv6 interfaces
- <WORD>** IPv6 Address, 45 length

Default

None

Command Mode

User Executive

show ipv6 default-gateway

Displays IPv6 default gateway.

Syntax

- `show ipv6 default-gateway`

Default

None

Command Mode

User Executive

show ipv6 default-routers

Displays IPv6 default routers configuration.

Syntax

- `show ipv6 default-routers`

Default

None

Command Mode

User Executive

show ipv6 destinationcache

Displays IPv6 destination cache information.

Syntax

- `show ipv6 destinationcache`

Default

None

Command Mode

User Executive

show ipv6 dhcp guard policy

Displays the Dynamic Host Configuration Protocol (DHCP) guard policy information.

Syntax

- `show ipv6 dhcp guard policy [<WORD>]`

Default

None

Command Mode

User Executive

show ipv6 dhcp-relay

Displays the Dynamic Host Configuration Protocol (DHCP)relay information.

Syntax

- `show ipv6 dhcp-relay {counters | fwd-path [summary] | interface [vlan <1-4094>]}`

Command Parameters

| | |
|-----------------------|--|
| <1-4094> | VLAN ID |
| counters | Show dhcp-relay counter information |
| fwd-path | Show fwd-path information |
| interface | Show dhcp-relay interface information |
| summary | Displays fwd-path summary |
| vlan | Show dhcp-relay counter information per vlan |

Default

None

Command Mode

User Executive

Command Output

The following table shows the field descriptions for the `show ipv6 dhcp-relay counters` command.

| Field | Description |
|-----------|---|
| INTERFACE | Indicates the interface IP address of the DHCP relay agent. |
| REQUESTS | Indicates the number of DHCP requests. |
| REPLIES | Indicates the number of DHCP replies. |

The following table shows the field descriptions for the **show ipv6 dhcp-relay fwd-path** command.

| Field | Description |
|-----------|---|
| INTERFACE | Specifies the interface IPv6 address of the DHCP relay agent. |
| SERVER | Specifies the IPv6 address of the DHCP server. |
| ENABLE | Specifies whether DHCP is enabled. |

The following table shows the field descriptions for the **show ipv6 dhcp-relay interface** command.

| Field | Description |
|------------|--|
| VLAN ID | Indicates the VLAN ID |
| IF INDEX | Indicates the VLAN interface index. |
| MAX HOP | Indicates the maximum hop value. |
| DHCP-RELAY | Indicates whether DHCP relay is enabled on the VLAN. |
| REMOTE ID | Indicates whether Remote ID is enabled on the VLAN. This release does not support Remote ID. |

Example

The following is an example for the **show ipv6 dhcp-relay counters** command output:

```
Switch>show ipv6 dhcp-relay counters
=====
                        DHCPv6 Counters
=====
INTERFACE                REQUESTS    REPLIES
```

The following is an example for the **show ipv6 dhcp-relay fwd-path** command output:

```
Switch>show ipv6 dhcp-relay fwd-path
=====
                        DHCPv6 Fwd-path
=====
INTERFACE                SERVER                ENABLE
```

The following is an example for the **show ipv6 dhcp-relay interface** command output:

```
Switch>show ipv6 dhcp-relay interface
=====
                        Vlan Dhcps6
=====
VLAN ID    IF INDEX    MAX HOP    DHCP-RELAY    REMOTE ID
```

show ipv6 fhs capture-policy

Displays the Dynamic Host Configuration Protocol for IPv6 (DHCPv6)/Router Advertisement (RA) guard policy name configured, number of DHCPv6/RA packets received, number of DHCPv6/RA

packets dropped, and if dynamic learning is enabled or disabled for neighbor discovery inspection configuration.

Syntax

- `show ipv6 fhs capture-policy [interface <LINE>]`

Command Parameters

Interface <LINE> Displays the first hop security statistics for the port number specified.

Default

None

Command Mode

User Executive

show ipv6 fhs ipv6-access-list

Displays all of the configured IPv6 access lists in the system.

Syntax

- `show ipv6 fhs ipv6-access-list [<WORD>]`

Command Parameters

<WORD> Displays the IPv6 access list for the access list name specified.

Default

None

Command Mode

User Executive

show ipv6 fhs mac-access-list

Displays all of the MAC access lists in the system.

Syntax

- `show ipv6 fhs mac-access-list [<WORD>]`

Command Parameters

<WORD> Displays the IPv6 MAC access list for the MAC access list name specified.

Default

None

Command Mode

User Executive

show ipv6 fhs status

Displays the global first hop security (FHS) status, router advertisement (RA) guard status, Dynamic Host Configuration Protocol for IPv6 (DHCPv6), neighbor discovery (ND) inspection status, reachable timer value, stale timer value, down timer value and source binding table (SBT) entry overflow.

Syntax

- `show ipv6 fhs status`

Default

None

Command Mode

User Executive

show ipv6 forwarding

Displays IPv6 forwarding information.

Syntax

- `show ipv6 forwarding`

Default

None

Command Mode

User Executive

show ipv6 global

Displays IPv6 global configuration.

Syntax

- `show ipv6 global`

Default

None

Command Mode

User Executive

Command Output

The `show ipv6 global` command displays the following information:

| Output Field | Default setting |
|-------------------------|-----------------|
| forwarding | disabled |
| default-hop-cnt | 30 |
| number-of-interfaces | 4 |
| number-of-tunnels | 0 |
| admin-status | disabled |
| icmp-error-interval | 1000 |
| icmp-redirect-msg | disabled |
| icmp-unreach-msg | disabled |
| icmp port-unreach | enabled |
| icmp addr-unreach | enabled |
| multicast-admin-status | disabled |
| icmp-error-quota | 50 |
| block-multicast-replies | disabled |
| autoconfig | disabled |
| slow-path-to-cpu | disabled |
| ecmp-max-path | enabled |

Example

The following is an example for the `show ipv6 global` command output:

```
Switch>show ipv6 global
forwarding                : disabled
default-hop-cnt           : 30
number-of-interfaces      : 4
number-of-tunnels         : 0
admin-status               : disabled
icmp-error-interval       : 1000
icmp-redirect-msg         : disabled
icmp-unreach-msg          : disabled
icmp port-unreach         : enabled
icmp addr-unreach         : enabled
multicast-admin-status    : disabled
icmp-error-quota          : 50
block-multicast-replies   : disabled
```



```

autoconfig           : disabled
slow-path-to-cpu    : disabled
ecmp-max-path       : 1

```

show ipv6 interface

Displays interface information.

Syntax

- `show ipv6 interface [loopback <1-16>] [vlan <1-4094>]`

Command Parameters

loopback <1-16> Displays IPv6 loopback interfaces.

vlan <1-4094> Displays IPv6 VLAN interfaces.

Default

None

Command Mode

User Executive

show ipv6 interface icmpstatistics

Displays IPv6 ICMP statistics.

Syntax

- `show ipv6 interface icmpstatistics [loopback <1-16>] [mgmt <1-4>] [tunnel <1-2147483647>] [vlan <1-4094>]`

Command Parameters

loopback <1-16> Displays by IPv6 loopback interface.

mgmt <1-4> Out of band.

tunnel <1-2147483647> Displays by tunnel.

vlan <1-4094> Displays by VLAN.

Default

None

Command Mode

User Executive

show ipv6 interface process-redirect

Displays IPv6 processing redirect.

Syntax

- `show ipv6 interface process-redirect [mgmt] [vlan <1-4094>]`

Command Parameters

mgmt OOB mgmt interface

vlan <1-4094> Displays by VLAN.

Default

None

Command Mode

User Executive

show ipv6 interface statistics

Displays IPv6 statistics.

Syntax

- `show ipv6 interface statistics [loopback <1-16>] [mgmt <1-4>] [tunnel <1-2147483647>] [vlan <1-4094>]`

Command Parameters

loopback <1-16> Displays by loopback interface.

mgmt <1-4> Out of band

tunnel <1-2147483647> Displays by tunnel.

vlan <1-4094> Displays by VLAN.

Default

None

Command Mode

User Executive

show ipv6 mgmt address

Displays IPv6 management addresses

Syntax

- `show ipv6 mgmt address [unit <1-8>]`

Command Parameters

`unit <1-8>` Specifies the unit number.

Default

None

Command Mode

User Executive

show ipv6 mgmt default-gateway

Displays the Dynamic Host Configuration Protocol (DHCP) management gateway.

Syntax

- `show ipv6 mgmt default-gateway`

Default

None

Command Mode

User Executive

show ipv6 mgmt interface

Display IPv6 management interface

Syntax

- `show ipv6 mgmt interface`

Default

None

Command Mode

User Executive

show ipv6 mld-cache interface

Displays the learned multicast groups in the cache.

Syntax

- `show ipv6 mld-cache interface [vlan <1-4094>]`

Command Parameters

`vlan <1-4094>` Displays by VLAN.

Default

None

Command Mode

User Executive

show ipv6 mld-host-cache

Displays the learned multicast groups in the host cache.

Syntax

- `show ipv6 mld-host-cache [interface <1-4094>] [mgmt]`

Command Parameters

`interface <1-4094>` Displays by VLAN

`mgmt` Out of Band

Default

None

Command Mode

User Executive

show ipv6 mld-proxy-cache

Displays MLD Proxy Cache.

Syntax

- `show ipv6 mld-proxy-cache vlan <1-4094> group <WORD>`

Command Parameters

group <WORD> Select group

vlan <1-4094> Select VLAN

Default

None

Command Mode

User Executive

show ipv6 nd interface

Displays the neighbor discovery (ND) interface configuration.

Syntax

- `show ipv6 nd interface [<1-4094>] [details] [mgmt] [vlan]`

Command Parameters

<1-4094> VLAN ID

details Displays IPv6 neighbor discovery details by on the interface

mgmt Show neighbor discovery parameters for oob mgmt interface

vlan Displays IPv6 neighbor discovery information on VLAN interfaces only

Default

None

Command Mode

User Executive

show ipv6 nd raguard policy

Displays the neighbor discovery (ND) router advertisement (RA) guard policy information.

Syntax

- `show ipv6 nd raguard policy [<WORD>]`

Command Parameters

<WORD> Displays by the policy name.

Default

None

Command Mode

User Executive

Command Output

The `show ipv6 nd raguard policy` command displays the following information:

| Output field | Description |
|-----------------------|---|
| Ra guard policy name | Indicates the RA-guard policy name. |
| Device role | Indicates if the device role is router or host. |
| Source ip ACL policy | Indicates if the received RA router packet source IP matches the configured IP ACL. |
| Ip prefix ACL policy | Indicates if the received RA prefix in the packet matches the configured IP ACL. |
| Source MAC ACL policy | Indicates if the received RA router packet source MAC address matches the configured MAC ACL. |
| Managed config | Indicates the managed address configuration flag status in the advertised RA packet. |
| Router preference | Indicates the advertised default router preference value. |
| Minimum hop limit | Indicates the advertised hop count minimum limit. |
| Maximum hop limit | Indicates the advertised hop count maximum limit. |

Example

The following is an example for the `show ipv6 nd raguard policy` command output:

```
Switch>show ipv6 nd raguard policy
Ra guard policy name :rag
Device role : Router
Source ip ACL policy : None
Ip prefix ACL policy : None
Source MAC ACL policy : None
Managed config : None
Router preference : None
Minimum hop limit : 0
Maximum hop limit : 0
```

show ipv6 nd-prefix interface

Displays the neighbor discovery (ND) prefix information.

Syntax

- `show ipv6 nd-prefix interface [<1-4094>][details][vlan]`

Command Parameters

- <1-4094>** Displays IPv6 neighbor discovery prefix information by VLAN ID.
- details** Displays IPv6 neighbor discovery prefix details by on the interface.
- vlan** Displays IPv6 neighbor discovery prefix information on VLAN interfaces only.

Default

None

Command Mode

User Executive

show ipv6 neighbor

Displays IPv6 neighbor information.

Syntax

- `show ipv6 neighbor [interface] [summary] [type] [WORD]`

Command Parameters

- interface** Display by interface
- summary** Display summary of IPv6 Neighbor Table
- type** Display by type
- WORD** IPv6 address

Default

None

Command Mode

User Executive

show ipv6 neighbor binding

Displays source binding table (SBT) entries and other timer values.

Syntax

- `show ipv6 neighbor binding [interface Ethernet <LINE>] [ipv6 <WORD>] [vlan <1-4094>]`

Command Parameters

| | |
|--|---|
| interface Ethernet <LINE> | Displays SBT entries and other timer values by Ethernet interface and port. |
| ipv6 <WORD> | Displays SBT entries and other timer values by IPv6 address. |
| vlan <1-4094> | Displays SBT entries and other timer values by VLAN. |

Default

None

Command Mode

User Executive

Command Output

The `show ipv6 neighbor binding` command displays the following information:

| Output field | Description |
|---------------------------------|--|
| Reachable-timer | Indicates the default reachable lifetime for a dynamically learnt SBT entry. |
| Stale-timer | Indicates the default stale lifetime for a dynamically learnt SBT entry. |
| Down-timer | Indicates the default down lifetime for a dynamically learnt SBT entry. |
| Preflevel values in Hex (prlvl) | Indicates the source IP preference value learnt by the switch. SBT entry prefers the highest preference value . On a VLAN, if there is a same IP address from two different pots, the switch prefers only one SBT entry depending on the value learnt during the SBT learning process. |
| Type | Indicates the following SBT learning types: <ul style="list-style-type: none"> • ND - discovers SBT entry by processing only the ND packets. • DHCP - discovers SBT entry by snooping the DHCP IP assignment. • STATIC - statically configured. |
| IPv6-Addr | Indicates the IPv6 address. |
| LL-Addr | Indicates the MAC address corresponding to the learnt SBT entry. |
| port | Indicates the port on which the SBT entry is learnt. |
| vlan | Indicates the VLAN on which the SBT entry is learnt. |

Table continues...

| Output field | Description |
|--------------|---|
| prlvl | Indicates the preference level values in hexadecimal. |
| state | Indicates the different stages of the SBT learning process. |
| Age (sec) | Indicates the elapsed time in the present state. |

Example

The following is an example for the **show ipv6 neighbor binding** command output:

```
Switch>show ipv6 neighbor binding
Binding Table has 2 entries, 2 dynamic
Reachable-timer: 300 sec, Stale-timer: 86300 sec, Down-timer 86300 sec
Codes: S - Static, ND - Neighbor Discovery, DH - DHCP
Preflevel values in Hex (prlvl):
0001:Access 0002:MAC & LLA match 0008:DAD Learnt 0010:DHCP Learnt
0020:Learnt from Non-ND-inspect Port(Trusted-port)
Type IPv6-Addr LL-Addr
=====
port vlan prlvl state Age (sec)
=====
ND 2001:DB8::/32 00:50:56:84:00:20
1/8 1 0003 REACH 86
ND 2001:DB8::/32 00:50:56:84:00:1e
3/14 1 0003 REACH 60
```

show ipv6 neighbor interface

Displays IPv6 neighbor information by interface.

Syntax

- **show ipv6 neighbor interface** [loopback <1-16>] [mgmt <1-4>] [tunnel <1-2147483647>] [vlan <1-4094>]

Command Parameters

| | |
|------------------------------------|---|
| loopback <1-16> | Displays neighbor information by loopback interface |
| mgmt <1-4> | Out of band |
| tunnel <1-2147483647> | Displays neighbor information by tunnel |
| vlan <1-4094> | Displays neighbor information by VLAN |

Default

None

Command Mode

User Executive

show ipv6 neighbor summary

Displays summary of IPv6 Neighbor Table.

Syntax

- `show ipv6 neighbor summary`

Default

None

Command Mode

User Executive

show ipv6 neighbor type

Displays by type.

Syntax

- `show ipv6 neighbor [<WORD>] type {dynamic | local | other | static}`

Command Parameters

| | |
|---------------------|---------------------------------------|
| <WORD> | IPv6 address |
| type | Display by type |
| dynamic | Display dynamically learned neighbors |
| local | Display local neighbor address |
| other | Display other neighbor entries |
| static | Display manually configured neighbors |

Default

None

Command Mode

User Executive

show ipv6 rip

Displays global RIP settings.

Syntax

- `show ipv6 rip [interface] [redistribute] [statistics] [loopback <1-16>] [vlan <1-4094>]`

Command Parameters

| | |
|------------------------------|---|
| interface | Show RIPng per interface |
| loopback <1-16> | Show RIPng information for loopback CLIP interfaces |
| redistribute | Show RIPng redistribution |
| statistics | Display per-interface RIPng statistics |
| vlan <1-4094> | RIPng per-vlan information |

Default

None

Command Mode

User Executive

show ipv6 route

Displays IPv6 route information.

Syntax

- `show ipv6 route [dest WORD] [mgmt <1-4>] [alternative] [local] [next-hop WORD] [static] [tunnel <1-2147483647>] [vlan <1-4094>] | preference | ripng [expired] | summary`

Command Parameters

| | |
|------------------------------|--------------------------------|
| alternative | Displays alternative routes. |
| dest <WORD> | Display IPV6 route destination |
| expired | Display timed-out ripng routes |
| local | Displays IPv6 local routes. |
| mgmt <1-4> | Out of band |
| next-hop <WORD> | IPV6 route next-hop |
| preference | Display Ipv6 route preference |

| | |
|------------------------------------|---|
| ripng | Display RIPng routes |
| static | Display IPV6 static routes |
| summary | Display summary of IPv6 route information |
| tunnel <1-2147483647> | IPV6 route tunnel |
| vlan <1-4094> | IPV6 route vlan |

Default

None

Command Mode

User Executive

show ipv6 source-guard

Displays Source Guard settings on interface.

Syntax

- `show ipv6 source-guard [binding] [interface] [enabled] [ethernet <LINE>] [<WORD>]`

Command Parameters

| | |
|------------------------------|--|
| <WORD> | Ipv6 address |
| binding | Show ipv6 addresses allowed on all or a given port |
| enabled | Show Source Guard setting on enabled interface |
| Ethernet <LINE> | Interface type |
| interface | Interface types |

Default

None

Command Mode

User Executive

show ipv6 tcp

Displays IPV6 tcp info.

Syntax

- `show ipv6 tcp`

Default

None

Command Mode

User Executive

show ipv6 tcp connections

Displays IPv6 tcp connections.

Syntax

- `show ipv6 tcp connections`

Default

None

Command Mode

User Executive

show ipv6 tcp listener

Displays IPv6 tcp listeners.

Syntax

- `show ipv6 tcp listener`

Default

None

Command Mode

User Executive

show ipv6 tunnel

Displays IPv6 tunnel ID.

Syntax

- `show ipv6 tunnel [<1-2147483647>] [sorted]`

Command Parameters

| | |
|-----------------------------------|--|
| <code><1-2147483647></code> | Tunnel ID |
| <code>sorted</code> | Sort tunnels by ID rather than interface index |

Default

None

Command Mode

User Executive

show ipv6 udp

Displays IPv6 udp global.

Syntax

- `show ipv6 udp endpoints`

Command Parameters

| | |
|------------------------|----------------------------|
| <code>endpoints</code> | Display ipv6 udp endpoints |
|------------------------|----------------------------|

Default

None

Command Mode

User Executive

show i-sid

Displays all configured UNIs.

Syntax

- `show i-sid <1-16777214>`

Command Parameters

<1-16777214>

I-SID

Default

None

Command Mode

User Executive

Command Output

The `show i-sid` command displays the following information:

| Output field | Description |
|--------------|--|
| I-SID | Indicates the I-SID IDs. |
| Vid | Indicates the VLAN IDs. |
| UNI-type | Indicates the UNI-type as CVLAN or Switched. |
| Ports | Indicates ports associated with the specific I-SIDs and VLANs. |

Example

The following example displays the output for this command.

```
Switch>show i-sid
I-SID      Vid  UNI-type  Ports
-----
5          5    CVLAN     4
100       100  switched  1
```

show isis

Displays IS-IS related information.

Syntax

- `show isis`

Default

None

Command Mode

User Executive

show isis adjacencies

Displays current IS-IS adjacencies.

Syntax

- `show isis adjacencies`

Default

None

Command Mode

User Executive

Command Output

The `show isis adjacencies` command displays the following information:

| Output field | Description |
|--------------|---|
| INTERFACE | Indicates the interface port or MLT on which IS-IS exists. |
| L | Indicates the level of the adjacent router. |
| STATE | Indicates the state of IS-IS on the interface (enabled [UP] or disabled [DOWN]). The state is non-configurable. |
| UPTIME | Indicates the length of time the adjacency has been up in ddd hh:mm:ss format. |
| PRI | Indicates the priority of the neighboring Intermediate System for becoming the Designated Intermediate System (DIS). |
| HOLDTIME | Indicates the calculated hold time for the Hello (hello multiplier x hello interval); if the route is determined to be a designated router, then the product is divided by 3. |
| SYSID | Indicates the adjacent system ID of the router. |
| HOST-NAME | Indicates the hostname listed in the LSP. If the host name is not configured, then the system name is displayed. |

Example

The following example displays the output for this command.

```
Switch>show isis adjacencies
=====
                        ISIS Adjacencies
=====
INTERFACE L STATE   UPTIME          PRI    HOLDTIME  SYSID          HOST-NAME
-----
Mlt2      1  UP      1d 03:57:25  127    20      0018.b0bb.b3df  ERS-Lab1
Port3/21  1  UP      1d 03:57:16  127    27      0016.ca23.73df  ERS-Lab2
=====
 2 out of 2 Total Num of Adjacencies
=====
```


show isis int-auth

Displays IS-IS interface authentication configuration.

Syntax

- `show isis int-auth`

Default

None

Command Mode

User Executive

Command Output

The `show isis int-auth` command displays the following information:

| Output field | Description |
|--------------|--|
| IFIDX | Shows the interface index for the Ethernet or MLT interface. |
| AUTH-TYPE | Shows the type of authentication configured for the interface. Types include: <ul style="list-style-type: none"> • <code>none</code> for no authentication • <code>simple</code> for a simple password • <code>hmac-md5</code> for MD5 encryption |
| AUTH-KEYID | Shows the authentication password configured for the interface. |
| AUTH-KEY | Shows the HMAC-MD5 key needed for encryption. This is used only for HMAC-MD5. |

Example

The following example displays the output for this command.

```
Switch>show isis int-auth
```

```
=====
                        ISIS Interface Auth
=====
IFIDX      AUTH-TYPE    AUTH-KEYID    AUTH-KEY
-----
Trunk: 3   none         0
Port: 21   none         0
```

show isis int-ckt-level

Displays IS-IS circuit level timers.

Syntax

- `show isis int-ckt-level`

Default

None

Command Mode

User Executive

Command Output

The `show isis int-ckt-level` command displays the following information:

| Output field | Description |
|--------------|--|
| IFIDX | Shows the interface index for the ethernet or MLT interface. |
| LEVEL | Shows the level of the IS-IS interface (Level 1 [default] or Level 2). |
| DIS | Shows the Designated Intermediate System (DIS) of the circuit. |
| CKTID | Displays the CKT ID. |

Example

The following example displays the output for this command.

```
Switch>show isis int-ckt-level
```

```
=====
                        ISIS Circuit level parameters
=====
IFIDX          LEVEL          DIS          CKTID
-----
Trunk: 2       Level 1          1
Port: 21      Level 1          2
```

show isis int-counters

Displays IS-IS interface counters.

Syntax

- `show isis int-counters`

Default

None

Command Mode

User Executive

Command Output

The `show isis int-counters` command displays the following information:

| Output field | Description |
|-----------------|--|
| IFIDX | Shows the interface index for the Ethernet or MLT interface. |
| LEVEL | Shows the level of the IS-IS interface (Level 1 in the current release). |
| AUTH FAILS | Shows the number of times authentication has failed per interface. |
| ADJ CHANGES | Shows the number of times the adjacencies have changed. |
| INIT FAILS | Shows the number of times the adjacency has failed to establish. |
| REJ ADJ | Shows the number of times the adjacency was rejected by another router. |
| ID LEN | Shows the ID field length mismatches. |
| MAX AREA | Shows the maximum area address mismatches. |
| LAN DIS CHANGES | Shows the number of times the DIS has changed. |

Example

The following example displays the output of this command.

```
Switch>show isis int-counters
=====
                    ISIS Interface Counters
=====
IFIDX      LEVEL      AUTH      ADJ      INIT      REJ      ID LEN  MAX AREA  LAN DIS
           FAILS      CHANGES  FAILS    ADJ
-----
Mlt2       Level 1    0         1        0         0        0       0         0
Port3/21   Level 1    0         1        0         0        0       0         0
```

show isis interface

Displays IS-IS interface configuration and status data.

Syntax

- `show isis interface l1`

Command Parameters

l1 Display IS-IS interface configuration and status data for Level-1

Default

None

Command Mode

User Executive

Command Output

The `show isis interface` command displays the following information:

| Output field | Description |
|----------------|---|
| IFIDX | Indicates the interface index for the Ethernet or MLT interface. |
| TYPE | Indicates the type of interface configured. In this release, only pt-pt is supported. |
| LEVEL | Indicates the level of the IS-IS interface (Level 1 [default] or Level 2). |
| OP-STATE | Shows the physical connection state of the interface. |
| ADM-STATE | Shows the configured state of the interface. |
| ADJ | Shows how many adjacencies are learned through the interface. |
| UP-ADJ | Shows how many adjacencies are active through the interface. |
| SPBM-L1-METRIC | Indicates the SPBM instance Level 1 metric on the IS-IS interface. |

Example

The following example displays the output for this command.

```
Switch>show isis interface
```

```
=====
                        ISIS Interfaces
=====
IFIDX      TYPE      LEVEL      OP-STATE  ADM-STATE  ADJ      UP-ADJ      SPBM-L1-METRIC
-----
Trunk: 2   pt-pt    Level 1    UP        UP         1        1          10
Port: 21   pt-pt    Level 1    UP        UP         1        1          10
=====
```

show isis int-l1-cntl-pkts

Displays IS-IS Level 1 control packet counters.

Syntax

- `show isis int-l1-cntl-pkts`

Default

None

Command Mode

User Executive

Command Output

The `show isis int-l1-cntl-pkts` command displays the following information:

| Output field | Description |
|--------------|--|
| IFIDX | Shows the interface index for the Ethernet or MLT interface. |

Table continues...

| Output field | Description |
|--------------|--|
| DIRECTION | Shows the packet flow (Transmitted or Received). |
| HELLO | Shows the number of interface-level Hello packets. |
| LSP | Shows the number of LSP packets. |
| CSNP | Shows the number of CSNPs. |
| PSNP | Shows the number of PSNPs. |

Example

The following example displays the output for this command.

```
Switch>show isis int-l1-ctrl-pkts
```

```
=====
                        ISIS L1 Control Packet counters
=====
IFIDX      DIRECTION    HELLO      LSP        CSNP       PSNP
-----
Mlt2       Transmitted   13346      231        2          229
Mlt2       Received     13329      230        1          230
Port3/21   Transmitted   13340      227        2          226
Port3/21   Received     13335      226        1          227
```

show isis int-timers

Displays IS-IS interface timers.

Syntax

- `show isis int-timers`

Default

None

Command Mode

User Executive

Command Output

The `show isis int-timers` command displays the following information:

| Output field | Description |
|------------------|---|
| IFIDX | Indicates the interface index for the Ethernet or MLT interface. |
| LEVEL | Indicates the IS-IS interface level. |
| HELLO INTERVAL | Indicates the interval at which a Hello packet is sent to the IS-IS network. |
| HELLO MULTIPLIER | Indicates the multiplier that is used in conjunction with the Hello Interval. |
| HELLO DR | Indicates the interval at which a Hello packet is sent to the IS-IS network if the router is a designated router (DIS). |

Example

The following example displays the output for this command.

```
Switch>show isis int-timers
=====
ISIS Interface Timers
=====
IFIDX          LEVEL          HELLO          HELLO          HELLO
                LEVEL          INTERVAL      MULTIPLIER     DR
-----
Trunk: 2       Level 1        9              3              3
Port: 21       Level 1        9              3              3
```

show isis lsdb

Displays IS-IS LSDB.

Syntax

- `show isis lsdb [level l1] [sysid <H.H.H>] [lsp-id <WORD>] [detail] [tlv <WORD> sub-tlv <1-3>]`

Command Parameters

| | |
|----------------------------|--|
| detail | Display details |
| level l1 | Level of the external router |
| lsp-id <WORD> | LSP ID assigned to the external IS-IS routing device |
| sub-tlv <1-3> | Enter sub-tlv type: 1(SPB-INST), 3(SPB-SI) |
| sysid <H.H.H> | System ID |
| tlv <WORD> | Enter tlv type: 1(Area Addresses), 3(End System Neighbors), 5(Prefix Neighbors), 22(TE Neighbors), 128(IP Addresses), 129(Protocol Supported), 135(TE IP Reachability), 137(Host Name), 144(Multi Topology), 147(Chassis mac), 185(IPVPN Multicast), 186(IPMC Multicast) |

Default

None

Command Mode

User Executive

Command Output

The `show isis lsdb` command displays the following information:

| Output field | Description |
|--------------|--|
| LSP ID | Indicates the LSP ID assigned to external IS-IS routing devices. |
| LEVEL | Indicates the level of the external router: L1, L2, or L12. |
| LIFETIME | Indicates the maximum age of the LSP. If the max-lsp-gen-interval is set to 900 (default) then the lifetime value begins to count down from 1200 seconds and updates after 300 seconds if connectivity remains. If the timer counts down to zero, the counter adds on an additional 60 seconds, then the LSP for that router is lost. This happens because of the zero age lifetime, which is detailed in the RFC standards. |
| SEQNUM | Indicates the LSP sequence number. This number changes each time the LSP is updated. |
| CHKSUM | Indicates the LSP checksum. This is an error checking mechanism used to verify the validity of the IP packet. |
| HOST-NAME | Indicates the hostname listed in the LSP. If the host name is not configured, then the system name is displayed. |

Example

The following example displays the output for this command.

```
Switch>show isis lsdb
=====
                        ISIS LSDB
=====
LSP ID                LEVEL      LIFETIME  SEQNUM    CHKSUM    HOST-NAME
-----
0014.c7e1.33df.00-00    1           545      0xb1     0xed28    NewYork
0016.ca23.73df.00-00    1           1119     0x9f     0x9c9d    VSP-
Lab2
0018.b0bb.b3df.00-00    1           708      0xb9     0xcb1a    VSP-Lab1
-----
Level-1 : 3 out of 3 Total Num of LSP Entries
Level-2 : 0 out of 0 Total Num of LSP Entries
```

The following example displays the output for this command using the **detail** modifier.

```
Switch>show isis lsdb detail
=====
                        ISIS LSDB (DETAIL)
=====
Level-1 LspID: 0001.bcb0.0003.00-001      SeqNum: 0x00000522      Lifetime: 1144
        Chksum: 0x32f7  PDU Length: 312
        Host_name: C0
        Attributes:      IS-Type 1
TLV:1   Area Addresses: 1
        c1.3000.0000.00
TLV:22  Extended IS reachability:
        Adjacencies: 7
        TE Neighbors: 7
        0000.beb1.0007.01 (ERS0)          Metric:10
        SPBM Sub TLV:
```

```

                port id: 640 num_port 1
                Metric: 10
0000.beb1.00b1.01 (VSP1)          Metric:10

        SPBM Sub TLV:

                port id: 643 num_port 1

                Metric: 10
0000.bcb1.0004.01 (C1)  Metric:10

        SPBM Sub TLV:

                port id: 6144 num_port 1

                Metric: 10
0000.beb1.00ca.01 (VSP2)          Metric:10

        SPBM Sub TLV:

                port id: 6156 num_port 1

                Metric: 10
0000.beb1.00a5.01 (VSS0)          Metric:10

        SPBM Sub TLV:

                port id: 651 num_port 1

                Metric: 10
0000.beb1.00b2.01 (VSS1)          Metric:10

        SPBM Sub TLV:

                port id: 645 num_port 1

                Metric: 10
0000.beb1.0008.01 (VSP1)          Metric:10

        SPBM Sub TLV:

                port id: 652 num_port 1

                Metric: 10

TLV:129 Protocol Supported: SPBM
TLV:137 Host_name: C0#
TLV:144 SUB-TLV 1      SPBM INSTANCE:
                Instance: 0
                bridge_pri: 0
                OUI: 00-33-33
                num of trees: 2
                vid tuple : u-bit 1 m-bit 1 ect-alg 0x80c201 base vid 1000
                vid tuple : u-bit 1 m-bit 1 ect-alg 0x80c202 base vid 1001
TLV:144 SUB-TLV 3      ISID:
                Instance: 0
                Metric: 0
                B-MAC: 00-00-bc-b1-00-03

```



```
BVID:1000
Number of ISID's:8
          3001 (Both) , 3002 (Rx) , 3003 (Both) , 3004 (Rx) , 4001 (Both) , 4002 (
Rx) , 4003 (Both) , 4004 (Rx)

Instance: 0
Metric: 0
B-MAC: 00-00-bc-b1-00-03

--More-- (q = quit)
```

show isis manual-area

Displays configured IS-IS manual area.

Syntax

- `show isis manual-area`

Default

None

Command Mode

User Executive

show isis net

Displays IS-IS NET address.

Syntax

- `show isis net`

Default

None

Command Mode

User Executive

show isis redistribute

Displays IS-IS redistribute configuration.

Syntax

- `show isis redistribute`

Default

None

Command Mode

User Executive

show isis spbm

Displays SPBM related information.

Syntax

- `show isis spbm`

Default

None

Command Mode

User Executive

show isis spbm i-sid

Displays IS-IS SPBM multicast FIB calculation results by I-SID.

Syntax

- `show isis spbm i-sid {all | config | discover} [vlan <0-4094>] [id <1-16777215>] nick-name <WORD>`

Command Parameters

| | |
|-------------------------------|---|
| all | Display all SPBM I-SID |
| config | Display configured SPBM I-SID |
| discover | Display discovered SPBM I-SID |
| id <1-16777215> | IS-IS SPBM I-SID identifier |
| nick-name <WORD> | Nickname of the node where I-SID was configured |
| vlan <0-4094> | B-VLAN where this I-SID was configured |

Default

None

Command Mode

User Executive

Command Output

The `show isis spbm i-sid` command displays the following information:

| Output field | Description |
|--------------|--|
| ISID | Indicates the IS-IS SPBM I-SID identifier. <ul style="list-style-type: none"> all: display all SPBM I-SID discover: display discovered SPBM I-SID config: display configured SPBM I-SID |
| SOURCE_NAME | Indicates the nickname of the node where this I-SID was configured or discovered. |
| VLAN | Indicates the B-VLAN where this I-SID was configured or discovered. |
| SYSID | Indicates the system identifier. |
| TYPE | Indicates the SPBM I-SID type as either configured or discovered. |
| HOST_NAME | Indicates the host name of the multicast FIB entry. |

Example

The following example displays the output for this command.

```
Switch>show isis spbm i-sid all
```

```
=====
                        SPBM ISID INFO
=====
ISID   SOURCE_NAME  VLAN  SYSID                TYPE      HOST_NAME
-----
200    1.11.16      1000  0014.c7e1.33df      config    ERS-4000
300    1.11.16      1000  0014.c7e1.33df      config    ERS-4000
400    1.11.16      1000  0014.c7e1.33df      config    ERS-4000
200    1.11.16      2000  0014.c7e1.33df      config    ERS-4000
300    1.11.16      2000  0014.c7e1.33df      config    ERS-4000
400    1.11.16      2000  0014.c7e1.33df      config    ERS-4000
-----
Total number of SPBM ISID entries configed: 6
-----
Total number of SPBM ISID entries: 6
-----
```

show isis spbm ip-multicast-route

Displays isis spbm IP multicast route table.

Syntax

- `show isis spbm ip-multicast-route [all] [vlan <1-4094>] [vsni-id <1-16777214>] [detail] [group {A.B.C.D}] [source {A.B.C.D}] [source-beb <WORD>]`

Command Parameters

| | |
|-----------------------------------|---|
| all | Display ip-multicast-route all command |
| detail | Display ip-multicast-route detail command |
| group {A.B.C.D} | Group IP address |
| source {A.B.C.D} | Source IP |
| source-beb <WORD> | Source-beb name |
| vlan <1-4094> | Displays ip-multicast-route by vlan ID |
| vsni-id <1-16777214> | Displays ip-multicast-route by vsni-id |

Default

None

Command Mode

User Executive

show isis spbm ip-unicast-fib

Displays isis spbm ip unicast-fib

Syntax

- `show isis spbm ip-unicast-fib [all] [id <1-16777214>] [spbm-nh-as-mac]`

Command Parameters

| | |
|------------------------------|--|
| all | all i-sid |
| id <1-16777214> | Display isis spbm ip-unicast-fib information by i-sid id |
| spbm-nh-as-mac | show spbm ip-unicast-fib entry next hop as mac |

Default

None

Command Mode

User Executive

show isis spbm multicast

Displays the status of the global SPBM multicast configuration.

Syntax

- `show isis spbm multicast`

Default

None

Command Mode

User Executive

Command Output

The `show isis spbm multicast` command displays the following information:

| Output field | Description |
|-------------------|--|
| multicast | Specifies if multicast is enabled. |
| fwd-cache-timeout | Specifies the forward cache timeout value. |

Example

The following example displays the output for this command.

```
Switch:1>show isis spbm multicast
      multicast : enable
      fwd-cache-timeout : 210
```

show isis spbm multicast-fib

Displays SPBM multicast FIB.

Syntax

- `show isis spbm multicast-fib [vlan <0-4094>] [i-sid <1-16777214>] [nick-name <WORD>] summary`

Command Parameters

| | |
|---------------------------------|--|
| i-sid <1-16777214> | I-SID associated with the multicast FIB entry |
| nick-name <WORD> | Nickname |
| summary | Display summary |
| vlan <0-4094> | B-VLAN associated with the multicast FIB entry |

Default

None

Command Mode

User Executive

Command Output

The `show isis spbm multicast-fib` command displays the following information:

| Output field | Description |
|---------------------|---|
| MCAST DA | Indicates the multicast destination MAC address of the multicast FIB entry. |
| ISID | Indicates the I-SID of the multicast FIB entry. |
| BVLAN | Indicates the B-VLAN of the multicast FIB entry. |
| SYSID | Indicates the system identifier of the multicast FIB entry. |
| HOST-NAME | Indicates the host name of the multicast FIB entry. |
| OUTGOING-INTERFACES | Indicates the outgoing interface of the multicast FIB entry. |

Example

The following example displays the output for this command.

```
Switch>show isis spbm multicast-fib
=====
                        SPBM MULTICAST FIB ENTRY INFO
=====
MCAST DA           ISID   BVLAN  SYSID          HOST-NAME      OUTGOING-INTERFACES
-----
13:11:16:00:00:c8  200    1000  0014.c7e1.33df  SPBM-1        MLT-2, 3/21, 3/37
13:11:16:00:01:2c  300    1000  0014.c7e1.33df  SPBM-1        MLT-2, 4/21
13:11:16:00:01:90  400    1000  0014.c7e1.33df  SPBM-1        MLT-2, 3/21
13:11:16:00:00:c8  200    2000  0014.c7e1.33df  SPBM-1        MLT-2, 3/21, 3/31, 3/37
-----
Total number of SPBM MULTICAST FIB entries 4
=====
```

show isis spbm nick-name

Displays SPBM network node identification data.

Syntax

- `show isis spbm nick-name [nick-name <WORD>] [smlt-virtual-bmac <H.H.H>] [sysid <H.H.H>]`

Command Parameters

| | |
|--|--|
| nick-name <WORD> | Show isis spbm nick-name info by nick-name |
| smlt-virtual-bmac <H.H.H> | Show isis spbm nick-name info by smlt-virtual-bmac |
| sysid <H.H.H> | Show isis spbm nick-name info by system-id |

Default

None

Command Mode

User Executive

show isis spbm unicast-fib

Displays SPBM unicast FIB.

Syntax

```
• show isis spbm unicast-fib [b-mac <H.H.H>] [vlan <0-4094>] summary
```

Command Parameters

| | |
|----------------------------|--|
| b-mac <H.H.H> | B-MAC |
| summary | Display summary |
| vlan <0-4094> | B-VLAN associated with the unicast FIB entry |

Default

None

Command Mode

User Executive

Command OutputThe `show isis spbm unicast-fib` command displays the following information:

| Output field | Description |
|---------------------|---|
| DESTINATION ADDRESS | Indicates the destination MAC Address of the unicast FIB entry. |
| BVLAN | Indicates the B-VLAN of the unicast FIB entry. |
| SYSID | Indicates the destination system identifier of the unicast FIB entry. |
| HOST-NAME | Indicates the destination host name of the unicast FIB entry. |
| OUTGOING INTERFACE | Indicates the outgoing interface of the unicast FIB entry. |
| COST | Indicates the cost of the unicast FIB entry. |

Example

The following example displays the output for this command.

```
Switch>show isis spbm unicast-fib
=====
                        SPBM UNICAST FIB ENTRY INFO
=====
DESTINATION          BVLAN  SYSID          HOST-NAME    OUTGOING    COST
```

| ADDRESS | | INTERFACE | | | |
|--|------|----------------|--------|-------|----|
| 00:16:ca:23:73:df | 1000 | 0016.ca23.73df | SPBM-1 | 3/21 | 10 |
| 00:16:ca:23:73:df | 2000 | 0016.ca23.73df | SPBM-1 | 3/21 | 10 |
| 00:18:b0:bb:b3:df | 1000 | 0018.b0bb.b3df | SPBM-2 | MLT-2 | 10 |
| 00:14:c7:e1:33:e0 | 1000 | 0018.b0bb.b3df | SPBM-2 | MLT-2 | 10 |
| 00:18:b0:bb:b3:df | 2000 | 0018.b0bb.b3df | SPBM-2 | MLT-2 | 10 |
| ----- | | | | | |
| Total number of SPBM UNICAST FIB entries 5 | | | | | |
| ----- | | | | | |

show isis spbm unicast-tree

Displays SPBM unicast tree.

Syntax

- `show isis spbm unicast-tree <1-4094> destination <H.H.H>`

Command Parameters

| | |
|----------------------------------|-------------------|
| <1-4094> | VLAN ID |
| destination <H.H.H> | Destination B-MAC |

Default

None

Command Mode

User Executive

Example

The following example displays the output for this command.

```
Switch>show isis spbm unicast-tree 1000
Node:0018.b0bb.b3df.00 (Switch) -> ROOT
Node:0016.ca23.73df.00 (Switch) -> ROOT
```

show isis spb-mcast-summary

Displays multicast over SPBM summary information for each S, G, V tuple.

Syntax

- `show isis spb-mcast-summary [host-name <WORD>] [lspid <WORD>]`

Command Parameters

host-name <WORD> Show spb-mcast-summary for a given host-name. <WORD> is router host name.

Ispid <WORD> Show spb-mcast-summary for a given Ispid. <WORD> is isis Ispid.

Default

None

Command Mode

User Executive

Command Output

The `show isis spb-mcast-summary` command displays the following information:

| Output field | Description |
|----------------|--|
| SCOPE I-SID | Indicates the I-SID that specifies the multicast streams when the scope Layer 2 VSN. |
| SOURCE ADDRESS | Indicates the IP multicast source address that maps to the I-SID. |
| GROUP ADDRESS | Indicates the IP multicast group address that maps to the I-SID. |
| DATA I-SID | Indicates the data I-SID for the IP multicast route, which includes the source IP address, group IP address, and the local VLAN that the stream is received on (S,G,V tuple). SPBM uses the data I-SID to create the multicast tree. |
| BVID | Indicates the ID of the SPBM backbone VLAN (B-VLAN) on which the multicast stream forwards in the SPBM cloud. |
| LSP FRAG | Indicates the fragment number of the LSP ID. |
| HOST-NAME | Indicates the host name of the router. |

Example

The following example displays the output for this command.

```
Switch:1>show isis spb-mcast-summary
```

```
=====
                        SPB Multicast - Summary
=====
SCOPE   SOURCE      GROUP      DATA      LSP   HOST
I-SID   ADDRESS     ADDRESS    I-SID      BVID  FRAG  NAME
-----
80      192.0.2.1   203.0.113.3 16300014   1000  0x0   MERS2-8606
80      192.0.2.1   203.0.113.4 16300015   1000  0x0   MERS2-8606
80      192.0.2.3   203.0.113.3 16300001   1001  0x0   MERS4-8606
80      192.0.2.3   203.0.113.4 16300002   1001  0x0   MERS4-8606
200    192.0.2.4   203.0.113.2 16000001   1000  0x1   4826GTS
80      192.0.2.5   203.0.113.2 16000003   1000  0x1   4826GTS
=====
6 out of 6 Total Num of Entries
```

show isis statistics

Displays IS-IS system statistics.

Syntax

- `show isis statistics`

Default

None

Command Mode

User Executive

Command Output

The `show isis statistics` command displays the following information:

| Output field | Description |
|------------------|--|
| LEVEL | Shows the level of the IS-IS interface. |
| CORR LSPs | Shows the number of corrupted LSPs detected. |
| AUTH FAILS | Shows the number of times authentication has failed on the global level. |
| AREA DROP | Shows the number of manual addresses dropped from the area. |
| MAX SEQ EXCEEDED | Shows the number of attempts to exceed the maximum sequence number. |
| SEQ NUM SKIPS | Shows the number of times the sequence number was skipped. |
| OWN LSP PURGE | Shows how many times the local LSP was purged. |
| BAD ID LEN | Shows the number of ID field length mismatches. |
| PART CHANGES | Shows the number of partition link changes. |
| LSP DB OLOAD | Show the number of times the switch was in the overload state. The overload bit is set in this release and the parameter will not increment. |

Example

The following example displays the output for this command.

```
Switch>show isis statistics
=====
                        ISIS System Stats
=====
LEVEL    CORR    AUTH    AREA    MAX SEQ  SEQ NUM  OWN LSP  BAD ID  PART    LSP DB
          LSPs   FAILS   DROP    EXCEEDED SKIPS    PURGE    LEN     CHANGES OLOAD
=====
Level-1  0       0       0       0         1       0       0       0       0
```

show isis system-id

Displays IS-IS system ID.

Syntax

- `show isis system-id`

Default

None

Command Mode

User Executive

show link-state

Displays link-state tracking configuration.

Syntax

- `show link-state [group <1-2>] detail`

Command Parameters

- | | |
|--------------------------|--|
| detail | Display detailed configuration |
| group <1-2> | Display link-state tracking configuration for a specific group |

Default

None

Command Mode

User Executive

show lldp local-sys-data

Displays 802.1ab local system data.

Syntax

- `show lldp local-sys-data [dot1] [dot3] [med] [detail]`

Command Parameters

- | | |
|---------------|------------------|
| detail | Display all TLVs |
|---------------|------------------|

- dot1** Display IEEE 802.1 Organizationally specific TLVs
- dot3** Display IEEE 802.3 Organizationally specific TLVs
- med** Display Media Endpoint Devices (MED) specific TLVs

Default

None

Command Mode

User Executive

show lldp med-network-policies

Displays Media Endpoint Devices (MED) network policies.

Syntax

- `show lldp med-network-policies [port <LINE>] [voice] [voice-signaling]`

Command Parameters

- port <LINE>** Port list
- voice** Display Voice Network Policies
- voice-signaling** Display Voice Signaling Network Policies

Default

None

Command Mode

User Executive

show lldp mgmt-sys-data

Displays 802.1ab management data.

Syntax

- `show lldp mgmt-sys-data`

Default

None

Command Mode

User Executive

Example

The following example displays a sample output for the `show lldp mgmt-sys-data` command.

```
Switch>show lldp mgmt-sys-data
-----
          LLDP mgmt-sys-data
-----
ManagementAddr      MgmtIfId      ManagedEntityOID
-----
IPv4 192.1.1.1      0             1.3.6.4.1.45.3.78.1
-----
```

show lldp neighbor

Displays 802.1ab neighbors.

Syntax

- `show lldp neighbor {detail | [dot1] [dot3] [med {[capabilities] [network-policy] [location] [extended-power] [inventory]}] | vendor-specific {[call-server] [dot1q-framing] [fa-element-type] [file-server] [phone-ip] [poe-conservation]}}`

Command Parameters

| | |
|------------------------|---|
| call-server | Display neighbors call-server information |
| capabilities | Display neighbors MED capabilities |
| detail | Display all TLVs |
| dot1 | Display IEEE 802.1 Organizationally specific TLVs |
| dot1q-framing | Display neighbors dot1q-framing information |
| dot3 | Display IEEE 802.3 Organizationally specific TLVs |
| extended-power | Display neighbors MED power information |
| fa-element-type | Display neighbors Fabric Attach information |
| file-server | Display neighbors file-server information |
| inventory | Display neighbors MED inventory information |
| location | Display neighbors MED location information |

| | |
|-------------------------|--|
| med | Display Media Endpoint Devices (MED) specific TLVs |
| network-policy | Display neighbors MED network-policy information |
| phone-ip | Display neighbors phone-ip information |
| poe-conservation | Display neighbors poe-conservation information |
| vendor-specific | Display the vendor-specific TLVs |

Default

None

Command Mode

User Executive

Example

The following example displays a sample output for the **show lldp port neighbor dot3** command.

```
Switch>show lldp port 7 neighbor dot3
```

```
-----
                                LLDP neighbor
-----
Port: 7      Index: 3              Time: 0 days, 03:31:38
  ChassisId: Network address      IPv4  10.100.41.101
  PortId:    MAC address          00:0a:e4:0c:05:ac
  SysCap:    TB / TB              (Supported/Enabled)
  PortDesc:  IP Phone
  SysDescr:  IP Telephone 2002, Firmware:0604DAD

Dot3-MAC/PHY Auto-neg: supported/enabled      OperMAUtype: 100BaseTXFD
PSE MDI power:      not supported/disabled    Port class:  PD
PSE power pair:     signal/not controllable  Power class:  1
PoE+ Power type:   Type 2 PD
PoE+ Power priority: High
PoE+ PD requested power: 26.2w
PoE+ PSE allocated power: 26.2w
LinkAggr: not aggregatable/not aggregated    AggrPortID:  0
                                                MaxFrameSize: 1522
PMD auto-neg:      10Base(T, TFD), 100Base(TX, TXFD)
-----
Sys capability: O-Other; R-Repeater; B-Bridge; W-WLAN accesspoint; r-Router;
T-Telephone; D-DOCSIS cable device; S-Station only.
Total neighbors: 2
```

show lldp neighbor-mgmt-addr

Displays 802.1ab neighbors management addresses.

Syntax

- `show lldp neighbor-mgmt-addr`

Default

None

Command Mode

User Executive

show lldp pdu-tlv-size

Displays 802.1ab tlv's in pdu.

Syntax

- `show lldp pdu-tlv-size`

Default

None

Command Mode

User Executive

show lldp port

Displays 802.1ab configuration for specified ports.

Syntax

- `show lldp port <LINE> {local-sys-data | neighbor | tx-tlv} {[dot1] [dot3] [med] [detail]} [vendor-specific {dot1q-framing | poe-conservation-request-level} | neighbor-mgmt-addr | pdu-tlv-size | rx-stats | tx-stats`

Command Parameters

| | |
|----------------------|---|
| <LINE> | List of ports |
| detail | Display all TLVs |
| dot1 | Display IEEE 802.1 Organizationally specific TLVs |
| dot1q-framing | Display 802.1Q framing tagging-mode |
| dot3 | Display IEEE 802.3 Organizationally specific TLVs |

| | |
|---------------------------------------|--|
| local-sys-data | Display 802.1ab local system data |
| med | Display Media Endpoint Devices (MED) specific TLVs |
| neighbor | Display 802.1ab neighbors |
| neighbor-mgmt-addr | Display 802.1ab neighbors management addresses |
| pdu-tlv-size | Display 802.1ab TLVs in PDU. |
| poe-conservation-request-level | Display PoE conservation request level |
| rx-stats | Display 802.1ab RX statistics |
| tx-stats | Display 802.1ab TX statistics |
| tx-tlv | Display 802.1ab TLVs |
| vendor-specific | Display 802.1ab vendor-specific settings |

Default

None

Command Mode

User Executive

show lldp rx-stats

Displays 802.1ab RX statistics.

Syntax

- `show lldp rx-stats`

Default

None

Command Mode

User Executive

show lldp stats

Displays 802.1ab statistics.

Syntax

- `show lldp stats`

Default

None

Command Mode

User Executive

show lldp tx-stats

Displays 802.1ab TX statistics.

Syntax

- `show lldp tx-stats`

Default

None

Command Mode

User Executive

show lldp tx-tlv

Displays 802.1ab TLVs.

Syntax

- `show lldp tx-tlv {dot1 | dot3 | med | vendor-specific}`

Command Parameters

| | |
|------------------------|--|
| dot1 | Display IEEE 802.1 Organizationally specific TLVs |
| dot3 | Display IEEE 802.3 Organizationally specific TLVs |
| med | Display Media Endpoint Devices (MED) specific TLVs |
| vendor-specific | Display Vendor-specific TLVs |

Default

None

Command Mode

User Executive

Example

The following example displays a sample output of the `show lldp port tx-tlv` command.

```
Switch>show lldp port 1-5 tx-tlv
-----
                        LLDP port tlvs
-----
Port  PortDesc  SysName  SysDesc  SysCap  MgmtAddr
-----
1      true       true     true     true    true
2      true       true     true     true    true
3      true       true     true     true    true
4      true       true     true     true    true
5      true       true     true     true    true
-----
```

show lldp vendor-specific

Displays 802.1ab vendor-specific settings.

Syntax

- `show lldp vendor-specific {call-server | dot1q-framing | file-server | poe-conservation-request-level}`

Command Parameters

| | |
|---------------------------------------|---|
| call-server | Display call-server address(es). |
| dot1q-framing | Display 802.1Q framing tagging-mode. |
| file-server | Display file-server address(es). |
| poe-conservation-request-level | Display PoE conservation request level. |

Default

None

Command Mode

User Executive

Example

The following example displays sample output for the `show lldp vendor-specific file-server` command.

```
Switch>show lld vendor-specific file-server
-----
LLDP Vendor Specific File Servers IP addresses
-----
```

```
-----
Configured Call Server 1: 192.0.1.1
Configured Call Server 2: 192.0.1.2
Configured Call Server 3: 192.0.2.3
-----
```

show macsec connectivity-association

Displays macsec connectivity association information.

Syntax

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

Command Parameters

WORD<5-15> Display the connectivity association name.

Default

None

Command Mode

User Executive

show macsec statistics

Displays macsec port statistics.

Syntax

- show macsec statistics <LINE> secure-channel [inbound] [outbound]

Command Parameters

inbound Shows macsec statistics for inbound secure channel of a port

<LINE> Display macsec port statistics for specified ports.

outbound Shows macsec statistics for outbound secure channel of port entered

secure-channel Shows macsec statistics for a secure channel of a port

Default

None

Command Mode

User Executive

show macsec status

Displays macsec status of entered ports or all macsec capable ports.

Syntax

- show macsec status <LINE>

Command Parameters

<LINE> Display macsec status of entered ports or all macsec capable ports.

Default

None

Command Mode

User Executive

show memory-utilization

Displays memory utilization info.

Syntax

- show memory-utilization unit <1-8>

Command Parameters

unit <1-8> Unit number

Default

None

Command Mode

User Executive

show mgmt-port

Display Management port information.

Syntax

- `show mgmt-port [status]`

Command Parameters

status Show the management port link status

Default

None

Command Mode

User Executive

show mvr

Displays MVR global information.

Syntax

- `show mvr [group-range] | [vlan]`

Command Parameters

group-range Displays MVR IP multicast address range information

vlan Displays MVR receiver VLAN information

Default

None

Command Mode

User Executive

show ntp

Displays NTP information.

Syntax

- `show ntp {server | statistics}`

Command Parameters

key Displays NTP key information

server Displays NTP server information

statistics Displays NTP statistics information

Default

None

Command Mode

User Executive

show nvram

Displays NV block information.

Syntax

- `show nvram block`

Command Parameters

block Display NV block information

Default

None

Command Mode

User Executive

show password

Displays password security restrictions.

Syntax

- `show password {aging-time [username <WORD>] | check-repeated | check-sequential | complexity | delay-time | login-failure-notification | min-length | notifications | password-change-on-first-login | password-change-rate-limiter | password-history | security | unlock-timer}`

Command Parameters

aging-time Password validity period (in days)

check-repeated State of check-repeated-characters option

check-sequential State of check-sequential-characters option

| | |
|---------------------------------------|--|
| complexity | Display password complexity rules settings |
| delay-time | Display the delay time after 3 failed login attempts within one minute |
| login-failure-notification | Display notification message to users encountering a login failure |
| min-length | Display the password minimum length |
| notifications | Display password expiration notifications intervals |
| password-change-on-first-login | State of password-change-on-first-login option |
| password-change-rate-limiter | Display number of times a password can be changed in a day |
| password-history | Number of passwords in history |
| security | State of password security restrictions |
| unlock-timer | State of unlock-timer option |
| username <WORD> | Display password aging-time for a specified user |

Default

None

Command Mode

User Executive

show quickconfig

Shows quick config status.

Syntax

- `show quickconfig`

Default

None

Command Mode

User Executive

show radius accounting

Displays the configuration of RADIUS Accounting Interim-Updates.

Syntax

- `show radius accounting interim-updates`

Command Parameters

interim-updates Display the parameters of interim-updates

Default

None

Command Mode

User Executive

show radius dynamic-server

Displays the configuration of RADIUS Dynamic Authorization Clients.

Syntax

- `show radius dynamic-server {[statistics] client {A.B.C.D} | replay-protection}`

Command Parameters

{A.B.C.D} IP address of RADIUS Dynamic Authorization Client

client Display the configuration of RADIUS Dynamic Authorization Client

replay-protection Display status of RADIUS dynamic server replay protection

statistics Display the statistics for RADIUS Dynamic Authorization Clients

Default

None

Command Mode

User Executive

show radius reachability

Displays RADIUS reachability settings.

Syntax

- `show radius reachability`

Default

None

Command Mode

User Executive

show radius use-management-ip

Displays RADIUS use-management-ip setting.

Syntax

- `show radius use-management-ip`

Default

None

Command Mode

User Executive

show ramdisk-files

Displays a list of files in the root directory of the ramdisk or the specified directory.

Syntax

- `show ramdisk-files [ascii <WORD>] [binary <WORD>] [dir <WORD>] [tree]`

Command Parameters

| | |
|---------------------------|---|
| ascii <WORD> | Displays the filename of the ASCII files. |
| binary<WORD> | Displays the filename of the binary files. |
| dir<WORD> | Displays the name of the ramdisk directories. |
| tree | Display ramdisk tree. |

Default

None

Command Mode

User Executive

show remote connection

Displays remote connection status on device.

Syntax

- `show remote connection`

Default

None

Command Mode

User Executive

show role

Displays role information.

Syntax

- `show role`

Default

None

Command Mode

User Executive

show route-map

Displays route policy table.

Syntax

- `show route-map [<WORD> <1-65535>] detail`

Command Parameters

| | |
|------------------------|--|
| <1-65535> | Index used to identify a specific policy in the route policy group |
| <WORD> | Name of set of policies |
| detail | Route policy details |

Default

None

Command Mode

User Executive

show serial-security

Displays current serial security setting.

Syntax

- `show serial-security`

Default

None

Command Mode

User Executive

show sftp-server

Displays the SFTP Server IP address.

Syntax

- `show sftp-server`

Default

None

Command Mode

User Executive

show slpp

Displays SLPP information.

Syntax

- `show slpp`

Default

None

Command Mode

User Executive

show slpp-guard

Displays SLPP-guard information.

Syntax

- `show slpp-guard <LINE>`

Command Parameters

<LINE> List of ports

Default

None

Command Mode

User Executive

show spanning-tree

Sub-commands to display spanning tree information.

Syntax

- `show spanning-tree mode`

Command Parameters

mode Display Spanning Tree operation mode

Default

None

Command Mode

User Executive

show spbm (User Executive)

Displays global SPBM status.

Syntax

- `show spbm`

Default

None

Command Mode

User Executive

show spbm reserved-port

Displays the current and the next reserved loopback port settings.

Syntax

- `show spbm reserved-port`

Default

None

Command Mode

User Executive

show stack

Shows stacking information.

Syntax

- `show stack {auto-unit-replacement [mac-addresses] | auto-unit-replacement-image | forced-mode | port-statistics | reboot-on-failure | retry-count}`

Command Parameters

| | |
|------------------------------------|---|
| auto-unit-replacement | Display auto unit replacement configuration |
| auto-unit-replacement-image | Display auto unit image replacement configuration |
| forced-mode | Display the forced stack mode |
| mac-addresses | Display the AUR MAC address cache |
| port-statistics | Display stack port counters |
| reboot-on-failure | Display stack reboot-on-failure status |
| retry-count | Display stack retry count |

Default

None

Command Mode

User Executive

show stack-cable-info

Displays cable information.

Syntax

- `show stack-cable-info`

Default

None

Command Mode

User Executive

show tech (User Executive)

Displays system information for Tech-Support.

Syntax

- `show tech`

Default

None

Command Mode

User Executive

show terminal

Displays terminal configuration parameters.

Syntax

- `show terminal`

Default

None

Command Mode

User Executive

show username

Displays user information.

Syntax

- `show username <LINE>`

Command Parameters

<LINE> Specifies the user name for which to display information.

Default

None

Command Mode

User Executive

show who

Displays the users authenticated by AAA.

Syntax

- `show who`

Default

None

Command Mode

User Executive

ssh

SSH to another host

Syntax

- `ssh {<Hostname> | {A.B.C.D} | <WORD>} username <WORD> port <0-65535>`

Command Parameters

| | |
|---|--|
| <code><Hostname> {A.B.C.D}</code> | Remote host name or IP address |
| <code>port <0-65535></code> | Specifies the port number |
| <code>username <WORD></code> | Specifies the username |
| <code><WORD></code> | Specifies the remote host IPv6 address |

Default

None

Command Mode

User Executive

telnet

Telnet to another host.

Syntax

- `telnet {<Hostname> | {A.B.C.D} | <WORD>} port <0-65535>`

Command Parameters

| | |
|---|--------------------------------------|
| <code><Hostname> {A.B.C.D}</code> | Remote host name or IP address |
| <code><WORD></code> | Remote host IPv6 address (45 length) |
| <code>port <0-65535></code> | tcp port number |

Default

None

Command Mode

User Executive

terminal

Sets terminal line parameters.

Syntax

- `terminal {length <0-132> | speed {[19200] | [38400] | [9600]} width <1-132>}`

Command Parameters

| | |
|---|-------------------------------------|
| length <0-132> | Set number of lines on a screen |
| speed <19200 38400 9600> | Set the transmit and receive speeds |
| width <1-132> | Set width of the display terminal |

Default

None

Command Mode

User Executive

trace

Traces level for a module ID.

Syntax

- `trace [screen] {[disable] [enable]} | [shutdown] | [module] {[hint] [<LINE>] [level] {critical | error | warning | info | debug | no-display} [unit <1-8>] [submodule]}`

Command Parameters

| | |
|-----------------|---------------------------|
| critical | enable critical level (1) |
| debug | enable all levels (1->5) |
| disable | Disable screen trace |

| | |
|-------------------------|---|
| enable | Enable screen trace |
| error | enable critical and error levels (1->2) |
| info | enable informational level (1->4) |
| level | Specifies the trace level |
| <LINE> | Specifies the module name |
| module | Set the trace |
| no-display | disable all levels (0) |
| screen | Enable/Disable screen trace |
| shutdown | Trace OFF |
| submodule | Specifies the trace submodule |
| unit <1-8> | Specifies the unit |
| warning | enable levels from critical to warning (1->3) |

Default

None

Command Mode

User Executive

traceroute

Traces route to a remote host.

Syntax

```
• traceroute {Hostname | {A.B.C.D} | <WORD>} [<1-1460>] [-m <1-255>] [-p
  <0-65535>] [-q <1-255>] { -v | {-w <1-255>}}
```

Command Parameters

| | |
|-----------------------------|--------------------------------|
| <1-1460> | probe packet data length |
| <WORD> | ipv6 address of remote host |
| Hostname {A.B.C.D} | remote host name or IP address |
| -m <1-255> | max ttl value |

| | |
|---------------------------|--------------------------|
| -p <1-65535> | base udp port number |
| -q <1-255> | number of probes per ttl |
| -v | verbose mode |
| -w <1-255> | wait time per probe |

Default

None

Command Mode

User Executive

username

Configure user name settings.

Syntax

- `username password`

Command Parameters

password Change user's password

Default

None

Command Mode

User Executive

Chapter 14: VLAN Interface Configuration

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

end (VLAN Interface Configuration)

Exits from interface configure mode.

Syntax

- `end`

Default

None

Command Mode

VLAN Interface Configuration

exit (VLAN Interface Configuration)

Exits from interface configuration mode.

Syntax

- `exit`

Default

None

Command Mode

VLAN Interface Configuration

igmp last-member-query-interval

Sets the maximum response time (in tenths of a second) that is inserted into group-specific queries that are sent in response to leave group messages.

Syntax

- `default ip igmp last-member-query-interval <0-255>`
- `ip igmp last-member-query-interval <0-255>`

Command Parameters

<0-255> Specifies the last member query interval value in 1/10 of a second. Values range from 0 to 255. You should configure this parameter to values higher than 3. If a fast leave process is not required, values above 10 are recommended.

default Sets the last member query interval to the default value of 10.

Default

10

Command Mode

VLAN Interface Configuration

igmp query-interval

Sets the frequency (in seconds) at which host query packets are transmitted on the VLAN.

Syntax

- `default ip igmp query-interval <1-65535>`
- `ip igmp query-interval <1-65535>`

Command Parameters

<1-65535> Specifies the query interval value. Values range from 1 to 65535 seconds.

default Sets the query interval to the default value of 125 seconds

Default

125

Command Mode

VLAN Interface Configuration

igmp query-max-response

Sets the maximum response time (in tenths of a second) that is advertised in IGMPv2 general queries on the VLAN.

Syntax

- `default ip igmp query-max-response <0-255>`
- `ip igmp query-max-response <0-255>`

Command Parameters

<0-255> Specifies the maximum query response time value in 1/10 of a second. Values range from 0 to 255.

default Sets the maximum query response time to the default value of 100.

Default

100

Command Mode

VLAN Interface Configuration

igmp send-query

Enables or disables IGMP send query on a snoop-enabled VLAN.

Syntax

- `default ip igmp send-query`
- `ip igmp send-query`
- `no ip igmp send-query`

Default

None

Command Mode

VLAN Interface Configuration

ip address (VLAN Interface Configuration)

Assigns an IP address to a VLAN.

Syntax

- `ip address {A.B.C.D} <subnet_mask> [<1-256>]`
- `no ip address {A.B.C.D} <subnet_mask> [<1-256>] [secondary]`

Command Parameters

| | |
|----------------------------------|--|
| <code>{A.B.C.D}</code> | IP address |
| <code><1-256></code> | MAC offset, 1 for management vlan only |
| <code><subnet_mask></code> | Subnet mask |

Default

None

Command Mode

VLAN Interface Configuration

ip arp-proxy

Configures proxy ARP status on a VLAN.

Syntax

- `default ip arp-proxy enable`
- `ip arp-proxy enable`
- `no ip arp-proxy enable`

Command Parameters

| | |
|---------------------|------------------|
| <code>enable</code> | Enable arp-proxy |
|---------------------|------------------|

Default

None

Command Mode

VLAN Interface Configuration

ip dhcp-relay (VLAN Interface Configuration)

Configures DHCP relay for a vlan.

Syntax

- `default ip dhcp-relay option82`
- `ip dhcp-relay [broadcast] [min-sec <min-sec>] [mode {bootp | dhcp | bootp_dhcp}] [option82]`
- `ip dhcp-relay clear-counters`
- `no ip dhcp-relay [broadcast] [min-sec <min-sec>] [mode {bootp | dhcp | bootp_dhcp}] [option82]`

Command Parameters

| | |
|---------------------------------------|--|
| broadcast | Enables the broadcast of DHCP reply packets to the DHCP clients on this VLAN interface |
| min-sec <minsec> | Indicates the min-sec value. The switch immediately forwards a BootP/DHCP packet if the secs field in the BootP/DHCP packet header is greater than the configured min-sec value; otherwise, the packet is dropped. Range is 0-65535. The default is 0. |
| mode {bootp dhcp bootp_dhcp} | Specifies the type of DHCP packets this VLAN supports: bootp - Supports BootP only; dhcp - Supports DHCP only; bootp_dhcp - Supports both BootP and DHCP. |
| option82 | Enables Option 82 for DHCP relay on a VLAN |

Default

None

Command Mode

VLAN Interface Configuration

ip directed-broadcast

Enabled directed broadcast forwarding.

Syntax

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

Command Parameters

| | |
|---------------|------------------------------|
| enable | Enable IP directed broadcast |
|---------------|------------------------------|

Default

None

Command Mode

VLAN Interface Configuration

ip forward-protocol udp (VLAN Interface Configuration)

Associates a UDP forwarding list with a VLAN interface.

Syntax

- `default ip forward-protocol udp [vlan <vid>] [broadcastmask] [maxttl]`
- `ip forward-protocol udp [vlan <vid>] [portfwdlist <forward_list>] [broadcastmask <bcast_mask>] [maxttl <max_ttl>]`
- `no ip forward-protocol udp [vlan <vid>] [portfwdlist <forward_list>] [broadcastmask <bcast_mask>] [maxttl <max_ttl>]`

Command Parameters

- <bcast_mask>** Specifies the 32-bit mask used by the selected VLAN interface to make forwarding decisions based on the destination IP address of the incoming UDP broadcast traffic. If you do not specify a broadcast mask value, the switch uses the mask of the interface to which the forwarding list is attached.
- <forward_list>** Specifies the ID of the UDP forwarding list to attach to the selected VLAN interface.
- <max_ttl>** Specifies the time-to-live (TTL) value inserted in the IP headers of the forwarded UDP packets coming out of the selected VLAN interface. If you do not specify a TTL value, the default value (4) is used.
- <vid>** Specifies the VLAN ID on which to attach the UDP forwarding list. This parameter is optional, and if not specified, the UDP forwarding list is applied to the interface specified in the interface vlan command.

Default

None

Command Mode

VLAN Interface Configuration

ip fwd-nh (VLAN Interface Configuration)

Configure IP forwarding next-hop configuration settings

Syntax

- `ip fwd-nh {[admin-status [disable] | [enable]]| [policy [word] [mode] [drop] [normal-routing]]}`

Command Parameters

- admin-status <disable|enable>** Specifies IP forwarding administrative status for all policies.
- policy <WORD>** Specify the name of the next-hop forwarding policy.

Default

None

Command Mode

VLAN Interface Configuration

ip igmp (VLAN Interface Configuration)

Creates a new IGMP interface.

Syntax

- `default ip igmp`
- `ip igmp`
- `no ip igmp`

Default

None

Command Mode

VLAN Interface Configuration

ip igmp mrouter

Adds one or more static mrouter ports to a VLAN.

Syntax

- `default ip igmp mrouter`
- `ip igmp mrouter <port_list>`
- `no ip igmp mrouter [<port_list>]`

Command Parameters

<port_list> Specifies the port or ports to add to the VLAN as static mrouter ports

Default

None

Command Mode

VLAN Interface Configuration

ip igmp proxy

Enables or disables IGMP proxy on a VLAN.

Syntax

- `default ip igmp proxy`
- `ip igmp proxy`
- `no ip igmp proxy`

Default

None

Command Mode

VLAN Interface Configuration

ip igmp robust-value

Sets the robustness value for a VLAN. With IGMP snooping robustness, the switch can offset expected packet loss on a subnet.

Syntax

- `default ip igmp robust-value <2-255>`
- `ip igmp robust-value <2-255>`

Command Parameters

<2-255> Specifies a numerical value for IGMP snooping robustness. Values range from 2 to 255.

Default

2

Command Mode

VLAN Interface Configuration

ip igmp router-alert

Enables the router alert feature. This feature instructs the router to drop control packets that do not have the router-alert flag in the IP header.

Syntax

- `default ip igmp router-alert`
- `ip igmp router-alert`
- `no ip igmp router-alert`

Default

None

Command Mode

VLAN Interface Configuration

ip igmp snooping

Enables or disables IGMP snooping for a VLAN.

Syntax

- `default ip igmp snooping`
- `ip igmp snooping`
- `no ip igmp snooping`

Default

None

Command Mode

VLAN Interface Configuration

ip igmp snoop-querier-addr

Configures the address of the IGMP snoop querier.

Syntax

- `default ip igmp snoop-querier-addr`
- `ip igmp snoop-querier-addr {A.B.C.D}`
- `no ip igmp snoop-querier-addr`

Command Parameters

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

Default

The default value is 0.0.0.0.

Command Mode

VLAN Interface Configuration

ip igmp version

Configures the IGMP version running on the VLAN.

Syntax

- `default ip igmp version <1-3>`
- `ip igmp version <1-3>`

Command Parameters

<1-3> Specifies the IGMP version: 1—IGMPv1; 2—IGMPv2; 3—IGMPv3

default Restores the IGMP protocol version to the default value (IGMPv2)

Default

IGMPv2

Command Mode

VLAN Interface Configuration

ip ospf (VLAN Interface Configuration)

Configures OSPF settings.

Syntax

- `default ip ospf [vlan <1-4094>] {[enable] [advertise-when-down] [area] [authentication-key] [authentication-type] [network] [hello-interval] [dead-interval] [retransmit-interval] [transit-delay] [cost] [mtu-ignore enable] [priority]}`
- `ip ospf [vlan <1-4094>]{[enable] [advertise-when-down enable] [area {A.B.C.D}] [authentication-key <WORD>] [authentication-type {message-digest | none | simple}] [primary-md5-key <1-255>] [network <broadcast | passive>] [hello-interval <1-65535>] [dead-interval <1-2147483647>]}`

```
[retransmit-interval <1-3600>] [transit-delay <1-3600>] [cost
<1-65535>] [mtu-ignore enable] [priority <0-255>] }
```

- `no ip ospf [vlan <1-4094>]{[enable] [advertise-when-down enable] [area {A.B.C.D}] [authentication-key <WORD>] [authentication-type]}`

Command Parameters

| | |
|---|--|
| advertise-when-down enable | Enables the advertisement of the OSPF interface, and even if the port or VLAN for the routing interface subsequently goes down, the switch continues to advertise the route. |
| area {A.B.C.D} | Specifies the unique ID of the area to which the interface connects. An area ID of 0.0.0.0 indicates the OSPF area backbone and is created automatically by the switch. |
| authentication-key <WORD> | Configure interface authentication password |
| authentication-type {message-digest none simple} | Select interface authentication type |
| cost <1-65535> | Specifies the cost assigned to the interface. |
| dead-interval <1-2147483647> | Specifies a dead interval for the interface. This is the interval of time that a neighbor waits for a Hello packet from this interface before the neighbor declares it down. |
| hello-interval <1-65535> | Specifies the amount of time between transmission of hello packets from this interface. |
| mtu-ignore enable | Instructs the interface to ignore the packet MTU size specified in Database Descriptors. |
| network <broadcast passive> | Defines the type of OSPF interface this interface is. |
| primary-md5-key <1-255> | Select MD5 key used for transmit |
| priority <0-255> | Assigns a priority to the interface for the purposes of Designated Router election. This is an integer value between 0 and 255. |
| retransmit-interval <1-3600> | Defines the number of seconds between link state advertisement retransmissions for adjacencies belonging to this interface. |
| transit-delay <1-3600> | Defines the transit delay for this OSPF interface in seconds. The transit delay is the estimated number of seconds it takes to transmit a link-state update over the interface. This is an integer value between 1 and 3600. |
| vlan <1-4094> | Select VLAN ID |

Default

None

Command Mode

VLAN Interface Configuration

ip ospf message-digest-key (VLAN Interface Configuration)

Configure MD5 key for interface.

Syntax

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

Command Parameters

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

Default

None

Command Mode

VLAN Interface Configuration

ip pim (VLAN Interface Configuration)

Configure global Protocol Independent Multicast (PIM) settings.

Syntax

- `default ip pim {[bsr-candidate] [interface-type] [join-prune-interval] [query-interval] [enable]}`
- `ip pim {[bsr-candidate priority <0-255>] [enable] [interface-type {active|passive}] [join-prune-interval <1-18724>] [query-interval <0-18724>]}`
- `no ip pim {[bsr-candidate] [enable]}`

Command Parameters

| | |
|--|---|
| bsr-candidate | Enable PIM bootstrap router (BSR) candidate and configure preference on a VLAN. |
| enable | Enables PIM. |
| interface-type {active passive} | Specifies the interface type as active or passive. |
| join-prune-interval <1-18724> | Configures the PIM join-prune interval. |
| priority <0-255> | Configures the PIM BSR-candidate priority on a VLAN. |
| query-interval <0-18724> | Configures the PIM query interval on a VLAN. |

Default

None

Command Mode

VLAN Interface Configuration

ip rip (VLAN Interface Configuration)

Configures RIP settings.

Syntax

- [default] [no] ip rip in-policy <rmap_name>
- [default] [no] ip rip out-policy <rmap_name>
- default ip rip [port <LINE>] [advertise-when-down enable] [auto-aggregation enable [domain <WORD>]] [cost <cost>] [default-listen enable] [default-supply enable] [enable] [holddown <holddown> | <global>] [listen enable] [poison enable] [proxy-announce enable] [receive version {rip1 | rip2}] [send version {notsend | rip1 | rip2}] [supply enable] [timeout {<timeout> | global}] [triggered enable]
- ip rip [port <LINE>] [advertise-when-down enable] [auto-aggregation enable [domain <WORD>]] [cost <cost>] [default-listen enable] [default-supply enable] [enable] [holddown <holddown> | <global>] [listen enable] [poison enable] [proxy-announce enable] [receive version {rip1 | rip2}] [send version {notsend | rip1 | rip2}] [supply enable] [timeout {<timeout> | global}] [triggered enable]
- no ip rip [port <LINE>] [advertise-when-down enable] [auto-aggregation enable [domain <WORD>]] [cost <cost>] [default-listen enable]


```
[default-supply enable] [enable] [holddown <holddown> | <global>]
[listen enable] [poison enable] [proxy-announce enable] [receive
version {rip1 | rip2 | rip2}] [send version { notsend | rip1 |
rip1comp | rip 2}] [supply enable] [timeout {<timeout> | global}]
[triggered enable]
```

Command Parameters

| | |
|---|--|
| advertise-when-down enable | Enables RIP advertisements for an interface even when the link to the network fails. The router continues to advertise the subnet even if that particular network is no longer connected (no link in the enabled VLAN). This feature does not advertise the route until the VLAN is first enabled. After the VLAN is enabled, the route is advertised even when the link fails. By default, advertise when down functionality is disabled. |
| auto-aggregation enable | Enables auto aggregation on the RIP interface. After you enable auto aggregation, the Ethernet Routing Switch automatically aggregates routes to their natural net mask when they are advertised on an interface in a network of a different class. Automatic route aggregation can be enabled only in RIP2 mode or RIP1 compatibility mode. By default, auto aggregation is disabled. |
| cost <cost> | Specifies the RIP cost (metric) for this interface in a range from 1 to 15. The default cost is 1. |
| default-listen enable | Enables the interface to accept default routes learned through RIP updates. The default setting is disabled. |
| default-supply enable | Enables the interface to send default route information in RIP updates. This setting takes effect only if a default route exists in the routing table. The default setting is disabled. |
| enable | Enables RIP on the interface |
| holddown {<holddown> <global>} | Specifies the interface holddown timer, which is the length of time (in seconds) that RIP maintains a route in the garbage list after determining that it is unreachable. <holddown> — overrides the global parameter and does not change if the global parameter is modified. Range is 0–360 seconds. <global> — default global holddown parameter (120 seconds). |
| in-policy <WORD> | Add in-policy on this interface |
| listen enable | Enables this interface to listen for RIP advertisements. The default value is enabled. |
| out-policy <WORD> | Add out-policy on this interface |
| poison enable | Specifies whether RIP routes on the interface learned from a neighbor are advertised back to the neighbor. If poison reverse is disabled, split horizon is invoked and IP routes learned from an immediate neighbor are not advertised back to the neighbor. If poison reverse is enabled, the RIP |

updates sent to a neighbor from which a route is learned are "poisoned" with a metric of 16. The receiving neighbor ignores this route because the metric 16 indicates infinite hops in the network. By default, poison reverse is disabled.

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

Default

None

Command Mode

VLAN Interface Configuration

ip routing (VLAN Interface Configuration)

Enables L3 routing on a VLAN.

Syntax

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

Command Parameters

force Do not ask for confirmation

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp

Changes VR settings or associate addresses.

Syntax

- `ip vrrp <vr_id> action {none | preempt}`
- `ip vrrp <vr_id> adver-int <interval>`
- `no ip vrrp <vr_id> fast-adv enable`

Command Parameters

{none | preempt} Specify the holddown action. Enter none for no action, Enter preempt to cancel the holddown timer.

<interval> Specify the advertisement interval in seconds. Value between 1 and 255.

<vr_id> Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp address

Associates an IP address with a virtual router ID.

Syntax

- `ip vrrp address <vr_id> <ip_address>`
- `no ip vrrp address <vr_id> <ip_address>`

Command Parameters

`<vr_id>` Specify the virtual router to configure. Value between 1 and 255.

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp critical-ip enable

Configures the VRRP critical IP status.

Syntax

- `ip vrrp <vr_id> critical-ip enable`
- `no ip vrrp <vr_id> critical-ip enable`

Command Parameters

`<vr_id>` Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp critical-ip-addr

Configures the VRRP critical IP address.

Syntax

- `ip vrrp <vr_id> critical-ip-addr <ip_address>`
- `no ip vrrp <vr_id> critical-ip-addr <ip_address>`

Command Parameters

- <ip_address>** Specify the critical IP address
- <vr_id>** Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp fast-adv-int

Configures the VRRP fast advertisement interval.

Syntax

- `ip vrrp <vr_id> fast-adv-int <interval>`

Command Parameters

- <interval>** Specify the fast advertisement interval in milliseconds. Value between 200 and 1000.
- <vr_id>** Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp holddown-timer

Configures the VRRP holddown timer.

Syntax

- `ip vrrp <vr_id> holddown-timer <timer_value>`

Command Parameters

- <timer_value>** Specify the holddown timer value. Value in seconds between 1 and 21600.
- <vr_id>** Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ip vrrp priority

Assigns a priority to the router for a specific virtual router ID.

Syntax

- `ip vrrp <vr_id> priority <1-255>`

Command Parameters

<1-255> Specify the priority value for the virtual router ID. Value between 1 and 255.

<vr_id> Specify the virtual router ID to configure

Default

None

Command Mode

VLAN Interface Configuration

ipv6 dhcp-relay fwd-path

Create fwd-path.

Syntax

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

Command Parameters

<WORD> Agent IPv6 address

Default

None

Command Mode

VLAN Interface Configuration

ipv6 interface (VLAN Interface Configuration)

Creates and configures a VLAN IPv6 interface.

Syntax

- `default ipv6 interface [all][enable][link-local][mtu] [reachable-time] [retransmit-timer]`
- `ipv6 interface [address <WORD>][enable][link-local <WORD>][mtu <1280-9216>][name <WORD>][reachable-time <1-3600000>][retransmit-timer <0-3600000>][eui <1-3>]`
- `no ipv6 interface [address <WORD>][all][enable]`

Command Parameters

| | |
|---|---|
| address <WORD> | Configures the IPv6 address and prefix length. The default value is none. |
| enable | Enables the interface admin status. |
| eui <1-3> | Specifies the EUI parameter setting. |
| link-local <WORD> | Configures the link local identifier. The default value is none. |
| mtu <1280-9216> | Configures the maximum transmission unit for the interface. The default value is 1500. |
| name <WORD> | Configures a description for the interface. This variable does not support the default parameter. |
| reachable-time <1-3600000> | Configures the time, in milliseconds, that a neighbor is considered reachable after receiving a reachability confirmation. Range is 0-3600000. The default value is 30000. |
| retransmit-timer <0-3600000> | Configures the time, in milliseconds, between retransmissions of Neighbor Solicitation messages to a neighbor when resolving the address or when probing the reachability of a neighbor. Range is 0-3600000. The default value is 1000. |

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld (VLAN Interface Configuration)

Configures the multicast listener discovery (MLD) settings for each VLAN.

Syntax

- `default ipv6 mld [last-memb-query-int] [mrouter] [proxy] [query-interval] [query-max-response-time] [robust-value] [send-query] [snoothing] [version]`
- `ipv6 mld [flush] [last-memb-query-int <0-255>] [mrouter <LINE>] [proxy] [query-interval <1-65535>] [query-max-response-time <0-255>] [robust-value <2-255>] [send-query] [snoothing [enable]] [version]`
- `no ipv6 mld [mrouter <LINE>] [proxy] [send-query] [snoothing [enable]]`

Command Parameters

| | |
|--|---|
| flush | Flushes MLD Mrouter, group member, or sender. |
| las-memb-query-int <0-255> | Configures the last member query interval. |
| mrouter <LINE> | Configures multicast forwarding ports. |
| proxy | Enables MLD proxy. |
| query-interval <0-65535> | Configures the query interval time. |
| query-max-response-time <0-255> | Configures the maximum response time in the query message in seconds. |
| robust-value <2-255> | Configures the robustness variable. |
| send-query | Enables MLD send query. |
| snoothing [enable] | Enables multicast listener discovery (MLD) snoothing. |
| version | Configures MLD protocol version. |

Default

None

Command Mode

VLAN Interface Configuration

ipv6 mld proxy

Enables MLD proxy.

Syntax

- `default ipv6 mld proxy {[query-interval] [query-max-response-time] [robust-value]} {send-query}`
- `ipv6 mld proxy {[query-interval <1-65535>] [query-max-response-time <0-255>] [robust-value <2-255>]} {send-query}`

- `no ipv6 mld proxy send-query`

Command Parameters

| | |
|--|---|
| query-interval <1-65535> | Configure query interval time |
| query-max-response-time <0-255> | Configure Max response time in query message (in seconds) |
| robust-value <2-255> | Configure robustness variable |
| send-query | Enable MLD send query |

Default

None

Command Mode

VLAN Interface Configuration

ipv6 nd (VLAN Interface Configuration)

Configures neighbor discovery.

Syntax

- `default ipv6 nd [dad-ns][hop-limit] [managed-config-flag] [other-config-flag] [ra-lifetime <0-9000>] [rtr-advert-max-interval <4-1800>] [rtr-advert-min-interval <3-1350>] [send-ra]`
- `ipv6 nd [dad-ns][hop-limit] [managed-config-flag] [other-config-flag] [ra-lifetime <0-9000>] [rtr-advert-max-interval <4-1800>] [rtr-advert-min-interval <3-1350>] [send-ra]`
- `no ipv6 nd [managed-config-flag] [other-config-flag] [send-ra]`

Command Parameters

| | |
|---|---|
| dad-ns <0-600> | Duplicates address detection - neighbor solicitation. |
| hop-limit <1-255> | Specifies the hop limit value for the interface. |
| managed-config-flag | Managed config flag |
| other-config-flag | Other config flag |
| ra-lifetime <0-9000> | Router advert lifetime |
| rtr-advert-max-interval <4-1800> | Max interval for router advert |
| rtr-advert-min-interval <3-1350> | Min interval for router advert |

send-ra

Send router advert

Default

None

Command Mode

VLAN Interface Configuration

Chapter 15: VRRP Router Configuration

This chapter provides information related to the VRRP Router configuration commands.

end (VRRP Router Configuration)

Exits from router configuration mode.

Syntax

- `end`

Default

None

Command Mode

VRRP Router Configuration

exit (VRRP Router Configuration)

Exits from router configuration mode.

Syntax

- `exit`

Default

None

Command Mode

VRRP Router Configuration

ping-virtual-address

Enables or disables ICMP echo replies from virtual router IP addresses.

Syntax

- `default ping-virtual-address [enable]`
- `no ping-virtual-address [enable]`
- `ping-virtual-address enable`

Command Parameters

enable Enables ICMP echo replies for VRRP associated addresses

Default

None

Command Mode

VRRP Router Configuration