Lenovo Network

Command Reference

For Lenovo Cloud Network Operating System 10.1

Lenovo™

Note: Before using this information and the product it supports, read the general information in the *Safety information and Environmental Notices and User Guide* documents on the Lenovo *Documentation* CD and the *Warranty Information* document that comes with the product.

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Contents

Preface

The *Lenovo Cloud Networking OS™ 10.1 Command Reference for the RackSwitch G8272* describes how to configure and use the Cloud Network OS 10.1 software on the RackSwitch G8272 (referred to as G8272 throughout this document). For documentation on installing the switch physically, see the *Installation Guide* for your G8272.

Who Should Use This Guide

This guide is intended for network installers and system administrators engaged in configuring and maintaining a network. The administrator should be familiar with Ethernet concepts, IP addressing, Spanning Tree Protocol, and SNMP configuration parameters.

What You'll Find in This Guide

This guide will help you plan, implement, and administer Cloud NOS software. Where possible, each section provides feature overviews, usage examples, and configuration instructions. The following information is covered:

- Chapter 1, "CNOS Basics," explains how to get around in CNOS and describes the commands you can enter from User EXEC Mode.
- Chapter 2, "Privileged EXEC Mode Commands," describes Privileged EXEC Mode and the commands available in it.
- Chapter 3, "Debugging Commands, "describes all available debugging commands.
- Chapter 4, "Configuration Mode Commands," describes commands available in Configuration Mode.
- Chapter 5, "Interface Mode Commands," describes commands available in Interface Mode.
- Chapter 6, "Line Mode Commands," describes commands available in Line Configuration Mode
- Chapter 7, "Class Map Mode Commands," describes commands available in Class Map Mode
- Chapter 8, "Route Map Mode Commands," describes commands available in Route Map Mode.
- Chapter 9, "BGP Configuration Mode Commands," describes commands available in BGP Configuration Mode.
- Chapter 10, "Address Family Mode Commands," describes the commands for entering and using BGP Address Family Mode.
- Chapter 11, "Neighbor Mode Commands," describes the commands for entering and using BGP Neighbor Mode.
- Chapter 12, "Neighbor Address Family Commands," describes the commands for entering and using BGP Neighbor Address Family Mode.
- Chapter 13, "OSPF Configuration Mode Commands," describes commands available in OSPF Configuration Mode.
- Chapter 14, "Virtual Link Mode Commands," describes the commands for entering and using OSPF Virtual Link Mode.
- Chapter 15, "TACACS+ Server Mode Commands," describes commands available in TACACS+ Server Configuration Mode.
- Chapter 16, "SPAN Session Mode Commands," describes commands available in SPAN Session Configuration Mode.
- Chapter 17, "Control Plane Mode Commands," describes commands available in Control Plane Configuration Mode.
- Chapter 18, "Key Chain Mode Commands," describes commands available in Key Chain Configuration Mode.
- Chapter 19, "IP ACL Mode Commands," describes commands available in ACL Configuration Mode.

- Chapter 20, “ARP ACL Mode Commands,” describes commands available in ARP ACL Configuration Mode.
- Chapter 21, “MAC ACL Mode Commands,” describes commands available in MAC ACL Configuration Mode.
- Chapter 22, “MST Mode Commands,” describes commands available in MST Configuration Mode.
- Chapter 23, “Policy Map Mode Commands,” describes commands available in Policy Map Configuration Mode.
- Chapter 24, “VLAN Mode Commands,” describes commands available in VLAN Configuration Mode.
- Chapter 25, “VRRP Mode Commands,” describes commands available in VRRP Configuration Mode.
- Chapter 26, “EVC Service Mode Commands,” describes commands available in EVC Service Configuration Mode.
- Chapter 27, “Display Commands,” describes commands available in various modes that display information and statistics about the switch.
- Appendix A, “Getting help and technical assistance,” tells you who to contact with any questions about this product.

Typographic Conventions

The following table describes the typographic styles used in this book.

Table 1. *Typographic Conventions*

Typeface or Symbol	Meaning	Example
`ABC123`	This type is used for names of commands, files, and directories used within the text. It also depicts on-screen computer output and prompts.	View the `readme.txt` file. `Main#`
`ABC123`	This bold type appears in command examples. It shows text that must be typed in exactly as shown.	`Main#` **`sys`**
<ABC123>	This italicized type appears in command examples as a parameter placeholder. Replace the indicated text with the appropriate real name or value when using the command. Do not type the brackets. This also shows book titles, special terms, or words to be emphasized.	To establish a Telnet session, enter: `host#` **`telnet`** *<IP address>* Read your *User's Guide* thoroughly.
{ }	Command items shown inside brackets are mandatory and cannot be excluded. Do not type the brackets.	`host#` **`ls {-a}`**
[ ]	Command items shown inside brackets are optional and can be used or excluded as the situation demands. Do not type the brackets.	`host#` **`ls`** `[`**`-a`**`]`
|	The vertical bar (|) is used in command examples to separate choices where multiple options exist. Select only one of the listed options. Do not type the vertical bar.	`host#` **`set left|right`**
AaBbCc123	This block type depicts menus, buttons, and other controls that appear in Web browsers and other graphical interfaces.	Click the **Save** button.

Chapter 1. CNOS Basics

Your RackSwitch G8272 is ready to perform basic switching functions right out of the box. Some of the more advanced features, however, require some administrative configuration before they can be used effectively.

This guide describes the individual Industry-Standard Command Line Interface (ISCLI) commands available for the G8272.

The ISCLI provides a direct method for collecting switch information and performing switch configuration. Using a basic terminal, the ISCLI allows you to view information and statistics about the switch, and to perform any necessary configuration.

This chapter explains how to access the ISCLI for the switch.

ISCLI Command Modes

The ISCLI has three major command modes listed in order of increasing privileges, as follows:

- User EXEC Mode (e.g. `G8272>`)

  This is the initial mode of access. By default, password checking is disabled for this mode, on console.

- Privileged EXEC mode (e.g. `G8272#`)

  This mode is accessed from User EXEC Mode. This mode can be accessed using the following command: **`enable`**

- Configuration Mode (e.g. `G8272(config)#`)

  This mode allows you to make changes to the running configuration. If you save the configuration, the settings survive a reload of the G8272. Several sub-modes can be accessed from the User EXEC Mode. This mode can be accessed using the following command: **`configure device`**

Each mode provides a specific set of commands. Most lower-privilege mode commands are accessible when using a higher-privilege mode.

Command Line Interface Shortcuts

The following shortcuts allow you to enter commands quickly and easily.

CLI List and Range Inputs

For VLAN and port commands that allow an individual item to be selected from within a numeric range, lists and ranges of items can now be specified. For example, the `vlan` command permits the following options:

```
# vlan 1,3,4094                    (access VLANs 1, 3, and 4094)
# vlan 1-20                        (access VLANs 1 through 20)
# vlan 1-5,90-99,4090-4094         (access multiple ranges)
# vlan 1-5,19,20,4090-4094         (access a mix of lists and ranges)
```

The numbers in a range must be separated by a dash: *<start of range>*-*<end of range>*

Multiple ranges or items are permitted using a comma: *<range or item 1>*,*<range or item 2>*

Do not use spaces within list and range specifications.

Ranges can also be used to apply the same command option to multiple items. For example, to access multiple ports with one command:

```
# spanning-tree mst 1-4 cost 200     (Instances 1 though 4)
```

Command Abbreviation

Most commands can be abbreviated by entering the first characters which distinguish the command from the others in the same mode. For example, consider the following full command and a valid abbreviation:

```
G8272(config)# spanning-tree mst 1-4 priority 4096
   or
G8272(config)# sp ms 1-4 p 4096
```

Tab Completion

By entering the first letter of a command at any prompt and pressing <Tab>, the ISCLI displays all available commands or options that begin with that letter. Entering additional letters further refines the list of commands or options displayed. If only one command fits the input text when <Tab> is pressed, that command is supplied on the command line, waiting to be entered.

If multiple commands share the typed characters, when you press <Tab>, the ISCLI completes the common part of the shared syntax.

Line Editing

The following keystroke commands are available for editing command lines:

Command	Behavior
`Ctrl-A`	Moves the cursor to the beginning of the line.
`Ctrl-B`	Moves the cursor one character to the left.
`Ctrl-D`	Deletes the character at the cursor.
`Ctrl-E`	Moves the cursor to the end of the line.
`Ctrl-F`	Moves the cursor one character to the right.
`Ctrl-K`	"Kills" all text to the right of the cursor, putting it into a buffer.
`Ctrl-L`	Blanks the screen, leaving the current line intact at the top.
`Ctrl-N`	Move to the next command in the command history.
`Ctrl-P`	Move to the previous command in the command history.
`Ctrl-T`	Swaps the character at the cursor with the character to the left of the cursor.
`Ctrl-U`	Clears all text from the command line.
`Ctrl-W`	Deletes from the cursor to the start of the "word."
`Ctrl-Y`	"Yank" the text from the kill buffer.
`Esc-B`	Moves the cursor backwards one "word."
`Esc-C`	Capitalizes the first letter of the "word" or the character where the cursor is pointing.
`Esc-D`	Deletes to the end of the word to the right of the cursor.
`Esc-F`	Moves the cursor forwards one "word."
`Esc-L`	Changes the text to lowercase from the cursor to the end of the "word."
`Esc-U`	Changes the text to uppercase from the cursor to the end of the "word."

User Access Levels

To enable better switch management and user accountability, two levels or *classes* of user access have been implemented on the G8272. Levels of access to CLI, Web management functions, and screens increase as needed to perform various switch management tasks. Conceptually, access classes are defined as follows:

- **network-operator**

  Interaction with the switch is completely passive—nothing can be changed on the G8296. Users may display information that has no security or privacy implications, such as switch statistics and current operational state information.

- **network-admin**

  Administrators are the only ones that may make permanent changes to the switch configuration—changes that are persistent across a reboot/reset of the switch. Administrators can access switch functions to configure and troubleshoot problems on the G8272. Because administrators can also make temporary (operator-level) changes as well, they must be aware of the interactions between temporary and permanent changes.

Access to switch functions is controlled through the use of unique surnames and passwords. Once you are connected to the switch via local Telnet, remote Telnet, or SSH, you are prompted to enter a password. The default user names/password for each access level are listed in the following table.

Note: To maintain security, change default switch passwords after initial configuration and as regularly as required under your network security policies.

User Account	Description and Tasks Performed	Password
Network Operator	The network operator has no direct responsibility for switch management. He or she can view all switch status information and statistics, but cannot make any configuration changes to the switch.	
Network Administrator	The network administrator has complete access to all command modes, information, and configuration commands on the RackSwitch G8272, including the ability to change both the operator and administrator passwords.	`admin`

Note: Access to network-operator user level can be disabled by setting the password to an empty value.

Using User EXEC Commands

Some basic commands are recognized throughout the ISCLI command modes. These commands are useful for obtaining online help, navigating through the interface, and for saving configuration changes.

For general help with using the CNOS ISCLI, enter `help`.

display

Displays information about the parameter given.

Syntax

`display` *<argument>*

where:

Parameter	Description
argument	The item about which information is desired.

For full information about the “display” commands, see Chapter 27, “Display Commands.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Restrictions

Not all “display” commands work in all modes. See Chapter 27, “Display Commands for more information about which “display” commands work in which modes.

Examples

The following example shows the users logged into the switch:

```
G8272> display users
```

disable

Turns off Privileged Command Mode.

Syntax

disable

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example disables Privileged Command Mode:

```
G8272# disable
```

enable

Turns on Privileged Command Mode.

Syntax

enable

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables Privileged Command Mode:

```
G8272> enable
```

exit

Leave the current command mode and go down to the previous command mode. If in User EXEC Mode, logs off the switch.

Syntax

```
exit
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example logs off the switch:

```
G8272> exit
```

help

Gives a brief description of the interactive help system.

Syntax

```
help
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example displays a short help text:

```
G8272> help
```

logout

Logs you off the switch.

Syntax

logout

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example logs you off the switch:

```
G8272> logout
```

Logs you off the switch.

no dbg

Disables debugging of the selected parameter. This command is the same as the undebug command.

Syntax

no dbg *<parameters>*

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example disables AAA debugging:

```
G8272> no dbg aaa
```

ntp sync-retry

Retries Network Time Protocol (NTP) synchronization with configured servers.

Syntax

```
ntp sync-retry
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example retries NTP synchronization:

```
G8272> ntp sync-retry
```

quit

Exits the current mode and goes down to the previous mode. If entered in User EXEC Mode, logs out of the switch.

Syntax

```
quit
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example logs out of the switch:

```
G8272> quit
```

remove aaa local user lockout

Unlock a user that has been locked out.

Syntax

`remove aaa local user lockout username` *<user name>*

where:

Parameter	Description
user name	The name of the user being unlocked.

Modes

User EXEC mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the lockout for the user `UnlockedUser`:

```
G8272> remove aaa local user lockout username UnlockedUser
```

remove access-list counters

Clears access list statistics.

Syntax

`remove access-list counters` [*<access list>*]

where:

Parameter	Description
access list	The name of an access list with statistics that are being cleared.

If no access list is supplied, all access list statistics are cleared.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the statistics for the acccess list `MyList`:

```
G8272> remove access-list counters MyList
```

remove arp access-list counters

Clears Address Resolution Protocol (ARP) access list statistics.

Syntax

`remove arp access-list counters` [<*access list*>]

where:

Parameter	Description
access list	The name of an access list with statistics that are being cleared.

If no access list is supplied, all access list statistics are cleared.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the statistics for the acccess list `MyList`:

```
G8272> remove arp access-list counters MyList
```

remove bgp ipv4 unicast policy statistics redistribute

Clears Border Gateway Protocol (BGP) IPv4 policy-related information, route filter statistics, and statistics for redistribution.

Syntax

remove bgp ipv4 unicast policy statistics redistribute {**all**|**direct**|**static**} [**vrf default**|**all**]

where:

Parameter	Description
all	Clear all statistics for redistributed protocols.
direct	Clear statistics for directly-connected switches.
static	Clear statistics for static addresses.
vrf	Select a VPN route/forwarding instance.
default	Select the default VPN route/forwarding instance.
all	Select all VPN route/forwarding instances.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example clears the statistics for the all redistributed protocols for all VPN route/forwarding instances:

```
G8272> remove bgp ipv4 unicast policy statistics redistribute all vrf all
```

remove cli history

Clears the command line history.

Syntax

```
remove cli history
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the CLI history:

```
G8272> remove cli history
```

remove copp statistics

Clears control plane policing (CoPP) statistics.

Syntax

```
remove copp statistics
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all CoPP statistics:

```
G8272> remove copp statistics
```

remove counters

Clears all counters.

Syntax

```
remove counters
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all counters:

```
G8272> remove counters
```

remove counters interface

Clears all interface counters.

Syntax

`remove counters interface` *<interface name>*

where:

Parameter	Description
interface name	The name of the interface containing the counters that are being cleared.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

The named interface must exist.

Examples

The following example clears all interface counters for interface `MyInterface`:

```
G8272> remove counters interface MyInterface
```

remove counters interface all

Clears all interface counters.

Syntax

```
remove counters interface all
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all interface counters:

```
G8272> remove counters interface all
```

remove counters interface ethernet

Clears all interface counters for the specified ethernet interface.

Syntax

remove counters interface ethernet *<slot>/<chassis>*

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

The specified interface must exist.

Examples

The following example clears all interface counters for ethernet interface 1/1:

```
G8272> remove counters interface ethernet 1/1
```

remove counters interface loopback

Clears all interface counters for the specified loopback interface.

Syntax

`remove counters interface loopback` *<interface number>*

where:

Parameter	Description
interface number	The loopback interface number; an integer from 0-7.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all interface counters from loopback interface 2:

```
G8272> remove counters interface loopback 2
```

remove counters interface mgmt

Clears all interface counters for the management interface.

Syntax

```
remove counters interface mgmt 0
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all interface counters from the management interface (0):

```
G8272> remove counters interface mgmt 0
```

remove counters interface port-aggregation

Clears all interface counters for the specified LAG.

Syntax

`remove counters interface port-aggregation` *<LAG number>*

where:

Parameter	Description
LAG number	The number of the LAG; an integer from 1-4096.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all interface counters from LAG 2:

```
G8272> remove counters interface port-aggregation 2
```

remove counters interface vlan

Clears all interface counters for the specified VLAN interface.

Syntax

remove counters interface vlan *<VLAN number>*

where:

Parameter	Description
VLAN number	The VLAN interface number; an integer from 1-4094.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

The VLAN must exist for this command to work.

Examples

The following example clears all interface counters from VLAN interface 2:

```
G8272> remove counters interface vlan 2
```

remove ip access-list counters

Clears all IP access list counters.

Syntax

`remove ip access-list counters` [<*ACL name*>]

where:

Parameter	Description
ACL name	The name of the access list.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all IP counters from access list MyACL:

```
G8272> remove ip access-list counters MyACL
```

remove ip bgp statistics

Resets all BGP statistics.

Syntax

```
remove ip bgp statistics
```

Modes

User EXEC mode
Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command resets all IP BGP statistics:

```
G8272> remove ip bgp statistics
```

remove ip igmp snooping

Resets Internet Group Management Protocol (IGMP) Snooping statistics and deletes all IGMP Snooping entries.

Syntax

`remove ip igmp snooping [{group|mrouter} {*|`*<multicast address>*** **`[vlan`** *<VLAN number>***`]|vlan`** *<VLAN number>***`}|statistics {all|vlan`** *<VLAN number>***`}]`**

where:

Parameter	Function
`group`	Deletes IGMP group entries.
`mrouter`	Deletes IGMP multicast router cache entries.
*	Deletes all entries.
multicast address	Deletes IGMP entries for the specified multicast IP address.
`statistics`	Deletes IGMP statistics.
`all`	Deletes all IGMP statistics.
`vlan` *VLAN number*	Deletes IGMP entries for the specified VLAN. The *VLAN number* is from 1 to 4094.

Modes

User EXEC mode
Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command resets all IGMP Snooping statistics:

```
G8272> remove ip igmp snooping statistics all
```

remove ip ospf policy statistics redistribute

Resets Open Shortest Path First (OSPF) redistribution policy related statistics.

Syntax

remove ip ospf [<*OSPF instance*>**] policy statistics redistribute {bgp|direct|static}**

where:

Parameter	Function
OSPF instance	The OSPF instance. Its number is 0.
`bgp`	Resets statistics only for routes learned through the Border Gateway Protocol (BGP).
`direct`	Resets statistics only for directly connected routes.
`static`	Resets statistics only for static routes.

Modes

User EXEC mode
Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command resets OSPF redistribution policy related statistics only for directly connected routes:

```
G8272> remove ip ospf policy statistics redistribute direct
```

remove ip ospf rib counters

Resets Open Shortest Path First (OSPF) Routing Information Base (RIB) statistics.

Syntax

```
remove ip ospf rib counters
```

Modes

User EXEC mode
Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command resets all OSPF RIB statistics:

```
G8272> remove ip ospf rib counters
```

remove ip ospf statistics

Resets Open Shortest Path First (OSPF) statistics.

Syntax

remove ip ospf [<*OSPF instance*>**] statistics**

where:

Parameter	Function
OSPF instance	The OSPF instance. Its number is 0.

Modes

User EXEC mode
Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command resets all OSPF statistics:

```
G8272> remove ip ospf statistics
```

remove ip ospf traffic

Resets Open Shortest Path First (OSPF) traffic statistics.

Syntax

remove ip ospf [<*OSPF instance*>**] traffic [**<*interface name*>**|ethernet** <*chassis number*/*port number*>**|loopback** <*loopback interface*>**|mgmt** <*management interface*>**|port-aggregation** <*LAG number*>**|vlan** <*VLAN number*>**]**

where:

Parameter	Function
OSPF instance	The OSPF instance. Its number is 0.
interface name	Resets traffic statistics for the specified interface by name.
`ethernet` *chassis number/port number*	Resets traffic statistics for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Resets traffic statistics for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Resets traffic statistics for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Resets traffic statistics for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Resets traffic statistics for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.

Modes

User EXEC mode
Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command resets all OSPF traffic statistics:

```
G8272> remove ip ospf traffic
```

remove ipv6 adjacency

Clears the IPv6 adjacency table for the specified IPv6 address or management interface.

Syntax

remove ipv6 adjacency [{*<IPv6 address>*|*<Mgmt number>*}] [**force-clear**] [**vrf** {**all**|**default**|**management**}]

where:

Parameter	Description
IPv6 address	The IPv6 address of the neighbor.
Mgmt number	The management interface number.
force-clear	Clear the table without a refresh.
vrf	Clear entries for virtual routing and forwarding (VRF) instances.
all	Clear all VRF instance entries.
default	Clear default VRF instance entries.
management	Clear management VRF instance entries.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all IPv6 adjacency table entries from IPv6 address dead:beef::caca:dada:

```
G8272> remove ipv6 adjacency dead:beef::caca:dada
```

The following example force clears all default VRF IPv6 adjacency table entries from management interface 0:

```
G8272> remove ipv6 adjacency 0 force-clear vrf default
```

remove ipv6 adjacency ethernet

Clears the IPv6 adjacency table for the specified ethernet interface.

Syntax

remove ipv6 adjacency ethernet {*<slot>*/*<chassis>*} [**force-clear**] [**vrf** {**all**|**default**|**management**}]

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
force-clear	Clear the table without a refresh.
vrf	Clear entries for virtual routing and forwarding (VRF) instances.
all	Clear all VRF instance entries.
default	Clear default VRF instance entries.
management	Clear management VRF instance entries.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all IPv6 adjacency table entries from Ethernet interface 1/1:

```
G8272> remove ipv6 adjacency ethernet 1/1
```

The following example force clears all default VRF IPv6 adjacency table entries from Ethernet interface 1/1:

```
G8272> remove ipv6 adjacency ethernet 1/1 force-clear vrf default
```

remove ipv6 adjacency loopback

Clears the IPv6 adjacency table for the specified loopback interface.

Syntax

remove ipv6 adjacency loopback {<*interface number*>} [**force-clear**] [**vrf** {**all**|**default**|**management**}]

where:

Parameter	Description
interface number	The loopback interface number; an integer from 0-7.
force-clear	Clear the table without a refresh.
vrf	Clear entries for virtual routing and forwarding (VRF) instances.
all	Clear all VRF instance entries.
default	Clear default VRF instance entries.
management	Clear management VRF instance entries.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all IPv6 adjacency table entries from loopback interface 2:

```
G8272> remove ipv6 adjacency loopback 2
```

The following example force clears all default VRF IPv6 adjacency table entries from loopback interface 2:

```
G8272> remove ipv6 adjacency loopback 2 force-clear vrf default
```

remove ipv6 adjacency mgmt

Clears the IPv6 adjacency table for the specified management interface.

Syntax

remove ipv6 adjacency mgmt {<*interface number*>} [**force-clear**] [**vrf** {**all**|**default**|**management**}]

where:

Parameter	Description
interface number	The management interface number (0).
force-clear	Clear the table without a refresh.
vrf	Clear entries for virtual routing and forwarding (VRF) instances.
all	Clear all VRF instance entries.
default	Clear default VRF instance entries.
management	Clear management VRF instance entries.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all IPv6 adjacency table entries from management interface 0:

```
G8272> remove ipv6 adjacency mgmt 0
```

The following example force clears all default VRF IPv6 adjacency table entries from management interface 0:

```
G8272> remove ipv6 adjacency mgmt 0 force-clear vrf default
```

remove ipv6 adjacency port-aggregation

Clears the IPv6 adjacency table for the specified LAG.

Syntax

remove ipv6 adjacency port-aggregation {<*LAG number*>} [**force-clear**] [**vrf** {**all**|**default**|**management**}]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
force-clear	Clear the table without a refresh.
vrf	Clear entries for virtual routing and forwarding (VRF) instances.
all	Clear all VRF instance entries.
default	Clear default VRF instance entries.
management	Clear management VRF instance entries.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all IPv6 adjacency table entries from LAG 1:

```
G8272> remove ipv6 adjacency port-aggregation 1
```

The following example force clears all default VRF IPv6 adjacency table entries from LAG 1:

```
G8272> remove ipv6 adjacency port-aggregation 1 force-clear vrf default
```

remove ipv6 adjacency vlan

Clears the IPv6 adjacency table for the specified VLAN interface.

Syntax

remove ipv6 adjacency vlan {<*VLAN number*>} [**force-clear**] [**vrf** {**all**|**default**|**management**}]

where:

Parameter	Description
VLAN number	The VLAN number; an integer from 1-4094.
force-clear	Clear the table without a refresh.
vrf	Clear entries for virtual routing and forwarding (VRF) instances.
all	Clear all VRF instance entries.
default	Clear default VRF instance entries.
management	Clear management VRF instance entries.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all IPv6 adjacency table entries from VLAN 1:

```
G8272> remove ipv6 adjacency vlan 1
```

The following example force clears all default VRF IPv6 adjacency table entries from VLAN 1:

```
G8272> remove ipv6 adjacency vlan 1 force-clear vrf default
```

remove ipv6 neighbor

Clears all IPv6 neighbors.

Syntax

`remove ipv6 neighbor [`*<interface name>***`|`***<neighbor address>***`|ethernet`** *<chassis number/port number>* **`|loopback`** *<loopback interface>* **`|mgmt`** *<management interface>* **`|port-aggregation`** *<LAG number>* **`|vlan`** *<VLAN number>* **`] [force-clear] [vrf {all|default|management}]`**

where:

Parameter	Function
interface name	Clears IPv6 neighbors for the interface specified by its name.
neighbor address	Clears the specified neighbor IPv6 address.
`ethernet` *chassis number/port number*	Clears IPv6 neighbors for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Clears IPv6 neighbors for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Clears IPv6 neighbors for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Clears IPv6 neighbors for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Clears IPv6 neighbors for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
`force-clear`	Clears the IPv6 neighbor cache without refreshing.
`vrf all`	Clears IPv6 neighbors associated with all Virtual Routing and Forwarding (VRF) instances.
`vrf default`	Clears IPv6 neighbors associated with the default VRF instance.
`vrf management`	Clears IPv6 neighbors associated with the management VRF instance.

Modes

User EXEC mode
Privileged EXEC mode
Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command clears all IPv6 neighbors:

```
G8272> remove ipv6 neighbor
```

remove lacp counters interface

Clears the LACP counters.

Syntax

remove lacp counters [interface port-aggregation *<LAG number>***]**

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the LACP counters from LAG 1:

```
G8272> remove lacp counters interface port-aggregation 1
```

remove lacp internal event-history

Clears the LACP internal event logs for the specified interface.

Syntax

remove lacp internal event-history {**all**|**errors**|**interface**|**msgs**}

where:

Parameter	Description
all	Clear all event logs.
errors	Only clear error logs.
interface	Only clear interface logs.
message	Only clear message logs.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the LACP events from interface logs:

```
G8272> remove lacp internal event-history interface
```

remove line

Clears the session on the specified virtual terminal (VTY).

Syntax

`remove line` *<VTY name>*

where:

Parameter	Description
VTY name	The name of the VTY being cleared.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears a VTY named MyVTY:

```
G8272> remove line MyVTY
```

remove lldp counters interface ethernet

Clears the LLDP information on the specified ethernet interface.

Syntax

remove lldp counters interface ethernet *<chassis number>/<port number>*

where:

Parameter	Description
chassis number	The ethernet chassis number is 1.
port number	The ethernet port number (a number from 1 to 128).

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears LLDP information on ethernet interface 1/1:

```
G8272> remove lldp counters interface ethernet 1/1
```

remove lldp counters interface mgmt

Clears the LLDP information on the specified management interface.

Syntax

`remove lldp counters interface mgmt` *<management interface>*

where:

Parameter	Description
<management interface>	The management interface (0).

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears LLDP information on management interface 0:

```
G8272> remove lldp counters interface mgmt 0
```

remove mac access-list counters

Clears the MAC access-list counters on the specified interface.

Syntax

remove mac access-list counters [<*MAC list*>]

where:

Parameter	Description
<*MAC list*>	The MAC list name.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears MAC access list counters for MAC list MyMACList:

```
G8272> remove mac access-list counters MyMACList
```

remove mac address-table dynamic

Clears all dynamic MAC addresses from the Forwarding Database (FDB).

Syntax

```
remove mac address-table dynamic
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all dynamic MAC addresses from the FDB:

```
G8272> remove mac address-table dynamic
```

remove mac address-table dynamic address

Clears the MAC address table for the specified dynamic address.

Syntax

remove mac address-table dynamic address <*MAC address*>

where:

Parameter	Description
MAC address	The MAC address of the address table..

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the MAC address table for MAC address `dead:beef:baba`:

```
G8272> remove mac address-table dynamic address dead:beef:baba
```

remove mac address-table dynamic interface ethernet

Clears the MAC address table for the specified ethernet interface.

Syntax

remove mac address-table dynamic interface ethernet *<slot>/<chassis>*

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
VLAN ID	The VLAN ID; an integer from 1-3999.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the MAC address table for ethernet `1/1`:

```
G8272> remove mac address-table dynamic interface ethernet 1/1
```

remove mac address-table dynamic interface port-aggregation

Clears the MAC address table for the specified LAG.

Syntax

remove mac address-table dynamic [interface port-aggregation <*LAG number*>**]** [**vlan** <*VLAN ID*>]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
VLAN ID	The VLAN ID; an integer from 1-3999.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the MAC address table for LAG 2:

```
G8272> remove mac address-table dynamic interface port-aggregation 2
```

remove mac address-table dynamic vlan

Clears the MAC address table for the specified dynamic VLAN.

Syntax

remove mac address-table dynamic vlan *<VLAN ID>*

where:

Parameter	Description
VLAN ID	The VLAN ID; an integer from 1-3999.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the MAC address table for the specified dynamic VLAN:

```
G8272> remove mac address-table dynamic vlan 200
```

remove mac address-table static

Clears all static MAC addresses from the Forwarding Database (FDB).

Syntax

```
remove mac address-table static
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears all static MAC addresses from the FDB:

```
G8272> remove mac address-table static
```

remove mac address-table static address

Clears the MAC address table for the specified static address.

Syntax

remove mac address-table static address *<MAC address>*
[**vlan** *<VLAN ID>*]

where:

Parameter	Description
MAC address	The MAC address of the address table..
VLAN ID	The VLAN ID; an integer from 1-3999.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the MAC address table for MAC address `dead:beef:baba`:

```
G8272> remove mac address-table static address dead:beef:baba
```

remove mac address-table static interface ethernet

Clears the MAC address table for the specified ethernet interface.

Syntax

remove mac address-table static interface ethernet *<slot>/<chassis>* [**vlan** *<VLAN ID>*]

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
VLAN ID	The VLAN ID; an integer from 1-3999.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the MAC address table for ethernet `1/1`:

```
G8272> remove mac address-table static interface ethernet 1/1
```

remove mac address-table static interface port-aggregation

Clears the MAC address table for the specified LAG.

Syntax

remove mac address-table static interface [port-aggregation <*LAG number*>**]** [**vlan** <*VLAN ID*>]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
VLAN ID	The VLAN ID; an integer from 1-3999.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the MAC address table for LAG 2:

```
G8272> remove mac address-table static interface port-aggregation 2
```

remove mac address-table static vlan

Clears the MAC address table for the specified VLAN.

Syntax

remove mac address-table static vlan <*VLAN ID*>]

where:

Parameter	Description
VLAN ID	The VLAN ID; an integer from 1-3999.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the MAC address table for VLAN 1:

```
G8272> remove mac address-table static vlan 1
```

remove ntp statistics

Clears Network Time Protocol (NTP) statistics.

Syntax

remove ntp statistics {**all-peers**|**io**|**local**|**memory**}

where:

Parameter	Description
all-peers	Clear peer-to-peer statistics counter of all peers.
io	Clear input/output statistics.
local	Clear counters maintained by the local NTP.
memory	Clear statistics counters related to memory code.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears NTP statistics for all peers:

```
G8272> remove ntp statistics all-peers
```

remove qos statistics input type

Clears Quality of Service (QoS) statistics for the specified input type.

Syntax

remove qos statistics input type {**qos**|**queuing**}

where:

Parameter	Description
qos	Clear QoS statistics.
queuing	Clear queuing statistics.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears QoS statistics:

```
G8272> remove qos statistics input type qos
```

remove qos statistics interface

Clears Quality of Service (QoS) interface statistics for the specified input type.

Syntax

remove qos statistics interface *<interface name>* [{**input**|**output**}] **type** {**qos**|**queuing**}

where:

Parameter	Description
interface name	The name of the interface.
input	Clear input direction only.
output	Clear output direction only.
qos	Clear QoS statistics.
queuing	Clear queuing statistics.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears QoS interface statistics: for the interface `MyInterface`:

```
G8272> remove qos statistics interface MyInterface input type qos
```

remove qos statistics interface ethernet

Clears Quality of Service (QoS) ethernet interface statistics for the specified input type.

Syntax

remove qos statistics interface ethernet *<slot>/<chassis>* [{**input**|**output**}] **type** {**qos**|**queuing**}

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number.
input	Clear input direction only.
output	Clear output direction only.
qos	Clear QoS statistics.
queuing	Clear queuing statistics.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears QoS interface statistics: for the ethernet interface `1/1`:

```
G8272> remove qos statistics interface ethernet 1/1 input type qos
```

remove qos statistics interface port-aggregation

Clears Quality of Service (QoS) LAG statistics for the specified input type.

Syntax

remove qos statistics interface port-aggregation *<LAG number>* [{**input**|**output**}] **type** {**qos**|**queuing**}

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-1024.
input	Clear input direction only.
output	Clear output direction only.
qos	Clear QoS statistics.
queuing	Clear queuing statistics.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears QoS interface statistics for LAG 2:

```
G8272> remove qos statistics interface port-aggregation 2 input type qos
```

remove qos statistics interface vlan

Clears Quality of Service (QoS) VLAN interface statistics for the specified input type.

Syntax

remove qos statistics interface VLAN *<VLAN number>* [{**input**|**output**}] **type** {**qos**|**queuing**}

where:

Parameter	Description
VLAN number	The VLAN number; an integer from 1-4094.
input	Clear input direction only.
output	Clear output direction only.
qos	Clear QoS statistics.
queuing	Clear queuing statistics.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears QoS interface statistics for VLAN 2:

```
G8272> remove qos statistics interface vlan 2 input type qos
```

remove rib ipc stats

Clears Routing Information Base (RIB) Inter-Process Communication (IPC) statistics.

Syntax

```
remove rib ipc stats
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears RIB IPC statistics:

```
G8272> remove rib ipc stats
```

remove snmp counters

Clears Simple Network Management Protocol (SNMP) counters.

Syntax

```
remove snmp counters
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears SNMP counters:

```
G8272> remove snmp counters
```

remove snmp hostconfig

Clears the Simple Network Management Protocol (SNMP) host configuration.

Syntax

```
remove snmp hostconfig
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears SNMP host configuration:

```
G8272> remove snmp hostconfig
```

remove spanning-tree counters

Clears the spanning-tree counters.

Syntax

```
remove spanning-tree counters
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears spanning tree counters:

```
G8272> remove spanning-tree counters
```

remove spanning-tree counters interface ethernet

Clears spanning tree counters for the specified ethernet interface.

Syntax

remove spanning-tree counters interface ethernet *<slot>/<chassis>*

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears spanning tree counters for ethernet interface `1/10`:

```
G8272> remove spanning-tree counters interface ethernet 1/10
```

remove spanning-tree counters interface port-aggregation

Clears spanning tree counters for the specified LAG.

Syntax

remove spanning-tree counters interface port-aggregation *<LAG number>*

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears spanning tree counters for LAG 2:

```
G8272> remove spanning-tree counters interface port-aggregation 2
```

remove spanning-tree internal event-history

Clears the spanning tree internal event history as specified.

Syntax

remove spanning-tree internal event-history
{**all**|**deleted**|**errors**|**msgs**|**tree**}

where:

Parameter	Description
all	Clear all event histories.
deleted	Clear event history of deleted trees and ports.
errors	Clear STP error event history logs.
msgs	Clear STP message event history logs.
tree	Clear spanning tree instance information.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the spanning tree internal event history of deleted trees and ports:

```
G8272> remove spanning-tree internal event-history deleted
```

remove statistics microburst

Clears the microburst statistics for all microburst detection enabled ethernet interfaces.

Syntax

```
remove statistics microburst
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears microburst statistics:

```
G8272> remove statistics microburst
```

remove statistics microburst interface ethernet

Clears the microburst.statistics for the specified ethernet interface.

Syntax

`remove statistics microburst interface ethernet` *<slot>/<chassis>*

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears microburst statistics for ethernet interface 1/10:

```
G8272> remove statistics microburst interface ethernet 1/10
```

remove user

Logs out the specified user.

Syntax

`remove user` *<user name>*

where:

Parameter	Description
user name	The user to be logged out.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears user `lynn`:

```
G8272> remove user lynn
```

remove vlag internal event-history

Clears the VLAG internal event history messages as specified.

Syntax

remove vlag internal event-history {**all**|**errors**|**msgs**}

where:

Parameter	Description
all	Clear all kinds of events.
errors	Clear all error events.
msgs	Clear all message events.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears VLAG statistics for all message events:

```
G8272> remove vlag internal event-history msgs
```

remove vlag statistics

Clears VLAG statistics.

Syntax

```
remove vlag statistics
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears VLAG statistics:

```
G8272> remove vlag statistics
```

remove vlan access-list counters

Clears VLAN access list counters. If a VLAN access map is specified, clears access list for that VLAN access map.

Syntax

`remove vlan access-list counters` [<*VLAN access map*>]

where:

Parameter	Description
VLAN access map	The name of the VLAN access map to be cleared.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears access list counters for VLAN access map `MyMap`:

```
G8272> remove vlan access-list counters MyMap
```

remove vrrp ipv6

Clears the specified IPv6 VRRP session.

Syntax

remove vrrp ipv6 vr *<VRRP group>* **interface** *<interface name>*

remove vrrp ipv6 vr *<VRRP group>* **interface ethernet** *<slot/chassis>*

remove vrrp ipv6 vr *<VRRP group>* **interface vlan** *<VLAN ID>*

where:

Parameter	Description
VRRP group	The VRRP group ID; an integer from 1-255.
interface name	The name of the interface containing the session being cleared.
slot	The ethernet slot number.
chassis	The ethernet chassis number.
VLAN ID	The VLAN ID; an integer from 1-4094.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example clears the IPv6 VRRP session on ethernet 1/10:

```
G8272> remove vrrp ipv6 vr 2 interface ethernet 1/10
```

terminal length

Sets the number of lines that display before the screen pauses.

Syntax

terminal length *<lines>*

where:.

Parameter	Description
lines	The number of lines on the screen (or 0 for no pausing); an integer from 0-511. The default value is 24.

The command **terminal no length** resets the terminal length.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the screen length to 70:

```
G8272> terminal length 70
```

terminal width

Sets the number of columns that display before the screen wraps.

Syntax

`terminal width` *<lines>*

where:.

Parameter	Description
lines	The number of lines on the screen; an integer from 24-511.

The command **`terminal no width`** resets the terminal width.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the screen width to 160:

```
G8272> terminal width 160
```

where

Shows which ISCLI mode you are in.

Syntax

where

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example shows which ISCLI mode you are in:

```
G8272> where
```

Chapter 2. Privileged EXEC Mode Commands

This chapter describes how to enter Privileged EXEC Mode and the commands available in this mode.

enable

Enters Privileged EXEC Mode.

Syntax

enable

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enters Privileged EXEC Mode::

```
G8272> enable
G8272#
```

end

Exits the current command mode and enters Privileged EXEC Mode.

Syntax

end

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command exits the current command mode and enters Privileged EXEC Mode:

```
G8272(config)# end
G8272#
```

remove ip arp

Clears all Address Resolution Protocol (ARP) table entries.

Syntax

`remove ip arp [`*<IPv4 address>*`|`***<interface name>*`|ethernet`** *<chassis number/port number>*`|loopback`** *<loopback interface>*`|mgmt`** *<management interface>*`|vlan`** *<VLAN number>*`] [force-delete] [vrf {all|default|management}]`**

where:

Parameter	Function
IPv4 address	Clears ARP entries for the specified IPv4 address.
interface name	Clears ARP entries for the interface specified by name.
`ethernet` *chassis number/port number*	Clears ARP entries for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Clears ARP entries for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Clears ARP entries for the specified management interface. The *management interface* is 0.
`vlan` *VLAN number*	Clears ARP entries for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
`force-delete`	Clears ARP entries without refreshing the table.
`vrf all`	Clears ARP entries associated with all Virtual Routing and Forwarding (VRF) instances.
`vrf default`	Clears ARP entries associated with the default VRF instance.
`vrf management`	Clears ARP entries associated with the management VRF instance.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes all ARP table entries:

```
G8272# remove ip arp
```

remove ip bgp

Resets Border Gateway Protocol (BGP) neighbors.

Syntax

remove ip bgp {all|{ipv4|ipv6} unicast} {*|<*AS number*>**|**<*neighbor address*>**[/**<*prefix length*>**]} [vrf {all|default}]**

remove ip bgp {<*AS number*>**|**<*neighbor address*>**|external|peer-group** <*peer group name*>**} [in [prefix-filter]|out|soft [in|out]]**

remove ip bgp {*|<*neighbor address*>**} [vrf default] [soft [in|out]]**

remove ip bgp {*|<*AS number*>**|**<*neighbor address*>**|external|peer-group** <*peer group name*>**} [ipv4 unicast {in [prefix-filter]|out|soft [in|out]}]**

remove ip bgp {*|<*AS number*>**} [ipv6 unicast [soft [in|out]]]**

where:

Parameter	Function
`all`	Resets BGP neighbors for all IP address families.
`ipv4`	Resets BGP neighbors only for the IPv4 address family.
`ipv6`	Resets BGP neighbors only for the IPv6 address family.
`unicast`	Resets BGP neighbors only for the unicast IP address family.
*	Resets all BGP neighbors.
AS number	Resets BGP neighbors from the specified autonomous system (AS). The *AS number* is from 1 to 4294967295.
neighbor address	The IPv4 or IPv6 address of the BGP neighbor.
/prefix length	The IPv4 or IPv6 network mask.
`external`	Resets all BGP neighbors outside the local AS.
`peer-group` *peer group name*	Resets all BGP neighbors that are part of the specified peer group.
`soft`	Triggers a soft reconfiguration (a routing update without resetting the BGP session).
`in`	Triggers a soft reconfiguration and saves a copy of all received routes.
`prefix-length`	Pushes out the prefix list Outbound Route Filter (ORF) and then, triggers a soft reconfiguration and saves a copy of all received routes.

Parameter	Function
`out`	Triggers a soft reconfiguration and saves a copy of all sent routes.
`vrf all`	Resets BGP neighbors associated with all Virtual Routing and Forwarding (VRF) instances.
`vrf default`	Resets BGP neighbors associated with the default VRF instance.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes all BGP neighbors:

```
G8272# remove ip bgp *
```

remove ip bgp dampening

Clears Border Gateway Protocol (BGP) dampening information.

Syntax

`remove ip bgp [all|{ipv4|ipv6} unicast] dampening [`*<neighbor address>***`[/`***<prefix length>***`]] [vrf {all|default}]`**

where:

Parameter	Function
`all`	Clears dampening information for all IP address families.
`ipv4`	Clears dampening information only for the IPv4 address family.
`ipv6`	Clears dampening information only for the IPv6 address family.
`unicast`	Clears dampening information only for the unicast IP address family.
neighbor address	The IPv4 or IPv6 address of the BGP neighbor.
/prefix length	The IPv4 or IPv6 network mask.
`vrf all`	Clears dampening information for BGP neighbors associated with all Virtual Routing and Forwarding (VRF) instances.
`vrf default`	Clears dampening information for BGP neighbors associated with the default VRF instance.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command resets BGP dampening information for all IP address families:

```
G8272# remove ip bgp all dampening
```

remove ip bgp flap-statistics

Clears Border Gateway Protocol (BGP) flap statistics.

Syntax

`remove ip bgp [all|{ipv4|ipv6} unicast] flap-statistics`
`[`*<neighbor address>***`[/`***<prefix length>***`]] [vrf {all|default}]`**

where:

Parameter	Function
`all`	Clears flap statistics for all IP address families.
`ipv4`	Clears flap statistics only for the IPv4 address family.
`ipv6`	Clears flap statistics only for the IPv6 address family.
`unicast`	Clears flap statistics only for the unicast IP address family.
neighbor address	The IPv4 or IPv6 address of the BGP neighbor.
/prefix length	The IPv4 or IPv6 network mask.
`vrf all`	Clears flap statistics for BGP neighbors associated with all Virtual Routing and Forwarding (VRF) instances.
`vrf default`	Clears flap statistics for BGP neighbors associated with the default VRF instance.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command resets BGP flap statistics for all IP address families:

```
G8272# remove ip bgp all flap-statistics
```

remove ip ospf neighbors

Resets all Open Shortest Path First (OSPF) neighbors.

Syntax

`remove ip ospf [`*<OSPF instance>***`] neighbors {*|`***<interface name>***`|ethernet`** *<chassis number/port number>***`|loopback`** *<loopback interface>***`|mgmt`** *<management interface>***`|port-aggregation`** *<LAG number>***`|vlan`** *<VLAN number>***`}`**

where:

Parameter	Function
OSPF instance	The OSPF instance. Its number is 0.
*	Resets all OSPF neighbors.
interface name	Resets OSPF neighbors for the specified interface by name.
`ethernet` *chassis number/port number*	Resets OSPF neighbors for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Resets OSPF neighbors for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Resets OSPF neighbors for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Resets OSPF neighbors for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Resets OSPF neighbors for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes all OSPF neighbors:

```
G8272# remove ip ospf neighbors *
```

remove ip ospf process

Resets the Open Shortest Path First (OSPF) process.

Syntax

```
remove ip ospf process
```

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command resets the OSPF process:

```
G8272# remove ip ospf process
```

remove ip prefix-list

Clears an IPv4 prefix list.

Syntax

remove ip prefix-list [<*prefix list name*> **[**<*IP prefix*>**]]**

where:

Parameter	Function
prefix list name	The name of the prefix list.
IP prefix	Clears the specified prefix from the selected prefix list. The *IP prefix* format is: • *IPv4 address/network mask length*

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes all IPv4 prefix lists:

```
G8272# remove ip prefix-list
```

remove ip route

Clears IPv4 routes.

Syntax

remove ip route [vrf *<VRF instance>***] {*|***<*IP route*>**}**

where:

Parameter	Function
`vrf` *VRF instance*	Clears IPv4 routes associated with the Virtual Routing and Forwarding (VRF) instance specified by its name.
*	Clears all IPv4 routes.
IP route	Clears the specified IPv4 route. The *IP route* format is: • *IPv4 address/network mask length*

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes all IPv4 routes:

```
G8272# remove ip route *
```

remove ipv6 bgp

Resets IPv6 Border Gateway Protocol (BGP) neighbors.

Syntax

remove ipv6 bgp {*|<*neighbor address*>**} [vrf default [soft [in|out]]]**

where:

Parameter	Function
*	Resets all IPv6 BGP neighbors.
neighbor address	Resets only the specified BGP neighbor by its IPv6 address.
`vrf default`	Resets IPv6 BGP neighbors associated with the default Virtual Routing and Forwarding (VRF) instance.
`soft`	Triggers a soft reconfiguration (a routing update without resetting the BGP session).
`in`	Triggers a soft reconfiguration and saves a copy of all received routes.
`out`	Triggers a soft reconfiguration and saves a copy of all sent routes.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes all IPv6 BGP neighbors:

```
G8272# remove ipv6 bgp *
```

remove ipv6 prefix-list

Clears an IPv6 prefix list.

Syntax

remove ipv6 prefix-list [*<prefix list name>* **[***<IP prefix>***]]**

where:

Parameter	Function
prefix list name	The name of the prefix list.
IP prefix	Clears the specified prefix from the selected prefix list. The *IP prefix* format is: • *IPv6 address/network mask length*

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes all IPv6 prefix lists:

```
G8272# remove ipv6 prefix-list
```

remove ipv6 route

Clears IPv6 routes.

Syntax

remove ipv6 route [vrf *<VRF instance>***] {*|***<*IP route*>**}**

where:

Parameter	Function
`vrf` *VRF instance*	Clears IPv6 routes associated with the Virtual Routing and Forwarding (VRF) instance specified by its name.
*	Clears all IPv6 routes.
IP route	Clears the specified IPv6 route. The *IP route* format is: • *IPv6 address/network mask length*

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes all IPv6 routes:

```
G8272# remove ipv6 route *
```

clock set

Configures the system time and date.

Syntax

`clock set` *<time> <day> <month> <year>*

where:

Parameter	Function
time	The *time* format is `HH:mm:ss`, where: • `HH` is the hour of the day (range is 00 to 24) • `mm` is the minute of the hour (range is 00 to 60) • `ss` is the second of the minute (range is 00 to 60)
day	The *day* of the month (range is 1 to 31).
month	The *month* of the year (range is January to December).
year	The *year* of the calendar (range is 2000 to 2030).

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command set the system time to 12 hours 30 minutes and 00 seconds and the system date to January 1st 2016:

```
G8272# clock set 12:30:00 1 January 2016
G8272# display clock

12:30:03 UTC Fri Jan  1 2016
```

configure

Enters Configuration Mode.

Syntax

configure [**device**]

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enters Configuration Mode:

```
G8272# configure device
G8272(config)#
```

cp file

Copies the specified file to a remote server.

Syntax

`cp file` {**`all|bgpd|hostpd|imi|imish|nsm|ospfd|show-redirect`**} {**`ftp|scp|`**
`sftp|tftp`} [*<server URL>*] [**`timeout`** *<timeout value>*] [**`vrf`** {**`default|`**
`management`}]

where:

Parameter	Function
`all`	Copies all binary files.
`bgpd`	Copies Border Gateway Protocol (BGP) daemon files.
`hostpd`	Copies Host Protocol daemon files.
`imi`	Copies Integrated Management Interface (IMI) files.
`imish`	Copies Integrated Management Interface Shell (IMISH) files.
`nsm`	Copies Network Service Module (NSM) files.
`ospfd`	Copies Open Shortest Path First (OSPF) daemon files.
`show-redirect`	Copies saved output redirect file.
`ftp`	Uses File Transfer Protocol (FTP).
`scp`	Uses Secure Copy Protocol (SCP).
`sftp`	Uses Secure File Transfer Protocol (SFTP).
`tftp`	Uses Trivial File Transfer Protocol (TFTP).
server URL	The URL address of the server.
`timeout` *timeout value*	Specifies the maximum time (in seconds) to wait for the server to reply to the connection request. If the timeout period expires, the connecting process stops. The *timeout value* is from 1 to 150. **Note:** This parameter is available only using SCP.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command all binary files using SFTP:

```
G8272# cp file all sftp sftp://1.1.1.1/name vrf management
```

cp ftp

Copies a file from a remote server using File Transfer Protocol (FTP).

Syntax

`cp ftp` *<server URL>* {**`file`** {**`bgpd|hostpd|imi|imish|nsm|ospfd`**}**`|`** **`startup-config|system-image`** {**`all|startup|onie|os`**}**`|usb1`** *<file name>*} [**`vrf`** {**`default|management`**}]

`cp ftp` {**`file`** {**`bgpd|hostpd|imi|imish|nsm|ospfd`**}**`|`** **`startup-config`**}

where:

Parameter	Function
server URL	The URL address of the server.
`file bgpd`	Copies Border Gateway Protocol (BGP) daemon files.
`file hostpd`	Copies Host Protocol daemon files.
`file imi`	Copies Integrated Management Interface (IMI) files.
`file imish`	Copies Integrated Management Interface Shell (IMISH) files.
`file nsm`	Copies Network Service Module (NSM) files.
`file ospfd`	Copies Open Shortest Path First (OSPF) daemon files.
`startup-config`	Copies to the startup configuration.
`system-image`	Copies to the system image.
`all`	Copies both boot and OS images.
`startup`	Copies only the boot image.
`onie`	Copies only the Open Network Install Environment (ONIE) image.
`os`	Copies only the OS image.
`usb1` *file name*	Copies to the specified file on the USB device.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command a file from a remote server to the startup configuration using FTP:

```
G8272# cp ftp ftp://admin@1.1.1.1/config startup-config vrf default
```

cp obs

Copies an On-Box Script (OBS) file to a remote server.

Syntax

cp obs *<script name>* {**sftp|tftp**} *<server URL>* [**vrf** {**default|management**}]

where:

Parameter	Function
script name	The name of the OBS script file.
`sftp`	Uses Secure File Transfer Protocol (SFTP).
`tftp`	Uses Trivial File Transfer Protocol (TFTP).
server URL	The URL address of the server.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command copies an OBS script file to a remove server using SFTP:

```
G8272# cp obs obs-script-01 sftp sftp://root@example.com:2222/filepath/
```

cp running-config

Copies the running configuration file to a remote server.

Syntax

`cp running-config` {{**`ftp|scp|sftp|tftp`**} [<*server URL*>] [**`timeout`** <*timeout value*>] [**`vrf`** {**`default|management`**}]**`|usb1`** <*file name*>**`|startup-config`**}

where:

Parameter	Function
`ftp`	Uses File Transfer Protocol (FTP).
`scp`	Uses Secure Copy Protocol (SCP).
`sftp`	Uses Secure File Transfer Protocol (SFTP).
`tftp`	Uses Trivial File Transfer Protocol (TFTP).
server URL	The URL address of the server.
`timeout` *timeout value*	Specifies the maximum time (in seconds) to wait for the server to reply to the connection request. If the timeout period expires, the connecting process stops. The *timeout value* is from 1 to 150. **Note:** This parameter is available only using SCP.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.
`usb1` *file name*	Copies the running configuration file to the specified file on the USB device.
startup-config	Copies the running configuration file to the startup configuration file.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command copies the running configuration to the startup configuration file:

```
G8272# cp running-config startup-config
```

cp scp

Copies a file from a remote server using Secure Copy Protocol (SCP).

Syntax

cp scp *<server URL>* [**timeout** *<timeout value>*] {**file** {**bgpd|hostpd|imi|imish|nsm|ospfd**}**|startup-config|system-image** [**all|startup|onie|os**]**|usb1** *<file name>*} [**vrf** {**default|management**}]

cp scp {**file** {**bgpd|hostpd|imi|imish|nsm|ospfd**}**|startup-config**}

where:

Parameter	Function
server URL	The URL address of the server.
`timeout` *timeout value*	Specifies the maximum time (in seconds) to wait for the server to reply to the connection request. If the timeout period expires, the connecting process stops. The *timeout value* is from 1 to 150.
`file bgpd`	Copies Border Gateway Protocol (BGP) daemon files.
`file hostpd`	Copies Host Protocol daemon files.
`file imi`	Copies Integrated Management Interface (IMI) files.
`file imish`	Copies Integrated Management Interface Shell (IMISH) files.
`file nsm`	Copies Network Service Module (NSM) files.
`file ospfd`	Copies Open Shortest Path First (OSPF) daemon files.
`startup-config`	Copies to the startup configuration.
`system-image`	Copies to the system image.
`all`	Copies both boot and OS images.
`startup`	Copies only the boot image.
`onie`	Copies only the Open Network Install Environment (ONIE) image.
`os`	Copies only the OS image.
`usb1` *file name*	Copies to the specified file on the USB device.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command a file from a remote server to the startup configuration using SCP:

```
G8272# cp scp scp://admin@1.1.1.1/config startup-config vrf management
```

cp script-log

Copies an On-Box Script (OBS) log file to a remote server.

Syntax

`cp script-log` *<script log name>* {**`sftp|tftp`**} *<server URL>* [**`vrf`** {**`default|management`**}]

where:

Parameter	Function
script log name	The name of the OBS script log file.
`sftp`	Uses Secure File Transfer Protocol (SFTP).
`tftp`	Uses Trivial File Transfer Protocol (TFTP).
server URL	The URL address of the server.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command copies an OBS script log file to a remove server using SFTP:

```
G8272# cp script-log obs-log-01 sftp sftp://root@example.com/filepath/
```

cp sftp

Copies a file from a remote server using Secure File Transfer Protocol (SFTP).

Syntax

cp sftp *<server URL>* {**file** {**bgpd|hostpd|imi|imish|nsm|ospfd**}**|obs** *<script name>***|startup-config|system-image** [**all|startup|onie|os**]**|usb1** *<file name>*} [**vrf** {**default|management**}]

cp sftp {**file** {**bgpd|hostpd|imi|imish|nsm|ospfd**}**|startup-config**}

where:

Parameter	Function
server URL	The URL address of the server.
`file bgpd`	Copies Border Gateway Protocol (BGP) daemon files.
`file hostpd`	Copies Host Protocol daemon files.
`file imi`	Copies Integrated Management Interface (IMI) files.
`file imish`	Copies Integrated Management Interface Shell (IMISH) files.
`file nsm`	Copies Network Service Module (NSM) files.
`file ospfd`	Copies Open Shortest Path First (OSPF) daemon files.
`obs` *script name*	Copies to the specified OBS script file.
`startup-config`	Copies to the startup configuration.
`system-image`	Copies to the system image.
`all`	Copies both boot and OS images.
`startup`	Copies only the boot image.
`onie`	Copies only the Open Network Install Environment (ONIE) image.
`os`	Copies only the OS image.
`usb1` *file name*	Copies to the specified file on the USB device.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command a file from a remote server to the startup configuration using SFTP:

```
G8272# cp sftp sftp://admin@1.1.1.1/config startup-config vrf default
```

cp startup-config

Copies the startup configuration file to a remote server.

Syntax

`cp startup-config` {{**`ftp|scp|sftp|tftp`**} [<*server URL*>] [**`timeout`** <*timeout value*>] [**`vrf`** {**`default|management`**}]**`|usb1`** <*file name*>}

where:

Parameter	Function
`ftp`	Uses File Transfer Protocol (FTP).
`scp`	Uses Secure Copy Protocol (SCP).
`sftp`	Uses Secure File Transfer Protocol (SFTP).
`tftp`	Uses Trivial File Transfer Protocol (TFTP).
server URL	The URL address of the server.
`timeout` *timeout value*	Specifies the maximum time (in seconds) to wait for the server to reply to the connection request. If the timeout period expires, the connecting process stops. The *timeout value* is from 1 to 150. **Note:** This parameter is available only using SCP.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.
`usb1` *file name*	Copies the startup configuration file to the specified file on the USB device.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command copies the startup configuration to the file 'startup-config-copy' on the USB device:

```
G8272# cp startup-config usb1 startup-config-copy
```

cp tech-support

Copies the technical support information dump file to a remote server.

Syntax

`cp tech-support` {**`ftp|scp|sftp|tftp`**} *<server URL>* [**`timeout`** *<timeout value>*] [**`vrf`** {**`default|management`**}]

where:

Parameter	Function
`ftp`	Uses File Transfer Protocol (FTP).
`scp`	Uses Secure Copy Protocol (SCP).
`sftp`	Uses Secure File Transfer Protocol (SFTP).
`tftp`	Uses Trivial File Transfer Protocol (TFTP).
server URL	The URL address of the server.
`timeout` *timeout value*	Specifies the maximum time (in seconds) to wait for the server to reply to the connection request. If the timeout period expires, the connecting process stops. The *timeout value* is from 1 to 150. **Note:** This parameter is available only using SCP.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command copies the technical support dump file to a remote server using SFTP:

```
G8272# cp tech-support sftp sftp://root@example.com:2222/filepath/
```

cp tftp

Copies a file from a remote server using Trivial File Transfer Protocol (TFTP).

Syntax

cp tftp *<server URL>* {**file** {**bgpd|hostpd|imi|imish|nsm|ospfd**}**| lsm-cert|obs** *<script name>***|startup-config|system-image** [**all| startup|onie|os**]**|usb1** *<file name>*} [**vrf** {**default|management**}]

cp tftp {**file** {**bgpd|hostpd|imi|imish|nsm|ospfd**}**| startup-config**}

where:

Parameter	Function
server URL	The URL address of the server.
`file bgpd`	Copies Border Gateway Protocol (BGP) daemon files.
`file hostpd`	Copies Host Protocol daemon files.
`file imi`	Copies Integrated Management Interface (IMI) files.
`file imish`	Copies Integrated Management Interface Shell (IMISH) files.
`file nsm`	Copies Network Service Module (NSM) files.
`file ospfd`	Copies Open Shortest Path First (OSPF) daemon files.
`lsm-cert`	Copies Low Security Mode (LSM) certificate.
`obs` *script name*	Copies to the specified OBS script file.
`startup-config`	Copies to the startup configuration.
`system-image`	Copies to the system image.
`all`	Copies both boot and OS images.
`startup`	Copies only the boot image.
`onie`	Copies only the Open Network Install Environment (ONIE) image.
`os`	Copies only the OS image.
`usb1` *file name*	Copies to the specified file on the USB device.
`vrf default`	Copies using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Copies using the management VRF instance.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command a file from a remote server to the startup configuration using TFTP:

```
G8272# cp tftp tftp://2.2.2.2/conf startup-config vrf default
```

cp usb1

Copies a file from the USB device to the system image.

Syntax

cp usb1 *<file name>* **system-image** [**all|startup|onie|os**]

where:

Parameter	Function
file name	The path and name of file to be copied.
`all`	Copies both boot and OS images.
`startup`	Copies only the boot image.
`onie`	Copies only the Open Network Install Environment (ONIE) image.
`os`	Copies only the OS image.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command copies file 'OS-10' from the USB device to the system image:

```
G8272# cp usb1 /os-images/OS-10.img system-image OS
```

edit script

Edits the specified On-Box Script (OBS) file.

Syntax

`edit script` *<script name>*

where:

Parameter	Function
script name	The name of the OBS script file.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command edits the OBS script 'obs-script-10':

```
G8272# edit script obs-script-10
```

faults delete

Some processes report software errors as faults and create a syslog entry. These errors are also kept in a special fault list.

This command deletes the specified type of errors from the fault list.

Syntax

`fault delete` {**`active|all|cleared`**} [*<process name>*]

where:

Parameter	Function
`active`	Deletes only active faults.
`all`	Deletes both active and cleared faults.
`cleared`	Deletes only cleared faults.
process name	Deletes faults only for the specified process.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes cleared faults for the Hardware Specific Layer (HSL) process:

```
G8272# faults delete cleared hsl
```

faults delete

Some processes report software errors as faults and create a syslog entry. These errors are also kept in a special fault list.

This command deletes the specified type of errors from the fault list.

Syntax

`fault delete` {**`active|all|cleared`**} [*<process name>*]

where:

Parameter	Function
`active`	Deletes only active faults.
`all`	Deletes both active and cleared faults.
`cleared`	Deletes only cleared faults.
process name	Deletes faults only for the specified process.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes cleared faults for the Hardware Specific Layer (HSL) process:

```
G8272# faults delete cleared hsl
```

maint mode enable

Enables maintenance mode.

To configure a password to activate this option by using the command below:

- **maint password** (in Global Configuration mode)

Syntax

maint mode enable

no maint mode

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables maintenance mode:

```
G8272# maint mode enable
```

Related Commands

Command	Description
maint password	Sets a maintenance mode password

ping

Polls the Internet Gateway or "pings" to see if the specified host is reachable.

Syntax

ping [<*dest-address*>**][vrf {default|management}] [source** <*source adress*>**] [interface {**<*interface name*>**|ethernet** <*chassis number/port number*>**|loopback** <*loopback interface*>**|mgmt** <*management interface*>**| port-aggregation** <*LAG number*>**|vlan** <*VLAN number*>**}] [count {**<*number*>**| unlimited}] [df-bit] [interval** <*seconds*>**] [packet-size** <*bytes*>**] [timeout** <*seconds*>**]**

where:

Parameter	Description
dest-address	The IP address of the host you are trying to ping.
`vrf default`	Pings the default VRF instance for the specified remote host.
`vrf management`	Pings the management VRF instance for the specified remote host.
`source`	Specifies the source IPv4 address to use.
source adress	The IP address of the source host.
`interface` *interface name*	The name of the interface to ping.
`interface ethernet` *chassis number/port number*	Specifies the ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface loopback` *loopback interface*	Specifies the loopback interface. The *loopback interface* is from 0 to 7.
`interface mgmt` *management interface*	Specifies the management interface. The *management interface* is 0.
`interface port-aggregation` *LAG number*	Specifies the Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`interface vlan` *VLAN number*	Specifies the VLAN. The *VLAN number* is from 1 to 4094.
`count` <*number*> `| unlimited`	Specifies repeat counts of ping packets. You can either set an unlimited number of counts or specify a specific value. The default value is 5.
`df-bit`	Enables the do-not-fragment bit in the IPv4 header. The default value is disabled.

`interval` <*seconds*>	Sets the interval of sending ping packets, in seconds (a number from 0 to 60). Default value is 0.
`packet-size` <*bytes*>	Sets the packet size of sending ping packets, in bytes (a number from to 65468). The default value is 56.
`timeout` <*seconds*>	Specifies non-responsive timeout interval of sending ping packets, in seconds (a number from 1 to 60). The default value is 2.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command pings host lenovo.com:

```
G8272# ping 1.1.1.1
```

ping6

Polls the Internet Gateway or "pings" an IPv6 address to see if the specified host is reachable.

Syntax

ping6 [<*dest-address*>**][vrf {default|management}] [source** <*source adress*>**] [interface {**<*interface name*>**|ethernet** <*chassis number/port number*>**|loopback** <*loopback interface*>**|mgmt** <*management interface*>**| port-aggregation** <*LAG number*>**|vlan** <*VLAN number*>**}] [count {**<*number*>**|unlimited}] [df-bit] [interval** <*seconds*>**] [packet-size** <*bytes*>**] [timeout** <*seconds*>**]**

where:

Parameter	Description
dest-address	The IPv6 address of the host you are trying to ping.
`vrf default`	Pings the default VRF instance for the specified remote host.
`vrf management`	Pings the management VRF instance for the specified remote host.
`source`	Specifies the source IPv6 address to use.
source adress	The IPv6 address of the source host.
`interface` *interface name*	The name of the interface to ping.
`interface ethernet` *chassis number/port number*	Specifies the ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface loopback` *loopback interface*	Specifies the loopback interface. The *loopback interface* is from 0 to 7.
`interface mgmt` *management interface*	Specifies the management interface. The *management interface* is 0.
`interface port-aggregation` *LAG number*	Specifies the Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`interface vlan` *VLAN number*	Specifies the VLAN. The *VLAN number* is from 1 to 4094.
`count` <*number*> `| unlimited`	Specifies repeat counts of ping packets. You can either set an unlimited number of counts or specify a specific value. The default value is 5.
`df-bit`	Enables the do-not-fragment bit in the IPv6 header. The default value is disabled.

`interval` <*seconds*>	Sets the interval of sending ping packets, in seconds (a number from 0 to 60). Default value is 0.
`packet-size` <*bytes*>	Sets the packet size of sending ping packets, in bytes (a number from to 65468). The default value is 56.
`timeout` <*seconds*>	Specifies non-responsive timeout interval of sending ping packets, in seconds (a number from 1 to 60). The default value is 2.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command pings host lenovo.com:

```
G8272# ping6 aaaa:bbbb::cccc:dddd
```

python

Enters the Python Programming Shell. To exit the Python Shell either type **`quit()`**, **`exit()`** or press **Ctrl + D**.

Syntax

`python` [<*script name*> [<*list of arguments*>]]

where:

Paramete	Function
script name	The name of the Python script file.
list of arguments	The list of arguments for the specified script file.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enters the Python Shell:

```
G8272# python
>>> help()
Welcome to Python 2.7! This is the online help utility.

If this is your first time using Python, you should definitely check out
the tutorial on the Internet at http://docs.python.org/tutorial/.

Enter the name of any module, keyword, or topic to get help on writing
Python programs and using Python modules. To quit this help utility and
return to the interpreter, just type "quit".

To get a list of available modules, keywords, or topics, type "modules",
"keywords", or "topics". Each module also comes with a oneline summary of
what it does; to list the modules whose summaries contain a given word
such as "spam", type "modules spam".

help> quit
>>> quit()
G8272#
```

reload

Restarts the switch. You will be prompted to confirm this action.

If the running configuration is different from the startup configuration, the switch will a message informing you of this. If you restart the switch without saving the running configuration, all unsaved changes will be lost.

To save the running configuration, use one of the following commands:

- **cp running-config startup-config**
- **write**

Syntax

reload

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command restarts the switch:

```
G8272# reload
```

restart bgp

Restarts Border Gateway Protocol (BGP).

Syntax

restart bgp *<AS number>*

where:

Parameter	Function
AS number	Removes BGP peers associated with the specified autonomous system (AS). The *AS number* is from 1 to 4294967295.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command restarts BGP and removes peers associated with AS 200:

```
G8272# restart bgp 200
```

ssh

Creates a Secure Shell (SSH) connection.

Syntax

ssh [<*ip address*>|<*user@ip-address*>] [**port** <*port number*>] [**vrf** {**default**|**management**}]

where:

Parameter	Function
ip address	IPv4 IP address.
user@ip-address	User for ssh connection. The default user is `admin`.
`port` *port number*	Creates a SSH connection using the specified port of the remote host. The *port number* is from 1 to 65535. The default port is 22.
`vrf default`	Creates a SSH connection using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Creates a SSH connection using the management VRF instance.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates an SSH connection:

```
G8272# ssh admin1@1.1.1.1 port 22 vrf management
```

ssh6

Creates a Secure Shell version 6 (SSH6) connection.

Syntax

ssh6 [<*ip address*>] [**port** <*port number*>] [**vrf** {**default**|**management**}]

where:

Parameter	Function
ip address	IPv6 IP address.
`port` *port number*	Creates a SSH6 connection using the specified port of the remote host. The *port number* is from 1 to 65535. The default port is 22.
`vrf default`	Creates a SSH6 connection using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Creates a SSH6 connection using the management VRF instance.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates an SSH6 connection:

```
G8272# ssh6 2000:11 port 22 vrf management
```

stop running-script

Stops the specified running Python script.

Syntax

`stop running-script` *<script name>*

where:

Parameter	Function
script name	The name of the running Python script. Its name must be specified using quotation marks: • *"script name"*

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command stops a running Python script:

```
G8272# stop running-script "py-script-arg"
```

telnet

Creates a Telnet connection.

Syntax

`telnet [`<*ip address*>**`] [port`** <*port number*>**`] [vrf {default|management}]`**

where:

Parameter	Function
ip address	IPv4 IP address.
`port` *port number*	Creates a Telnet connection using the specified port of the remote host. The *port number* is from 1 to 65535. The default port is 23.
`vrf default`	Creates a Telnet connection using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Creates a Telnet connection using the management VRF instance.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following commands create a Telnet connection:

```
G8272# telnet 16.78.194.3
```

telnet6

Creates a Telnet version 6 (Telnet6) connection.

Syntax

`telnet6 [`*<ipv6 address>***`] [port`** *<port number>***`] [vrf {default| management}]`**

where:

Parameter	Function
ipv6 address	IPv6 IP address.
`port` *port number*	Creates a Telnet6 connection using the specified port of the remote host. The *port number* is from 1 to 65535. The default port is 23.
`vrf default`	Creates a Telnet6 connection using the default Virtual Routing and Forwarding (VRF) instance.
`vrf management`	Creates a Telnet6 connection using the management VRF instance.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates a Telnet6 connection:

```
G8272# telnet6 fe80::21b:21ff:fe22:e865
```

terminal monitor

Copies debug output to this terminal line.

Syntax

terminal monitor [<*name*>**|all]**

where:

Parameter	Description
<*name*>	Name of non-privileged Virtual Router.
all	All Virtual Routers.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example shows how to copy debug output to this terminal line:

```
G8272# terminal monitor all
```

terminal no monitor

Stops forwarding the Virtual Router log output to this terminal.

Syntax

terminal no monitor [<*name*>**]**

where:

Parameter	Description
<*name*>	Name of non-privileged Virtual Router.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example shows how to stop forwarding log output to this terminal:

```
G8272# terminal no monitor test
```

terminal terminal-type

Sets the terminal type.

Syntax

[**no**] **terminal terminal-type** *<name>*

where:

Parameter	Description
<name>	Terminal type name.

Using **no** before this command without the last argument deletes the terminal type.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the terminal type to `vt100`:

```
G8272# terminal terminal-type vt100
```

terminal session-timeout

Sets the terminal session interval.

Syntax

[**no**] **terminal session-timeout** *<time interval>*

where:

Parameter	Description
<time interval>	Timeout interval, in seconds (a number from 0 to 35791).

Using **no** before this command restores the default settings.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the terminal session timeout:

```
G8272# terminal session-timeout 100
```

traceroute

Traces the route from the switch to the specified IPv4 remote host.

Syntax

`traceroute [`*<remote address>* **`[vrf {default|management}] [source`** *<source adress>***`]]`**

where:

Parameter	Description
remote address	The IPv4 address of the host you are trying to reach.
`vrf default`	Searches the default VRF instance for the specified remote host.
`vrf management`	Searches the management VRF instance for the specified remote host.
`source`	Includes the source IPv4 address in the IP header.
source adress	The IPv4 address of the source host.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example traces the route from the switch to `10.2.3.47`:

```
G8272# traceroute 10.200.3.47 vrf default source 10.124.25.90
```

traceroute6

Traces the route from the switch to the specified IPv6 host.

Syntax

`traceroute6` *<remote address>* **`[vrf {default| management}] [source`** *<source adress>*`] [interface {`***<interface name>|ethernet*** *<chassis number/port number>*`|loopback`** *<loopback interface>*`|mgmt`** *<management interface>*`|port-aggregation`** *<LAG number>*`|vlan`** *<VLAN number>*`}]`**

where:

Parameter	Description
remote address	The IPv6 address of the host you are trying to reach.
`vrf default`	Searches the default VRF instance for the specified remote host.
`vrf management`	Searches the management VRF instance for the specified remote host.
`source`	Includes the source IPv6 address in the IP header.
source adress	The IPv6 address of the source host.
`interface` *interface name*	The name of the interface.
`interface ethernet` *chassis number/port number*	Uses the specified ethernet interface to trace the route to the remote host. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface loopback` *loopback interface*	Uses the specified loopback interface to trace the route to the remote host. The *loopback interface* is from 0 to 7.
`interface mgmt` *management interface*	Uses the specified management interface to trace the route to the remote host. The *management interface* is 0.
`interface port-aggregation` *LAG number*	Uses the specified Link Aggregation Group (LAG) to trace the route to the remote host. The *LAG number* is from 1 to 4096.
`interface vlan` *VLAN number*	Uses the specified VLAN to trace the route to the remote host. The *VLAN number* is from 1 to 4094.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example traces the route from the switch to a remote IPv6 host:

```
G8272# traceroute6 tracehost source fe80::aa97:dcff:fede:2501 interface
ethernet 1/12
```

save

Copies the running configuration to the startup configuration.

Syntax

save [**erase**|**file**|**memory**|**terminal**]

where:

Parameter	Function
erase	Deletes the current startup configuration and then saves the running configuration as the new startup configuration.
file	Copies the running configuration file to the startup configuration file.
memory	Copies the running configuration to the Non-volatile Random-access Memory (NVRAM).
terminal	Displays the running configuration.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command deletes the current startup configuration and saves the running configuration as the new startup configuration:

```
G8272# save erase

Warning: This command will erase the startup-configuration.
Do you wish to proceed anyway? (y/n)  [n] n
```

The following command copies the running configuration to the NVRAM:

```
G8272# save memory

Building configuration...
[OK]

G8272#
```

Chapter 3. Debugging Commands

The commands in this chapter enable and disable debugging of the switch.

dbg aaa

Enables or disables authentication, authorization, and accounting (AAA) debugging on the switch.

Syntax

```
[no] dbg aaa
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example debugs AAA on the switch:

```
G8272> dbg aaa
```

dbg bfd

Enables or disables Bidirectional Forwarding Detection (BFD) debugging on the switch.

Syntax

[no] dbg bfd [{**all**|**event**|**ipc-error**|**ipc-event**|**nsm**|**packet**|**session**}]

where:

Parameter	Description
all	Enable all debugging.
event	Enable BFD event debugging.
ipc-error	Enable BFD ipc-error debugging.
ipc-event	Enable BFD ipc-event debugging.
nsm	Enable BFD NSM debugging.
packet	Enable BFD packet debugging.
session	Enable BFD session debugging.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables BFD packet debugging on the switch:

```
G8272> dbg bfd packet
```

dbg bgp

Enables or disables Border Gateway Protocol (BGP) debugging on the switch.

Syntax

```
[no] dbg bgp [{all|bfd|dampening|events|filters|fsm|
   keepalives|nht|nsm|packets|updates}]
```

where:

Parameter	Description
all	Enable all BGP debugging.
bfd	Enable Bidirectional Forwarding Detection (BFD) BGP debugging.
dampening	Enable BGP Dampening debugging.
events	Enable BGP events debugging.
filters	Enable BGP filter debugging.
fsm	Enable BGP Finite State Machine debugging.
keepalives	Enable BGP keepalives debugging.
nht	Enable NHT message debugging.
nsm	Enable NSM message debugging.
packets	Enable BGP packet contents debugging.
updates	Enable BGP update debugging.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables BGP BFD debugging on the switch:

```
G8272> dbg bgp bfd
```

dbg diag

Debugs diagnostic and LLI commands.

Syntax

`dbg diag` *<diagnostic command>*

where:

Parameter	Function
diagnostic command	The command to be debugged.

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command debugs the diagnostic command `DiagCommand`:

```
G8272(config)# dbg diag DiagCommand
```

dbg hal

Enables or disables debugging the Hardware Abstraction Layer (HAL).

Syntax

[no] dbg hal [**all**]

where:

Parameter	Function
all	Debug all HAL commands

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command debugs the HAL:

```
G8272(config)# dbg hal all
```

dbg hardware cstat

Enables hardware statistics debugging on the switch.

Syntax

dbg hardware cstat <*port*>

where:

Parameter	Description
port	The port number; an integer from 1-73.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables hardware statistics debugging on port 2:

```
G8272> dbg hardware cstat 2
```

dbg hardware cstat get

Enables hardware trigger debugging in the specified direction.

Syntax

dbg hardware cstat get <*port*> [**egress**|**ingress**]

where:

Parameter	Description
port	The name of the port.
egress	Debug outgoing triggers.
ingress	Debug incoming triggers.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables hardware trigger debugging on port mgmt for incoming traffic:

```
G8272> dbg hardware cstat get mgmt ingress
```

dbg hardware cstat info

Lists available hardware triggers with a short description.

Syntax

dbg hardware cstat info [**egress**|**ingress**]

where:

Parameter	Description
egress	Debug outgoing triggers.
ingress	Debug incoming triggers.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example list hardware triggers with a short description of each for incoming traffic:

```
G8272> dbg hardware cstat info ingress
```

dbg hardware cstat ls

Lists available hardware triggers.

Syntax

dbg hardware cstat ls [**egress**|**ingress**]

where:

Parameter	Description
egress	Debug outgoing triggers.
ingress	Debug incoming triggers.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example list hardware triggers for incoming traffic:

```
G8272> dbg hardware cstat ls ingress
```

dbg hsl

Enables or disables debugging of Hot-Standby-Links (HSLs).

Syntax

`dbg hsl {enable|disable} {0|1|2|3|4|5|6|7|8}`

where:

Parameter	Description
`enable`	Enable debugging.
`disable`	Disable debugging.
`0`	All HSL parameters.
`1`	HSL information.
`2`	HSL debugging.
`3`	HSL warnings.
`4`	HSL errors.
`5`	HSL fatal events.
`6`	HSL administration.
`7`	HSL counters.
`8`	HSL packets.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables HSL packet debugging:

```
G8272> dbg hsl enable 8
```

dbg ip arp

Enables or disables debugging of Address Resolution Protocol (ARP). To display ARP debugging messages, you also need to run the following commands:

```
G8272(config)# logging console 7
G8272(config)# logging level ndd 7
G8272(config)# logging level hsl 6
```

Syntax

[no] dbg ip arp {event|packet}

where:

Parameter	Description
event	ARP related events.
packet	ARP packets.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of ARP packets:

```
G8272> dbg ip arp packet
```

dbg ip bgp packets

Enables or disables debugging of Border Gateway Protocol (BGP) packet contents.

Syntax

```
[no] dbg ip bgp packets
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of BGP packet contents:

```
G8272> dbg ip bgp packets
```

dbg ip bgp packets

Enables or disables debugging of Border Gateway Protocol (BGP) packet contents.

Syntax

```
[no] dbg ip bgp packets
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of BGP packet contents:

```
G8272> dbg ip bgp packets
```

dbg ip ospf

Enables or disables debugging of all Open Shortest Path First (OSPF) events.

Syntax

```
[no] dbg ip ospf all
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all OSPF events:

```
G8272> dbg ip ospf all
```

dbg ip ospf database-timer rate-limit

Enables or disables debugging of Open Shortest Path First (OSPF) database timer rate limiting values for link state advertisement (LSA) throttling events.

Syntax

```
[no] dbg ip ospf database-timer rate-limit
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all OSPF database timer rate limiting values for LSA throttling events:

```
G8272> dbg ip ospf database-timer rate-limit
```

dbg ip ospf events

Enables or disables debugging of the specified Open Shortest Path First (OSPF) events, or if no argument beyond events is given, all OSPF events.

Syntax

[no] dbg ip ospf events [**abr**] [**asbr**] [**lsa**] [**nssa**] [**os**] [**router**] [**type3-range**] [**vlink**]

where:

Parameter	Description
abr	OSPF ABR events.
asbr	OSPF ASBR events.
lsa	OSPF LSA events.
nssa	OSPF NSSA events.
os	OSPF OS interaction events.
router	Other router events.
type3-range	OSPF Type3-Range events.
vlink	OSPF Virtual-Link events.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all OSPF ABR and OS events:

```
G8272> dbg ip ospf events abr os
```

dbg ip ospf ifsm

Enables or disables debugging of the specified interface state machine (IFSM) option, or if no argument is given, all IFSM items.

Syntax

[no] dbg ip ospf ifsm [**events**|**status**|**timers**]

where:

Parameter	Description
events	Enable IFSM event debugging.
status	Enable IFSM status debugging.
timers	Enable IFSM timers debugging.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all OSPF IFSM events:

```
G8272> dbg ip ospf ifsm events
```

dbg ip ospf lsa

Enables or disables debugging of the specified link state advertisement (LSA) options, or if no argument is given, all LSA options.

Syntax

[no] dbg ip ospf lsa [**flooding**] [**generate**] [**install**] [**maxage**] [**refresh**]

where:

Parameter	Description
flooding	Enable LSA flooding debugging.
generate	Enable LSA generation debugging.
install	Enable LSA installation debugging.
maxage	Enable LSA maximum age processing debugging.
refresh	Enable LSA refresh debugging.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of OSPF LSA installations:

```
G8272> dbg ip ospf lsa flooding install
```

dbg ip ospf nfsm

Enables or disables debugging of the specified neighbor state machine (NFSM) option, or if no argument is given, all NFSM items.

Syntax

[no] dbg ip ospf nfsm [**events**|**status**|**timers**]

where:

Parameter	Description
events	Enable NFSM event debugging.
status	Enable NFSM status debugging.
timers	Enable NFSM timers debugging.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all OSPF NFSM events:

```
G8272> dbg ip ospf nfsm events
```

dbg ip ospf nsm

Enables or disables debugging of the specified Network and Security Manager (NSM) option, or if no argument is given, all NSM items.

Syntax

[no] dbg ip ospf nsm [**interface**] [**redistribute**]

where:

Parameter	Description
interface	Enable NSM interface debugging.
redistribute	Enable NSM redistribution debugging.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all OSPF NSM interface events:

```
G8272> dbg ip ospf nsm interface
```

dbg ip ospf packet

Enables or disables debugging of the specified OSPF packet option, or if no argument is given, all OSPF packets.

Syntax

[no] dbg ip ospf packet [**dd**] [**detail**] [**hello**] [**ls-ack**] [**ls-request**] [**ls-update**] [**recv**] [**send**]

where:

Parameter	Description
dd	Enable OSPF database description debugging.
detail	Enable detail information debugging.
hello	Enable OSPF hello debugging.
ls-ack	OSPF link state acknowledgment debugging.
ls-request	Enable OSPF link state request debugging.
ls-update	Enable OSPF link state update debugging.
recv	Enable OSPF packets received debugging.
send	Enable OSPF packets sent debugging.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all OSPF hello and link state request events:

```
G8272> dbg ip ospf packet hello ls-request
```

dbg ip ospf policy

Enables or disables debugging of OSPF policy information.

Syntax

```
[no] dbg ip ospf policy
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all OSPF policy information:

```
G8272> dbg ip ospf policy
```

dbg ip ospf policy

Enables or disables debugging of OSPF redistribution information.

Syntax

[no] dbg ip ospf redist [**detail**|**terse**]

where:

Parameter	Description
`detail`	Enable debugging of OSPF redistribution details
`terse`	Enable debugging of OSPF redistribution terse

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of OSPF redistribution information:

```
G8272> dbg ip ospf redist
```

dbg ip ospf retransmission

Enables or disables debugging of OSPF retransmission information.

Syntax

```
[no] dbg ip ospf retransmission
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of OSPF retransmission information:

```
G8272> dbg ip ospf retransmission
```

dbg ip ospf rib

Enables or disables debugging of OSPF routing information base (RIB) information.

Syntax

[no] dbg ip ospf rib [**client**] [**interface**] [**redistribute**]

where:

Parameter	Description
client	RIB client.
interface	RIB interface.
redistribute	RIB redistribute.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of OSPF RIB client and interface information:

```
G8272> dbg ip ospf rib client interface
```

dbg ip ospf route

Enables or disables debugging of OSPF route information.

Syntax

[no] dbg ip ospf route [**ase**][**ia**][**install**][**spf**]

where:

Parameter	Description
ase	Enable debugging of external route calculation information.
ia	Enable debugging of inter-area route calculation information.
install	Enable debugging of route installation information.
spf	Enable debugging of SPF calculation information.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of OSPF external route calculation and route installation information:

```
G8272> dbg ip ospf route ase install
```

dbg ip ospf spf-trigger

Enables or disables debugging of OSPF shortest path first (SPF) trigger information.

Syntax

[no] dbg ip ospf spf-trigger [**detail**|**terse**]

where:

Parameter	Description
`detail`	Enable debugging of OSPF redistribution details
`terse`	Enable debugging of OSPF redistribution terse

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of OSPF SPF trigger information:

```
G8272> dbg ip ospf spf-trigger
```

dbg ipv6 nd

Enables or disables debugging of ICMPv6-ND (Neighbor Discovery) information.

Syntax

`[no] dbg ipv6 nd {event|packet}`

where:

Parameter	Description
`event`	Enable debugging of ND related events.
`packet`	Enable debugging of ND packets.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of IPv6 ND packet information:

```
G8272> dbg ipv6 nd packet
```

dbg ipv6 packet address

Enables or disables debugging of IPv6 packet address information.

Syntax

[no] dbg ipv6 packet address {<*IPv6 network address*>**|**<*prefix length*>**}**

where:

Parameter	Description
IPv6 network address	IPv6 network address.
prefix length	IPv6 network mask length.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of IPv6 packet address information:

```
G8272> dbg ipv6 packet address dead:beef::caca:dada
```

dbg ipv6 packet dest

Enables or disables debugging of IPv6 packet destination information.

Syntax

[no] dbg ipv6 packet dest {<*IPv6 network address*>**|**<*prefix length*>**}**

where:

Parameter	Description
IPv6 network address	IPv6 network address.
prefix length	IPv6 network mask length.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of IPv6 packet destination information:

```
G8272> dbg ipv6 packet dest dead:beef::caca:dada
```

dbg ipv6 packet detail

Enables or disables debugging of transport layer protocol detailed information.

Syntax

[no] dbg ipv6 packet detail [address|dest|source{<*IPv6 network address*>**|**<*prefix length*>**}]|protocol {icmp|ospf|tcp|udp}]**

where:

Parameter	Description
IPv6 network address	IPv6 network address.
prefix length	IPv6 network mask length.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of transport layer protocol detailed information:

```
G8272> dbg ipv6 packet detail
```

dbg ipv6 packet protocol

Enables or disables debugging of IPv6 transport layer protocol information.

Syntax

```
[no] dbg ipv6 packet protocol {icmp|ospf|tcp|udp}
```

where:

Parameter	Description
icmp	Enable debugging of Internet Control Message Protocol (ICMP) information.
ospf	Enable debugging of OSPF information.
tcp	Enable debugging of Transmission Control Protocol information.
udp	Enable debugging of User Datagram Protocol information.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of IPv6 packet OSPF protocol information:

```
G8272> dbg ipv6 packet routing-protocol ospf
```

dbg ipv6 packet source

Enables or disables debugging of IPv6 source address information.

Syntax

[no] dbg ipv6 packet source {<*IPv6 network address*>**|**<*prefix length*>**}**

where:

Parameter	Description
IPv6 network address	IPv6 network address.
prefix length	IPv6 network mask length.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of IPv6 packet source address information:

```
G8272> dbg ipv6 packet source dead:beef::caca:dada
```

dbg ipv6 routing

Enables or disables debugging for routing events.

Syntax

`[no] dbg ipv6 routing [add-route|delete-route|mod-route]`

where:

Parameter	Description
`add-route`	Adds route events.
`delete-route`	Deletes route events.
`mod-route`	Modifies route events.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging for routing events:

```
G8272> dbg ipv6 routing
```

dbg lacp

Enables or disables debugging for LACP events.

Syntax

`[no] dbg lacp {all|cli|error|event|individual| interface {all|ethernet` *<slot/chassis number>***`}|message {both|recv|send}|packet {both|rx|tx}| sync|timer|trace}`**

where:

Parameter	Description
`all`	Enable debugging of all LACP events.
`cli`	Enable debugging of the LACP command-line interface.
`error`	Enable debugging of LACP error events.
`event`	Enable debugging of LACP events.
`individual`	Enable debugging of LACP individual.
`interface all|ethernet` *<slot/chassis number>*	Enable debugging on a all interfaces or on a specified interface.
`message both|recv|send`	Enable debugging of LACP message events.
`packet both|rx|tx`	Enable debugging of LACP packet events.
`sync`	Enable debugging of LACP sync.
`timer`	Enable debugging of LACP timer.
`trace`	Enable debugging of LACP trace events.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables LACP debugging for all interfaces:

```
G8272> dbg lacp interface all
```

dbg lldp

Enables or disables debugging for LLDP events.

Syntax

`[no] dbg lldp {all|decode|encode|error|event|`
`interface {all|ethernet` *<slot/chassis number>***`}|message|rx|trace|tx}`**

where:

Parameter	Description
`all`	Enable debugging of all LLDP events.
`decode`	Enable debugging of decoding events.
`encode`	Enable debugging of encoding events.
`error`	Enable debugging of error events.
`event`	Enable debugging of events.
`interface all|ethernet` *<slot/chassis number>*	Enable debugging on a all interfaces or on a specified interface.
`message`	Enable debugging of message events.
`rx`	Enable debugging of rx events.
`trace`	Enable debugging of trace events.
`tx`	Enable debugging of tx events.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables LLDP debugging for all interfaces:

```
G8272> dbg lldp interface all
```

dbg logging facility bfd message

Enables logging of Bidirectional Forewarding Database (BFD) error messages of the specified type.

Syntax

dbg logging facility bfd message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
auth-digest-err	Generate dbg syslog message with syslog ID BFD-3-AUTH_DIGEST_ERR
auth-hash-err	Generate dbg syslog message with syslog ID BFD-3-AUTH_HASH_ERR
auth-lenght-err	Generate dbg syslog message with syslog ID BFD-3-AUTH_LENGHT_ERR
auth-pass-err	Generate dbg syslog message with syslog ID BFD-3-AUTH_PASS_ERR
auth-type-err	Generate dbg syslog message with syslog ID BFD-3-AUTH_TYPE_ERR
bfd-mpls-session-err	Generate dbg syslog message with syslog ID BFD-3-BFD_MPLS_SESSION_ERR
bfd-msg-server-err	Generate dbg syslog message with syslog ID BFD-3-BFD_MSG_SERVER_ERR
bfd-started	Generate dbg syslog message with syslog ID BFD-6-BFD_STARTED
connect-error	Generate dbg syslog message with syslog ID BFD-3-CONNECT_ERROR
session-err	Generate dbg syslog message with syslog ID BFD-3-SESSION_ERR
session-state	Generate dbg syslog message with syslog ID BFD-6-SESSION_STATE
smgr-client-init-error	Generate dbg syslog message with syslog ID BFD-3-SMGR_CLIENT_INIT_ERROR
socket-error	Generate dbg syslog message with syslog ID BFD-3-SOCKET_ERROR
syslog-init	Generate dbg syslog message with syslog ID BFD-6-SYSLOG_INIT
write-error	Generate dbg syslog message with syslog ID BFD-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID BFD-3-WRITE_ERROR:

```
G8272>dbg logging facility bfd message write-error count 10
```

dbg logging facility bgp message

Enables logging of Border Gateway Protocol (BGP) error messages of the specified type.

Syntax

dbg logging facility bgp message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
adj-change	Generate dbg syslog message with syslog ID BGP-6-ADJ_CHANGE
adv-invalid-route	Generate dbg syslog message with syslog ID BGP-3-ADV_INVALID_ROUTE
bad-hold-time	Generate dbg syslog message with syslog ID BGP-3-BAD_HOLD_TIME
bad-remote-as	Generate dbg syslog message with syslog ID BGP-3-BAD_REMOTE_AS
bad-version	Generate dbg syslog message with syslog ID BGP-3-BAD_VERSION
bfd-session-dwn-rcvd	Generate dbg syslog message with syslog ID BGP-6-BFD_SESSION_DWN_RCVD
bfd-session-up-rcvd	Generate dbg syslog message with syslog ID BGP-6-BFD_SESSION_UP_RCVD
connect-error	Generate dbg syslog message with syslog ID BGP-3-CONNECT_ERROR
max-peer-ingrp-exceed	Generate dbg syslog message with syslog ID BGP-5-MAX_PEER_INGRP_EXCEED
maxpfx	Generate dbg syslog message with syslog ID BGP-4-MAXPFX
maxpfxexceed	Generate dbg syslog message with syslog ID BGP-4-MAXPFXEXCEED
maxupdexceed	Generate dbg syslog message with syslog ID BGP-4-MAXUPDEXCEED
opt-auth-not-sup	Generate dbg syslog message with syslog ID BGP-3-OPT_AUTH_NOT_SUP
opt-strict-cap-mismatch	Generate dbg syslog message with syslog ID BGP-3-OPT_STRICT_CAP_MISMATCH
same-router-id	Generate dbg syslog message with syslog ID BGP-4-SAME_ROUTER_ID

Parameter	Function
`smgr-client-init-error`	Generate dbg syslog message with syslog ID BGP-3-SMGR_CLIENT_INIT_ERROR
`socket-error`	Generate dbg syslog message with syslog ID BGP-3-SOCKET_ERROR
`starting-bgpd`	Generate dbg syslog message with syslog ID BGP-6-STARTING_BGPD
`state-change`	Generate dbg syslog message with syslog ID BGP-5-STATE_CHANGE
`strict-cap-mismatch`	Generate dbg syslog message with syslog ID BGP-3-STRICT_CAP_MISMATCH
`syslog-init`	Generate dbg syslog message with syslog ID BGP-6-SYSLOG_INIT
`unacceptable-hold-time`	Generate dbg syslog message with syslog ID BGP-3-UNACCEPTABLE_HOLD_TIME
`unconfigured-peer`	Generate dbg syslog message with syslog ID BGP-5-UNCONFIGURED_PEER
`upd-aggr-no-asval`	Generate dbg syslog message with syslog ID BGP-4-UPD_AGGR_NO_ASVAL
`upd-same-origid`	Generate dbg syslog message with syslog ID BGP-4-UPD_SAME_ORIGID
`vrf-add-no-reply-save-vrf`	Generate dbg syslog message with syslog ID BGP-3-VRF_ADD_NO_REPLY_SAVE_VRF
`vrf-save-cmd`	Generate dbg syslog message with syslog ID BGP-3-VRF_SAVE_CMD
`write-error`	Generate dbg syslog message with syslog ID BGP-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID BGP-3-WRITE_ERROR:

```
G8272>dbg logging facility bgp message write-error count 10
```

dbg logging facility hostmib message

Enables logging of host Management Information Base (host MIB) error messages of the specified type.

Syntax

dbg logging facility hostmib message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
`connect-error`	Generate dbg syslog message with syslog ID HOSTMIB-3-CONNECT_ERROR
`smgr-client-init-error`	Generate dbg syslog message with syslog ID HOSTMIB-3-SMGR_CLIENT_INIT_ERROR
`socket-error`	Generate dbg syslog message with syslog ID HOSTMIB-3-SOCKET_ERROR
`syslog-init`	Generate dbg syslog message with syslog ID HOSTMIB-6-SYSLOG_INIT
`write-error`	Generate dbg syslog message with syslog ID HOSTMIB-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID HOSTMIB-3-WRITE_ERROR:

```
G8272>dbg logging facility hostmib message write-error count 10
```

dbg logging facility hostp message

Enables logging of host protocol (hostp) error messages of the specified type.

Syntax

dbg logging facility bgp message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
connect-error	Generate dbg syslog message with syslog ID HOSTP-3-CONNECT_ERROR
daemon-started	Generate dbg syslog message with syslog ID HOSTP-6-DAEMON_STARTED
file-err	Generate dbg syslog message with syslog ID HOSTP-3-FILE_ERR
libsysinfo-init	Generate dbg syslog message with syslog ID HOSTP-3-LIBSYSINFO_INIT
master-control-alloc-error	Generate dbg syslog message with syslog ID HOSTP-4-MASTER_CONTROL_ALLOC_ERROR
master-helper-alloc-error	Generate dbg syslog message with syslog ID HOSTP-4-MASTER_HELPER_ALLOC_ERROR
master-instance-alloc-error	Generate dbg syslog message with syslog ID HOSTP-4-MASTER_INSTANCE_ALLOC_ERROR
master-notifier-alloc-err	Generate dbg syslog message with syslog ID HOSTP-4-MASTER_NOTIFIER_ALLOC_ERR
master-trap-alloc-err	Generate dbg syslog message with syslog ID HOSTP-4-MASTER_TRAP_ALLOC_ERR
nsm-server-version-error	Generate dbg syslog message with syslog ID HOSTP-3-NSM_SERVER_VERSION_ERROR
nsm-service-bits-error	Generate dbg syslog message with syslog ID HOSTP-3-NSM_SERVICE_BITS_ERROR
passwd-dbase-err	Generate dbg syslog message with syslog ID HOSTP-3-PASSWD_DBASE_ERR
pubsub-client-init	Generate dbg syslog message with syslog ID HOSTP-3-PUBSUB_CLIENT_INIT
smgr-client-init-error	Generate dbg syslog message with syslog ID HOSTP-3-SMGR_CLIENT_INIT_ERROR
socket-error	Generate dbg syslog message with syslog ID HOSTP-3-SOCKET_ERROR

Parameter	Function
`ssh-cfg-alloc-err`	Generate dbg syslog message with syslog ID HOSTP-3-SSH_CFG_ALLOC_ERR
`ssh-server-start-err`	Generate dbg syslog message with syslog ID HOSTP-3-SSH_SERVER_START_ERR
`write-error`	Generate dbg syslog message with syslog ID HOSTP-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID HOSTP-3-WRITE_ERROR:

```
G8272>dbg logging facility hostp message write-error count 10
```

dbg logging facility hsl message

Enables logging of Hardware Services Layer (HSL) error messages of the specified type.

Syntax

dbg logging facility hsl message <*message-type*> **count** <*count*>

where *message-type* is one of the message types available on the switch (type "**?**" to see the list of possible messages) and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID HSL-3-WRITE_ERROR:

```
G8272>dbg logging facility hsl message write-error count 10
```

dbg logging facility imi message

Enables logging of Integrated Management Interface (IMI) error messages of the specified type.

Syntax

dbg logging facility imi message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
config-cr-error	Generate dbg syslog message with syslog ID IMI-3-CONFIG_CR_ERROR
config-cr-removed	Generate dbg syslog message with syslog ID IMI-6-CONFIG_CR_REMOVED
config-not-ascii	Generate dbg syslog message with syslog ID IMI-3-CONFIG_NOT_ASCII
config-nul-error	Generate dbg syslog message with syslog ID IMI-3-CONFIG_NUL_ERROR
config-nul-removed	Generate dbg syslog message with syslog ID IMI-6-CONFIG_NUL_REMOVED
connect-error	Generate dbg syslog message with syslog ID IMI-3-CONNECT_ERROR
keyword-wrapper-error	Generate dbg syslog message with syslog ID IMI-3-KEYWORD_WRAPPER_ERROR
maint-pwd-changed	Generate dbg syslog message with syslog ID IMI-5-MAINT_PWD_CHANGED
maint-pwd-removed	Generate dbg syslog message with syslog ID IMI-5-MAINT_PWD_REMOVED
smgr-client-init-error	Generate dbg syslog message with syslog ID IMI-3-SMGR_CLIENT_INIT_ERROR
socket-error	Generate dbg syslog message with syslog ID IMI-3-SOCKET_ERROR
syslog-init	Generate dbg syslog message with syslog ID IMI-6-SYSLOG_INIT
user-logout	Generate dbg syslog message with syslog ID IMI-5-USER_LOGOUT
write-error	Generate dbg syslog message with syslog ID IMI-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID IMI-3-WRITE_ERROR:

```
G8272>dbg logging facility imi message write-error count 10
```

dbg logging facility imish message

Enables logging of IMI shell (IMISH) error messages of the specified type.

Syntax

`dbg logging facility imish message` *<message-type>* **`count`** *<count>*

where *message-type* is one of the following:

Parameter	Function
`download-config-err`	Generate dbg syslog message with syslog ID IMISH-3-DOWNLOAD_CONFIG_ERR
`enter-maint-mode`	Generate dbg syslog message with syslog ID IMISH-5-ENTER_MAINT_MODE
`exit-maint-mode`	Generate dbg syslog message with syslog ID IMISH-5-EXIT_MAINT_MODE
`pam-user-err`	Generate dbg syslog message with syslog ID IMISH-3-PAM_USER_ERR
`syslog-init`	Generate dbg syslog message with syslog ID IMISH-7-SYSLOG_INIT
`user-login`	Generate dbg syslog message with syslog ID IMISH-5-USER_LOGIN
`user-logout`	Generate dbg syslog message with syslog ID IMISH-5-USER_LOGOUT

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID IMISH-5-USER_LOGOUT:

```
G8272>dbg logging facility imish message user-logout count 10
```

dbg logging facility khsl message

Enables logging of Kernel Hardware Services Layer (KHSL) error messages of the specified type.

Syntax

dbg logging facility khsl message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
devdrv-alloc-err-hash-data	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_ALLOC_ERR_HASH_DATA
devdrv-arp-pkt-not-sbnt-for	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_ARP_PKT_NOT_SBNT_FOR
devdrv-error-sndng-pckt-for-vid	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_ERROR_SNDNG_PCKT_FOR_VID
devdrv-ethrnt-hdr	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_ETHRNT_HDR
devdrv-flre-sndng-pckt	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_FLRE_SNDNG_PCKT
devdrv-get-knet-vport-info-using	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_GET_KNET_VPORT_INFO_USING
devdrv-hash-crtn-fld	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HASH_CRTN_FLD
devdrv-hash-null	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HASH_NULL
devdrv-hsl-dstr-ll-ntdv-list	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_DSTR_LL_NTDV_LIST
devdrv-hsl-knt-drv-pst-l3-pkt	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_KNT_DRV_PST_L3_PKT
devdrv-hsl-knt-snd-l3-pkt-null	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_KNT_SND_L3_PKT_NULL
devdrv-hsl-knt-snd-l3-pkt-nullr	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_KNT_SND_L3_PKT_NULLR
devdrv-hsl-knt-snd-l3-pkt-nullz	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_KNT_SND_L3_PKT_NULLZ
devdrv-hsl-knt-snd-l3-pkt-smac	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_HSL_KNT_SND_L3_PKT_SMAC

Parameter	Function
devdrv-hsl-ndv-gt-b-fnme-list	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_NDV_GT_B_FNME_LIST
devdrv-hsl-ndv-gt-b-fnme-null	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_NDV_GT_B_FNME_NULL
devdrv-hsl-ndv-gt-b-fnme-such	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_NDV_GT_B_FNME_SUCH
devdrv-hsl-ndv-lst-dl-list-null	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_NDV_LST_DL_LIST_NULL
devdrv-hsl-ndv-lst-dl-null-pntr	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_NDV_LST_DL_NULL_PNTR
devdrv-hsl-ndv-lst-dl-such-node	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_NDV_LST_DL_SUCH_NODE
devdrv-hsl-s-vldt-cmpv6-pckt	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_S_VLDT_CMPV6_PCKT
devdrv-hsl-s-vldt-rp-pckt-null	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_S_VLDT_RP_PCKT_NULL
devdrv-hsl-th-drv-dstr-ntdvce	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_DRV_DSTR_NTDVCE
devdrv-hsl-th-drv-dstr-ntdvces	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_DRV_DSTR_NTDVCES
devdrv-hsl-th-drv-pst-l3-pkt	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_DRV_PST_L3_PKT
devdrv-hsl-th-drv-pst-l3-pkt-fld	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_DRV_PST_L3_PKT_FLD
devdrv-hsl-th-drv-pst-l3-pktv	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_DRV_PST_L3_PKTV
devdrv-hsl-th-snd-l3-pkt-null	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_SND_L3_PKT_NULL
devdrv-hsl-th-snd-l3-pkt-nullm	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_SND_L3_PKT_NULLM
devdrv-hsl-th-snd-l3-pkt-nullr	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_SND_L3_PKT_NULLR
devdrv-hsl-th-snd-l3-pkt-nulls	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_SND_L3_PKT_NULLS
devdrv-hsl-th-snd-l3-pkt-nullt	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_HSL_TH_SND_L3_PKT_NULLT
devdrv-icmpv6-pkt-not-sbnt-for	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_ICMPV6_PKT_NOT_SBNT_FOR

Parameter	Function
devdrv-intrfce-null	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_INTRFCE_NULL
devdrv-lag-lport	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_LAG_LPORT
devdrv-len-port	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_LEN_PORT
devdrv-null-pntr-ifnme-dev	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_NULL_PNTR_IFNME_DEV
devdrv-ooooops-there-such-ntdv	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_OOOOOPS_THERE_SUCH_NTDV
devdrv-pckt-for-vport	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_PCKT_FOR_VPORT
devdrv-pkt-bf-null	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_PKT_BF_NULL
devdrv-pkt-ddr-null	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_PKT_DDR_NULL
devdrv-pkt-with	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_PKT_WITH
devdrv-pkt-with-eth-tpe-04x	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_PKT_WITH_ETH_TPE_04X
devdrv-post-null-dev	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_POST_NULL_DEV
devdrv-prt-chnnl-lprt	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_PRT_CHNNL_LPRT
devdrv-prt-dta-trnk-d-prt-dta	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_PRT_DTA_TRNK_D_PRT_DTA
devdrv-pstng-pckt-stack	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_PSTNG_PCKT_STACK
devdrv-rcvd-pkt-with-pkt-l1	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_RCVD_PKT_WITH_PKT_L1
devdrv-rcvd-pkt-with-pkt-l2	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_RCVD_PKT_WITH_PKT_L2
devdrv-rsn-name-l3-ntf	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_RSN_NAME_L3_NTF
devdrv-sccss-hash-crtn	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_SCCSS_HASH_CRTN
devdrv-sccssflly-dltd-all-the	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_SCCSSFLLY_DLTD_ALL_THE

Parameter	Function
devdrv-send-pkt-dev-ifp-vid	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_SEND_PKT_DEV_IFP_VID
devdrv-there-intrfce-found	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_THERE_INTRFCE_FOUND
devdrv-tunnel-ip-efound	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_TUNNEL_IP_EFOUND
devdrv-unble-alloc-mmry-for	Generate dbg syslog message with syslog ID KHSL-3-DEVDRV_UNBLE_ALLOC_MMRY_FOR
devdrv-unrgstrng-the-ntdv	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_UNRGSTRNG_THE_NTDV
devdrv-vlan-name	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_VLAN_NAME
devdrv-vprt-dta-encp-tpe	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_VPRT_DTA_ENCP_TPE
devdrv-vrrp-enbld-for-incmng	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_VRRP_ENBLD_FOR_INCMNG
devdrv-vrrp-enbld-for-out-going	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_VRRP_ENBLD_FOR_OUT_GOING
devdrv-vrrp-enbld-for-out-goingn	Generate dbg syslog message with syslog ID KHSL-7-DEVDRV_VRRP_ENBLD_FOR_OUT_GOINGN
general	Generate dbg syslog message with syslog ID KHSL-3-GENERAL
helper-hsl-rcvd-read-from	Generate dbg syslog message with syslog ID KHSL-7-HELPER_HSL_RCVD_READ_FROM
helper-lag-lport	Generate dbg syslog message with syslog ID KHSL-7-HELPER_LAG_LPORT
helper-pckt-rcvd-with-vntgwth	Generate dbg syslog message with syslog ID KHSL-7-HELPER_PCKT_RCVD_WITH_VNTGWTH
helper-vport-pckt-rcvd-for	Generate dbg syslog message with syslog ID KHSL-7-HELPER_VPORT_PCKT_RCVD_FOR
log-msg	Generate dbg syslog message with syslog ID KHSL-D-LOG_MSG
msg-came-into-the-fnctn	Generate dbg syslog message with syslog ID KHSL-7-MSG_CAME_INTO_THE_FNCTN
msg-came-into-the-fnctnf	Generate dbg syslog message with syslog ID KHSL-7-MSG_CAME_INTO_THE_FNCTNF

Parameter	Function
msg-dev-for-not-found	Generate dbg syslog message with syslog ID KHSL-3-MSG_DEV_FOR_NOT_FOUND
msg-dflt	Generate dbg syslog message with syslog ID KHSL-7-MSG_DFLT
msg-hal-crte-ntdv-alloc-fail	Generate dbg syslog message with syslog ID KHSL-3-MSG_HAL_CRTE_NTDV_ALLOC_FAIL
msg-hsl-msg-rcv-f-ddr-dd	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_RCV_F_DDR_DD
msg-hsl-msg-rcv-f-ddr-ddf	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_RCV_F_DDR_DDF
msg-hsl-msg-rcv-f-ddr-ddl	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_RCV_F_DDR_DDL
msg-hsl-msg-rcv-f-ddr-dl	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_RCV_F_DDR_DL
msg-hsl-msg-rcv-f-ddr-dlc	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_RCV_F_DDR_DLC
msg-hsl-msg-s-dv-stts-pdte	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_S_DV_STTS_PDTE
msg-hsl-msg-snd-f-ddr-null	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_SND_F_DDR_NULL
msg-hsl-msg-snd-pkt-cmmnctn	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_SND_PKT_CMMNCTN
msg-hsl-msg-snd-pkt-large	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_SND_PKT_LARGE
msg-hsl-msg-snd-pkt-null-pkt	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_SND_PKT_NULL_PKT
msg-hsl-msg-snd-pkt-null-pktf	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_SND_PKT_NULL_PKTF
msg-hsl-msg-snd-pkt-pkt-send	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_MSG_SND_PKT_PKT_SEND
msg-hsl-rcv-msg-pkt-rx-fld	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_RCV_MSG_PKT_RX_FLD
msg-hsl-rcv-msg-pkt-rx-null	Generate dbg syslog message with syslog ID KHSL-3-MSG_HSL_RCV_MSG_PKT_RX_NULL
msg-hsl-sck-rlse-lost-cmmnctn	Generate dbg syslog message with syslog ID KHSL-7-MSG_HSL_SCK_RLSE_LOST_CMMNCTN
msg-knet-dvce-fld	Generate dbg syslog message with syslog ID KHSL-3-MSG_KNET_DVCE_FLD

Parameter	Function
msg-knet-dvce-init-fld	Generate dbg syslog message with syslog ID KHSL-3-MSG_KNET_DVCE_INIT_FLD
msg-mssge-hal-acknwldgmnt-pstd	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_ACKNWLDGMNT_PSTD
msg-mssge-hal-addr-add	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_ADDR_ADD
msg-mssge-hal-addr-del	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_ADDR_DEL
msg-mssge-hal-crte-ntdv	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_CRTE_NTDV
msg-mssge-hal-dlte-ntdv	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_DLTE_NTDV
msg-mssge-hal-dntlztn	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_DNTLZTN
msg-mssge-hal-intlztn	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_INTLZTN
msg-mssge-hal-pkt	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_PKT
msg-mssge-hal-pktg	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_PKTG
msg-mssge-hal-set-flags-ntdv	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_SET_FLAGS_NTDV
msg-mssge-hal-unset-flags	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HAL_UNSET_FLAGS
msg-mssge-hsl-hlpr-dbg	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_HLPR_DEBUG
msg-mssge-hsl-hlpr-dbg-off	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_HLPR_DEBUG_OFF
msg-mssge-hsl-hlpr-debuga	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_HLPR_DEBUGA
msg-mssge-hsl-hlpr-debugc	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_HLPR_DEBUGC
msg-mssge-hsl-hlpr-debugx	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_HLPR_DEBUGX
msg-mssge-hsl-intrfce-init	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_INTRFCE_INIT
msg-mssge-hsl-intrfce-initm	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_INTRFCE_INITM

Parameter	Function
`msg-mssge-hsl-pkt-dntlztn`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_PKT_DNTLZTN
`msg-mssge-hsl-pkt-intlztn`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_PKT_INTLZTN
`msg-mssge-hsl-recv-vrrp`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_RECV_VRRP
`msg-mssge-hsl-spl-brngp`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_HSL_SPL_BRNGP
`msg-mssge-khsl-vrrp-updte`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_KHSL_VRRP_UPDTE
`msg-mssge-knet-init-sccss`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_KNET_INIT_SCCSS
`msg-mssge-knet-sccss`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_KNET_SCCSS
`msg-mssge-ntdv-crtd-succ`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_NTDV_CRTD_SUCC
`msg-mssge-ntdv-dltn-succ`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_NTDV_DLTN_SUCC
`msg-mssge-ntdv-shut-sccss`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_NTDV_SHUT_SCCSS
`msg-mssge-ntdv-shut-sccsss`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_NTDV_SHUT_SCCSSS
`msg-mssge-type`	Generate dbg syslog message with syslog ID KHSL-7-MSG_MSSGE_TYPE
`msg-ntdv-crtn-fld`	Generate dbg syslog message with syslog ID KHSL-3-MSG_NTDV_CRTN_FLD
`msg-ntdv-dltn-fld`	Generate dbg syslog message with syslog ID KHSL-3-MSG_NTDV_DLTN_FLD
`msg-ntdv-get-fld-for`	Generate dbg syslog message with syslog ID KHSL-3-MSG_NTDV_GET_FLD_FOR
`msg-ntdv-shut-fld`	Generate dbg syslog message with syslog ID KHSL-3-MSG_NTDV_SHUT_FLD
`msg-ntdv-shut-fldp`	Generate dbg syslog message with syslog ID KHSL-3-MSG_NTDV_SHUT_FLDP
`msg-ooooooooops-user-hsl-klld`	Generate dbg syslog message with syslog ID KHSL-7-MSG_OOOOOOOOPS_USER_HSL_KLLD
`msg-vlan-name`	Generate dbg syslog message with syslog ID KHSL-7-MSG_VLAN_NAME

Parameter	Function
pktdrv-cnnt-crte-thrd	Generate dbg syslog message with syslog ID KHSL-3-PKTDRV_CNNT_CRTE_THRD
pktdrv-cnnt-start-pckt-dsptchr	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_CNNT_START_PCKT_DSPTCHR
pktdrv-error-dntlzng-cpu-intrfce	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_ERROR_DNTLZNG_CPU_INTRFCE
pktdrv-error-dntlzng-cpu-intrfcz	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_ERROR_DNTLZNG_CPU_INTRFCZ
pktdrv-error-intlzng-cpu-intrfce	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_ERROR_INTLZNG_CPU_INTRFCE
pktdrv-error-intlzng-cpu-intrfcn	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_ERROR_INTLZNG_CPU_INTRFCN
pktdrv-fld-allctng-mmry-for-pckt	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_FLD_ALLCTNG_MMRY_FOR_PCKT
pktdrv-fld-allctng-mmry-fr-pcktf	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_FLD_ALLCTNG_MMRY_FR_PCKTF
pktdrv-fld-allctng-mmry-fr-pcktl	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_FLD_ALLCTNG_MMRY_FR_PCKTL
pktdrv-fld-crte-mutex	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_FLD_CRTE_MUTEX
pktdrv-mmry-allctn-faile-for	Generate dbg syslog message with syslog ID KHSL-2-PKTDRV_MMRY_ALLCTN_FAILE_FOR
pktdrv-total-drop-count	Generate dbg syslog message with syslog ID KHSL-7-PKTDRV_TOTAL_DROP_COUNT
platform-bcm-ifndx-bcm-prt-name	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_BCM_IFNDX_BCM_PRT_NAME
platform-bcm-port-ifndx-dnam1	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_BCM_PORT_IFNDX_DNAM1
platform-bcm-port-ifndx-dnam2	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_BCM_PORT_IFNDX_DNAM2
platform-bcm-port-ifndx-nam1	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_BCM_PORT_IFNDX_NAM1

Parameter	Function
`platform-bcm-port-ifndx-nam2`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_BCM_PORT_IFNDX_NAM2
`platform-bcm-vln-d-name-rgstrd`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_BCM_VLN_D_NAME_RGSTRD
`platform-bcm-vln-d-unrgstrd`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_BCM_VLN_D_UNRGSTRD
`platform-dltng-mmbr-port-from`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_DLTNG_MMBR_PORT_FROM
`platform-func-sccss`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_FUNC_SCCSS
`platform-hsl-knt-ndx-nt-fld`	Generate dbg syslog message with syslog ID KHSL-3-PLATFORM_HSL_KNT_NDX_NT_FLD
`platform-hsl-knt-prt-nt-fld`	Generate dbg syslog message with syslog ID KHSL-3-PLATFORM_HSL_KNT_PRT_NT_FLD
`platform-hsl-knt-vln-nt-fld`	Generate dbg syslog message with syslog ID KHSL-3-PLATFORM_HSL_KNT_VLN_NT_FLD
`platform-hsl-knt-vprt-nt-fld`	Generate dbg syslog message with syslog ID KHSL-3-PLATFORM_HSL_KNT_VPRT_NT_FLD
`platform-ifndx-alrdy-rgstrd`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_IFNDX_ALRDY_RGSTRD
`platform-ifndx-insrtd`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_IFNDX_INSRTD
`platform-ifndx-rmvd-from-map`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_IFNDX_RMVD_FROM_MAP
`platform-ifp-vid-for-intrfce`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_IFP_VID_FOR_INTRFCE
`platform-ifp-vid-updte-for`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_IFP_VID_UPDTE_FOR
`platform-invld-node-prtmp-tree`	Generate dbg syslog message with syslog ID KHSL-3-PLATFORM_INVLD_NODE_PRTMP_TREE
`platform-port-alrdy-rgstrd`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_PORT_ALRDY_RGSTRD
`platform-port-get-for-bcm-pr1`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_PORT_GET_FOR_BCM_PR1
`platform-port-get-for-bcm-pr2`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_PORT_GET_FOR_BCM_PR2
`platform-port-insrtd`	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_PORT_INSRTD

Parameter	Function
platform-port-set-for-bcm-pr1	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_PORT_SET_FOR_BCM_PR1
platform-port-set-for-bcm-pr2	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_PORT_SET_FOR_BCM_PR2
platform-rmvd-from-map	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_RMVD_FROM_MAP
platform-smthng-wrong	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_SMTHNG_WRONG
platform-smthng-wrong-bcm-prt	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_SMTHNG_WRONG_BCM_PRT
platform-smthng-wrong-drng-index	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_SMTHNG_WRONG_DRNG_INDEX
platform-smthng-wrong-drng-vlan	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_SMTHNG_WRONG_DRNG_VLAN
platform-trunk-data-addtn-for	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_TRUNK_DATA_ADDTN_FOR
platform-trunk-dlte-clld-bcmprt	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_TRUNK_DLTE_CLLD_BCMPRT
platform-vf-ndx-ph-fndx-lprt1	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_VF_NDX_PH_FNDX_LPRT1
platform-vf-ndx-ph-fndx-lprt2	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_VF_NDX_PH_FNDX_LPRT2
platform-vf-ndx-ph-fndx-lprt3	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_VF_NDX_PH_FNDX_LPRT3
platform-vlan-data-for-intrfce	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_VLAN_DATA_FOR_INTRFCE
platform-vlan-rmvd-from-map	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_VLAN_RMVD_FROM_MAP
platform-vln-d-alrdy-rgstrd	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_VLN_D_ALRDY_RGSTRD
platform-vln-d-insrtd	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_VLN_D_INSRTD
platform-vport-ifndx-unrgstrd	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_VPORT_IFNDX_UNRGSTRD
platform-vport-vport-ifndx-with	Generate dbg syslog message with syslog ID KHSL-7-PLATFORM_VPORT_VPORT_IFNDX_WITH
vrrp-mssge-vrrp-vip-add-rcvd	Generate dbg syslog message with syslog ID KHSL-7-VRRP_MSSGE_VRRP_VIP_ADD_RCVD

Parameter	Function
`vrrp-mssge-vrrp-vip-del-rcvd`	Generate dbg syslog message with syslog ID KHSL-7-VRRP_MSSGE_VRRP_VIP_DEL_RCVD
`vrrp-mssge-vrrp-vipv6-add-rcvd`	Generate dbg syslog message with syslog ID KHSL-7-VRRP_MSSGE_VRRP_VIPV6_ADD_RCVD
`vrrp-mssge-vrrp-vipv6-del-rcvd`	Generate dbg syslog message with syslog ID KHSL-7-VRRP_MSSGE_VRRP_VIPV6_DEL_RCVD

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID KHSL-3-DEVDRV_HASH_NULL:

```
G8272>dbg logging facility khsl message devdrv-hash-null count 10
```

dbg logging facility lacp message

Enables logging of Link Aggregation Control Protocol (LACP) error messages of the specified type.

Syntax

dbg logging facility lacp message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
agg-malloc-err	Generate dbg syslog message with syslog ID LACP-1-AGG_MALLOC_ERR
connect-error	Generate dbg syslog message with syslog ID LACP-3-CONNECT_ERROR
create-aggr-err	Generate dbg syslog message with syslog ID LACP-1-CREATE_AGGR_ERR
disabled	Generate dbg syslog message with syslog ID LACP-5-DISABLED
enabled	Generate dbg syslog message with syslog ID LACP-5-ENABLED
link-malloc-err	Generate dbg syslog message with syslog ID LACP-1-LINK_MALLOC_ERR
packet-transmit-err	Generate dbg syslog message with syslog ID LACP-3-PACKET_TRANSMIT_ERR
pdu-receive-fail	Generate dbg syslog message with syslog ID LACP-4-PDU_RECEIVE_FAIL
pdu-receive-truncate	Generate dbg syslog message with syslog ID LACP-4-PDU_RECEIVE_TRUNCATE
port-add-count-malloc-err	Generate dbg syslog message with syslog ID LACP-1-PORT_ADD_COUNT_MALLOC_ERR
port-delete-count-malloc-err	Generate dbg syslog message with syslog ID LACP-1-PORT_DELETE_COUNT_MALLOC_ERR
port-down	Generate dbg syslog message with syslog ID LACP-5-PORT_DOWN
port-malloc-err	Generate dbg syslog message with syslog ID LACP-1-PORT_MALLOC_ERR
port-priority-changed	Generate dbg syslog message with syslog ID LACP-5-PORT_PRIORITY_CHANGED
port-up	Generate dbg syslog message with syslog ID LACP-5-PORT_UP

Parameter	Function
`receive-fail`	Generate dbg syslog message with syslog ID LACP-4-RECEIVE_FAIL
`smgr-client-init-error`	Generate dbg syslog message with syslog ID LACP-3-SMGR_CLIENT_INIT_ERROR
`socket-error`	Generate dbg syslog message with syslog ID LACP-3-SOCKET_ERROR
`suspend-individual`	Generate dbg syslog message with syslog ID LACP-5-SUSPEND_INDIVIDUAL
`syslog-init`	Generate dbg syslog message with syslog ID LACP-6-SYSLOG_INIT
`system-priority-changed`	Generate dbg syslog message with syslog ID LACP-5-SYSTEM_PRIORITY_CHANGED
`vlag-agg-mismatch`	Generate dbg syslog message with syslog ID LACP-4-VLAG_AGG_MISMATCH
`vlag-inst-mismatch`	Generate dbg syslog message with syslog ID LACP-4-VLAG_INST_MISMATCH
`write-error`	Generate dbg syslog message with syslog ID LACP-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID BGP-3-WRITE_ERROR:

```
G8272>dbg logging facility bgp message write-error count 10
```

dbg logging facility bgp message

Enables logging of Link Layer Discovery Protocol (LLDP) error messages of the specified type.

Syntax

dbg logging facility lldp message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
`lldp-detect-multi-peers`	Generate dbg syslog message with syslog ID LLDP-3-LLDP_DETECT_MULTI_PEERS
`lldp-detect-remote-change`	Generate dbg syslog message with syslog ID LLDP-6-LLDP_DETECT_REMOTE_CHANGE
`lldp-err-memory`	Generate dbg syslog message with syslog ID LLDP-3-LLDP_ERR_MEMORY
`lldp-err-not-found`	Generate dbg syslog message with syslog ID LLDP-U-LLDP_ERR_NOT_FOUND
`lldp-internal-error`	Generate dbg syslog message with syslog ID LLDP-U-LLDP_INTERNAL_ERROR
`lldp-invalid`	Generate dbg syslog message with syslog ID LLDP-3-LLDP_INVALID
`lldp-limit-exceeded`	Generate dbg syslog message with syslog ID LLDP-5-LLDP_LIMIT_EXCEEDED
`lldp-open-device`	Generate dbg syslog message with syslog ID LLDP-3-LLDP_OPEN_DEVICE
`lldp-rx-disabled`	Generate dbg syslog message with syslog ID LLDP-6-LLDP_RX_DISABLED
`lldp-rx-enabled`	Generate dbg syslog message with syslog ID LLDP-6-LLDP_RX_ENABLED
`lldp-server-added`	Generate dbg syslog message with syslog ID LLDP-5-LLDP_SERVER_ADDED
`lldp-server-removed`	Generate dbg syslog message with syslog ID LLDP-5-LLDP_SERVER_REMOVED
`lldp-syslog-init`	Generate dbg syslog message with syslog ID LLDP-6-LLDP_SYSLOG_INIT
`lldp-tx-disabled`	Generate dbg syslog message with syslog ID LLDP-6-LLDP_TX_DISABLED
`lldp-tx-enabled`	Generate dbg syslog message with syslog ID LLDP-6-LLDP_TX_ENABLED

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID LLDP-3-LLDP_ERR_MEMORY:

```
G8272>dbg logging facility lldp message lldp-err-memory count 10
```

dbg logging facility log message clear-logfile

Enables logging of log file clearing error messages.

Syntax

`dbg logging facility log message clear-logfile count` *<count>*

where:

Parameter	Function
`clear-logfile`	Show when the log files are cleared and by who.
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID LOG-1-CLEAR_LOGFILE:

```
G8272>dbg logging facility log message clear-logfile count 10
```

dbg logging facility mcast message

Enables logging of multicast (MCAST) error messages of the specified type.

Syntax

dbg logging facility mcast message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Definition
`aged-mrouter`	Generate dbg syslog message with syslog ID MCAST-5-AGED_MROUTER
`group-limit-exceeded`	Generate dbg syslog message with syslog ID MCAST-4-GROUP_LIMIT_EXCEEDED
`igmp-querier-election`	Generate dbg syslog message with syslog ID MCAST-5-IGMP_QUERIER_ELECTION
`igmp-version-mismatch`	Generate dbg syslog message with syslog ID MCAST-4-IGMP_VERSION_MISMATCH
`mrouter-limit-exceeded`	Generate dbg syslog message with syslog ID MCAST-4-MROUTER_LIMIT_EXCEEDED
`new-mrouter-learned`	Generate dbg syslog message with syslog ID MCAST-5-NEW_MROUTER_LEARNED
`syslog-init`	Generate dbg syslog message with syslog ID MCAST-U-SYSLOG_INIT
`value-autoadjust`	Generate dbg syslog message with syslog ID MCAST-5-VALUE_AUTOADJUST

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID MCAST-5-AGED_MROUTER:

```
G8272>dbg logging facility mcast message aged-mrouter count 10
```

dbg logging facility mstp message

Enables logging of Multiple Spanning Tree Protocol (MSTP) error messages of the specified type.

Syntax

dbg logging facility mstp message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
bridge-cist-root-change	Generate dbg syslog message with syslog ID MSTP-6-BRIDGE_CIST_ROOT_CHANGE
bridge-root-change	Generate dbg syslog message with syslog ID MSTP-6-BRIDGE_ROOT_CHANGE
bridge-topo-change	Generate dbg syslog message with syslog ID MSTP-6-BRIDGE_TOPO_CHANGE
connect-error	Generate dbg syslog message with syslog ID MSTP-3-CONNECT_ERROR
port-bpduguard-block	Generate dbg syslog message with syslog ID MSTP-2-PORT_BPDUGUARD_BLOCK
port-err-disable-timeout	Generate dbg syslog message with syslog ID MSTP-4-PORT_ERR_DISABLE_TIMEOUT
port-role-change	Generate dbg syslog message with syslog ID MSTP-6-PORT_ROLE_CHANGE
port-rootguard-block	Generate dbg syslog message with syslog ID MSTP-2-PORT_ROOTGUARD_BLOCK
port-state-change	Generate dbg syslog message with syslog ID MSTP-6-PORT_STATE_CHANGE
smgr-client-init-error	Generate dbg syslog message with syslog ID MSTP-3-SMGR_CLIENT_INIT_ERROR
socket-error	Generate dbg syslog message with syslog ID MSTP-3-SOCKET_ERROR
syslog-init	Generate dbg syslog message with syslog ID MSTP-6-SYSLOG_INIT
vlag-port-mismatch	Generate dbg syslog message with syslog ID MSTP-2-VLAG_PORT_MISMATCH
write-error	Generate dbg syslog message with syslog ID MSTP-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID MSTP-3-WRITE_ERROR:

```
G8272>dbg logging facility mstp message write-error count 10
```

dbg logging facility ndd message

Enables logging of Network Design and Development (NDD) error messages of the specified type.

Syntax

dbg logging facility ndd message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Description
add-dyn-nbr-entry	Generate dbg syslog message with syslog IDNDD-6-ADD_DYN_NBR_ENTRY
add-dyn-nbr-entry-fail	Generate dbg syslog message with syslog ID NDD-6-ADD_DYN_NBR_ENTRY_FAIL
add-dyn-nbr-entry-suc	Generate dbg syslog message with syslog ID NDD-6-ADD_DYN_NBR_ENTRY_SUC
add-nbr-arp-fail	Generate dbg syslog message with syslog ID NDD-3-ADD_NBR_ARP_FAIL
add-nbr-fail	Generate dbg syslog message with syslog ID NDD-4-ADD_NBR_FAIL
add-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-ADD_NBR_MS
add-nbr-suc	Generate dbg syslog message with syslog ID NDD-6-ADD_NBR_SUC
add-static-arp-error	Generate dbg syslog message with syslog ID NDD-3-ADD_STATIC_ARP_ERROR
add-static-nbr-fail	Generate dbg syslog message with syslog ID NDD-3-ADD_STATIC_NBR_FAIL
add-static-nbr-suc	Generate dbg syslog message with syslog ID NDD-6-ADD_STATIC_NBR_SUC
address-add-ifc-null-error	Generate dbg syslog message with syslog ID NDD-3-ADDRESS_ADD_IFC_NULL_ERROR
address-add-ifp-null-error	Generate dbg syslog message with syslog ID NDD-3-ADDRESS_ADD_IFP_NULL_ERROR
address-add-success	Generate dbg syslog message with syslog ID NDD-6-ADDRESS_ADD_SUCCESS
address-del-ifc-null-error	Generate dbg syslog message with syslog ID NDD-3-ADDRESS_DEL_IFC_NULL_ERROR
address-del-ifp-null-error	Generate dbg syslog message with syslog ID NDD-3-ADDRESS_DEL_IFP_NULL_ERROR

Parameter	Description
address-del-success	Generate dbg syslog message with syslog ID NDD-6-ADDRESS_DEL_SUCCESS
arp-entyr-message	Generate dbg syslog message with syslog ID NDD-6-ARP_ENTYR_MESSAGE
arp-hw-delete-fail	Generate dbg syslog message with syslog ID NDD-4-ARP_HW_DELETE_FAIL
arp-hw-install-fail	Generate dbg syslog message with syslog ID NDD-4-ARP_HW_INSTALL_FAIL
arp-hw-uninstall-fail	Generate dbg syslog message with syslog ID NDD-4-ARP_HW_UNINSTALL_FAIL
arp-hw-uninstall-suc	Generate dbg syslog message with syslog ID NDD-6-ARP_HW_UNINSTALL_SUC
arp-os-install-fail	Generate dbg syslog message with syslog ID NDD-4-ARP_OS_INSTALL_FAIL
cb-add-neighbor-success	Generate dbg syslog message with syslog ID NDD-6-CB_ADD_NEIGHBOR_SUCCESS
cb-add-os-arp-message	Generate dbg syslog message with syslog ID NDD-6-CB_ADD_OS_ARP_MESSAGE
cb-add-os-arp-success	Generate dbg syslog message with syslog ID NDD-6-CB_ADD_OS_ARP_SUCCESS
cb-arp-entry-exceeded-error	Generate dbg syslog message with syslog ID NDD-4-CB_ARP_ENTRY_EXCEEDED_ERROR
cb-arp-refresh-error	Generate dbg syslog message with syslog ID NDD-4-CB_ARP_REFRESH_ERROR
cb-del-arp-fail	Generate dbg syslog message with syslog ID NDD-4-CB_DEL_ARP_FAIL
cb-del-neighbor-message	Generate dbg syslog message with syslog ID NDD-6-CB_DEL_NEIGHBOR_MESSAGE
cb-del-os-arp-message	Generate dbg syslog message with syslog ID NDD-6-CB_DEL_OS_ARP_MESSAGE
cb-del-os-arp-success	Generate dbg syslog message with syslog ID NDD-6-CB_DEL_OS_ARP_SUCCESS
cb-nd-interface-find-error	Generate dbg syslog message with syslog ID NDD-4-CB_ND_INTERFACE_FIND_ERROR
cb-neighbor-refresh-error	Generate dbg syslog message with syslog ID NDD-4-CB_NEIGHBOR_REFRESH_ERROR
client-add-null-fail	Generate dbg syslog message with syslog ID NDD-3-CLIENT_ADD_NULL_FAIL

Parameter	Description
client-disconnect	Generate dbg syslog message with syslog ID NDD-6-CLIENT_DISCONNECT
clr-all-static-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-CLR_ALL_STATIC_NBR_MS
configuration-response-message	Generate dbg syslog message with syslog ID NDD-6-CONFIGURATION_RESPONSE_MESSAGE
connect-error	Generate dbg syslog message with syslog ID NDD-3-CONNECT_ERROR
create-socket-fail	Generate dbg syslog message with syslog ID NDD-4-CREATE_SOCKET_FAIL
del-all-dyn-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-DEL_ALL_DYN_NBR_MS
del-all-static-nbr-fail	Generate dbg syslog message with syslog ID NDD-3-DEL_ALL_STATIC_NBR_FAIL
del-all-static-nbr-suc	Generate dbg syslog message with syslog ID NDD-6-DEL_ALL_STATIC_NBR_SUC
del-if-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-DEL_IF_NBR_MS
del-ipv6-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-DEL_IPV6_NBR_MS
del-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-DEL_NBR_MS
del-static-ipv6-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-DEL_STATIC_IPV6_NBR_MS
del-static-nbr-by-index-fail	Generate dbg syslog message with syslog ID NDD-3-DEL_STATIC_NBR_BY_INDEX_FAIL
del-static-nbr-by-index-suc	Generate dbg syslog message with syslog ID NDD-6-DEL_STATIC_NBR_BY_INDEX_SUC
del-static-nbr-by-ipaddr-fail	Generate dbg syslog message with syslog ID NDD-3-DEL_STATIC_NBR_BY_IPADDR_FAIL
del-static-nbr-by-ipaddr-suc	Generate dbg syslog message with syslog ID NDD-6-DEL_STATIC_NBR_BY_IPADDR_SUC
del-static-nbr-fail	Generate dbg syslog message with syslog ID NDD-3-DEL_STATIC_NBR_FAIL
del-static-nbr-suc	Generate dbg syslog message with syslog ID NDD-6-DEL_STATIC_NBR_SUC
duplicate-address-detected	Generate dbg syslog message with syslog ID NDD-3-DUPLICATE_ADDRESS_DETECTED

Parameter	Description
duplicate-address-fail	Generate dbg syslog message with syslog ID NDD-3-DUPLICATE_ADDRESS_FAIL
eof	Generate dbg syslog message with syslog ID NDD-3-EOF
for-if-ms	Generate dbg syslog message with syslog ID NDD-6-FOR_IF_MS
hw-nbr-table-full-err	Generate dbg syslog message with syslog ID NDD-3-HW_NBR_TABLE_FULL_ERR
ignore-non-kernel-msg	Generate dbg syslog message with syslog ID NDD-3-IGNORE_NON_KERNEL_MSG
inform-arp-client-fail	Generate dbg syslog message with syslog ID NDD-4-INFORM_ARP_CLIENT_FAIL
interface-create-message	Generate dbg syslog message with syslog ID NDD-6-INTERFACE_CREATE_MESSAGE
interface-delete-message	Generate dbg syslog message with syslog ID NDD-6-INTERFACE_DELETE_MESSAGE
interface-memory-allocated-error	Generate dbg syslog message with syslog ID NDD-3-INTERFACE_MEMORY_ALLOCATED_ERROR
interface-update-message	Generate dbg syslog message with syslog ID NDD-6-INTERFACE_UPDATE_MESSAGE
interface-vrf-null-error	Generate dbg syslog message with syslog ID NDD-3-INTERFACE_VRF_NULL_ERROR
invalid-icmp-length	Generate dbg syslog message with syslog ID NDD-4-INVALID_ICMP_LENGTH
invalid-na-ns-icmp-code	Generate dbg syslog message with syslog ID NDD-4-INVALID_NA_NS_ICMP_CODE
invalid-na-packet-hoplimit	Generate dbg syslog message with syslog ID NDD-4-INVALID_NA_PACKET_HOPLIMIT
invalid-na-packet-length	Generate dbg syslog message with syslog ID NDD-4-INVALID_NA_PACKET_LENGTH
invalid-ns-packet-hoplimit	Generate dbg syslog message with syslog ID NDD-4-INVALID_NS_PACKET_HOPLIMIT
invalid-ns-packet-len	Generate dbg syslog message with syslog ID NDD-4-INVALID_NS_PACKET_LEN
link-down-event	Generate dbg syslog message with syslog ID NDD-6-LINK_DOWN_EVENT
link-up-event	Generate dbg syslog message with syslog ID NDD-6-LINK_UP_EVENT

Parameter	Description
`lookup-response-message`	Generate dbg syslog message with syslog ID NDD-6-LOOKUP_RESPONSE_MESSAGE
`mac-address-is`	Generate dbg syslog message with syslog ID NDD-6-MAC_ADDRESS_IS
`mac-same-as-interface`	Generate dbg syslog message with syslog ID NDD-3-MAC_SAME_AS_INTERFACE
`max-arp-exceeded`	Generate dbg syslog message with syslog ID NDD-3-MAX_ARP_EXCEEDED
`max-static-arp-exceeded`	Generate dbg syslog message with syslog ID NDD-3-MAX_STATIC_ARP_EXCEEDED
`message-error`	Generate dbg syslog message with syslog ID NDD-3-MESSAGE_ERROR
`message-remnant-error`	Generate dbg syslog message with syslog ID NDD-3-MESSAGE_REMNANT_ERROR
`message-truncated-error`	Generate dbg syslog message with syslog ID NDD-3-MESSAGE_TRUNCATED_ERROR
`mul-or-unspecified-address`	Generate dbg syslog message with syslog ID NDD-4-MUL_OR_UNSPECIFIED_ADDRESS
`nbr-entry-memory-allocated-fail`	Generate dbg syslog message with syslog ID NDD-3-NBR_ENTRY_MEMORY_ALLOCATED_FAIL
`nd-delete-fail`	Generate dbg syslog message with syslog ID NDD-4-ND_DELETE_FAIL
`nd-refresh-fail`	Generate dbg syslog message with syslog ID NDD-4-ND_REFRESH_FAIL
`nd-stale-set-fail`	Generate dbg syslog message with syslog ID NDD-4-ND_STALE_SET_FAIL
`neighbor-down`	Generate dbg syslog message with syslog ID NDD-6-NEIGHBOR_DOWN
`neighbor-up`	Generate dbg syslog message with syslog ID NDD-6-NEIGHBOR_UP
`nsm-client-create-fail`	Generate dbg syslog message with syslog ID NDD-3-NSM_CLIENT_CREATE_FAIL
`os-nbr-table-full-err`	Generate dbg syslog message with syslog ID NDD-3-OS_NBR_TABLE_FULL_ERR
`proxy-arp-hw-uninstall-fail`	Generate dbg syslog message with syslog ID NDD-4-PROXY_ARP_HW_UNINSTALL_FAIL
`receive-overrunning-msg`	Generate dbg syslog message with syslog ID NDD-3-RECEIVE_OVERRUNNING_MSG

Parameter	Description
sender-address-length-error	Generate dbg syslog message with syslog ID NDD-3-SENDER_ADDRESS_LENGTH_ERROR
server-is-not-sufficient	Generate dbg syslog message with syslog ID NDD-3-SERVER_IS_NOT_SUFFICIENT
server-protocol-version-error	Generate dbg syslog message with syslog ID NDD-3-SERVER_PROTOCOL_VERSION_ERROR
set-hoplimit-fail	Generate dbg syslog message with syslog ID NDD-4-SET_HOPLIMIT_FAIL
set-icmpv6-checksum-fail	Generate dbg syslog message with syslog ID NDD-4-SET_ICMPV6_CHECKSUM_FAIL
set-icmpv6-filter-fail	Generate dbg syslog message with syslog ID NDD-4-SET_ICMPV6_FILTER_FAIL
set-multicast-loop-fail	Generate dbg syslog message with syslog ID NDD-4-SET_MULTICAST_LOOP_FAIL
set-pktinfo-fail	Generate dbg syslog message with syslog ID NDD-4-SET_PKTINFO_FAIL
set-static-linkup-nbr-fail	Generate dbg syslog message with syslog ID NDD-4-SET_STATIC_LINKUP_NBR_FAIL
set-static-linkup-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-SET_STATIC_LINKUP_NBR_MS
set-static-linkup-nbr-suc	Generate dbg syslog message with syslog ID NDD-6-SET_STATIC_LINKUP_NBR_SUC
smgr-client-init-error	Generate dbg syslog message with syslog ID NDD-3-SMGR_CLIENT_INIT_ERROR
smi-clr-dyn-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-SMI_CLR_DYN_NBR_MS
smi-force-clr-dyn-nbr-ms	Generate dbg syslog message with syslog ID NDD-4-SMI_FORCE_CLR_DYN_NBR_MS
smi-force-del-all-dyn-nbr-ms	Generate dbg syslog message with syslog ID NDD-6-SMI_FORCE_DEL_ALL_DYN_NBR_MS
socket-error	Generate dbg syslog message with syslog ID NDD-3-SOCKET_ERROR
source-ip-is	Generate dbg syslog message with syslog ID NDD-6-SOURCE_IP_IS
svi-update-message	Generate dbg syslog message with syslog ID NDD-6-SVI_UPDATE_MESSAGE
syslog-init	Generate dbg syslog message with syslog ID NDD-6-SYSLOG_INIT

Parameter	Description
`target-ip-is`	Generate dbg syslog message with syslog ID NDD-6-TARGET_IP_IS
`target-ip-is-multicast`	Generate dbg syslog message with syslog ID NDD-4-TARGET_IP_IS_MULTICAST
`target-ip-is-multicast-solicited`	Generate dbg syslog message with syslog ID NDD-4-TARGET_IP_IS_MULTICAST_SOLICITED
`unknown-icmp-packet-type`	Generate dbg syslog message with syslog ID NDD-4-UNKNOWN_ICMP_PACKET_TYPE
`unknown-interface-index`	Generate dbg syslog message with syslog ID NDD-4-UNKNOWN_INTERFACE_INDEX
`unset-linkdown-nbr-ms`	Generate dbg syslog message with syslog ID NDD-6-UNSET_LINKDOWN_NBR_MS
`unset-static-linkdown-nbr-ms`	Generate dbg syslog message with syslog ID NDD-6-UNSET_STATIC_LINKDOWN_NBR_MS
`update-all-arp-entry`	Generate dbg syslog message with syslog ID NDD-6-UPDATE_ALL_ARP_ENTRY
`vrf-clr-arp-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_CLR_ARP_MS
`vrf-clr-dyn-arp-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_CLR_DYN_ARP_MS
`vrf-clr-dyn-nbr-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_CLR_DYN_NBR_MS
`vrf-clr-if-arp-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_CLR_IF_ARP_MS
`vrf-clr-if-dyn-nbr-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_CLR_IF_DYN_NBR_MS
`vrf-clr-if-ipv4-arp-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_CLR_IF_IPV4_ARP_MS
`vrf-clr-ipv4-arp-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_CLR_IPV4_ARP_MS
`vrf-clr-ipv6-nbr-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_CLR_IPV6_NBR_MS
`vrf-clr-nbr-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_CLR_NBR_MS
`vrf-force-clr-dyn-arp-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_FORCE_CLR_DYN_ARP_MS
`vrf-force-clr-dyn-nbr-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_FORCE_CLR_DYN_NBR_MS

Parameter	Description
`vrf-force-clr-vrf-dyn-nbr-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_FORCE_CLR_VRF_DYN_NBR_MS
`vrf-force-del-all-dyn-arp-ms`	Generate dbg syslog message with syslog ID NDD-6-VRF_FORCE_DEL_ALL_DYN_ARP_MS

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID NDD-3-SOCKET_ERROR:

```
G8272>dbg logging facility ndd message socket-error count 10
```

dbg logging facility nlog message

Enables logging of Network Log (NLOG) error messages of the specified type.

Syntax

dbg logging facility nlog message *<message-type>* **count** *<count>*

where *message-type* is one of the following:

Parameter	Function
`timer-create-failed`	Generate dbg syslog message with syslog ID NLOG-3-TIMER_CREATE_FAILED
`timer-set-failed`	Generate dbg syslog message with syslog ID NLOG-3-TIMER_SET_FAILED
`write-error`	Generate dbg syslog message with syslog ID NLOG-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID NLOG-3-WRITE_ERROR:

```
G8272>dbg logging facility nlog message write-error count 10
```

dbg logging facility nsm message

Enables logging of Network and Security Manager (NSM) error messages of the specified type.

Syntax

dbg logging facility nsm message *<message-type>* **count** *<count>*

where *message-type* is one of the following:

Parameter	Function
connect-error	Generate dbg syslog message with syslog ID NSM-3-CONNECT_ERROR
delete-dhcp-lease-error	Generate dbg syslog message with syslog ID NSM-3-DELETE_DHCP_LEASE_ERROR
dhcp-get-gateway-fail	Generate dbg syslog message with syslog ID NSM-3-DHCP_GET_GATEWAY_FAIL
dhcp-interface-err	Generate dbg syslog message with syslog ID NSM-3-DHCP_INTERFACE_ERR
dhcp-no-lease	Generate dbg syslog message with syslog ID NSM-6-DHCP_NO_LEASE
dhcp-np-overflow-err	Generate dbg syslog message with syslog ID NSM-3-DHCP_NP_OVERFLOW_ERR
dhcp-rib-client-err	Generate dbg syslog message with syslog ID NSM-3-DHCP_RIB_CLIENT_ERR
erspan-arp-send-err	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_ARP_SEND_ERR
erspan-arp-thread-create	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_ARP_THREAD_CREATE
erspan-hw-err	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_HW_ERR
erspan-invalid-param	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_INVALID_PARAM
erspan-invalid-state	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_INVALID_STATE
erspan-no-ifp	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_NO_IFP
erspan-no-nm	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_NO_NM
erspan-no-vrf	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_NO_VRF

Parameter	Function
`erspan-params-err`	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_PARAMS_ERR
`erspan-sess-upate`	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_SESS_UPATE
`erspan-set-arp`	Generate dbg syslog message with syslog ID NSM-7-ERSPAN_SET_ARP
`erspan-set-arp-err`	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_SET_ARP_ERR
`erspan-set-hw`	Generate dbg syslog message with syslog ID NSM-7-ERSPAN_SET_HW
`erspan-set-route`	Generate dbg syslog message with syslog ID NSM-7-ERSPAN_SET_ROUTE
`erspan-set-route-err`	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_SET_ROUTE_ERR
`erspan-set-vrf`	Generate dbg syslog message with syslog ID NSM-7-ERSPAN_SET_VRF
`erspan-transition`	Generate dbg syslog message with syslog ID NSM-7-ERSPAN_TRANSITION
`erspan-unset-arp`	Generate dbg syslog message with syslog ID NSM-7-ERSPAN_UNSET_ARP
`erspan-unset-arp-err`	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_UNSET_ARP_ERR
`erspan-unset-hw`	Generate dbg syslog message with syslog ID NSM-7-ERSPAN_UNSET_HW
`erspan-unset-route`	Generate dbg syslog message with syslog ID NSM-7-ERSPAN_UNSET_ROUTE
`erspan-unset-route-err`	Generate dbg syslog message with syslog ID NSM-3-ERSPAN_UNSET_ROUTE_ERR
`erspan-unset-vrf`	Generate dbg syslog message with syslog ID NSM-7-ERSPAN_UNSET_VRF
`ifm-if-addr-set-err`	Generate dbg syslog message with syslog ID NSM-3-IFM_IF_ADDR_SET_ERR
`ifm-if-bind-vrf`	Generate dbg syslog message with syslog ID NSM-5-IFM_IF_BIND_VRF
`ifm-if-down`	Generate dbg syslog message with syslog ID NSM-5-IFM_IF_DOWN
`ifm-if-unbind-vrf`	Generate dbg syslog message with syslog ID NSM-5-IFM_IF_UNBIND_VRF

Parameter	Function
ifm-if-up	Generate dbg syslog message with syslog ID NSM-5-IFM_IF_UP
ifm-link-down	Generate dbg syslog message with syslog ID NSM-5-IFM_LINK_DOWN
ifm-link-up	Generate dbg syslog message with syslog ID NSM-5-IFM_LINK_UP
ifm-vrf-create	Generate dbg syslog message with syslog ID NSM-6-IFM_VRF_CREATE
ifm-vrf-delete	Generate dbg syslog message with syslog ID NSM-6-IFM_VRF_DELETE
ifm-vrf-invalid-fib	Generate dbg syslog message with syslog ID NSM-3-IFM_VRF_INVALID_FIB
ifm-vrf-max	Generate dbg syslog message with syslog ID NSM-3-IFM_VRF_MAX
ip-redirect-dis	Generate dbg syslog message with syslog ID NSM-6-IP_REDIRECT_DIS
ip-redirect-dis-note	Generate dbg syslog message with syslog ID NSM-2-IP_REDIRECT_DIS_NOTE
ip-redirect-en	Generate dbg syslog message with syslog ID NSM-6-IP_REDIRECT_EN
ip-redirect-en-note	Generate dbg syslog message with syslog ID NSM-2-IP_REDIRECT_EN_NOTE
lacp-agg-config-removed	Generate dbg syslog message with syslog ID NSM-4-LACP_AGG_CONFIG_REMOVED
lacp-agg-created	Generate dbg syslog message with syslog ID NSM-5-LACP_AGG_CREATED
lacp-agg-deleted	Generate dbg syslog message with syslog ID NSM-5-LACP_AGG_DELETED
lacp-compat-check-failure	Generate dbg syslog message with syslog ID NSM-U-LACP_COMPAT_CHECK_FAILURE
lacp-max-agg-disallow	Generate dbg syslog message with syslog ID NSM-5-LACP_MAX_AGG_DISALLOW
lacp-max-link-disallow	Generate dbg syslog message with syslog ID NSM-5-LACP_MAX_LINK_DISALLOW
lacp-miscfg	Generate dbg syslog message with syslog ID NSM-U-LACP_MISCFG
lacp-no-agg	Generate dbg syslog message with syslog ID NSM-3-LACP_NO_AGG

Parameter	Function
lacp-no-port	Generate dbg syslog message with syslog ID NSM-4-LACP_NO_PORT
lacp-port-add	Generate dbg syslog message with syslog ID NSM-5-LACP_PORT_ADD
lacp-port-individual	Generate dbg syslog message with syslog ID NSM-4-LACP_PORT_INDIVIDUAL
lacp-port-individual-down	Generate dbg syslog message with syslog ID NSM-5-LACP_PORT_INDIVIDUAL_DOWN
lacp-port-individual-warning	Generate dbg syslog message with syslog ID NSM-4-LACP_PORT_INDIVIDUAL_WARNING
lacp-port-leaves-individual	Generate dbg syslog message with syslog ID NSM-4-LACP_PORT_LEAVES_INDIVIDUAL
lacp-port-leaves-suspended	Generate dbg syslog message with syslog ID NSM-5-LACP_PORT_LEAVES_SUSPENDED
lacp-port-remove	Generate dbg syslog message with syslog ID NSM-5-LACP_PORT_REMOVE
lacp-port-suspended	Generate dbg syslog message with syslog ID NSM-5-LACP_PORT_SUSPENDED
lacp-set-mac-error	Generate dbg syslog message with syslog ID NSM-U-LACP_SET_MAC_ERROR
lacp-syslog-mismatch	Generate dbg syslog message with syslog ID NSM-U-LACP_SYSLOG_MISMATCH
lacp-system-mac-err	Generate dbg syslog message with syslog ID NSM-U-LACP_SYSTEM_MAC_ERR
new-dhcp-offered	Generate dbg syslog message with syslog ID NSM-5-NEW_DHCP_OFFERED
plf-cmr-init	Generate dbg syslog message with syslog ID NSM-3-PLF_CMR_INIT
publish-write-error	Generate dbg syslog message with syslog ID NSM-3-PUBLISH_WRITE_ERROR
pubsub-client-init	Generate dbg syslog message with syslog ID NSM-3-PUBSUB_CLIENT_INIT
rib-client-exst	Generate dbg syslog message with syslog ID NSM-3-RIB_CLIENT_EXST
rib-rearm-err	Generate dbg syslog message with syslog ID NSM-3-RIB_REARM_ERR
smgr-client-init-error	Generate dbg syslog message with syslog ID NSM-3-SMGR_CLIENT_INIT_ERROR

Parameter	Function
socket-error	Generate dbg syslog message with syslog ID NSM-3-SOCKET_ERROR
span-null-err	Generate dbg syslog message with syslog ID NSM-3-SPAN_NULL_ERR
span-pmirr-list-err	Generate dbg syslog message with syslog ID NSM-3-SPAN_PMIRR_LIST_ERR
span-pmirr-node-err	Generate dbg syslog message with syslog ID NSM-3-SPAN_PMIRR_NODE_ERR
span-pmirr-src-list-err	Generate dbg syslog message with syslog ID NSM-3-SPAN_PMIRR_SRC_LIST_ERR
span-pmirr-src-node-err	Generate dbg syslog message with syslog ID NSM-3-SPAN_PMIRR_SRC_NODE_ERR
span-set-hw-err	Generate dbg syslog message with syslog ID NSM-3-SPAN_SET_HW_ERR
span-unset-hw-err	Generate dbg syslog message with syslog ID NSM-3-SPAN_UNSET_HW_ERR
subscribe-topic	Generate dbg syslog message with syslog ID NSM-3-SUBSCRIBE_TOPIC
subscriber-read-thr	Generate dbg syslog message with syslog ID NSM-3-SUBSCRIBER_READ_THR
syslog-init	Generate dbg syslog message with syslog ID NSM-6-SYSLOG_INIT
unsubscribe-topic	Generate dbg syslog message with syslog ID NSM-3-UNSUBSCRIBE_TOPIC
vlag-add-inst-agg	Generate dbg syslog message with syslog ID NSM-5-VLAG_ADD_INST_AGG
vlag-add-isl-agg	Generate dbg syslog message with syslog ID NSM-5-VLAG_ADD_ISL_AGG
vlag-add-tier	Generate dbg syslog message with syslog ID NSM-5-VLAG_ADD_TIER
vlag-agg-usedby-inst	Generate dbg syslog message with syslog ID NSM-4-VLAG_AGG_USEDBY_INST
vlag-agg-usedby-isl	Generate dbg syslog message with syslog ID NSM-4-VLAG_AGG_USEDBY_ISL
vlag-del-inst-agg	Generate dbg syslog message with syslog ID NSM-4-VLAG_DEL_INST_AGG
vlag-del-isl-agg	Generate dbg syslog message with syslog ID NSM-4-VLAG_DEL_ISL_AGG

Parameter	Function
`vlag-del-tier`	Generate dbg syslog message with syslog ID NSM-4-VLAG_DEL_TIER
`vlag-dis-instance`	Generate dbg syslog message with syslog ID NSM-4-VLAG_DIS_INSTANCE
`vlag-ena-instance`	Generate dbg syslog message with syslog ID NSM-5-VLAG_ENA_INSTANCE
`vlag-global-dis`	Generate dbg syslog message with syslog ID NSM-4-VLAG_GLOBAL_DIS
`vlag-global-ena`	Generate dbg syslog message with syslog ID NSM-5-VLAG_GLOBAL_ENA
`vlag-indiv-inst-agg`	Generate dbg syslog message with syslog ID NSM-4-VLAG_INDIV_INST_AGG
`vlag-indiv-isl-agg`	Generate dbg syslog message with syslog ID NSM-4-VLAG_INDIV_ISL_AGG
`vlag-lacp-syspri-mismatch`	Generate dbg syslog message with syslog ID NSM-4-VLAG_LACP_SYSPRI_MISMATCH
`vlag-mac-learn-ctrl`	Generate dbg syslog message with syslog ID NSM-5-VLAG_MAC_LEARN_CTRL
`vlag-start-delay-boot`	Generate dbg syslog message with syslog ID NSM-5-VLAG_START_DELAY_BOOT
`write-error`	Generate dbg syslog message with syslog ID NSM-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID NSM-3-WRITE_ERROR:

```
G8272>dbg logging facility nsm message write-error count 10
```

dbg logging facility nsxgw message

Enables logging of NSX Gateway (NSXGW) error messages of the specified type.

Syntax

dbg logging facility nsxgw message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
`active-sn-is-down`	Generate dbg syslog message with syslog ID NSXGW-6-ACTIVE_SN_IS_DOWN
`active-sn-is-down-no-bkp`	Generate dbg syslog message with syslog ID NSXGW-6-ACTIVE_SN_IS_DOWN_NO_BKP
`active-sn-is-removed`	Generate dbg syslog message with syslog ID NSXGW-6-ACTIVE_SN_IS_REMOVED
`active-sn-is-removed-no-bkp`	Generate dbg syslog message with syslog ID NSXGW-6-ACTIVE_SN_IS_REMOVED_NO_BKP
`error`	Generate dbg syslog message with syslog ID NSXGW-6-ERROR
`ovsdb-success`	Generate dbg syslog message with syslog ID NSXGW-6-OVSDB_SUCCESS
`sn-is-active`	Generate dbg syslog message with syslog ID NSXGW-6-SN_IS_ACTIVE
`ssl-connection-close`	Generate dbg syslog message with syslog ID NSXGW-6-SSL_CONNECTION_CLOSE
`ssl-connection-establish`	Generate dbg syslog message with syslog ID NSXGW-6-SSL_CONNECTION_ESTABLISH
`ssl-connection-open`	Generate dbg syslog message with syslog ID NSXGW-6-SSL_CONNECTION_OPEN
`syslog-init`	Generate dbg syslog message with syslog ID NSXGW-6-SYSLOG_INIT
`unregister-db`	Generate dbg syslog message with syslog ID NSXGW-6-UNREGISTER_DB
`unregister-db-fail`	Generate dbg syslog message with syslog ID NSXGW-6-UNREGISTER_DB_FAIL

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID NSXGW-6-SYSLOG_INIT:

```
G8272>dbg logging facility nsxgw message syslog-init count 10
```

dbg logging facility ntp message

Enables logging of Network Time Protocol (NTP) error messages of the specified type.

Syntax

`dbg logging facility ntp message` <*message-type*> **`count`** <*count*>

where *message-type* is one of the following:

Parameter	Function
`disable-copp-filter-fail`	Generate dbg syslog message with syslog ID NTP-7-DISABLE_COPP_FILTER_FAIL
`enable-copp-filter-fail`	Generate dbg syslog message with syslog ID NTP-7-ENABLE_COPP_FILTER_FAIL

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID NTP-7-DISABLE_COPP_FILTER_FAIL:

```
G8272>dbg logging facility ntp message disable-copp-filter-fail count 10
```

dbg logging facility onm message

Enables logging of Open Network Management (ONM) error messages of the specified type.

Syntax

dbg logging facility onm message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
connect-error	Generate dbg syslog message with syslog ID ONM-3-CONNECT_ERROR
smgr-client-init-error	Generate dbg syslog message with syslog ID ONM-3-SMGR_CLIENT_INIT_ERROR
socket-error	Generate dbg syslog message with syslog ID ONM-3-SOCKET_ERROR
syslog-init	Generate dbg syslog message with syslog ID ONM-6-SYSLOG_INIT
write-error	Generate dbg syslog message with syslog ID ONM-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID ONM-3-WRITE_ERROR:

```
G8272>dbg logging facility onm message write-error count 10
```

dbg logging facility ospf message

Enables logging of Open Shortest Path First (OSPF) error messages of the specified type.

Syntax

dbg logging facility ospf message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
adjchg	Generate dbg syslog message with syslog ID OSPF-5-ADJCHG
connect-error	Generate dbg syslog message with syslog ID OSPF-3-CONNECT_ERROR
db-overflow	Generate dbg syslog message with syslog ID OSPF-3-DB_OVERFLOW
dboverflow	Generate dbg syslog message with syslog ID OSPF-5-DBOVERFLOW
nbrstate	Generate dbg syslog message with syslog ID OSPF-5-NBRSTATE
smgr-client-init-error	Generate dbg syslog message with syslog ID OSPF-3-SMGR_CLIENT_INIT_ERROR
socket-error	Generate dbg syslog message with syslog ID OSPF-3-SOCKET_ERROR
syslog-init	Generate dbg syslog message with syslog ID OSPF-6-SYSLOG_INIT
write-error	Generate dbg syslog message with syslog ID OSPF-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID OSPF-3-WRITE_ERROR:

```
G8272>dbg logging facility ospf message write-error count 10
```

dbg logging facility ovsdb message

Enables logging of Open vSwitch Database (OVSDB) error messages of the specified type.

Syntax

`dbg logging facility ovsdb message` <*message-type*> **`count`** <*count*>

where *message-type* is one of the following:

Parameter	Function
`error`	Generate dbg syslog message with syslog ID OVSDB-6-ERROR
`got-nisc`	Generate dbg syslog message with syslog ID OVSDB-U-GOT_NISC
`ipc-recv`	Generate dbg syslog message with syslog ID OVSDB-6-IPC_RECV
`sslc-cnx-error`	Generate dbg syslog message with syslog ID OVSDB-6-SSLC_CNX_ERROR
`sslc-cnx-success`	Generate dbg syslog message with syslog ID OVSDB-6-SSLC_CNX_SUCCESS
`sslc-ena`	Generate dbg syslog message with syslog ID OVSDB-6-SSLC_ENA
`syslog-init`	Generate dbg syslog message with syslog ID OVSDB-6-SYSLOG_INIT

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID OVSDB-6-SSLC_ENA:

```
G8272>dbg logging facility ovsdb message sslc-ena count 10
```

dbg logging facility pubsub message

Enables logging of publish/subscribe (Pub/Sub) error messages of the specified type.

Syntax

dbg logging facility pubsub message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
connect-error	Generate dbg syslog message with syslog ID PUBSUB-3-CONNECT_ERROR
init	Generate dbg syslog message with syslog ID PUBSUB-7-INIT
malloc-error	Generate dbg syslog message with syslog ID PUBSUB-3-MALLOC_ERROR
publish	Generate dbg syslog message with syslog ID PUBSUB-7-PUBLISH
read-failed	Generate dbg syslog message with syslog ID PUBSUB-3-READ_FAILED
recv-size-error	Generate dbg syslog message with syslog ID PUBSUB-3-RECV_SIZE_ERROR
recv-too-small-error	Generate dbg syslog message with syslog ID PUBSUB-3-RECV_TOO_SMALL_ERROR
recvfrom-error	Generate dbg syslog message with syslog ID PUBSUB-3-RECVFROM_ERROR
select-error	Generate dbg syslog message with syslog ID PUBSUB-3-SELECT_ERROR
sendto-error	Generate dbg syslog message with syslog ID PUBSUB-3-SENDTO_ERROR
shutdown	Generate dbg syslog message with syslog ID PUBSUB-6-SHUTDOWN
socket-bind-error	Generate dbg syslog message with syslog ID PUBSUB-3-SOCKET_BIND_ERROR
socket-error	Generate dbg syslog message with syslog ID PUBSUB-3-SOCKET_ERROR
socket-open-error	Generate dbg syslog message with syslog ID PUBSUB-3-SOCKET_OPEN_ERROR
subscribe	Generate dbg syslog message with syslog ID PUBSUB-7-SUBSCRIBE

Parameter	Function
`timer-error`	Generate dbg syslog message with syslog ID PUBSUB-3-TIMER_ERROR
`unknown-cmd`	Generate dbg syslog message with syslog ID PUBSUB-6-UNKNOWN_CMD
`unsubscribe`	Generate dbg syslog message with syslog ID PUBSUB-7-UNSUBSCRIBE
`write-error`	Generate dbg syslog message with syslog ID PUBSUB-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with pubsub ID PUBSUB-3-WRITE_ERROR:

```
G8272>dbg logging facility pubsub message write-error count 10
```

dbg logging facility pyrun message

Enables logging of Python runtime error messages of the specified type.

Syntax

dbg logging facility pyrun message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
`cannot-create-mqueue`	Generate dbg syslog message with syslog ID PYRUN-3-CANNOT_CREATE_MQUEUE
`connect-error`	Generate dbg syslog message with syslog ID PYRUN-3-CONNECT_ERROR
`obs`	Generate dbg syslog message with syslog ID PYRUN-U-OBS
`select-error`	Generate dbg syslog message with syslog ID PYRUN-3-SELECT_ERROR
`shutdown`	Generate dbg syslog message with syslog ID PYRUN-6-SHUTDOWN
`socket-error`	Generate dbg syslog message with syslog ID PYRUN-3-SOCKET_ERROR
`write-error`	Generate dbg syslog message with syslog ID PYRUN-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID PYRUN-3-WRITE_ERROR:

```
G8272>dbg logging facility pyrun message write-error count 10
```

dbg logging facility pysched message

Enables logging of Python scheduler error messages of the specified type.

Syntax

dbg logging facility onm message *<message-type>* **count** *<count>*

where *message-type* is one of the following:

ParameterFunction

Parameter	Function
`init-complete`	Generate dbg syslog message with syslog ID PYSCHED-U-INIT_COMPLETE

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID PYSCHED-U-INIT_COMPLETE:

```
G8272>dbg logging facility pysched message init-complete count 10
```

dbg logging facility rib message

Enables logging of Routing Information Base (RIB) error messages of the specified type.

Syntax

dbg logging facility rib message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
add-wrong-afi	Generate dbg syslog message with syslog ID RIB-3-ADD_WRONG_AFI
bfd-add-no-reply-save-bfd	Generate dbg syslog message with syslog ID RIB-3-BFD_ADD_NO_REPLY_SAVE_BFD
bfd-add-session-fail	Generate dbg syslog message with syslog ID RIB-5-BFD_ADD_SESSION_FAIL
bfd-context-save-fail	Generate dbg syslog message with syslog ID RIB-5-BFD_CONTEXT_SAVE_FAIL
bfd-ifp-not-found	Generate dbg syslog message with syslog ID RIB-3-BFD_IFP_NOT_FOUND
bfd-no-mem	Generate dbg syslog message with syslog ID RIB-2-BFD_NO_MEM
bfd-route-not-found	Generate dbg syslog message with syslog ID RIB-3-BFD_ROUTE_NOT_FOUND
bfd-serv-not-conn	Generate dbg syslog message with syslog ID RIB-5-BFD_SERV_NOT_CONN
bfd-tree-insert-err	Generate dbg syslog message with syslog ID RIB-3-BFD_TREE_INSERT_ERR
bfd-tree-rem-err	Generate dbg syslog message with syslog ID RIB-3-BFD_TREE_REM_ERR
cal-start-fail	Generate dbg syslog message with syslog ID RIB-3-CAL_START_FAIL
cannot-create-rib	Generate dbg syslog message with syslog ID RIB-3-CANNOT_CREATE_RIB
cannot-find-rib-del	Generate dbg syslog message with syslog ID RIB-3-CANNOT_FIND_RIB_DEL
cannot-find-rib-mod	Generate dbg syslog message with syslog ID RIB-3-CANNOT_FIND_RIB_MOD
cannot-modify-rib	Generate dbg syslog message with syslog ID RIB-3-CANNOT_MODIFY_RIB

Parameter	Function
clear-fib-err	Generate dbg syslog message with syslog ID RIB-3-CLEAR_FIB_ERR
connect-error	Generate dbg syslog message with syslog ID RIB-3-CONNECT_ERROR
cpm-msg-send-bundle-err-socket	Generate dbg syslog message with syslog ID RIB-3-CPM_MSG_SEND_BUNDLE_ERR_SOCKET
create-fail-no-mem	Generate dbg syslog message with syslog ID RIB-3-CREATE_FAIL_NO_MEM
del-wrong-afi	Generate dbg syslog message with syslog ID RIB-3-DEL_WRONG_AFI
disallowed-del-rib-type	Generate dbg syslog message with syslog ID RIB-4-DISALLOWED_DEL_RIB_TYPE
disallowed-mod-rib-type	Generate dbg syslog message with syslog ID RIB-4-DISALLOWED_MOD_RIB_TYPE
disallowed-rib-type	Generate dbg syslog message with syslog ID RIB-4-DISALLOWED_RIB_TYPE
domain-create-fail-no-mem	Generate dbg syslog message with syslog ID RIB-3-DOMAIN_CREATE_FAIL_NO_MEM
hal-err	Generate dbg syslog message with syslog ID RIB-3-HAL_ERR
l3-table-full	Generate dbg syslog message with syslog ID RIB-3-L3_TABLE_FULL
local-if-not-match-addr	Generate dbg syslog message with syslog ID RIB-3-LOCAL_IF_NOT_MATCH_ADDR
nexthop-num-over-msg-limit	Generate dbg syslog message with syslog ID RIB-5-NEXTHOP_NUM_OVER_MSG_LIMIT
no-master-for-vrid	Generate dbg syslog message with syslog ID RIB-3-NO_MASTER_FOR_VRID
no-mem-rib-if	Generate dbg syslog message with syslog ID RIB-3-NO_MEM_RIB_IF
nsm-server-proto-error	Generate dbg syslog message with syslog ID RIB-3-NSM_SERVER_PROTO_ERROR
nsm-service-not-sufficient	Generate dbg syslog message with syslog ID RIB-3-NSM_SERVICE_NOT_SUFFICIENT
ribd-starts	Generate dbg syslog message with syslog ID RIB-6-RIBD_STARTS
smgr-client-init-error	Generate dbg syslog message with syslog ID RIB-3-SMGR_CLIENT_INIT_ERROR

Parameter	Function
`snmp-cidr-route-no-mem`	Generate dbg syslog message with syslog ID RIB-3-SNMP_CIDR_ROUTE_NO_MEM
`snmp-route-no-mem`	Generate dbg syslog message with syslog ID RIB-3-SNMP_ROUTE_NO_MEM
`snmp-table-no-mem`	Generate dbg syslog message with syslog ID RIB-3-SNMP_TABLE_NO_MEM
`socket-error`	Generate dbg syslog message with syslog ID RIB-3-SOCKET_ERROR
`static-route-no-mem`	Generate dbg syslog message with syslog ID RIB-3-STATIC_ROUTE_NO_MEM
`syslog-init`	Generate dbg syslog message with syslog ID RIB-6-SYSLOG_INIT
`thread-add-err`	Generate dbg syslog message with syslog ID RIB-3-THREAD_ADD_ERR
`vrf-add-no-reply-save-vrf`	Generate dbg syslog message with syslog ID RIB-3-VRF_ADD_NO_REPLY_SAVE_VRF
`vrf-bfd-create-tree-err`	Generate dbg syslog message with syslog ID RIB-3-VRF_BFD_CREATE_TREE_ERR
`vrf-context-save-fail`	Generate dbg syslog message with syslog ID RIB-5-VRF_CONTEXT_SAVE_FAIL
`vrf-del-unable-save-vrf`	Generate dbg syslog message with syslog ID RIB-3-VRF_DEL_UNABLE_SAVE_VRF
`vrf-no-mem`	Generate dbg syslog message with syslog ID RIB-2-VRF_NO_MEM
`vrf-not-found`	Generate dbg syslog message with syslog ID RIB-5-VRF_NOT_FOUND
`vrf-update-no-reply-save-vrf`	Generate dbg syslog message with syslog ID RIB-3-VRF_UPDATE_NO_REPLY_SAVE_VRF
`write-error`	Generate dbg syslog message with syslog ID RIB-3-WRITE_ERROR
`wrong-req-err`	Generate dbg syslog message with syslog ID RIB-3-WRONG_REQ_ERR
`wrong-route-req`	Generate dbg syslog message with syslog ID RIB-3-WRONG_ROUTE_REQ

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID RIB-3-WRITE_ERROR:

```
G8272>dbg logging facility rib message write-error count 10
```

dbg logging facility secureimg message

Enables logging of secure image error messages of the specified type.

Syntax

dbg logging facility secureimg message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
`invalid-signature`	Generate dbg syslog message with syslog ID SECUREIMG-3-INVALID_SIGNATURE
`out-of-memory`	Generate dbg syslog message with syslog ID SECUREIMG-3-OUT_OF_MEMORY
`unable-to-create-keys`	Generate dbg syslog message with syslog ID SECUREIMG-3-UNABLE_TO_CREATE_KEYS
`valid-image-detected`	Generate dbg syslog message with syslog ID SECUREIMG-6-VALID_IMAGE_DETECTED

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID SECUREIMG-3-OUT_OF_MEMORY:

```
G8272>dbg logging facility secureimg message out-of-memory count 10
```

dbg logging facility sysmgmt message

Enables logging of System Management Host Protocol error messages of the specified type.

Syntax

dbg logging facility sysmgmt message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
`module-init-error`	Generate dbg syslog message with syslog ID SYSMGMT-3-MODULE_INIT_ERROR
`module-init-success`	Generate dbg syslog message with syslog ID SYSMGMT-6-MODULE_INIT_SUCCESS

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID SYSMGMT-3-MODULE_INIT_ERROR:

```
G8272>dbg logging facility sysmgmt message module-init-error count 10
```

dbg logging facility sysmgr message

Enables logging of system manager error messages of the specified type.

Syntax

dbg logging facility sysmgr message *<message-type>* **count** *<count>*

where *message-type* is one of the following:

Parameter	Function
`connect-error`	Generate dbg syslog message with syslog ID SYSMGR-3-CONNECT_ERROR
`pubsub-client-init`	Generate dbg syslog message with syslog ID SYSMGR-3-PUBSUB_CLIENT_INIT
`smgr-client-init-error`	Generate dbg syslog message with syslog ID SYSMGR-3-SMGR_CLIENT_INIT_ERROR
`socket-error`	Generate dbg syslog message with syslog ID SYSMGR-3-SOCKET_ERROR
`syslog-init`	Generate dbg syslog message with syslog ID SYSMGR-6-SYSLOG_INIT
`write-error`	Generate dbg syslog message with syslog ID SYSMGR-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID SYSMGR-3-WRITE_ERROR:

```
G8272>dbg logging facility sysmgr message write-error count 10
```

dbg logging facility um message

Enables logging of User Management (UM) error messages of the specified type.

Syntax

dbg logging facility um message *<message-type>* **count** *<count>*

where *message-type* is one of the following:

Parameter	Function
admin-add-fail	Generate dbg syslog message with syslog ID UM-3-ADMIN_ADD_FAIL
admin-pwd-reset	Generate dbg syslog message with syslog ID UM-5-ADMIN_PWD_RESET
admin-pwd-reset-fail	Generate dbg syslog message with syslog ID UM-3-ADMIN_PWD_RESET_FAIL
bad-pwd-char	Generate dbg syslog message with syslog ID UM-3-BAD_PWD_CHAR
bad-pwd-len	Generate dbg syslog message with syslog ID UM-3-BAD_PWD_LEN
bad-uname-char	Generate dbg syslog message with syslog ID UM-3-BAD_UNAME_CHAR
bad-uname-first	Generate dbg syslog message with syslog ID UM-3-BAD_UNAME_FIRST
bad-uname-len	Generate dbg syslog message with syslog ID UM-3-BAD_UNAME_LEN
bad-uname-upper	Generate dbg syslog message with syslog ID UM-3-BAD_UNAME_UPPER
feature-add	Generate dbg syslog message with syslog ID UM-6-FEATURE_ADD
feature-add-fail	Generate dbg syslog message with syslog ID UM-3-FEATURE_ADD_FAIL
feature-create-fail	Generate dbg syslog message with syslog ID UM-3-FEATURE_CREATE_FAIL
feature-del	Generate dbg syslog message with syslog ID UM-6-FEATURE_DEL
feature-exist	Generate dbg syslog message with syslog ID UM-3-FEATURE_EXIST
feature-not-found	Generate dbg syslog message with syslog ID UM-6-FEATURE_NOT_FOUND

Parameter	Function
gid-modify-fail	Generate dbg syslog message with syslog ID UM-3-GID_MODIFY_FAIL
grp-add	Generate dbg syslog message with syslog ID UM-6-GRP_ADD
grp-add-fail	Generate dbg syslog message with syslog ID UM-3-GRP_ADD_FAIL
grp-create-fail	Generate dbg syslog message with syslog ID UM-3-GRP_CREATE_FAIL
grp-del	Generate dbg syslog message with syslog ID UM-6-GRP_DEL
grp-not-found	Generate dbg syslog message with syslog ID UM-6-GRP_NOT_FOUND
mem-new-rule-fail	Generate dbg syslog message with syslog ID UM-3-MEM_NEW_RULE_FAIL
mem-pwd-fail	Generate dbg syslog message with syslog ID UM-3-MEM_PWD_FAIL
mem-role-fail	Generate dbg syslog message with syslog ID UM-3-MEM_ROLE_FAIL
mem-ulist-fail	Generate dbg syslog message with syslog ID UM-3-MEM_ULIST_FAIL
mem-user-fail	Generate dbg syslog message with syslog ID UM-3-MEM_USER_FAIL
module-init	Generate dbg syslog message with syslog ID UM-6-MODULE_INIT
module-shutdown	Generate dbg syslog message with syslog ID UM-6-MODULE_SHUTDOWN
pwd-backup-fail	Generate dbg syslog message with syslog ID UM-3-PWD_BACKUP_FAIL
pwd-reset-fail	Generate dbg syslog message with syslog ID UM-3-PWD_RESET_FAIL
pwd-reset-shutdown	Generate dbg syslog message with syslog ID UM-6-PWD_RESET_SHUTDOWN
read-pwd-reset-fail	Generate dbg syslog message with syslog ID UM-3-READ_PWD_RESET_FAIL
role-add-fail	Generate dbg syslog message with syslog ID UM-3-ROLE_ADD_FAIL
role-not-found	Generate dbg syslog message with syslog ID UM-3-ROLE_NOT_FOUND

Parameter	Function
`root-disable`	Generate dbg syslog message with syslog ID UM-5-ROOT_DISABLE
`root-disable-fail`	Generate dbg syslog message with syslog ID UM-3-ROOT_DISABLE_FAIL
`root-enable`	Generate dbg syslog message with syslog ID UM-5-ROOT_ENABLE
`root-enable-fail`	Generate dbg syslog message with syslog ID UM-3-ROOT_ENABLE_FAIL
`root-timer-disable`	Generate dbg syslog message with syslog ID UM-5-ROOT_TIMER_DISABLE
`root-timer-enable`	Generate dbg syslog message with syslog ID UM-5-ROOT_TIMER_ENABLE
`root-timer-enable-fail`	Generate dbg syslog message with syslog ID UM-3-ROOT_TIMER_ENABLE_FAIL
`rule-add-fail`	Generate dbg syslog message with syslog ID UM-3-RULE_ADD_FAIL
`system-call-fail`	Generate dbg syslog message with syslog ID UM-3-SYSTEM_CALL_FAIL
`user-not-found`	Generate dbg syslog message with syslog ID UM-3-USER_NOT_FOUND
`weak-pwd`	Generate dbg syslog message with syslog ID UM-3-WEAK_PWD

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID UM-3-WEAK_PWD:

```
G8272>dbg logging facility um message weak-pwd count 10
```

dbg logging facility vlag message

Enables logging of Virtual Link Aggregation Group (VLAG) error messages of the specified type.

Syntax

dbg logging facility vlag message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
auto-rec-can	Generate dbg syslog message with syslog ID VLAG-5-AUTO_REC_CAN
auto-rec-exp-hc-fail	Generate dbg syslog message with syslog ID VLAG-5-AUTO_REC_EXP_HC_FAIL
auto-rec-exp-hc-succ	Generate dbg syslog message with syslog ID VLAG-5-AUTO_REC_EXP_HC_SUCC
hc-down	Generate dbg syslog message with syslog ID VLAG-5-HC_DOWN
hc-not-local-subnet	Generate dbg syslog message with syslog ID VLAG-4-HC_NOT_LOCAL_SUBNET
hc-self-addr	Generate dbg syslog message with syslog ID VLAG-4-HC_SELF_ADDR
hc-server-failed	Generate dbg syslog message with syslog ID VLAG-3-HC_SERVER_FAILED
hc-up	Generate dbg syslog message with syslog ID VLAG-5-HC_UP
inst-resutdown	Generate dbg syslog message with syslog ID VLAG-5-INST_RESUTDOWN
inst-state	Generate dbg syslog message with syslog ID VLAG-5-INST_STATE
isl-fail-with-hc-fail	Generate dbg syslog message with syslog ID VLAG-5-ISL_FAIL_WITH_HC_FAIL
isl-fail-with-hc-succ	Generate dbg syslog message with syslog ID VLAG-5-ISL_FAIL_WITH_HC_SUCC
isl-recover	Generate dbg syslog message with syslog ID VLAG-5-ISL_RECOVER
isl-state	Generate dbg syslog message with syslog ID VLAG-5-ISL_STATE
os-mismatch	Generate dbg syslog message with syslog ID VLAG-2-OS_MISMATCH

Parameter	Function
`peer-state`	Generate dbg syslog message with syslog ID VLAG-5-PEER_STATE
`platform-mismatch`	Generate dbg syslog message with syslog ID VLAG-5-PLATFORM_MISMATCH
`role-res`	Generate dbg syslog message with syslog ID VLAG-5-ROLE_RES
`smgr-client-init-error`	Generate dbg syslog message with syslog ID VLAG-3-SMGR_CLIENT_INIT_ERROR
`start-delay-can-primary`	Generate dbg syslog message with syslog ID VLAG-5-START_DELAY_CAN_PRIMARY
`start-delay-exp`	Generate dbg syslog message with syslog ID VLAG-5-START_DELAY_EXP
`tier-id-mismatch`	Generate dbg syslog message with syslog ID VLAG-5-TIER_ID_MISMATCH

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID VLAG-5-ROLE_RES:

```
G8272>dbg logging facility vlag message role-res count 10
```

dbg logging facility vlan message

Enables logging of Virtual Local Area Network (VLAN) error messages of the specified type.

Syntax

dbg logging facility vlan message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
vlan-add-to-bridge-err	Generate dbg syslog message with syslog ID VLAN-3-VLAN_ADD_TO_BRIDGE_ERR
vlan-add-to-port-err	Generate dbg syslog message with syslog ID VLAN-3-VLAN_ADD_TO_PORT_ERR
vlan-create	Generate dbg syslog message with syslog ID VLAN-6-VLAN_CREATE
vlan-create-range	Generate dbg syslog message with syslog ID VLAN-6-VLAN_CREATE_RANGE
vlan-create-to-port-err	Generate dbg syslog message with syslog ID VLAN-3-VLAN_CREATE_TO_PORT_ERR
vlan-create-to-port-err-hw	Generate dbg syslog message with syslog ID VLAN-3-VLAN_CREATE_TO_PORT_ERR_HW
vlan-del-from-bridge-err	Generate dbg syslog message with syslog ID VLAN-3-VLAN_DEL_FROM_BRIDGE_ERR
vlan-null-err	Generate dbg syslog message with syslog ID VLAN-U-VLAN_NULL_ERR
vlan-prev-add-to-port-err	Generate dbg syslog message with syslog ID VLAN-3-VLAN_PREV_ADD_TO_PORT_ERR
vlan-set-tag-native	Generate dbg syslog message with syslog ID VLAN-6-VLAN_SET_TAG_NATIVE
vlan-set-tag-native-err	Generate dbg syslog message with syslog ID VLAN-3-VLAN_SET_TAG_NATIVE_ERR
vlan-state-chg	Generate dbg syslog message with syslog ID VLAN-6-VLAN_STATE_CHG
vlan-update-ipmc-flood-err	Generate dbg syslog message with syslog ID VLAN-3-VLAN_UPDATE_IPMC_FLOOD_ERR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID VLAN-6-VLAN_CREATE:

```
G8272>dbg logging facility vlan message vlan-create count 10
```

dbg logging facility vlog message

Enables logging of Virtual Terminal Logging Control (VLOG) daemon error messages of the specified type.

Syntax

dbg logging facility vlog message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
`backend-daemon-init`	Generate dbg syslog message with syslog ID VLOG-6-BACKEND_DAEMON_INIT
`connect-error`	Generate dbg syslog message with syslog ID VLOG-3-CONNECT_ERROR
`smgr-client-init-error`	Generate dbg syslog message with syslog ID VLOG-3-SMGR_CLIENT_INIT_ERROR
`socket-error`	Generate dbg syslog message with syslog ID VLOG-3-SOCKET_ERROR
`startup-config`	Generate dbg syslog message with syslog ID VLOG-6-STARTUP_CONFIG
`syslog-init`	Generate dbg syslog message with syslog ID VLOG-7-SYSLOG_INIT

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID VLOG-7-SYSLOG_INIT:

```
G8272>dbg logging facility vlog message syslog-init count 10
```

dbg logging facility vrrp message

Enables logging of Virtual Router Redundancy Protocol (VRRP) error messages of the specified type.

Syntax

dbg logging facility vrrp message <*message-type*> **count** <*count*>

where *message-type* is one of the following:

Parameter	Function
connect-error	Generate dbg syslog message with syslog ID VRRP-3-CONNECT_ERROR
end	Generate dbg syslog message with syslog ID VRRP-5-END
err-state-to-init	Generate dbg syslog message with syslog ID VRRP-3-ERR_STATE_TO_INIT
exit	Generate dbg syslog message with syslog ID VRRP-6-EXIT
garp-send-error	Generate dbg syslog message with syslog ID VRRP-6-GARP_SEND_ERROR
if-addr-added	Generate dbg syslog message with syslog ID VRRP-U-IF_ADDR_ADDED
if-addr-deleted	Generate dbg syslog message with syslog ID VRRP-U-IF_ADDR_DELETED
if-down	Generate dbg syslog message with syslog ID VRRP-U-IF_DOWN
join-mc	Generate dbg syslog message with syslog ID VRRP-6-JOIN_MC
leave-mc	Generate dbg syslog message with syslog ID VRRP-6-LEAVE_MC
mac-set-error	Generate dbg syslog message with syslog ID VRRP-6-MAC_SET_ERROR
mac-unset-error	Generate dbg syslog message with syslog ID VRRP-6-MAC_UNSET_ERROR
malloc-err	Generate dbg syslog message with syslog ID VRRP-3-MALLOC_ERR
rx-bad-pkt	Generate dbg syslog message with syslog ID VRRP-4-RX_BAD_PKT
smgr-client-init-error	Generate dbg syslog message with syslog ID VRRP-3-SMGR_CLIENT_INIT_ERROR

Parameter	Function
`sock-bind-error`	Generate dbg syslog message with syslog ID VRRP-6-SOCK_BIND_ERROR
`sock-open-error`	Generate dbg syslog message with syslog ID VRRP-6-SOCK_OPEN_ERROR
`sock-send-error`	Generate dbg syslog message with syslog ID VRRP-6-SOCK_SEND_ERROR
`socket-error`	Generate dbg syslog message with syslog ID VRRP-3-SOCKET_ERROR
`started`	Generate dbg syslog message with syslog ID VRRP-5-STARTED
`state-to-backup`	Generate dbg syslog message with syslog ID VRRP-5-STATE_TO_BACKUP
`state-to-init`	Generate dbg syslog message with syslog ID VRRP-5-STATE_TO_INIT
`state-to-master`	Generate dbg syslog message with syslog ID VRRP-5-STATE_TO_MASTER
`unknown-error`	Generate dbg syslog message with syslog ID VRRP-6-UNKNOWN_ERROR
`write-error`	Generate dbg syslog message with syslog ID VRRP-3-WRITE_ERROR

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID VRRP-3-WRITE_ERROR:

```
G8272>dbg logging facility vrrp message write-error count 10
```

dbg logging facility ztp message

Enables logging of Zero Touch Provisioning (ZTP) error messages of the specified type.

Syntax

`dbg logging facility ztp message` *<message-type>* **`count`** *<count>*

where *message-type* is one of the following:

Parameter	Function
`bootfile-get`	Generate dbg syslog message with syslog ID ZTP-6-BOOTFILE_GET
`bootfile-get-done`	Generate dbg syslog message with syslog ID ZTP-6-BOOTFILE_GET_DONE
`bootfile-get-fail`	Generate dbg syslog message with syslog ID ZTP-5-BOOTFILE_GET_FAIL
`bootfile-info-invalid`	Generate dbg syslog message with syslog ID ZTP-5-BOOTFILE_INFO_INVALID
`config-get`	Generate dbg syslog message with syslog ID ZTP-6-CONFIG_GET
`config-get-done`	Generate dbg syslog message with syslog ID ZTP-6-CONFIG_GET_DONE
`config-get-fail`	Generate dbg syslog message with syslog ID ZTP-5-CONFIG_GET_FAIL
`dhcp-again`	Generate dbg syslog message with syslog ID ZTP-5-DHCP_AGAIN
`dhcp-begin`	Generate dbg syslog message with syslog ID ZTP-6-DHCP_BEGIN
`dhcp-done`	Generate dbg syslog message with syslog ID ZTP-6-DHCP_DONE
`dhcp-fail`	Generate dbg syslog message with syslog ID ZTP-5-DHCP_FAIL
`enable`	Generate dbg syslog message with syslog ID ZTP-6-ENABLE
`image-download`	Generate dbg syslog message with syslog ID ZTP-6-IMAGE_DOWNLOAD
`image-get-fail`	Generate dbg syslog message with syslog ID ZTP-5-IMAGE_GET_FAIL
`image-install`	Generate dbg syslog message with syslog ID ZTP-6-IMAGE_INSTALL

Parameter	Function
`image-upgrade`	Generate dbg syslog message with syslog ID ZTP-6-IMAGE_UPGRADE
`image-upgrade-done`	Generate dbg syslog message with syslog ID ZTP-6-IMAGE_UPGRADE_DONE
`image-upgrade-noneed`	Generate dbg syslog message with syslog ID ZTP-6-IMAGE_UPGRADE_NONEED
`script`	Generate dbg syslog message with syslog ID ZTP-6-SCRIPT
`scriptfile-get-fail`	Generate dbg syslog message with syslog ID ZTP-5-SCRIPTFILE_GET_FAIL
`tftp-notalive`	Generate dbg syslog message with syslog ID ZTP-5-TFTP_NOTALIVE

and:

Parameter	Function
count	The number of messages to generate

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command generates 10 messages with syslog ID ZTP-6-ENABLE:

```
G8272>dbg logging facility ztp message enable count 10
```

dbg mstp

Debug Multiple Spanning Tree Protocol.

Syntax

[**no**] **dbg mstp** {**all**|**cli**}

where:

Parameter	Function
all	Debug all MSTP functions.
cli	Debug the MSTP command-line interface.

Using no before the command turns off the specified type of MSTP debugging.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command debugs the MSTP command-line interface:

```
G8272>dbg mstp cli
```

dbg mstp packet

Debug Multiple Spanning Tree Protocol packets.

Syntax

[**no**] **dbg mstp packets** {**rx**|**tx**}

where:

Parameter	Function
rx	Debug received packets.
tx	Debug transmitted packets.

Using no before the command turns off the specified type of MSTP debugging.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command debugs received MSTP packets:

```
G8272>dbg mstp packet rx
```

dbg mstp protocol

Debug Multiple Spanning Tree Protocol errors specifically related to protocol.

Syntax

[**no**] **dbg mstp protocol** [**detail**]

where:

Parameter	Function
detail	(Optional) Give detailed output.

Using no before the command turns off the specified type of MSTP debugging.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command debugs MSTP protocol errors:

```
G8272>dbg mstp protocol
```

dbg mstp timer

Debug Multiple Spanning Tree Protocol timers.

Syntax

[**no**] **dbg mstp timer** [**detail**]

where:

Parameter	Function
`detail`	(Optional) Give detailed output.

Using `no` before the command turns off the specified type of MSTP debugging.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command debugs MSTP timer errors:

```
G8272>dbg mstp timer
```

dbg nsm

Enables or disables debugging of the specified network security monitoring (NSM) option, or if no argument is given, all NSM parameters.

Syntax

[no] dbg nsm [*<name>*|**bfd**|**events**]

where:

Parameter	Description
name	Enable debugging of all NSM parameters.
status	Enable NSM status debugging.
events	Enable NSM event debugging.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of NSM events:

```
G8272> dbg nsm events
```

dbg nsm ha

Enables or disables debugging of network security monitoring (NSM) High Availability (HA).

Syntax

[no] dbg nsm ha [**all**]

where:

Parameter	Description
all	Enable debugging of all NSM HA events.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of NSM HA events:

```
G8272> dbg nsm ha
```

dbg nsm hal ipc

Enables or disables debugging of the network security monitoring (NSM) Hardware Abstraction Layer (HA).

Syntax

```
[no] dbg nsm hal ipc
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of NSM HAL events:

```
G8272> dbg nsm hal ipc
```

dbg nsm hsl

Enables or disables debugging of network security monitoring (NSM) High Speed Links (HSLs).

Syntax

[no] dbg nsm hsl {**0**|**1**}

where:

Parameter	Description
0	Enable debugging of all NSM HSLs.
1	Enable debugging of NSM HSL interface counters.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of NSM HSL interface counters:

```
G8272> dbg nsm hsl 1
```

dbg nsm packet detail

Enables or disables debugging of network security monitoring (NSM) packets with detailed information displayed.

Syntax

```
[no] dbg nsm packet detail
```

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of NSM packets with detailed information displayed:

```
G8272> dbg nsm packet detail
```

dbg nsm packet recv

Enables or disables debugging of received network security monitoring (NSM) packets.

Syntax

[no] dbg nsm packet recv [**detail**]

where:

Parameter	Definition
detail	Display detailed information.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of received NSM packets with detailed information displayed:

```
G8272> dbg nsm packet recv detail
```

dbg nsm packet send

Enables or disables debugging of sent network security monitoring (NSM) packets.

Syntax

[no] dbg nsm packet send [**detail**]

where:

Parameter	Definition
detail	Display detailed information.

Modes

User EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of sent NSM packets with detailed information displayed:

```
G8272> dbg nsm packet send detail
```

dbg ntp

Enables or disables debugging of Network Time Protocol (NTP).

Syntax

```
[no] dbg ntp
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of NTP:

```
G8272> dbg ntp
```

dbg rib

Enables or disables debugging of Routing Information Base (RIB) parameters as specified.

Syntax

[no] dbg rib {**all**|**bfd**|**events**|**hal**|**nsm**|**packet**}

where:

Parameter	Definition
all	Enable all debugging.
bfd	BFD messages.
events	RIB events.
hal ipc	Hardware Abstraction Layer asynchronous debugging.
nsm	NSM messages.
packet	RIB packets.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of Routing Information Base (RIB) packets:

```
G8272> dbg rib packet
```

dbg snmp

Debug Simple Network Management Protocol.

Syntax

[no] dbg snmp [all|detail|error-string|process|receive|send|xdump]

where:

Parameter	Function
`all`	Enable all SNMP debugging, including packet hexadecimal-dump and error-strings.
`detail`	Enable detailed debugging messages.
`error-string`	Display error strings.
`process`	Debug the SNMP packet process.
`receive`	Debug the SNMP packet receive process.
`send`	Debug the SNMP packet send process.
`xdump`	Enable packet hexadecimal dump.

Using no argument enables debugging of the `receive` and `send` processes.

Using `no` before the command turns off the specified type of SNMP debugging.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables all SNMP debugging:

```
G8272>dbg snmp all
```

dbg snmp-server

Enables or disables debugging of Simple Network Management Protocol (SNMP) agent information.

Syntax

```
[no] dbg snmp-server
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of Simple Network Management Protocol (SNMP) agent information:

```
G8272> dbg snmp-server
```

dbg spanning-tree all

Enables or disables debugging of all spanning tree commands.

Syntax

```
[no] dbg spanning-tree all
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree commands:

```
G8272> dbg spanning-tree all
```

dbg spanning-tree bpdu-rx interface ethernet

Enables or disables debugging of spanning-tree Bridge Protocol Data Unit (BPDU) receive packets for the specified ethernet interface.

Syntax

[no] dbg spanning-tree bpdu-rx interface ethernet *<slot/chassis>* [**tree** *<tree ID>*] [**detail**]

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).
detail	Spanning tree packet detail.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of spanning tree Bridge Protocol Data Unit (BPDU) receive packets for ethernet interface 1/10 on tree 25:

```
G8272> dbg spanning-tree bpdu-rx interface ethernet 1/10 tree 25
```

dbg spanning-tree bpdu-rx interface port-aggregation

Enables or disables debugging of spanning-tree Bridge Protocol Data Unit (BPDU) receive packets for the specified LAG.

Syntax

[no] dbg spanning-tree bpdu-rx interface port-aggregation *<LAG number>* [**tree** *<tree ID>*] [**detail**]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).
detail	Spanning tree packet detail.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of spanning tree Bridge Protocol Data Unit (BPDU) receive packets for LAG 10 on tree 25:

```
G8272> dbg spanning-tree bpdu-rx interface port-aggregation 10 tree 25
```

dbg spanning-tree bpdu-tx interface ethernet

Enables or disables debugging of spanning-tree Bridge Protocol Data Unit (BPDU) transmit packets for the specified ethernet interface.

Syntax

[no] dbg spanning-tree bpdu-tx interface ethernet *<slot/chassis>* [**tree** *<tree ID>*] [**detail**]

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).
detail	Spanning tree packet detail.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of spanning tree Bridge Protocol Data Unit (BPDU) receive packets for ethernet interface 1/10 on tree 25:

```
G8272> dbg spanning-tree bpdu-tx interface ethernet 1/10 tree 25
```

dbg spanning-tree bpdu-tx interface port-aggregation

Enables or disables debugging of spanning-tree Bridge Protocol Data Unit (BPDU) transmit packets for the specified LAG.

Syntax

[no] dbg spanning-tree bpdu-tx interface port-aggregation *<LAG number>* [**tree** *<tree ID>*] [**detail**]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).
detail	Spanning tree packet detail.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of spanning tree Bridge Protocol Data Unit (BPDU) receive packets for LAG 10 on tree 25:

```
G8272> dbg spanning-tree bpdu-tx interface port-aggregation 10 tree 25
```

dbg spanning-tree cfg

Enables or disables debugging of spanning tree configuration.

Syntax

```
[no] dbg spanning-tree cfg
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of spanning tree configuration:

```
G8272> dbg spanning-tree cfg
```

dbg spanning-tree error

Enables or disables debugging of all spanning tree errors.

Syntax

```
[no] dbg spanning-tree error
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree errors:

```
G8272> dbg spanning-tree error
```

dbg spanning-tree event

Enables or disables debugging of all spanning tree events.

Syntax

[no] dbg spanning-tree event [**tree** *<tree ID>*]

where:

Parameter	Description
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree events:

```
G8272> dbg spanning-tree event
```

dbg spanning-tree event interface ethernet

Enables or disables debugging of all spanning tree events for the specified ethernet interface.

Syntax

[no] dbg spanning-tree event interface ethernet *<slot>/<chassis>* [**tree** *<tree ID>*]

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree events for ethernet interface 1/10 on tree 20:

```
G8272> dbg spanning-tree event interface ethernet 1/10 tree 20
```

dbg spanning-tree event interface port-aggregation

Enables or disables debugging of all spanning tree events for the specified LAG.

Syntax

[no] dbg spanning-tree event interface port-aggregation *<LAG number>* [**tree** *<tree ID>*]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree events for LAG 10 on tree 20:

```
G8272> dbg spanning-tree event interface port-aggregation 10 tree 20
```

dbg spanning-tree timer

Enables or disables debugging of all spanning tree timers.

Syntax

[no] dbg spanning-tree timer [**tree** *<tree ID>*]

where:

Parameter	Description
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree timers:

```
G8272> dbg spanning-tree timer
```

dbg spanning-tree timer interface ethernet

Enables or disables debugging of all spanning tree timers for the specified ethernet interface.

Syntax

[no] dbg spanning-tree timer interface ethernet *<slot>/<chassis>* [**tree** *<tree ID>*]

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree timers for ethernet interface 1/10 on tree 20:

```
G8272> dbg spanning-tree timer interface ethernet 1/10 tree 20
```

dbg spanning-tree timer interface port-aggregation

Enables or disables debugging of all spanning tree timers for the specified LAG.

Syntax

[no] dbg spanning-tree timer interface port-aggregation *<LAg number>* [**tree** *<tree ID>*]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree timers for LAG 10 on tree 20:

```
G8272> dbg spanning-tree timer interface port-aggregation 10 tree 20
```

dbg spanning-tree topology

Enables or disables debugging of all spanning tree topologies.

Syntax

[no] dbg spanning-tree topology [**tree** *<tree ID>*]

where:

Parameter	Description
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree topologies:

```
G8272> dbg spanning-tree topology
```

dbg spanning-tree topology interface ethernet

Enables or disables debugging of all spanning tree topologies for the specified ethernet interface.

Syntax

[no] dbg spanning-tree topology interface ethernet *<slot>/<chassis>*
[**tree** *<tree ID>*]

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree topologies for ethernet interface 1/10 on tree 20:

```
G8272> dbg spanning-tree topology interface ethernet 1/10 tree 20
```

dbg spanning-tree topology interface port-aggregation

Enables or disables debugging of all spanning tree topologies for the specified LAG.

Syntax

[no] dbg spanning-tree topology interface port-aggregation *<LAG number>* [**tree** *<tree ID>*]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree topologies for LAG 10 on tree 20:

```
G8272> dbg spanning-tree topology interface port-aggregation 10 tree 20
```

dbg spanning-tree trace

Enables or disables debugging of all spanning tree traces.

Syntax

[no] dbg spanning-tree trace [**tree** *<tree ID>*]

where:

Parameter	Description
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree traces:

```
G8272> dbg spanning-tree trace
```

dbg spanning-tree trace interface ethernet

Enables or disables debugging of all spanning tree traces for the specified ethernet interface.

Syntax

[no] dbg spanning-tree trace interface ethernet *<slot>/<chassis>* [**tree** *<tree ID>*]

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree traces for ethernet interface 1/10 on tree 20:

```
G8272> dbg spanning-tree trace interface ethernet 1/10 tree 20
```

dbg spanning-tree trace interface port-aggregation

Enables or disables debugging of all spanning tree traces for the specified LAG.

Syntax

[no] dbg spanning-tree trace interface port-aggregation *<LAG number>* [**tree** *<tree ID>*]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree traces for LAG 10 on tree 20:

```
G8272> dbg spanning-tree trace interface port-aggregation 10 tree 20
```

dbg spanning-tree warning

Enables or disables debugging of all spanning tree warnings.

Syntax

[no] dbg spanning-tree warning [**tree** *<tree ID>*]

where:

Parameter	Description
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree warnings:

```
G8272> dbg spanning-tree warning
```

dbg spanning-tree warning interface ethernet

Enables or disables debugging of all spanning tree warnings for the specified ethernet interface.

Syntax

[no] dbg spanning-tree warning interface ethernet *<slot>/<chassis>* [**tree** *<tree ID>*]

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree warnings for ethernet interface 1/10 on tree 20:

```
G8272> dbg spanning-tree warning interface ethernet 1/10 tree 20
```

dbg spanning-tree warning interface port-aggregation

Enables or disables debugging of all spanning tree warnings for the specified LAG.

Syntax

[no] dbg spanning-tree warning interface port-aggregation *<LAG number>* [**tree** *<tree ID>*]

where:

Parameter	Description
LAG number	The LAG number; an integer from 1-4096.
tree ID	The spanning tree ID; an integer from 0-4094. A value of 0 specifies Common and Internal Spanning Tree (CIST).

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all spanning tree warnings for LAG 10 on tree 20:

```
G8272> dbg spanning-tree warning interface port-aggregation 10 tree 20
```

dbg ssh

Enables or disables debugging of the Secure Shell (ssh) client or server.

Syntax

[no] dbg ssh {**client**|**server**}

where:

Parameter	Description
client	The ssh client.
server	The ssh server.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of the ssh client:

```
G8272> dbg ssh client
```

dbg syslog

Enables or disables debugging of the host protocol syslog.

Syntax

```
[no] dbg syslog
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of the host protocol syslog:

```
G8272> dbg syslog
```

dbg tacacs+

Enables or disables debugging of the Terminal Access Controller Access Control System (TACACS+) feature.

Syntax

```
[no] dbg tacacs+
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of the Terminal Access Controller Access Control System (TACACS+) feature:

```
G8272> dbg tacacs+
```

dbg telnet

Enables or disables debugging of the telnet client or server.

Syntax

[no] dbg telnet [**server**}

where:

Parameter	Description
server	The telnet server.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of the telnet client:

```
G8272> dbg telnet
```

dbg um

Enables or disables debugging of User Management.

Syntax

```
[no] dbg um
```

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of UM:

```
G8272> dbg um
```

dbg vlan

Enables or disables debugging of Virtual Local Area Networks (VLANs).

Syntax

[no] dbg vlan {**all**|**error|message {both|rx|tx}}**

where:

Parameter	Description
all	Enable all dbg flags.
error	Enable error debugging.
message	Enable message debugs.
both	Enable both rx and tx message debugs.
rx	Enable rx message debugs.
tx	Enable tx message debugs.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all VLAN flags:

```
G8272> dbg vlan all
```

dbg vlan message

Enables or disables debugging of Virtual Local Area Network (VLAN) messages.

Syntax

[no] dbg vlan message {**both**|**rx**|**tx**}

where:

Parameter	Description
both	Enable debugging in both directions.
rx	Enable debugging of received messages.
tx	Enable debugging of transmitted messages.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all VLAN messages:

```
G8272> dbg vlan message both
```

dbg vrrp engine

Enables or disables debugging of the Virtual Router Redundancy Protocol (VRRP) engine. To display VRRP debugging messages, you also need to run the following commands:

```
G8272(config)# logging console 7
G8272(config)# logging level vrrp 7
```

Syntax

[no] dbg vrrp engine {all|events|packet {recv|send}}

where:

Parameter	Description
all	Enable all VRRP debugging.
events	Enable debugging of VRRP events.
packet	Enable debugging of all VRRP packets.
recv	Enable debugging of VRRP received packets only.
send	Enable debugging of VRRP sent packets only.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of all VRRP engine events:

```
G8272> dbg vrrp engine events
```

dbg vrrp packet

Enables or disables debugging of Virtual Router Redundancy Protocol (VRRP) packets.

Syntax

[no] dbg vrrp engine packets {**recv**|**send**}

where:

Parameter	Description
recv	Enable debugging of received packets.
send	Enable debugging of transmitted packets.

Modes

All modes

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables debugging of VRRP received packets:

```
G8272> dbg vrrp engine packets recv
```

Chapter 4. Configuration Mode Commands

This chapter describes how to enter Configuration Mode and the commands available in this mode.

configure

Enters Configuration Mode.

Syntax

configure [**device**]

Modes

Privileged EXEC Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enters Configuration Mode:

```
G8272# configure device
G8272(config)#
```

aaa accounting default groups

Enables or disables Authentication, Authorization and Accounting (AAA) accounting using the specified list of Terminal Access Controller Access-Control System Plus (TACACS+) server groups.

Syntax

[**no**] **aaa accounting default groups** *<list of groups>* [**local**]

where:

Parameter	Function
list of groups	The name of the group of TACACS+ servers. Up to a maximum of 8 groups can be specified.
`local`	If the configured TACACS+ server group is unavailable, local accounting will be used.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command Enables AAA accounting using the TACACS+ server groups 'tacacs-s1' and 'tacacs-s2':

```
G8272(config)# aaa accounting default groups tacacs-s1 tacacs-s2
```

aaa accounting default local

Enables of disables Authentication, Authorization and Accounting (AAA) accounting locally.

Syntax

[**no**] **aaa accounting default local**

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables AAA accounting locally:

```
G8272(config)# aaa accounting default local
```

aaa authentication login console

Enables or disables Authentication, Authorization and Accounting (AAA) console user login authentication.

Syntax

[**no**] **aaa authentication login console** {**groups** *<list of groups>*|**local|none**}

where:

Parameter	Function
list of groups	The name of the group of TACACS+ servers. Up to a maximum of 8 groups can be specified. The groups are tried in the specified order. The list of groups can be followed by `local` or `none` or both. They are used if the TACACS+ server group is unavailable.
`local`	Local user database is used for authentication.
`none`	No user authentication is required.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables AAA console user login authentication using local authentication:

```
G8272(config)# aaa authentication login console local
```

aaa authentication login default

Enables or disables Authentication, Authorization and Accounting (AAA) remote user login authentication for remote protocol connections such as SSH or Telnet.

Syntax

[**no**] **aaa authentication login default** {**groups** *<list of groups>*|**local**|**none**}

where:

Parameter	Function
list of groups	The name of the group of TACACS+ servers. Up to a maximum of 8 groups can be specified. The groups are tried in the specified order. The list of groups can be followed by `local` or `none` or both. They are used if the TACACS+ server group is unavailable.
`local`	Local user database is used for authentication.
`none`	No user authentication is required.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables AAA remote user login authentication using local authentication:

```
G8272(config)# aaa authentication login default local
```

aaa authentication login error-enable

Enable or disables the displays of errors when the user fails to authenticate.

Syntax

[**no**] **aaa authentication login error-enable**

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the displays of errors when the user fails to authenticate:

```
G8272(config)# aaa authentication login error-enable
```

aaa authorization commands default

Enables of disables User EXEC Mode command level authorization.

Syntax

[no] aaa authorization commands default {**groups** *<list of groups>*|**local**}

where:

Parameter	Function
`groups`	The authorization process will use a list of Terminal Access Controller Access-Control System Plus (TACACS+) server groups.
list of groups	The name of the group of TACACS+ servers. Up to a maximum of 8 groups can be specified. The groups are tried in the specified order. The list of groups can be followed by `local`. This is used if the TACACS+ server group is unavailable.
`local`	Local user database will be used for authorization.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables User EXEC command level authorization using local authorization:

```
G8272(config)# aaa authorization commands default local
```

aaa authorization config-commands default

Enables of disables configuration command level authorization.

Syntax

[**no**] **aaa authorization config-commands default** {**groups** <*list of groups*>**|local**}

where:

Parameter	Function
`groups`	The authorization process will use a list of Terminal Access Controller Access-Control System Plus (TACACS+) server groups.
list of groups	The name of the group of TACACS+ servers. Up to a maximum of 8 groups can be specified. The groups are tried in the specified order. The list of groups can be followed by `local`. This is used if the TACACS+ server group is unavailable.
`local`	Local user database will be used for authorization.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables configuration command level authorization using local authorization:

```
G8272(config)# aaa authorization config-commands default local
```

aaa group server tacacs+

Creates or deletes a group of Terminal Access Controller Access-Control System Plus (TACACS+) servers for Authentication, Authorization and Accounting (AAA). After creating a group, you enter TACACS+ Server Configuration Mode for that group.

Syntax

[**no**] **aaa group server tacacs+** <*server group name*>

where:

Parameter	Function
server group name	The name of the TACACS+ server group. Its length can be up to a maximum of 127 characters, only lowercase letters and numbers and it must start with a letter.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates TACACS+ server group 'tacacs-group-1':

```
G8272(config)# aaa group server tacacs+ tacacs-group-1
```

Restrictions

- The server group name cannot be *radius*, *tacacs+* or *ldap*.
- A default group named *tacacs+* includes all tacacs servers.

aaa local authentication attempts max-fail

Sets the number of unsuccessful authentication attempts until a user is locked out. To remove this limit use the no form of the command. An administrator cannot be locked out.

Syntax

[**no**] **aaa local authentication attempts max-fail** *<number of attempts>*

where:

Parameter	Function
number of attempts	The maximum number of unsuccessful authentication attempts. The *number of attempts* is from 1 to 25.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the number of unsuccessful authentication attempts until a user is locked out to 3:

```
G8272(config)# aaa local authentication attempts max-fail 3
```

aaa user default-role

Enables or disables users to login even if the TACACS+ server does not provide a role. The default role is network-operator. If this option is disabled, then users without a role provided by the TACACS+ server will be unable to login.

Syntax

```
aaa user default-role
```

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables user to login even if the TACACS+ server does not provide a role:

```
G8272(config)# aaa user default-role
```

arp access-list

Creates or removes an Address Resolution Protocol (ARP) Access Control List (ACL). After creating an ACL, you enter configuration mode for that ACL.

Syntax

[**no**] **arp access-list** <*ACL name*>

where:

Parameter	Function
ACL name	The name of the ARP ACL. Its length can be up to a maximum of 64 characters.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates an ARP ACL named 'arp-acl-1':

```
G8272(config)# arp access-list arp-acl-1
```

banner motd

Enables or disables the message of the day (MOTD) banner displayed of the user logs in.

Syntax

[**no**] **banner motd** {<*message*>**|default**}

where:

Parameter	Function
message	The message that will be displayed after a user logs in.
`default`	Resets the MOTD banner to the default message.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the MOTD banner to display 'This is a test.':

```
G8272(config)# banner motd This is a test.
G8272(config)# exit
G8272# display banner motd

This is a test.
```

bfd gtsm

Enables or disables the Bidirectional Forwarding Detection (BFD) Generalized TTL Security Mechanism (GTSM).

By default, BFD GTSM is disabled.

Syntax

`bfd gtsm {enable|disable}`

where:

Parameter	Function
`enable`	Enables the BFD GTSM.
`disable`	Disables the BFD GTSM.

Modes

Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command :

```
G8272(config)# bfd
```

bfd gtsm ttl

Configures the Bidirectional Forwarding Detection (BFD) Generalized TTL Security Mechanism (GTSM) hop limit or Time-to-Live (TTL).

Use the **no** form to reset the hop limit to its default value.

The default hop limit is 255.

Syntax

[no] bfd gtsm ttl *<hop limit>*

where:

Parameter	Function
hop limit	Specifies the number of maximum hops a BFD packet is allowed to travel through until it is discarded. The *hop limit* is from 1 to 255.

Modes

Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configure the BFD hop limit to 30:

```
G8272(config)# bfd gtsm ttl 30
```

bfd interval

Configures Bidirectional Forwarding Detection (BFD) global session parameters, including sent and received packet rates and hello messages multiplier.

Use the **no** form to delete a configured set of parameters.

Syntax

[no] bfd [ipv4|ipv6] interval *<send packet rate>* **minrx** *<receive packet rate>* **multiplier** *<hello multiplier>*

where:

Parameter	Function
ipv4	Configures BFD parameters only for IPv4 addresses.
ipv6	Configures BFD parameters only for IPv6 addresses.
interval *send packet rate*	Specifies how often, in milliseconds, the switch sends BFD control packets to other BFD peers. The *send packet rate* is from 50 to 999. The default value is 50 milliseconds.
minrx *receive packet rate*	Specifies the minimum time period, in milliseconds, during which the switch should expect to receive BFD control packets from other BFD peers. The *receive packet rate* is from 50 to 999. The default value is 50 milliseconds.
multiplier *hello multiplier*	Specifies the number of consecutive BFD control packets that have to be missed from a BFD peer before the switch declares that peer unavailable and informs the Layer 3 BFD peer of the failure. The *hello multiplier* is from 3 to 50. The default value is 3.

Modes

Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the BFD send packet rate to 120, the minimum expected receive rate to 120 and the hello multiplier to 7:

```
G8272(config)# bfd interval 120 minrx 120 multiplier 7
```

bfd multihop-peer auth

Configures Bidirectional Forwarding Detection (BFD) authentication for a multi-hop peer.

Use the **no** form of the command to disable the use of a BFD authentication.

By default, BFD authentication is disabled.

Syntax

[no] bfd multihop-peer *<peer address>* **auth type {keyed-md5|keyed-sha1|meticulous-keyed-md5|meticulous-keyed-sha1|simple} {key-chain** *<key chain name>***|key-id** *<key number>* **key** *<authentication key string>***}**

where:

Parameter	Function
peer address	Configures the BFD authentication key for the specified destination. The *peer address* can be either an IPv4 address or an IPv6 address.
`type`	Specify the type of encryption used.
`keyed-md5`	Keyed Message Digest 5 hash algorithm.
`keyed-sha1`	Keyed Secure Hash Algorithm I.
`meticulous-keyed-md5`	Meticulous keyed Message Digest 5 hash algorithm.
`meticulous-keyed-sha1`	Meticulous keyed Secure Hash Algorithm I.
`simple`	Plain-text password.
`key-chain` *key chain name*	Specifies the use an already configured authentication key chain. The maximum length for the *key chain name* is 32 characters.
`key-id` *key number*	Specifies the use of a new authentication key. The *key number* is from 0 to 255.
`key` *authentication key string*	Specifies the key to be used for BFD authentication. It will be encrypted with the previously selected algorithm.

Modes

Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures BFD authentication using Keyed Secure Hash Algorithm I encryption and key chain 'bfd-chain-3':

```
G8272(config)# bfd multihop-peer 10.90.200.15 auth type keyed-sha1
key-chain bfd-chain-3
```

The following command configures BFD authentication using Keyed Secure Hash Algorithm I encryption and a new key:

```
G8272(config)# bfd multihop-peer 10.90.200.15 auth type keyed-sha1 key-id
35 key test-bfd-auth-key
```

bfd multihop-peer interval

Configures Bidirectional Forwarding Detection (BFD) multi-hop peer parameters, including sent and received packet rates and hello messages multiplier.

Use the **no** form to delete a configured set of parameters.

Syntax

[no] bfd multihop-peer *<peer address>* **interval** *<send packet rate>* **minrx** *<receive packet rate>* **multiplier** *<hello multiplier>*

where:

Parameter	Function
peer address	Configures BFD parameters for the specified destination. The *peer address* can be either an IPv4 address or an IPv6 address.
`interval` *send packet rate*	Specifies how often, in milliseconds, the switch sends BFD control packets to other BFD peers. The *send packet rate* is from 50 to 999. The default value is 50 milliseconds.
`minrx` *receive packet rate*	Specifies the minimum time period, in milliseconds, during which the switch should expect to receive BFD control packets from other BFD peers. The *receive packet rate* is from 50 to 999. The default value is 50 milliseconds.
`multiplier` *hello multiplier*	Specifies the number of consecutive BFD control packets that have to be missed from a BFD peer before the switch declares that peer unavailable and informs the Layer 3 BFD peer of the failure. The *hello multiplier* is from 3 to 50. The default value is 3.

Modes

Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures a multi-hop peer BFD parameters:

```
G8272(config)# bfd multihop-peer 10.145.11.123 interval 120 minrx 120
multiplier 7
```

bfd slow-timer

Globally configures the slow-timer used in the Bidirectional Forwarding Detection (BFD) echo function. This value determines how fast BFD starts up new sessions and at what speed asynchronous sessions use for BFD control packets when the echo function is enabled. The slow-timer value is used as the new control packet interval, while echo packets use the configured BFD intervals.

Use the **no** form of this command to reset the slow-timer to its default value.

The default value is 2000 milliseconds.

Syntax

[no] bfd slow-timer *<slow-timer interval>*

where:

Parameter	Function
slow-timer interval	The time interval, in milliseconds, used for the slow-timer in the BFD echo function. The *slow-timer interval* is from 1000 to 30000.

Modes

Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures a BFD slow-timer interval of 3000 milliseconds:

```
G8272(config)# bfd slow-timer 3000
```

startup image

Configures the software image to be booted on the next switch reload.

Syntax

`startup image` {**`active|onie-image`** {**`install|rescue|uninstall|update`**}**`|standby`**}

where:

Parameter	Function
`active`	On the next reload, the switch will boot using the active image.
`onie-image install`	On the next reload, the switch will boot using the ONIE image in ONIE OS installer mode.
`onie-image rescue`	On the next reload, the switch will boot using the ONIE image in ONIE rescue mode.
`onie-image uninstall`	On the next reload, the switch will boot using the ONIE image in ONIE OS uninstall mode.
`onie-image update`	On the next reload, the switch will boot using the ONIE image in ONIE self update mode.
`standby`	On the next reload, the switch will boot using the standby image.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the switch to boot using the standby image on the next reload:

```
G8272(config)# startup image standby
```

class-map

Creates or deletes a class map that is used to match packets to a specified class. After creating a class map, you enter Class Map Configuration mode.

Syntax

[**no**] **class-map** {**match-all|match-any**} *<class map name>*

where:

Parameter	Function
`match-all`	Configures the class map to use the logical AND function for packet evaluation when dealing with multiple match rules.
`match-any`	Configures the class map to use the logical OR function for packet evaluation when dealing with multiple match rules.
class map name	The name of the class map.

Modes

Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates class map 'cmap-01' that uses the logical OR function when evaluating packets:

```
G8272(config)# class-map match-any cmap-01
```

class-map type qos

Creates or deletes a Quality of Service (QoS) class map that is used to match packets to a specified class. After creating a class map, you enter QoS Class Map Configuration mode.

Syntax

[**no**] **class-map type qos** {**match-all|match-any**} *<class map name>*

where:

Parameter	Function
`match-all`	Configures the class map to use the logical AND function for packet evaluation when dealing with multiple match rules.
`match-any`	Configures the class map to use the logical OR function for packet evaluation when dealing with multiple match rules.
class map name	The name of the class map.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates QoS class map 'cmap-qos-01' that uses the logical AND function when evaluating packets:

```
G8272(config)# class-map type qos match-all cmap-qos-01
```

class-map type queuing

Creates or deletes a queuing class map that is used to match packets to a specified class. After creating a class map, you enter Queuing Class Map Configuration mode.

Syntax

[**no**] **class-map type queuing match-any** *<queue name>*

where:

Parameter	Function
`match-any`	Configures the class map to use the logical OR function for packet evaluation when dealing with multiple match rules.
queue name	The name of the queue. The possible options are: o `1p7q1t-out-q-default` (queue 0 or default queue) o `1p7q1t-out-pq1` (queue 1 or priority queue) o `1p7q1t-out-q2` (queue 2) o `1p7q1t-out-q3` (queue 3) o `1p7q1t-out-q4` (queue 4) o `1p7q1t-out-q5` (queue 5) o `1p7q1t-out-q6` (queue 6) o `1p7q1t-out-q7` (queue 7)

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates queuing class map `1p7q1t-out-q2` that uses the logical OR function when evaluating packets:

```
G8272(config)# class-map type queuing match-any 1p7q1t-out-q2
```

clock format

Configures the system time format.

Syntax

clock format {**12**|**24**}

where:

Parameter	Function
12	Displays the time in 12 hour format.
24	Displays the time in 24 hour format.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the system time in 24 hour format:

```
G8272(config)# clock format 24
```

clock protocol

Enables or disables the system time to be configured by the specified protocol.

Syntax

[no] clock protocol {**none**|**ntp**}

where:

Parameter	Function
none	System time can be configured manually.
ntp	System time is configured using the Network Time Protocol (NTP).

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the system time to be configured by NTP:

```
G8272(config)# clock protocol ntp
```

clock summer-time

Enables or disables the use of a summer time (daylight saving time) offset.

Syntax

[no] clock summer-time *<time zone name>* [*<start week>* *<start day>* *<start month>* *<start time>* *<end week>* *<end day>* *<end month>* *<end time>* [*<offset>*]]

where:

Parameter	Function
time zone name	The name of the time zone in 3 character format, such as PST, MST, CST, EST etc.
start week	The starting week of the offset. The range is from 1 (first week of the month) to 5 (last week of the month).
start day	The starting day of the offset. The range is from Monday to Sunday.
start month	The starting month of the offset. The range is from January to December.
start time	The starting time of the offset. The format is *HH:mm*, where: • *HH* is the hour of the day (range is 00 to 24) • *mm* is the minute of the hour (range is 00 to 60)
end week	The ending week of the offset. The range is from 1 (first week of the month) to 5 (last week of the month).
end day	The ending day of the offset. The range is from Monday to Sunday.
end month	The ending month of the offset. The range is from January to December.
end time	The ending time of the offset. The format is *HH:mm*, where: • *HH* is the hour of the day (range is 00 to 24) • *mm* is the minute of the hour (range is 00 to 60)
offset	The number of minutes to offset the time. The *offset* is from 1 to 1440.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables summer-time for Pacific Standard Time:

```
G8272(config)# clock summer-time PST
```

clock timezone

Enables or disables the use of time zones.

Syntax

[no] clock timezone *<time zone> <hour offset> <minute offset>*

where:

Parameter	Function
time zone	The name of the time zone in 3 character format, such as PST, MST, CST, or EST.
hour offset	The hour offset from UTC. The range is from -23 to 23.
minute offset	The minute offset from UTC. The range is from 0 to 59.

Using **no** before the command without arguments disables the use of time zones.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the use of the EST time zone with an offset of -5 hour and 0 minutes from UTC:

```
G8272(config)# clock timezone EST -5 0
```

do

Executes the specified command.

Syntax

do *<command>*

where:

Parameter	Function
command	The command to be executed.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command executes the **display cli history** command:

```
G8272(config)# do display cli history

   1 enable
   2 terminal session-timeout 0
   3 write
   4 clock set 11:23:35 27 January 2016
   5 conf t
   6 clock format 24
   7 clock timezone EET +2
   8 clock timezone EET +2 0
   9 display clock
  10 exit
  11 dis
  12 ena
  13 conf t
  14 en
  15 exit
  16 conf t
  17 dis
  18 enable
  19 display license brief
  20 display license host-id
...
```

enable password

Enables or disables the use of a password to enter Privileged EXEC mode.

Syntax

`[no] enable password [8]` *<password>*

where:

Parameter	Function
8	Indicates that a encrypted password will follow.
password	The password required to enter Privileged EXEC mode. The *password* can be up to 8 characters long.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures `code-sec` as the encrypted password required to enter Privileged EXEC mode:

```
G8272(config)# enable password 8 code-sec
```

end

Exits the current command mode and enters Privileged EXEC mode.

Syntax

end

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command exits the current command mode and enters Privileged EXEC mode:

```
G8272(config)# end
G8272#
```

errdisable recovery cause bpduguard

Enables or disables the timeout mechanism for a port to be recovered automatically from being operationally shut down by Bridge Protocol Data Units (BPDU) guard.

Syntax

```
[no] errdisable recovery cause bpduguard
```

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables error recovery:

```
G8272(config)# errdisable recovery cause bpduguard
```

errdisable recovery interval

Enables and disables a time interval after which an error-disabled port shall be recovered automatically.

Syntax

[no] errdisable recovery interval *<time interval>*

where:

Parameter	Function
time interval	The time in seconds that the switch waits until it will automatically recover an error-disabled port. The *time interval* is from 30 to 65535. The default value is 300.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the error recovery time interval to 600 seconds:

```
G8272(config)# errdisable recovery interval 600
```

feature

Enables or disables certain switch processes.

Syntax

[**no**] **feature** {**dhcp**|**ntp**|**restApi**|**ssh**|**tacacs+**|**telnet**}

where:

Parameter	Function
dhcp	Enables or disables Dynamic Host Configuration Protocol (DHCP).
ntp	Enables or disables Network Time Protocol (NTP).
restApi	Enables or disables REpresentational State Transfer (REST) server.
ssh	Enables or disables Secure Shell (SSH) service.
tacacs+	Enables or disables Terminal Access Controller Access-Control System Plus (TACACS+) service.
telnet	Enables or disables Telnet service.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the REST service:

```
G8272(config)# feature restApi
```

graceful-restart ospf helper max-grace-period

The Cloud NOS design provides a complete separation of its control plane from the forwarding plane, thus allowing the restart or upgrade of control plane software without disturbing forwarding. Such a restart/upgrade is called graceful-restart.

The router attempting a graceful restart originates link-local Opaque-LSAs, called Grace-LSAs, announcing its intention to perform a graceful restart within a specified amount of time called grace period.

This commands configures the maximum grace period. To disable the grace period use the **no** form of the command.

Syntax

[no] graceful-restart ospf helper max-grace-period *<grace period>*

where:

Parameter	Function
grace period	The maximum grace period in seconds. The *grace period* is from 1 to 1800. The default value is 60.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the grace period to 300 seconds:

```
G8272(config)# graceful-restart ospf helper max-grace-period 300
```

graceful-restart ospf helper never

The Cloud NOS design provides a complete separation of its control plane from the forwarding plane, thus allowing the restart or upgrade of control plane software without disturbing forwarding. Such a restart/upgrade is called graceful-restart.

In graceful-restart the OSPF neighbors help the restarting router by announcing links to it in their LSAs. These neighbors are said to be in "helper mode" for the duration of the graceful restart.

This commands enables or disables helper mode. Helper mode is enabled by default.

Note: When this command is enabled, helper mode is disabled on the router. When using the **no** form of this command, helper mode is enabled on the router.

Syntax

[no] graceful-restart ospf helper never [router-id *<neighbor address>***]**

where:

Parameter	Function
`router-id` *neighbor address*	Helper mode will be enabled or disabled only for the specified OSPF neighbor. The *neighbor address* is specified in IPv4 address format.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command disables helper mode on the router:

```
G8272(config)# graceful-restart ospf helper never
```

hardware ecmp hash-offset

Configures the Open Shortest Path First (OSPF) Equal Cost Multiple Paths (ECMP) hash offset.

Syntax

[no] hardware ecmp hash-offset *<offset value>*

where:

Parameter	Function
offset value	The value of the ECMP hash offset. The *offset value* is from 0 to 15. The default value is 0.

Using **no** before the command disables the OSPF hash offset.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures an ECMP hash offset of 3:

```
G8272(config)# hardware ecmp hash-offset 3
```

hardware esn

A customer support representative can assign your switch an Entitlement Serial Number (ESN) at the time you request support. The ESN helps to locate your switch's identifying information when you call technical support for help in future.

This command configures the switch's ESN.

Syntax

hardware esn *<serial number>*

where:

Parameter	Function
serial number	The ESN assigned to the switch by a customer support representative. The *serial number* is valid only as a 7 to 11 characters long alpha-numeric string.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the switch ESN as 'LNV109ty442':

```
G8272(config)# hardware esn LNV109ty442
```

hardware mtm

Configures the switch's Machine Type Model (MTM) number. The MTM number is applied when the switch reloads and persist across firmware upgrades.

Syntax

`hardware mtm` *<serial number>*

where:

Parameter	Function
serial number	The new MTM number for the switch. Valid *serial numbers* are listed below: • *1611-16E* • *8036-AFX* • *8036-ARX* • *8036-HC1* • *8036-HC2* • *7120-16E*

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the switch MTM number to '1611-16E':

```
G8272(config)# hardware mtm 1611-16E

New MTM value: 1611-16E
Please reset the system for the new changes to take effect.
```

hardware profile portmode

Enables or disables different hardware profiles for the switch ports.

Syntax

[no] hardware profile portmode {72x10G|custom ethernet *<chassis number/port number>***|default}**

where:

Parameter	Function
`72x10G`	Configures all ports as 10Gb ports.
`custom ethernet`	Configures the specified QSPF ports from 40Gb mode to 4 x 10 Gb mode.
chassis number/port number	The ethernet interface chassis and port numbers. The *chassis number* is 1 and the *port number* is from 1 to 128.
`default`	Configures 48 x 10Gb ports and 6 x 40Gb ports.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures all ports as 10 Gb ports:

```
G8272(config)# hardware profile portmode 72x10G
```

hostname

Configures or resets the switch network name.

Syntax

[**no**] **hostname** *<network name>*

where:

Parameter	Function
network name	The network name of the switch.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the switch network name to 'sw-lab-33':

```
G8272(config)# hostname sw-lab-33
sw-lab-33(config)#
```

The following command resets the switch network name to the default value:

```
sw-lab-33(config)# no hostname
G8272(config)#
```

install license

Install a Feature on Demand (FoD) license.

Syntax

`license install {ftp|scp|sftp|tftp|usb1}` *<source>*

where:

Parameter	Function
source	The address where the FoD license file can be found.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command installs a FoD license from a USB device:

```
G8272(config)# license install usb1 name
```

ip arp inspection filter

Adds or removes an Address Resolution Protocol (ARP) inspection filter.

Syntax

[no] ip arp inspection filter <*ACL name*> **vlan** <*VLAN number*>

where:

Parameter	Function
ACL name	The name of the ARP Access Control List (ACL).
`vlan`	Applies the specified ACL to the list of VLANs.
VLAN number	The VLAN number. Range is from 1 to 4094.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables an ARP inspection filter by applying the ARP ACL 'arp-acl-5' to VLANs 100, 101 and 102:

```
G8272(config)# ip arp inspection filter arp-acl-5 vlan 100-102
```

ip arp timeout

Dynamic ARP entries expire after a set amount of time and then they are removed from the table. The default value is 1500 seconds (25 minutes).

This commands configures a global timeout value for dynamic ARP entries.

Syntax

[no] ip arp timeout <*timeout value*>

where:

Parameter	Function
timeout value	The time in seconds until an ARP entry expires. The *timeout value* is from 60 to 28800.

Modes

Configuration Mode

Interface Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures ARP timeout to 1800 seconds (30 minutes):

```
G8272(config)# ip arp timeout 1800
```

ip as-path access-list

Creates or deletes a Border Gateway Protocol (BGP) autonomous system (AS) access list.

Syntax

`[no] ip as-path access-list` *<ACL name>* **`{deny|permit}`** *<regular expression>*

where:

Parameter	Function
ACL name	The name of the BGP Access Control List (ACL).
`deny`	Enables the rejection of packets.
`permit`	Enables the forwarding of packets.
regular expression	A regular-expression to match the BGP AS paths.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command forwards packets from networks belonging to AS 340:

```
G8272(config)# ip as-path access-list as-acl-3 permit ^340$
```

Related Commands

Command	Description
ip as-path access-list	Creates or deletes a BGP AS access list.

ip community-list expanded

Adds or removes an expanded entry to or from the specified Border Gateway Protocol (BGP) community list.

Syntax

[no] ip community-list expanded *<community list name>* **{deny| permit}** *<regular expression>*

where:

Parameter	Function
community list name	The name of the community list.
`deny`	Rejects routes that match the specified community list.
`permit`	Accepts routes that match the specified community list.
regular expression	A regular expression specifying a pattern to match against an input string.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds an expanded community list entry that denies routes from network 28 to autonomous system (AS) 3000:

```
G8272(config)# ip community-list expanded exp-list-28 deny 3000:28
```

ip community-list standard

Adds or removes a standard entry to or from the specified Border Gateway Protocol (BGP) community list.

Syntax

[no] ip community-list standard *<community list name>* **{deny| permit} {[***<community number>***] [internet] [local-AS] [no-advertise] [no-export]}**

where:

Parameter	Function
community list name	The name of the community list.
deny	Rejects routes that match the specified community list.
permit	Accepts routes that match the specified community list.
community number	Rejects or accepts routes based on their community number. The format for the community number is *AA:NN* (autonomous system number:community number).
internet	Rejects or accepts only routes that are part of the well-known internet community.
local-AS	Rejects or accepts only routes not advertised outside the local autonomous system (AS).
no-advertise	Rejects or accepts only routes not advertised to any peers (internal or external).
no-export	Rejects or accepts only routes only advertised to peers in the same AS.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds a standard community list entry that accepts routes only not advertised outside the local AS:

```
G8272(config)# ip community-list standard clist-local permit local-AS
```

ip dhcp relay

Globally enables or disables IPv4 Dynamic Host Configuration Protocol (DHCPv4) service.

Syntax

```
[no] ip dhcp relay [information option]
```

where:

Parameter	Function
`information option`	Enables or disables DHCPv4 option 82, which inserts DHCP relay agent information in BOOTREQUEST messages forwarded to a DHCP server. By default, this option is disabled.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command globally enables DHCPv4:

```
G8272(config)# ip dhcp relay
```

ip extcommunity-list expanded

Adds or removes an expanded entry to or from the specified extended Border Gateway Protocol (BGP) community list.

Syntax

[no] ip extcommunity-list expanded *<extended community list name>* **{deny|permit}** *<regular expression>*

where:

Parameter	Function
extended community list name	The name of the extended community list.
`deny`	Rejects routes that match the specified extended community list.
`permit`	Accepts routes that match the specified extended community list.
regular expression	A regular expression specifying a pattern to match against an input string.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds an expanded entry to an extended community list that denies routes from network 28 to autonomous system (AS) 3000:

```
G8272(config)# ip extcommunity-list expanded extlist-28 deny 3000:28
```

ip extcommunity-list standard

Adds or removes a standard entry to or from the specified extended Border Gateway Protocol (BGP) community list.

Syntax

[no] ip extcommunity-list standard *<extended community list name>* **{deny|permit} {{rt|soo}[***<community number>***]}**

where:

Parameter	Function
community list name	The name of the community list.
`deny`	Rejects routes that match the specified community list.
`permit`	Accepts routes that match the specified community list.
community number	Rejects or accepts routes based on their community number. The format for the community number is *AA:NN* (autonomous system number:community number).
`rt`	Rejects or accepts only routes based on their route target.
`soo`	Rejects or accepts only routes based on their source of origin.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds a standard entry to an extended community list that accepts only routes with the community number 32500:34:

```
G8272(config)# ip extcommunity-list standard ext-32500 permit rt 32500:34
```

ip forwarding

Enables or disables the forwarding of IPv4 packets.

Syntax

```
[no] ip forwarding
```

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the forwarding of IPv4 packets:

```
G8272(config)# ip forwarding
```

ip icmp-broadcast

Enables or disables Internet Control Message Protocol (ICMP) echo broadcast reply.

Syntax

```
[no] ip icmp-broadcast
```

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables ICMP echo broadcast reply:

```
G8272(config)# ip icmp-broadcast
```

ip igmp snooping

Globally enables or disables Internet Group Management Protocol (IGMP) snooping.

By default, IGMP Snooping is enabled.

Syntax

`[no] ip igmp snooping [report-suppression|tcn flood]`

where:

Parameter	Function
`report-suppression`	When enabled, the snooping switch only sends the first report for a group to the multicast routers. Subsequent reports for the same group are not forwarded to the multicast router. When disabled, all reports are forwarded to multicast routers. This report suppression is applied only for IGMP v1 and v2 reports. By default, report suppression is enabled.
`tcn flood`	Enables or disable the GQ packet transmission when a Topology Change Notification (TCN) is received.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

When the `tcn flood` is enabled, all associated IGMP Snooping groups and multicast routers are deleted.

Example

The following command globally enables IGMP Snooping:

```
G8272(config)# ip igmp snooping
```

ip load-sharing

Configures the unicast Forwarding Information Base (FIB) load-sharing algorithm for data traffic.

Using the **no** form of this commands reset the load-sharing algorithm to its default configuration.

The default setting is to use both source and destination IP addresses and ports.

Syntax

[no] ip load-sharing {destination-ip|destination-port| source-dest-ip|source-dest-port|source-ip|source-port} [universal-id *<random seed>***]**

where:

Parameter	Function
`destination-ip`	Uses destination IP address for load-sharing.
`destination-port`	Uses destination port address for load-sharing.
`source-dest-ip`	Uses both destination and source IP addresses for load-sharing.
`source-dest-port`	Uses both destination and source ports for load-sharing.
`source-ip`	Uses source IP address for load-sharing.
`source-port`	Uses source port for load-sharing.
`universal-id` *random seed*	Uses the specified value to randomize hash functions for load-sharing. The *random seed* is from 1 to 4294967295. The default value is 1431655765.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the load-sharing algorithm to use only the destination port and IP address and a random seed of `13445000`:

```
G8272(config)# ip load-sharing destination-ip destination-port
universal-id 13445000
```

ip prefix-list

Adds or removes an IPv4 prefix list used to filter routes.

Syntax

[no] ip prefix-list *<prefix list name>* **{description** *<description>***|[seq** *<sequence number>***] {deny|permit} {***<prefix>* **[eq** *<prefix length>***|ge** *<prefix length>* **[le** *<prefix length>***]|le** *<prefix length>* **[ge** *<prefix length>***]]| any}}**

where:

Parameter	Function
prefix list name	The name of the prefix list.
`description` *description*	Provides a short description of the prefix list. Its length can be up to a maximum of 80 characters.
`seq` *sequence number*	Specifies the sequence number of the prefix list entry. The *sequence number* is from 1 to 4294967295.
`deny`	Rejects the matching routes.
`permit`	Forwards the matching routes.
prefix	Filters routes that match the specified prefix. The *prefix* is written as: • *IPv4 network address/network mask length*
`eq`	Filters routes that match an exact prefix length.
`ge`	Filters routes that have a prefix length greater than the specified value.
`le`	Filters routes that have a prefix length smaller than the specified value.
prefix length	The *prefix length* is from 1 to 32.
`any`	Filters routes based on any prefix match.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds an IPv4 prefix list called 'pref-list-35' that forwards BGP routes that match IPv4 address 35.0.0.0 with network mask length 8:

```
G8272(config)# ip prefix-list pref-list-35 permit 35.0.0.0/8
```

ip prefix-list sequence-number

Enables or disables the creation of sequence numbers for IPv4 prefix list entries.

Syntax

```
[no] ip prefix-list sequence-number
```

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the creation of sequence numbers for IPv4 prefix list entries:

```
G8272(config)# ip prefix-list sequence-number
```

ip route

Adds or removes static IPv4 routes.

Syntax

[no] ip route *<destination prefix>* **[***<interface name>***|ethernet** *<chassis number/port number>***|mgmt** *<management interface>***|null** *<null interface>***|vlan** *<VLAN number>***]** *<gateway address>* **[***<distance>***] [description** *<description>***] [tag** *<tag number>***]**

where:

Parameter	Function
destination prefix	The destination prefix of the static route. The destination prefix can written as: • *IPv4 prefix/network mask* • *IPv4 address/network mask length*
interface name	Creates a static route on the named interface.
`ethernet` *chassis number/port number*	Creates a static route on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`mgmt` *management interface*	Creates a static route on the specified management interface. The *management interface* is 0.
`null` *null interface*	Creates a static route on the specified null interface. The *null interface* is 0.
`vlan` *VLAN number*	Creates a static route on the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
gateway address	The IPv4 address of the next hop that can be used to reach the specified destination prefix.
distance	The administrative distance of the route. The *distance* is from 1 to 255. The default value is 1.
`description` *description*	Adds a short description of the static route.
`tag` *tag number*	The tag value of the route that can be used to control redistribution via route maps. The *tag number* is from 0 to 4294967295.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds a static IPv4 route for prefix `10.0.0.0/8` with its next hop address `12.290.76.240`:

```
G8272(config)# ip route 10.0.0.0/8 12.190.76.240
```

ip route static bfd

Enables or disables Bidirectional Forwarding Detection (BFD) for static IPv4 routes.

This option is disabled by default.

Syntax

`[no] ip route static bfd {`*<interface name>***`|ethernet`** *<chassis number/ port number>***`|mgmt`** *<management interface>***`|vlan`** *<VLAN number>***`} {`***<gateway address>*|*<IP destination prefix>***`}`**

where:

Parameter	Function
interface name	Enables BFD on the named interface.
`ethernet` *chassis number/port number*	Enables BFD on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`mgmt` *management interface*	Enables BFD on the specified management interface. The *management interface* is 0.
`vlan` *VLAN number*	Enables BFD on the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
gateway address	Enables BFD for routes with the specified gateway address.
IP destination prefix	Enables BFD for routes with the specified destination ip prefix.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables BFD on ethernet interface 1/7 for routes with gateway address `10.56.178.34`:

```
G8272(config)# ip route static bfd ethernet 1/7 10.56.178.34
```

ipv6 dhcp relay

Globally enables or disables IPv6 Dynamic Host Configuration Protocol (DHCPv6) service.

Syntax

```
[no] ipv6 dhcp relay
```

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command globally enables DHCPv6:

```
G8272(config)# ipv6 dhcp relay
```

ipv6 forwarding

Enables or disables the forwarding of IPv6 packets.

Syntax

```
[no] ipv6 forwarding
```

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the forwarding of IPv6 packets:

```
G8272(config)# ipv6 forwarding
```

ipv6 prefix-list

Adds or removes an IPv6 prefix list used to filter routes.

Syntax

[no] ipv6 prefix-list *<prefix list name>* **{description** *<description>***|[seq** *<sequence number>***] {deny|permit} {***<prefix>* **[ge** *<prefix length>* **[le** *<prefix length>***]|le** *<prefix length>* **[ge** *<prefix length>***]]|any}}**

where:

Parameter	Function
prefix list name	The name of the prefix list.
`description` *description*	Provides a short description of the prefix list. Its length can be up to a maximum of 80 characters.
`seq` *sequence number*	Specifies the sequence number of the prefix list entry. The *sequence number* is from 1 to 4294967295.
`deny`	Rejects the matching routes.
`permit`	Forwards the matching routes.
prefix	Filters routes that match the specified prefix. The *prefix* is written as: • *IPv6 network address/network mask length*
`ge`	Filters routes that have a prefix length greater than the specified value.
`le`	Filters routes that have a prefix length smaller than the specified value.
prefix length	The *prefix length* is from 0 to 128.
`any`	Filters routes based on any prefix match.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds an IPv6 prefix list called 'pref-list-3ffe' that forwards BGP routes that match IPv6 address `3ffe::` with network mask length `16`:

```
G8272(config)# ipv6 prefix-list pref-list-3ffe permit 3ffe::/16
```

ipv6 prefix-list sequence-number

Enables or disables the creation of sequence numbers for IPv6 prefix list entries.

Syntax

```
[no] ipv6 prefix-list sequence-number
```

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the creation of sequence numbers for IPv6 prefix list entries:

```
G8272(config)# ipv6 prefix-list sequence-number
```

ipv6 route

Adds or removes static IPv6 routes.

Syntax

[no] ipv6 route *<destination prefix>* *<gateway address>* **[***<interface name>***|ethernet** *<chassis number/port number>***|mgmt** *<management interface>***|vlan** *<VLAN number>***] [***<distance>***]**

where:

Parameter	Function
destination prefix	The destination prefix of the static route. The destination prefix can written as: • *IPv6 address/network mask length*
gateway address	The IPv6 address of the next hop that can be used to reach the specified destination prefix.
interface name	Creates a static route on the named interface.
`ethernet` *chassis number/port number*	Creates a static route on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`mgmt` *management interface*	Creates a static route on the specified management interface. The *management interface* is 0.
`vlan` *VLAN number*	Creates a static route on the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
distance	The administrative distance of the route. The *distance* is from 1 to 255. The default value is 1.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds a static IPv6 route for prefix `3ffe:506::/32` with its next hop address `389c:be45:78::c45:8156`:

```
G8272(config)# ipv6 route 3ffe:506::/32 389c:be45:78::c45:8156
```

ipv6 route static bfd

Enables or disables Bidirectional Forwarding Detection (BFD) for static IPv6 routes.

This option is disabled by default.

Syntax

[no] ipv6 route static bfd {<*interface name*>**|ethernet** <*chassis number/port number*>**|loopback** <*loopback interface*>**|mgmt** <*management interface*>**|port-aggregation** <*LAG number*>**|vlan** <*VLAN number*>**} [**<*gateway address*>|<*IP destination prefix*>**]**

where:

Parameter	Function
interface name	Enables BFD on the named interface.
`ethernet` *chassis number/port number*	Enables BFD on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Enables BFD on the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Enables BFD on the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Enables BFD on the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Enables BFD on the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
gateway address	Enables BFD for routes with the specified gateway address.
IP destination prefix	Enables BFD for routes with the specified destination ip prefix.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables BFD on ethernet interface 1/10 for routes with gateway address `832a:5821:b34a::187:14`:

```
G8272(config)# ipv6 route static bfd ethernet 1/10 832a:5821:b34a::187:14
```

lacp system-priority

Configures the Link Aggregation Control Protocol (LACP) system priority of the switch.

Using the **no** form of this command resets LACP system priority to its default value.

The default value is 32768.

Syntax

[no] lacp system-priority *<LACP system priority>*

where:

Parameter	Function
LACP system priority	The *LACP system priority* range is from 1 to 65535.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures a LACP system priority of 35000:

```
G8272(config)# lacp system-priority 35000
```

line

Enter Line Configuration Mode.

Syntax

[**no**] **line** {**console** *<console line>*}|{**vty** *<vty number>*

where:

Parameter	Function
console line	The console line number; default value is 0.
vty number	The virtual terminal number; an integer from 0-871.

For more information on Line Configuration Mode commands, see Chapter 6, "Line Mode Commands."

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enters Line Configuration Mode to configure virtual terminal 3:

```
G8272(config)# line vty 3
G8272(config-line)#
```

lldp holdtime-multiplier

Hold time is the amount of time a receiving device holds the information before discarding it. Hold time is configured as a multiple of the message transmission interval, which is set by the **lldp timer** command.

This command configures the Link Layer Discovery Protocol (LLDP) hold time multiplier value.

Syntax

[**no**] **lldp holdtime-multiplier** *<multiplier value>*

where:

Parameter	Function
multiplier value	The multiplier value; an integer from 2-10. Default value is 4.

Using the **no** form of this command resets the LLDP hold time multiplier to its default value (4).

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures an LLDP hold time multiplier of 3:

```
G8272(config)# lldp holdtime-multiplier 3
```

Related Commands

Command	Description
lldp timer	Sets the message transmission interval.

lldp reinit

Configures the time delay before Link Layer Discovery Protocol (LLDP) re-initialization is attempted on an interface. The re-initialization delay allows the port LLDP information to stabilize before transmitting LLDP messages.

Using the **no** form of this command reset the re-initialization delay to its default value.

The default value is 2 seconds.

Syntax

[**no**] **lldp reinit** *<time delay>*

where:

Parameter	Function
time delay	The time delay in seconds before LLDP re-initialization is attempted on an interface. The *time delay* is from 1 to 10.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the LLDP re-initialization delay to 5 seconds:

```
G8272(config)# lldp reinit 5
```

lldp timer

Configures the time interval between Link Layer Discovery Protocol (LLDP) message transmissions.

Using the **no** form of this command resets the time interval between LLDP messages to its default value.

The default value is 30 seconds.

Syntax

[**no**] **lldp timer** <*time interval*>

where:

Parameter	Function
time interval	The rate at which the switch sends LLDP messages. The *time interval* is in seconds from 5 to 32768.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the switch to send LLDP messages every 20 seconds:

```
G8272(config)# lldp timer 20
```

Restrictions

The transmission interval must be at least four times the transmission delay interval, which is set by the **lldp transmit-delay** command.

lldp transmit-delay

Configures the Link Layer Discovery Protocol (LLDP) transmission delay interval, which represents the minimum time permitted between two successive LLDP transmissions on a port.

Using the **no** form of this command resets the LLDP transmission delay interval to its default value.

The default value is 2 seconds.

Syntax

[**no**] **lldp transmit-delay** *<time delay>*

where:

Parameter	Function
time delay	The minimum time in seconds a switch waits between two successive LLDP transmission on a port. The *time delay* is from 1 to 8192.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the LLDP transmission delay interval to 5 seconds:

```
G8272(config)# lldp transmit-delay 5
```

Restrictions

The transmission delay interval must be at least four times smaller than the transmission interval, which is set by the **lldp timer** command.

lldp trap-interval

Configures the Link Layer Discovery Protocol (LLDP) trap notification interval.

Using the **no** form of the command resets the LLDP trap notification to its default value.

The default value is 5 seconds.

Syntax

[**no**] **lldp trap-interval** *<time interval>*

where:

Parameter	Function
time interval	The minimum number of seconds between two successive LLDP trap notifications. The *time interval* is from 5 to 3600.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the LLDP trap notification interval to 10 seconds:

```
G8272(config)# lldp trap-interval 10
```

logging console

Enables the switch to log messages to the console session.

Syntax

[no] logging console [<*severity level*>**]**

where:

Parameter	Function
severity level	The severity level; an integer from 0-7 as follows: • 0 - emergencies • 1 - alerts • 2 - critical • 3 - errors • 4 - warnings • 5 - notifications • 6 - informational • 7 - debugging Only messages up to the specified severity level are logged. The default severity level is 2 (critical).

Using the **no** form of this command disables logging messages on the console. Logging is enabled by default.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the logging of messages to the console session with a severity level of 3:

```
G8272(config)# logging console 3
```

logging level

Configures the logging level for each facility in the system. Each facility corresponds to an application, process, protocol, or module.

Using the **no** form of this command resets the severity level to the default value.

The default severity level varies based on facility. Each facility has its own default value independently of the other facilities. The user can determine the default severity level for a given facility using the following command: `display logging level` *<facility>*.

Syntax

`[no] logging level {`*<facility>***`|all}`** *<severity level>*

where:

Parameter	Function
facility	The name of the facility that will have its severity level changed. A facility is a keyword used to identify the application, process, protocol, or module that logs a message. The list of supported facilities is shown below.
`all`	Configures the severity level for all facilities.
severity level	Only messages up to the specified severity level will be logged. The *severity level* is from 0 to 7: • 0 - emergencies • 1 - alerts • 2 - critical • 3 - errors • 4 - warnings • 5 - notifications • 6 - informational • 7 - debugging

You are allowed to change the severity level of the following *facilities*:

- `aaa` - Authentication, Authorization and Accounting (AAA). The default security level is 5.
- `bfd` - Bidirectional Forwarding Detection (BFD). The default security level is 6.
- `bgp` - Border Gateway Protocol (BGP). The default security level is 5.
- `ecp` - Edge Control Protocol (ECP). The default security level is 6.
- `hostmib` - Host Management Information Base (MIB). The default security level is 6.
- `hostp` - Host Protocols. The default security level is 5.
- `hsl` - Hardware Services Layer (HSL). The default security level is 3.

- `imi` - Integrated Management Interface (IMI). The default security level is 6.
- `imish` - Integrated Management Interface Shell (IMISH). The default security level is 6.
- `khsl` - Kernel Hardware Services Layer (KHSL) module. The default security level is 6.
- `l2mrib` - Layer 2 Multicast Routing Information Base (MRIB). The default security level is 5.
- `lacp` - Link Aggregation Control Protocol (LACP). The default security level is 5.
- `lldp` - Link Layer Discovery Protocol (LLDP). The default security level is 5.
- `mstp` - Multiple Spanning Tree Protocol (MSTP). The default security level is 5.
- `ndd` - Neighbor Discovery Daemon (NDD). The default security level is 6.
- `nlog` - Logging Control Daemon (NLOG). The default security level is 6.
- `nsm` - Network Service Module (NSM). The default security level is 5.
- `nsxgw` - NSX Gateway. The default security level is 6.
- `ntp` - Network Time Protocol (NTP). The default security level is 5.
- `onm` - Open Network Management (ONM). The default security level is 5.
- `ospf` - Open Shortest Path First (OSPF). The default security level is 5.
- `ovsdb` - Open vSwitch Database Management Protocol (OVSDB). The default security level is 6.
- `platform-mgr` - Platform Manager. The default security level is 6.
- `pubsub` - Publisher/Subscriber Inter Process Communication Module. The default security level is 6.
- `pyrun` - Python Runtime Environment. The default security level is 6.
- `pysched` - Python Scheduler. The default security level is 6.
- `rest` - REpresentational State Transfer (REST). The default security level is 5.
- `rib` - Routing Information Base (RIB). The default security level is 6.
- `service-mgr` - Service Manager. The default security level is 5.
- `smiacl2mrib` - Simple Management Interface (SMI) API Client (AC) Layer 2 Multicast Routing Information Base (MRIB). The default security level is 5.
- `smi-ac-lacp` - SMI AC Link Aggregation Control Protocol (LACP). The default security level is 5.
- `smi-ac-mstp` - SMI AC Multiple Spanning Tree Protocol (MSTP). The default security level is 5.
- `smi-ac-ndd` - SMI AC Neighbor Discovery Daemon (NDD). The default security level is 5.
- `smi-ac-nsm` - SMI AC Network Service Module (NSM). The default security level is 5.
- `smi-ac-onm` - SMI AC Open Network Management (ONM). The default security level is 5.

- `smi-ac-rib` - SMI AC Routing Information Base (RIB). The default security level is 5.
- `smi-ac-vrrp` - SMI AC Virtual Router Redundancy Protocol (VRRP). The default security level is 5.
- `snmp` - Simple Network Management Protocol (SNMP). The default security level is 5.
- `ssh` - Secure Shell (SSH). The default security level is 5.
- `syslog` - System Log Host Protocol. The default security level is 5.
- `sysmgmt` - System Management Host Protocol. The default security level is 5.
- `sysmgr` - System Manager. The default security level is 5.
- `tacacs` - Terminal Access Controller Access-Control System Plus (TACACS+). The default security level is 5.
- `telnet` - Telnet Control Host Protocol. The default security level is 5.
- `um` - User Management. The default security level is 5.
- `vlag` - Virtual Link Aggregation Group (VLAG). The default security level is 6.
- `vlan` - Virtual Local Area Network (VLAN). The default security level is 5.
- `vlog` - Virtual Terminal Logging Control Daemon. The default security level is 6.
- `vrrp` - Virtual Router Redundancy Protocol (VRRP). The default security level is 6.
- `ztp` - Zero Touch Provisioning. The default security level is 6.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures a severity level of 3 for the VLAN facility:

```
G8272(config)# logging level vlan 3
```

logging library

Configures the logging level for each system library and application process facility in the system. A system library facility is shared among multiple application process facilities in the system.

Using the **no** form of this command resets the severity level to the default value.

The default severity level varies based on the system library facility. Each system library facility has its own default value independently of the other libraries. The user can determine the default severity level for a given system library facility using the following command: `display logging library` *<system-library>*.

Syntax

`[no] logging library [<system-library>] facility {`*<app-process>***`|all}`**
<severity level>

where:

Parameter	Function
`hsl-nos-ipcclib`	Displays HSL Inter-Process-Communication Client library. The default security level is 3.
`hsl-nos-ipcslib`	Displays HSL Inter-Process-Communication Server library. The default security level is 3.
`llilib`	Displays low level drivers interface library. The default security level is 5.
`log`	Configures the log logging library. The default security level is 6.
`mcast`	Configures the multicast logging library. The default security level is 5.
`secureimg`	Configures the secure image logging library. The default security level is 6.
`sysinfolib`	Configures the system information library. The default security level is 5.
`facility`	Configures the severity level of a certain application process facility.
app-process	The name of the application process facility that will have its severity level changed for the selected system library facility. The list of supported application process facilities is shown below.

Parameter	Function
`all`	Configures the severity level for all application process facilities using a given system library facility.
severity level	Only messages up to the specified severity level will be logged. The *severity level* is from 0 to 7: • 0 - emergencies • 1 - alerts • 2 - critical • 3 - errors • 4 - warnings • 5 - notifications • 6 - informational • 7 - debugging

To change the severity level for a certain *facility* use one of the following:

- `bfd` - Bidirectional Forwarding Detection (BFD)
- `bgp` - Border Gateway Protocol (BGP)
- `ecp` - Edge Control Protocol (ECP)
- `hostmib` - Host Management Information Base (MIB)
- `hostp` - Host Protocols
- `hsl` - Hardware Services Layer (HSL)
- `imi` - Integrated Management Interface (IMI)
- `imish` - Integrated Management Interface Shell (IMISH)
- `l2mrib` - Layer 2 Multicast Routing Information Base (MRIB)
- `lacp` - Link Aggregation Control Protocol (LACP)
- `mstp` - Multiple Spanning Tree Protocol (MSTP)
- `ndd` - Neighbor Discovery Daemon (NDD)
- `nlog` - Logging Control Daemon
- `nsm` - Network Service Module (NSM)
- `nsxgw` - NSX Gateway
- `onm` - Open Network Management (ONM)
- `ospf` - Open Shortest Path First (OSPF)
- `ovsdb` - Open vSwitch Database Management Protocol (OVSDB)
- `platform-mgr` - Platform Manager
- `pubsub` - Publisher/Subscriber Inter Process Communication Module
- `pyrun` - Python Runtime Environment
- `pysched` - Python Scheduler
- `rib` - Routing Information Base (RIB)

- `service-mgr` - Service Manager
- `sysmgr` - System Manager
- `vlag` - Virtual Link Aggregation Group (VLAG)
- `vlog` - Virtual Terminal Logging Control Daemon
- `vrrp` - Virtual Router Redundancy Protocol (VRRP)
- `ztp` - Zero Touch Provisioning

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures a severity level of 3 for the system library llilib when operating as part of the application process OSPF:

```
G8272(config)# logging library llilib facility ospf 3
```

logging logfile

Enables or disables the logging of messages to a log file. The log file will be created in persistent memory under the /cfg/log/customer/ directory.

Using the no form of this command will only disable the logging of messages to the log file. However, it will not delete the log file or the logged messages.

The default severity level is 6 (informational).

To delete the logged messages from a log file use the following command:

- **`clear logging logfile`**

Syntax

`[no] logging logfile` *<log file name>* *<severity level>* **`[size`** *<file size>***`]`**

where:

Parameter	Function
log file name	The name of the log file. Its length can be up to a maximum of 32 characters. The allowed characters are: • letters • numbers • _
severity level	Only messages up to the specified severity level will be logged. The *severity level* is from 0 to 7: • 0 - emergencies • 1 - alerts • 2 - critical • 3 - errors • 4 - warnings • 5 - notifications • 6 - informational • 7 - debugging
`size` *file size*	The maximum size in bytes of the log file. The file size is from 4096 (4 KB) to 10485760 (10 MB).

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the logging of messages to the log file named 'log_file_sev_2'. In order to be saved to the file, the logged messages must have a severity level of 2 (critical) or greater. The size of log file is restricted to 3 MB:

```
G8272(config)# logging logfile log_file_sev_2 2 size 3145728
```

Restrictions

The default log file size is 10,485,760 bytes (10 MB).

logging monitor

Enables or disables the switch to log messages to the monitor sessions (Telnet and Secure Shell (SSH)).

The default settings is enabled with a severity level of 5 (notifications).

Syntax

`[no] logging monitor [`<*severity level*>**`]`**

where:

Parameter	Function
severity level	Only messages up to the specified severity level will be logged. The *severity level* is from 0 to 7: • 0 - emergencies • 1 - alerts • 2 - critical • 3 - errors • 4 - warnings • 5 - notifications • 6 - informational • 7 - debugging

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the logging of messages to the monitor sessions with a severity level of 3 (errors):

```
G8272(config)# logging monitor 3
```

logging rate-limit

Configures the rate limit of logged messages (maximum number of messages that can be logged per time interval in seconds) for three supported contexts:

- for the entire system;
- for each severity level;
- for each facility;

The three rate limit contexts listed previously are independent of each other. (e.g. if we disable rate limit for the system, the rate limit parameters related to the severity levels and facilities are still applicable).

Using the **no** form of this command disables rate limiting for the specified context. In order to reset the rate limit parameters to their default values use the `default` keywords associated to the number of messages or time interval parameters.

Rate limit has different default values for the distinct contexts:

- for the system: 512 messages every 5 seconds;
- for severity levels: 1024 messages every 10 seconds;
- for facilities: 512 messages every 10 seconds;

Syntax

`logging rate-limit num {`*<number of messages>***`|default} interval {`***<time interval>***`|default} {facility {`***<facility>***`|all}|level`** *<severity level>***`|system}`**

`no logging rate-limit {facility {`*<facility>***`|all}|level`** *<severity level>***`|system}`**

where:

Parameter	Function
`num`	Configures the maximum number of messages that can be logged within the configured interval.
number of messages	The *number of messages* is from 1 to 4096.
`default`	This keyword will instruct the system to set parameter being configured to its default value.
`interval`	Configures the time interval.
time interval	The *time interval* is in seconds from 1 to 600.
`facility` *facility*	Configures the rate limit of logged messages for the specified facility. A facility is a keyword used to identify the application, process, protocol, or module that logs a message. The list of supported facilities is shown below.

Parameter	Function
`level` *severity level*	Only messages up to the specified severity level will be logged. The *severity level* is from 0 to 7: • 0 - emergencies • 1 - alerts • 2 - critical • 3 - errors • 4 - warnings • 5 - notifications • 6 - informational • 7 - debugging
`system`	Configures the rate limit of logged messages for the system.

To configure the rate limit for a certain *facility* use one of the following:

- `aaa` - Authentication, Authorization and Accounting (AAA)
- `all` - all facilities
- `bfd` - Bidirectional Forwarding Detection (BFD)
- `bgp` - Border Gateway Protocol (BGP)
- `ecp` - Edge Control Protocol (ECP)
- `hostmib` - Host Management Information Base (MIB)
- `hostp` - Host Protocols
- `hsl` - Hardware Services Layer (HSL)
- `imi` - Integrated Management Interface (IMI)
- `imish` - Integrated Management Interface Shell (IMISH)
- `khsl` - Kernel Hardware Services Layer (KHSL) module
- `l2mrib` - Layer 2 Multicast Routing Information Base (MRIB)
- `lacp` - Link Aggregation Control Protocol (LACP)
- `lldp` - Link Layer Discovery Protocol (LLDP)
- `mstp` - Multiple Spanning Tree Protocol (MSTP)
- `ndd` - Neighbor Discovery Daemon (NDD)
- `nlog` - Logging Control Daemon (NLOG)
- `nsm` - Network Service Module (NSM)
- `nsxgw` - NSX Gateway
- `ntp` - Network Time Protocol (NTP)
- `onm` - Open Network Management (ONM)
- `ospf` - Open Shortest Path First (OSPF)
- `ovsdb` - Open vSwitch Database Management Protocol (OVSDB)

- `platform-mgr` - Platform Manager
- `pubsub` - Publisher/Subscriber Inter Process Communication Module
- `pyrun` - Python Runtime Environment
- `pysched` - Python Scheduler
- `rest` - REpresentational State Transfer (REST)
- `rib` - Routing Information Base (RIB)
- `service-mgr` - Service Manager
- `smiacl2mrib` - Simple Management Interface (SMI) API Client (AC) Layer 2 Multicast Routing Information Base (MRIB)
- `smi-ac-lacp` - SMI AC Link Aggregation Control Protocol (LACP)
- `smi-ac-mstp` - SMI AC Multiple Spanning Tree Protocol (MSTP)
- `smi-ac-ndd` - SMI AC Neighbor Discovery Daemon (NDD)
- `smi-ac-nsm` - SMI AC Network Service Module (NSM)
- `smi-ac-onm` - SMI AC Open Network Management (ONM)
- `smi-ac-rib` - SMI AC Routing Information Base (RIB)
- `smi-ac-vrrp` - SMI AC Virtual Router Redundancy Protocol (VRRP)
- `snmp` - Simple Network Management Protocol (SNMP)
- `ssh` - Secure Shell (SSH)
- `syslog` - System Log Host Protocol
- `sysmgmt` - System Management Host Protocol
- `sysmgr` - System Manager
- `tacacs` - Terminal Access Controller Access-Control System Plus (TACACS+)
- `telnet` - Telnet Control Host Protocol
- `um` - User Management
- `vlag` - Virtual Link Aggregation Group (VLAG)
- `vlan` - Virtual Local Area Network (VLAN)
- `vlog` - Virtual Terminal Logging Control Daemon
- `vrrp` - Virtual Router Redundancy Protocol (VRRP)
- `ztp` - Zero Touch Provisioning

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the rate-limit of the system to 300 messages every 10 seconds:

```
G8272(config)# logging rate-limit num 300 interval 10 system
```

The following command configures the rate-limit of the severity level 6 (informational) to 256 messages every 16 seconds:

```
G8272(config)# )# logging rate-limit num 256 interval 16 level 6
```

The following command configures the rate-limit of the facility bgp to 200 messages every 5 seconds:

```
G8272(config)# logging rate-limit num 200 interval 5 facility bgp
```

The following command configures the rate-limit of the system to the default values of 512 messages every 5 seconds:

```
G8272(config)# logging rate-limit num default interval default system
```

The following command disables the rate-limit for the severity level 3 (errors). If only this command is issued, the rate-limit parameters related to the system and all facilities are still applicable:

```
G8272(config)# no logging rate-limit level 3
```

The following command disables the rate-limit for all facilities. If only this command is issued, the rate-limit parameters related to the system and all severity levels are still applicable:

```
G8272(config)# no logging rate-limit facility all
```

logging server

Adds or removes a remote logging server at the specified address.

If not specified when adding a remote logging server, the default values for severity level is 7 (debugging) and outgoing facility local7.

Syntax

`[no] logging server` <*server address*> **`[[`**<*severity level*>**`] facility`** <*outgoing facility*>**`]`**

where:

Parameter	Function
server address	The IPv4 or IPv6 address of the remote server.
severity level	Only messages up to the specified severity level will be logged. The *severity level* is from 0 to 7: • 0 - emergencies • 1 - alerts • 2 - critical • 3 - errors • 4 - warnings • 5 - notifications • 6 - informational • 7 - debugging
`facility` *outgoing facility*	Logs messages only for the specified outgoing facility. A facility is a keyword used to identify the source of the log messages when forwarding them to a remote server. Use one of the following: • `local0` • `local1` • `local2` • `local3` • `local4` • `local5` • `local6` • `local7` • `user`

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures a remote logging server at an IPv4 address:

```
G8272(config)# logging server 10.240.34.178
```

logging timestamp

Configures the unit used to display the time-stamp when logging messages.

Using the **no** form of the command resets the time-stamp unit to its default setting.

The default time-stamp unit is seconds.

Syntax

`[no] logging timestamp {microseconds|milliseconds|seconds}`

where:

Parameter	Function
`microseconds`	Configures logging messages to use microseconds as the timestamp units (1 microsecond = 10^{-6} seconds).
`milliseconds`	Configures logging messages to use milliseconds as the timestamp units (1 millisecond = 10^{-3} seconds).
`seconds`	Configures logging messages to use seconds as the timestamp unit.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures milliseconds as the time-stamp unit:

```
G8272(config)# logging timestamp milliseconds
```

mac-learn disable

When a packet with an unknown MAC source address is received, the switch saves the MAC address in its the Forwarding Database (FDB). This process is called MAC address learning.

The command globally disables MAC address learning. Any new MAC addresses will not be saved in the FDB.

Use the **no** form of this command to enable MAC address learning.

Note: We recommend you remove all dynamic MAC addresses from the FDB after disabling/enabling MAC learning.

Syntax

```
[no] mac-learn disable
```

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command disables MAC address learning:

```
G8272(config)# mac-learn disable
```

Related Commands

Command	Description
remove mac address-table dynamic	Removes all dynamic MAC addresses from the FDB.

maint password

Enables or disables the use of a password to enable maintenance mode.

Syntax

`maint password [8]` *<password>*

`no maint password`

where:

Parameter	Function
8	Indicates that an encrypted password will follow.
password	The password required to enable maintenance mode. The *password* can be up to 8 characters long.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures `maint-cd` as the encrypted password required to enable maintenance mode:

```
G8272(config)# maint password 8 maint-cd
```

Related Commands

Command	Description
maint mode enable	Enables maintenance mode

mac access-list

Creates a MAC access control list and enters MAC ACL Configuration Mode.

Syntax

[**no**] **mac access-list** *<MAC ACL>*

where:

Parameter	Definition
MAC ACL	The name of the MAC access control list; a string up to 64 characters long.

Using **no** before the command removes the MAC ACL.

For information about MAC ACL Configuration mode commands, see Chapter 21, "MAC ACL Mode Commands.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates MAC ACL `MyACL`:

```
G8272(config)# mac access-list MyACL
G8272(config-mac-acl)#
```

Related Commands

Command	Definition
configure	Configure terminal parameters

mac address-table aging time

Enables an aging time for a MAC address table.

Syntax

[**no**] **mac address-table aging-time** *<seconds>*

where:

Parameter	Definition
`aging-time` *<seconds>*	Aging time in seconds; a number from 0 to 1000000.

Using **no** before the command removes the aging time.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures aging time for an address table:

```
G8272(config)# mac address-table aging-time 5
```

Related Commands

Command	Definition
configure	Configure terminal parameters

mac address-table static

Configures static entries for the MAC address table.

Syntax

[**no**] **mac address-table static** <*MAC address*> **vlan** <*VLAN ID*> **interface {ethernet|port-aggregation}** <*chassis number/port number*>

where:

Parameter	Definition
MAC address	MAC address in one of the following formats: • *X.X.X* • *XX-XX-XX-XX-XX-XX* • *XX:XX:XX:XX:XX:XX* • *XXXX.XXXX.XXXX*
`vlan` <*VLAN ID*>	The VLAN ID of the VLAN; an integer from 1 to 3999.
`interface ethernet|port-aggregation`	Ethernet interface or LAG.
chassis number/port number	Chassis number or port number.

Using **no** before the command removes the static entry.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures aging time for an address table:

```
G8272(config)# mac address-table static 0001.dcde.3b00 vlan 10 interface
port-aggregation 61
```

Related Commands

Command	Definition
configure	Configure terminal parameters

maximum-paths

Configures the maximum number of Equal Cost Multiple Paths (ECMP) that can be installed in the Forwarding Information Base (FIB).

Using the **no** form of the command resets the maximum number of ECMP paths the its default value.

Syntax

[no] maximum-paths <*number of paths*>

where:

Parameter	Function
number of paths	The maximum number of ECMP paths; an integer from 1-32. The default value is 32.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the maximum number of ECMP paths to 12:

```
G8272(config)# maximum-paths 12
```

microburst-detection interval

Microbursts are short peaks in data traffic that manifest as a sudden increase in the number of data packets transmitted over a specific millisecond-level time frame, potentially overwhelming network buffers. Microburst detection allows users to analyze and mitigate microburst-related incidents, thus preventing network congestion.

Configures the time interval used by microburst detection to evaluate traffic burst.

Syntax

`microburst-detection interval` *<time interval>*

where:

Parameter	Function
time interval	The time period in milliseconds used to evaluate traffic burst; an integer from 5 to 5000. Default value is 5.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the microburst detection interval to 20 milliseconds:

```
G8272(config)# microburst-detection interval 20
```

monitor erspan origin ip-address

Configures the global origin IPv4 address of ethernet Encapsulated Remote Switched Port Analyzer (ERSPAN) sessions.

Using the **no** form of this command will remove the configured global origin IPv4 address.

Syntax

[**no**] **monitor erspan origin ip-address** *<IPv4 address>* **global**

where:

Parameter	Function
IPv4 address	The origin IPv4 address of ethernet ERSPAN sessions.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command the global origin address of ethernet ERSPAN sessions as `10.206.38.96`:

```
G8272(config)# monitor erspan origin ip-address 10.206.38.96 global
```

monitor session

Adds a Switch Port Analyzer (SPAN) session. After the creation of a SPAN session, enters SPAN Session Configuration Mode.

Syntax

[**no**] **monitor session** <*session number*>

where:

Parameter	Function
session number	The SPAN session number. The *session number* is from 1 to 18.

Using no before the command removes the specified SPAN session.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds SPAN session 7:

```
G8272(config)# monitor session 7
```

monitor session shut

Configures the specified Switch Port Analyzer (SPAN) session as being shut down for monitoring.

Using the **no** form of the command configures the SPAN session as not being shut down for monitor.

Syntax

[**no**] **monitor session** {<*session number*>|**all**} **shut**

where:

Parameter	Function
session number	The SPAN session number. The *session number* is from 1 to 18.
`all`	Configures all SPAN sessions as being shut down.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures all SPAN sessions as being shut down:

```
G8272(config)# monitor session all shut
```

monitor session type

Specifies the Switch Port Analyzer (SPAN) session type.

Syntax

monitor session *<session number>* **type** {**erspan-destination**|**erspan-source**|**local**}

where:

Parameter	Function
session number	The SPAN session number. The *session number* is from 1 to 18.
`type erspan-destination`	Specifies that the session is a Encapsulated Remote Switched Port Analyzer (ERSPAN) destination session.
`type erspan-source`	Specifies that the session is a Encapsulated Remote Switched Port Analyzer (ERSPAN) source session.
`type local`	Specifies that the session is a local session.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command assigns SPAN session 10 as a local session:

```
G8272(config)# monitor session 10 type local
```

ntp authenticate

Enables the Network Time Protocol (NTP) authentication.

Syntax

`[no] ntp authenticate`

Using **no** before the command disables the authentication.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable NTP authentication:

```
G8272(config)# ntp authenticate
```

ntp authentication-key

Adds the authentication key.

Syntax

[no] authentication-key *<value>* **md5** *<string>*

where:

Parameter	Description
<value>	Authentication key number (a value from 1 to 65534).
md5	Authentication algorithm.
<string>	MD5 string.

Using **no** before the command removes the authentication key.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set the authentication key:

```
G8272(config)# ntp authentication-key 5 md5 test
```

ntp enable

Enables Network Time Protocol (NTP) feature. This feature allows you to synchronize the switch clock to a Network Time Protocol (NTP) server. NTP is enabled by default.

Syntax

[no] ntp enable

Using **no** before the command turns off the feature.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable NTP:

```
G8272(config)# ntp enable
```

ntp peer

Sets NTP peer.

Syntax

[no] ntp peer {<*ip-address*> **|** <*ipv6-address*>**} [key** <*key-id*>**] [maxpoll** <*max-poll*>**] [minpoll** <*min-poll*>**] [prefer]**

where:

Parameter	Description
<*ip-address*>	IPv4 address.
<*ipv6-address*>	IPv6 address.
key	Specifies the key to be used for associating with a server.
<*key-id*>	Key ID (a number from 1 to 65534).
maxpoll	Specifies the maximum poll interval to poll the server, poll interval in seconds.
<*max-poll*>	Maximum poll interval (a number from 4 to 16). The default value is 6.
minpoll	Specifies the minimum poll interval to poll the server, poll interval in seconds.
<*min-poll*>	Minimum poll interval (a number from 4 to 16). The default value is 4.
prefer	Specifies the given NTP server as the preferred one.

Using **no** before the command removes a NTP peer.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set a NTP peer:

```
G8272(config)# ntp peer 1.1.1.1
```

ntp server

Sets NTP server.

Syntax

[no] ntp server {<*ip-address*> **|** <*ipv6-address*>**} [key** <*key-id*>**] [maxpoll** <*max-poll*>**] [minpoll** <*min-poll*>**] [prefer]**

where:

Parameter	Description
<*ip-address*>	IPv4 address.
<*ipv6-address*>	IPv6 address.
key	Specifies the key to be used for associating with a server.
<*key-id*>	Key ID (a number from 1 to 65534).
maxpoll	Specifies the maximum poll interval to poll the server, poll interval in seconds.
<*max-poll*>	Maximum poll interval (a number from 4 to 16). The default value is 6.
minpoll	Specifies the minimum poll interval to poll the server, poll interval in seconds.
<*min-poll*>	Minimum poll interval (a number from 4 to 16). The default value is 4.
prefer	Specifies the given NTP server as the preferred one.

Using **no** before the command removes a NTP server.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set NTP server:

```
G8272(config)# ntp server 1.1.1.1
```

ntp trusted-key

Sets a trusted key.

Syntax

[no] ntp trusted-key *<number>*

where:

Parameter	Description
<number>	Trusted key value (a number from 1 to 65534).

Using **no** before the command removes a trusted key.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set a trusted key:

```
G8272(config)# ntp trusted-key 20
```

ntp use-vrf

Configures NTP VRF. NTP daemon (ntpd) will run in the given namespace.

Syntax

`ntp user-vrf {default|management}`

where:

Parameter	Description
`default`	Default VRF. For data interfaces, a default VRF with ID 0 is created and associated with default FIB. All data IP interfaces are attached to default VRF.
`management`	Management VRF. By default, a VRF with ID1 is created. This is the default setting.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure NTP VRF:

```
G8272(config)# ntp user-vrf default
```

policy-map type

Creates or modifies a control-plane or qos policy-map.

Syntax

[no] policy-map type {control-plane *<policy-map name>***|qos** *<policy-map name>***|queing}**

where:

Parameter	Description
control-plane	Control Plane Protection (CoPP) policy map type.
qos	Quality of Service (QoS) policy map type.
<policy-map name>	Policy map name.
queing	Queing policy map.

Using **no** before the command removes a specified policy map.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set a policy-map:

```
G8272(config)# policy-map type control-plane test
```

port-aggregation load-balance ethernet

Enables or disables Link Aggregation Group (LAG) traffic balancing.

Syntax

[no] port-aggregation load-balance ethernet [destination-ip| destination-mac|destination-port|source-dest-ip| source-dest-mac|source-dest-port|source-ip|source-mac| source-port] [source-interface]

where:

Parameter	Function
destination-ip	Enables load distribution on the destination IP address.
destination-mac	Enables load distribution on the destination MAC address.
destination-port	Enables load distribution on the destination port number.
source-dest-ip	Enables load distribution on both the destination and source IP addresses.
source-dest-mac	Enables load distribution on both the destination and source MAC addresses.
source-dest-port	Enables load distribution on both the destination and source port numbers.
source-ip	Enables load distribution on the source IP address.
source-mac	Enables load distribution on the source MAC address.
source-port	Enables load distribution on the source port number.
source-interface	Enables load distribution on the source ethernet interface.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables load distribution on the destination MAC address and source ethernet interface:

```
G8272(config)# port-aggregation load-balance ethernet destination-mac
source-interface
```

qos statistics

Enables or disables Quality of Service (QoS) statistics.

Syntax

[**no**] **qos statistics**

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables QoS statistics:

```
G8272(config)# qos statistics
```

resequence

Applies sequence numbers to the access list entries in an access list.

Syntax

`resequence {ip|arp|mac} access-list` *<access-list name> <starting sequence number> <increment value>*

where:

Parameter	Description
`ip`	Configures IP features.
`arp`	Configures ARP features.
`mac`	Configures MAC features.
`access-list` *<access-list name>*	Configures access-list name.
<starting sequence number>	First entry number (a value from 1 to 2147483645).
<increment value>	Increment by which to separate the entry numbers of the statements. By default the entry has a sequence number of 10 more than the last entry in the access list.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to re-sequence numbers to access list:

```
G8272(config)# resequence ip access-list test 34 20
```

script-job

Defines a script job.

Syntax

[no] script-job *<job name>* **{QUOTE_LINE|time {QUOTE_LINE| daily|hourly|monthly|reboot|weekly|yearly}**

where:

Parameter	Description
<job name>	Script file to run.
QUOTE_LINE	Crontab time format. Individual arguments in the string must be separated by one or more space characters.
daily	Runs once a day at midnight.
hourly	Runs once a hour at the beginning of the hour.
monthly	Runs once a month at midnight on the morning of the first day of the month.
reboot	Runs at startup.
weekly	Runs once a week at midnight of Sunday morning of the first day of the month.
yearly	Runs once a year at midnight of the morning of January 1st.

Using **no** before the command removes a running script.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to define a script job:

```
G8272(config)# script-job test.py time daily
```

no script

Deletes a script file.

Syntax

`no script {`*<file name>***`|all}`**

where:

Parameter	Description
<file name>	Name of the script file to delete.
`all`	Deletes all script files.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to delete all script files:

```
G8272(config)# no script all
```

no script-log

Deletes a script log file.

Syntax

`no script-log {`*<file name>***`|all}`**

where:

Parameter	Description
<file name>	Name of the script log file to delete.
`all`	Deletes all script log files.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to delete all script log files:

```
G8272(config)# no script-log all
```

snmp-server community

Configures the community table entry. The configured entry is stored in the community table list in the SNMP engine. This table is used to configure community strings in the Local Configuration Datastore (LCD) of SNMP engine.

Syntax

[no] snmp-server community *<name>* **[ro|rw|group** *<word>***|view** *<view name>* **version {v1|v2c} {ro|rw}]**

where:

Parameter	Description
<name>	SNMP community name.
view *<view name>*	View name.
v1	Sets v1 for SNMPv1.
v2c	Sets v2c for SNMPv2c.
ro	Read-only access with this community string.
rw	Read-write access with this community string.
group *<word>*	Group to which the community belongs.

Using **no** before the command removes the community table entry.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure community tale entries:

```
G8272(config)#snmp-server community test view test2 version v1 ro
```

snmp-server contact

Sets the name of the system contact.

[no] snmp-server contact *<string>*

where:

Parameter	Description
<string>	Name of the contact.

Using **no** before the command removes a SNMP contact.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the name of a contact:

```
G8272(config)# snmp-server contact test
```

snmp-server enable

Enables or disables SNMP engine.

Syntax

```
[no] snmp-server enable {snmp|traps [bfd|link
[linkDown|linkUp]]}
```

where:

Parameter	Description
snmp	Enables SNMP management.
bfd	Enables Bidirectional Forwarding Detection (BFD) traps.
link	Enables the sending of SNMP link up and link down traps for a specific system port.
linkDown	IETF Link state down notification.
linkUp	IETF Link state up notification.

Using **no** before the command turns off the feature.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable SNMP engine:

```
G8272(config)# snmp-server enable snmp
```

snmp-server host

Sets the recipient of a SNMP notification operation.

Syntax

[no] snmp-server host *<ip address>* **{informs|traps|version} version {1|2c|3}** *<user name>* **[udp-port <1-65535>]**

where:

Parameter	Description
<ip address>	IPv4 or IPv6 address of SNMP notification host.
informs	Sends inform messages to this host.
traps	Sends traps messages to this host.
version	SNMP version to use for notification messages.
1	Sets v1 for SNMPv1.
2c	Sets v2c for SNMPv2c.
3	Sets v3 for SNMPv3.
<user name>	SNMP community string or SNMPv3 user name.
udp-port *<port number>*	The UDP port number of the notification host (a number from 1 to 65535).

Using **no** before the command removes a specified host.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set a SNMP host:

```
G8272(config)# snmp-server host 255.0.0.0 traps version v1 test
```

Restrictions

The maximum number of SNMP hosts is 16.

snmp-server location

Sets the name of the system location.

Syntax

[no] snmp-server location *<string>*

where:

Parameter	Description
<string>	Name of the system location.

Using **no** before the command removes a specified name.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set a SNMP server location:

```
G8272(config)# snmp-server location test
```

snmp-server tcp-session

Sets SNMP TCP session authentication.

Syntax

[no] snmp-server tcp-session

where:

Parameter	Description
<job name>	Script file to run.

Using **no** before the command turns off the feature.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable TCP session:

```
G8272(config)# snmp-server tcp-session
```

snmp-server user

Sets a user security model (USM) entry for an authorized user.

Syntax

[no] snmp-server user *<name>* **[auth{md5|sha} {***<password>* **priv {des|aes}** *<private password>***}]**

[no] snmp-server user *<name>* **[network-admin [auth{md5|sha} {***<password>* **priv {des|aes} <***private password>***}]]**

[no] snmp-server user *<name>* **[network-operator [auth{md5|sha} {***<password>* **priv {des|aes}** *<private password>***}]]**

where:

Parameter	Description
<name>	User name.
auth	Sets the authentication protocol.
md5|sha	Available authentication protocols: o md5 o sha
<password>	Password.
priv	Type of privacy protocol.
des|aes *<private password>*	Available privacy protocols: o des (CBC-DES Symmetric Encryption Protocol) o aes (AES-128 Advanced Encryption Standard Protocol)

Using **no** before the command disable a user.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set a user:

```
G8272(config)# snmp-server user test
```

snmp-server view

Sets a SNMP view.

Syntax

[no] snmp-server view *<name>* **OID-TREE {excluded|included}**

where:

Parameter	Description
<name>	Name of the view.
excluded	Specify view to exclude.
included	Specify view to include.

Using **no** before the command removes a specified view.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set a SNMP view:

```
G8272(config)# snmp-server view test OID-TREE excluded
```

spanning-tree mode

Enables or disables Multiple Spanning Tree mode (mst).

Syntax

spanning-tree mode {disable|mst}

no spanning-tree mode

where:

Parameter	Description
disable	Disables MST mode.
mst	Enables MST mode.

Using **no** before the command restores the default settings.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable MST mode:

```
G8272(config)# spanning tree-mode mst
```

Restrictions

When you select the disable option, the switch globally turns Spanning Tree off. All ports are placed into forwarding state. Any BPDU's received are flooded.

spanning-tree pathcost

Calculates default port path cost.

Syntax

```
[no] spanning-tree pathcost method {long|short}
```

where:

Parameter	Description
long	32 bit based values for default port path costs.
short	16 bit based values for default port path costs.

Using **no** before the command turns off this feature.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to calculate default path cost:

```
G8272(config)# spanning-tree pathcost method long
```

Restrictions

When you are using MST spanning tree mode, the switch uses only the long method for calculating path cost.

spanning-tree mst <range> priority

Configures the bridge priority for the specified MSTP instance. The bridge priority parameter controls which bridge on the network is the MSTP root bridge. To make this switch the root bridge, configure the bridge priority lower than all other switches and bridges on your network. The lower the value, the higher the bridge priority.

Syntax

[no] spanning-tree mst *<range>* **priority** *<number>*

where:

Parameter	Description
<range>	MST instance range (ranges from 0 to 64).
priority *<number>*	Bridge priority number. The range is 0 to 61440, in steps of 4096 (0, 4096, 8192, 12288 ...). The default value is 32768.

Using **no** before the command removes a previous configured instance bridge priority.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set an instance bridge priority:

```
G8272(config)# spanning-tree mst 7-9 priority 8192
```

spanning-tree mst forward-time

Configures the forward delay time in seconds. The forward delay parameter specifies the amount of time that a bridge port has to wait before it changes from the discarding and learning states to the forwarding state.

Syntax

[no] spanning-tree mst forward-time *<value>*

where:

Parameter	Description
<value>	Number of seconds for the forward delay timer (a number from 4 to 30). The default value is 15.

Using **no** before the command restores the default setting.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure forward time:

```
G8272(config)# spanning-tree mst forward-time 30
```

spanning-tree mst hello-time

Configures the port Hello time.The Hello time specifies how often the bridge transmits a configuration bridge protocol data unit (BPDU). Any bridge that is not the root bridge uses the root bridge Hello value.

Syntax

`spanning-tree mst hello-time` *<value>*

`no spanning-tree mst hello-time`

where:

Parameter	Description
<value>	Number of seconds for the hello BPDU time interval (a number from 1 to 10). The default value is 2.

Using **no** before the command restores the default setting.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure hello time interval:

```
G8272(config)# spanning-tree mst hello-time 10
```

spanning-tree mst max-age

Configures the maximum age interval in seconds. The maximum age parameter specifies the maximum time the bridge waits without receiving a configuration bridge protocol data unit before it reconfigures the MSTP network.

Syntax

spanning-tree mst max-age *<value>*

no spanning-tree mst max-age

where:

Parameter	Description
<value>	Number of seconds for the hello BPDU time interval (a number from 6 to 40). The default value is 20.

Using **no** before the command restores the default setting.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the maximum age interval:

```
G8272(config)# spanning-tree mst max-age 30
```

spanning-tree mst max-hops

Configures the maximum number of bridge hops a packet may traverse before it is dropped.

Syntax

[no] spanning-tree mst max-hops *<value>*

where:

Parameter	Description
<value>	Maximum number of hops the BPDU is valid for all MST instance (a number from 1 to 255). The default value is 20.

Using **no** before the command restores the default setting.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the maximum number of bridge hops:

```
G8272(config)# spanning-tree mst max-hops 100
```

ssh key

Configures SSH keys.

Syntax

[no] ssh key {dsa|rsa [length *<value>***]} [force]**

where:

Parameter	Description
dsa	Generates SSH server DSA keys.
rsa	Generates SSH server RSA keys.
length *<value>*	Force key generation length (a number from 768 to 2048).
force	Forces key generation.

Using **no** before the command removes a SSH key.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure a SSH key:

```
G8272(config)#ssh key dsa force
```

ssh login-attempts

Sets the number of failed login attempts before disconnecting the user.

Syntax

[no] ssh login-attempts *<retries>*

where:

Parameter	Description
<retries>	Number of retries (a value from 1 to 10). The default value is 3.

Using **no** before the command removes restores the default setting.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure a maximum number of login attempts:

```
G8272(config)# ssh login-attempts 5
```

ssh server

Sets the SSH server port number.

Syntax

`ssh server port` *<port number>*

where:

Parameter	Description
<port number>	SSH server port number (a value from 1 to 65535).

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following show how to configure SSH port number:

```
G8272(config)# ssh server port 10
```

system cores

Enables users to retrieve the core dump files from the switch.

Syntax

[no] system cores *<tftp url>* **vrf [management|default]**

where:

Parameter	Description
<tftp url>	URL link location (tftp:[//server[:port]][/path]).

Using **no** before the command turns off this feature.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable retrieving the core dumb files:

```
G8272(config)# system cores tftp://1.1.1.1/ vrf management
```

system service-led operational-enable

Enables (on) or disables (off) the Service Required LED to glow in steady blue to locate the device.

Syntax

```
[no] system service-led operational-enable
```

Using **no** before the command turns off the feature.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable service led:

```
G8272(config)# system service-led operational-enable
```

tacacs-server host

Specifies a TACACS+ host.

Syntax

tacacs-server host {<*ipv4 address*>**|**<*ipv6 address*>**} [key [0|7]** <*word*>**] [port** <*server port*>**]**

no tacacs-server host {<*ipv4 address*>**|**<*ipv6 address*>**}**

where:

Parameter	Description
<*ipv4 address*>	IPv4 IP address.
<*ipv6 address*>	IPv6 IP address
key [0|7] <*word*>	TACACS clear(0) or encrypted(7) key.
port <*server port*>	TACACS server port number (a value from 1 to 65535).

Using **no** before the command deletes the specified name or address.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set a TACACS+ host:

```
G8272(config)# tacacs-server host 255.0.0.0 key 7 test
```

Restrictions

User can configure up to 4 TACACS+ host.

tacacs-server key

Specifies a global TACACS+ encryption or decryption key in global configuration mode.

Syntax

tacacs-server key [0|7] *<word>*

no tacacs-server key

where:

Parameter	Description
0	Default clear text password.
7	Default encrypted text password.
<word>	TACACS password name. The password length can be up to a maximum of 63 characters, only lowercase letters and numbers and it must start with a letter.

Using **no** before the command removes previous settings.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set default TACACS key properties:

```
G8272(config)# tacacs-server key 0 test
```

Restrictions

This is a global configuration value for all TACACS+ servers. This value will be overwritten by **tacacs-server host key** command.

telnet

Sets an optional Telnet server port number for cases where the server listens for Telnet sessions on a non-standard port.

Syntax

`telnet server port` *<port number>*

where:

Parameter	Description
<port number>	Telnet port number (a value from 1 to 65535).

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to set an optional telnet connection:

```
G8272(config)# telnet server port 55
```

username

Adds or modifies user with a specified role or password.

Syntax

[no] username *<username>* **[password** *<password>***| role {network-admin|network-operator}]**

no username *<username>*

where:

Parameter	Description
<username>	Name of the user (2 to 28 characters).
password *<password>*	Password of the user (encrypted or not).
role	Role assigned to the user. The default is `network-operator`.

Using **no** before the command deletes the specified user.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to create a new user:

```
G8272(config)# username master network-admin
```

vlag auto-recovery

Sets the duration in seconds of the auto-recovery timer. This timer configures how long after boot-up configuration load, the switch can assume the Primary role from an unresponsive ISL peer and bring up the vLAG ports.

Syntax

[no] vlag auto-recovery *<value>*

where:

Parameter	Description
<value>	Time interval, in seconds (a number from 240 to 3600). The default value is 300.

Using **no** before the command restores the default setting.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command sets the auto-recovery value:

```
G8272(config)# vlag auto-recovery 1000
```

vlag enable

Enables or disables vLAG globally.

Syntax

[no] vlag enable

Using **no** before the command turns off the feature.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following enables vLAG:

```
G8272(config)# vlag enable
```

vlag hlthchk keepalive-attempts

Sets the number of vLAG keep alive attempts.

Syntax

[no] vlag hlthchk keepalive-attempts *<value>*

where:

Parameter	Description
<value>	Number of keepalive attempts made before declaring the peer is down (a number from 1 to 24). The default value is 3.

Using **no** before the command restores the default setting.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the number of vLAG keep alive attempts:

```
G8272(config)# vlag hlthck keepalive-attempts 10
```

vlag hlthchk keepalive-interval

Sets, in seconds, the time between vLAG keep alive attempts.

Syntax

[no] vlag hlthchk keepalive-interval *<value>*

where:

Parameter	Description
<value>	Time interval, in seconds (a number from 2 to 300). The default value is 5.

Using **no** before the command restores the default setting.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the keep alive interval:

```
G8272(config)# vlag hlthchk keepalive-interval 100
```

vlag hlthchk peer-ip

Configures the IP address of the peer switch, used for health checks. Use the management IP address of the peer switch.

Syntax

[no] vlag hlthchk peer-ip *<ip address>*

where:

Parameter	Description
<ip address>	IP address for health check connection.

Using **no** before the command removes previous settings.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the IP address for health check connection:

```
G8272(config)# vlag hlthchk peer-ip 1.1.1.1
```

vlag hlthchk retry-interval

Sets, in seconds, the vLAG health check connect retry interval.

Syntax

[no] vlag hlthchk retry-interval *<value>*

where:

Parameter	Description
<value>	Time interval, in seconds (a number from 1 to 300). The default value is 30.

Using **no** before the command restores the default setting.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure retry interval:

```
G8272(config)# vlag hlthchk retry-interval 100
```

vlag instance

Configures vLAG instance parameters.

Syntax

[no] vlag instance *<vLAG number>* {**enable|port-aggregation** *<LAG number>*}

where:

Parameter	Description
<vLAG number>	vLAG instance number (a number from 1 to 64).
enable	Enables vLAG instance.
port-aggregation	Attaches vLAG instance to a LAG.
<LAG number>	LAG identifier (a number from 1 to 4096).

Using **no** before the command turns off this feature or removes previous settings.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable vLAG instance:

```
G8272(config)# vlag instance 1 port-aggregation 1000
G8272(config)# vlag instance 1 enable
```

vlag isl

Enables vLAG Inter-Switch Link (ISL) on the selected LAG.

Syntax

[no] vlag isl port-aggregation *<LAG number>*

where:

Parameter	Description
<LAG number>	LAG identifier (a number from 1 to 4096).

Using **no** before the command removes previous settings.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable vLAG ISL:

```
G8272(config)# vlag isl port-aggregation 100
```

vlag mac-address-table refresh

Enables or disables the periodic check of the aging status of synchronized Forwarding Database (FDB) entries. When a MAC address is marked for removal from the FDB table, the entry is reinstalled instead.

By default, the feature is enabled.

Syntax

[no] vlag mac-address-table refresh

Using **no** before the command turns off the feature.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable periodic check:

```
G8272(config)# vlag mac-address-table refresh
```

Restrictions

- This option takes effect only if the aging value for FDB entries is set to 40 seconds or more.

vlag startup-delay

Sets the vLAG startup delay interval.

Syntax

[no] vlag startup-delay *<delay value>*

where:

Parameter	Description
<delay value>	Delay time, in seconds (a number from 0 to 3600). The default value is 120.

Using **no** before the command restores the default setting.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets vLAG startup delay interval:

```
G8272(config)# vlag startup-delay 1000
```

vlag tier-id

Sets the vLAG tier ID.

Syntax

[no] vlag tier-id *<value>*

where:

Parameter	Description
<value>	vLAG tier-id value (a number from 1 to 512). The default value is 0.

Using **no** before the command restores the default setting.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure a vLAG tier-id value:

```
G8272(config)# vlag tier-id 100
```

vlag priority

Configures the vLAG priority for the switch, used for election of Primary and Secondary vLAG switches. The switch with lower priority is elected to the role of Primary vLAG switch.

Syntax

[no] vlag priority *<priority value>*

where:

Parameter	Description
<priority value>	vLAG priority value (a number from 0 to 65535). The default value is 0.

Using **no** before the command restores the default setting.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure vLAG priority:

```
G8272(config)# vlag priority 50
```

vlan access-map

Configures VLAN access-maps.

Syntax

[no] vlan access-map *<name>*

where:

Parameter	Description
<name>	Name of the access-map.

Using **no** before the command turns off the feature.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure VLAN access-map named `test`:

```
G8272(config)# vlan access-map test
```

vlan dot1q tag native

Disables or enables VLAN tag persistence. When disabled, the VLAN tag is removed at egress from packets whose VLAN tag matches the port PVID/Native-vlan.

The default setting is disabled.

Syntax

[no] vlan dot1q tag native [egress-only]

where:

Parameter	Description
egress-only	Enables tag native VLAN only on egress-side.

Using **no** before the command disables this feature.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable VLAN tag persistence:

```
G8272(config)# vlan dot1q tag native
```

vlan filter

Configures VLAN access map filtering.

Syntax

[no] vlan *<name>* **vlan-list** *<vlan id or range>*

where:

Parameter	Description
<name>	Name of the VLAN access-map.
<vlan id or range>	VLAN ID or range.

Using **no** before the command turns off this feature.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure VLAN access-map filtering:

```
G8272(config)# vlan test vlan-list 2
```

vrf context

Virtual routing and forwarding (VRF) allows multiple instances of a routing table to exist in a router and work simultaneously.

Syntax

```
vrf context {default|management}
```

where:

Parameter	Description
default	Default VRF. For data interfaces, a default VRF with ID 0 is created and associated with default FIB. All data IP interfaces are attached to default VRF.
management	Management VRF. By default, a VRF with ID1 is created.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable management VRF:

```
G8272(config)# vrf context management
G8272(config-vrf)#
```

Chapter 5. Interface Mode Commands

These commands enter you into an advanced configuration mode for the selected interface type.

interface

Enter an Interface Mode.

Syntax

`interface` *<interface name or type> <arguments>*

where:

Parameter	Function
<interface name>	Enters Interface Configuration mode for the named ethernet interface.
`ethernet` *<slot/chassis number>*	Enters Ethernet Interface Configuration mode for the specified ethernet interface with the slot and chassis separated by a slash (“**/**”) character.
`loopback` *<interface number>*	Enters Loopback Interface Configuration mode for the specified loopback interface (an integer from 0-7).
`mgmt` *<interface number>*	Enters Management Interface Configuration mode for the specified management interface (0)
`port-aggregation` *<LAG number>*	Enters LAG Configuration mode for the specified LAG (an integer from 1-4096).
`vlan` *<vlan number>*	Enters VLAN Interface Configuration mode for the specified VLAN (an integer from 1-3999).

Mode

Global Command Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example enters interface command mode for LAG 4001:

```
G8272(config)# interface port-aggregation 4001
```

Restrictions

If you use `interface` *<name>*, the command will not work unless the interface with that name exists.

Related Commands

Command	Description
configure device	Enter Configuration Mode.

bfd authentication keyed-md5

Configures Bidirectional Forwarding Detection (BFD) with keyed message digest authentication.

Syntax

`[no] bfd authentication keyed-md5` *<parameter> <argument>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID (a number from 0-255).
`key` *<string>*	The authentication key string.

Using **no** before the command turns off keyed message digest authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command configures BFD for a keyed MD5 keychain called `my-keychain`:

```
G8272(config-if)# bfd authentication keyed-md5 key-chain my-keychain
```

The following command configures BFD for keyed MD5 authentication with the key ID `120` and the key `my-kstring`:

```
G8272(config-if)# bfd authentication keyed-md5 key-id 120 key my-kstring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd authentication keyed-sha1

Configures Bidirectional Forwarding Detection (BFD) with keyed Secure Hash Algorithm authentication.

Syntax

`[no] bfd authentication keyed-sha1` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command turns off keyed Secure Hash Algorithm authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures BFD for a keyed SHA1 keychain called `mykeychain`:

```
G8272(config-if)# bfd authentication keyed-sha1 key-chain mykeychain
```

The following command configures BFD for keyed SHA1 with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd authentication keyed-sha1 key-id 120 key mystring
```

bfd authentication meticulous-keyed-md5

Configures Bidirectional Forwarding Detection (BFD) with meticulous keyed Message Digest authentication.

Syntax

`[no] bfd authentication meticulous-keyed-md5` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command turns off meticulous keyed Message Digest authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures BFD for a meticulous keyed MD5 keychain called `mykeychain`:

```
G8272(config-if)# bfd authentication meticulous-keyed-md5 key-chain
mykeychain
```

The following command configures BFD for meticulous keyed MD5 with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd authentication meticulous-keyed-md5 key-id 120 key
mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd authentication meticulous-keyed-sha1

Configures Bidirectional Forwarding Detection (BFD) with meticulous keyed Secure Hash Algorithm authentication.

Syntax

`[no] bfd authentication meticulous-keyed-sha1` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command turns off meticulous keyed Secure Hash Algorithm authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures BFD for a meticulous keyed SHA1 keychain called `mykeychain`:

```
G8272(config-if)# bfd authentication meticulous-keyed-sha1 key-chain
mykeychain
```

The following command configures BFD for meticulous keyed SHA1 with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd authentication meticulous-keyed-sha1 key-id 120 key
mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd authentication simple

Configures Bidirectional Forwarding Detection (BFD) with simple password authentication.

Syntax

`bfd authentication simple` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command turns off simple password authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures BFD for a simple keychain called `mykeychain`:

```
G8272(config-if)# bfd authentication simple key-chain mykeychain
```

The following command configures BFD for simple authentication with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd authentication simple key-id 120 key mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd echo

Puts the BFD session into echo mode.

Syntax

[no] bfd echo

Using **no** before the command turns off echo mode.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command puts the BFD session into echo mode:

```
G8272(config-if)# bfd echo
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd interval

Sets the BFD transmit interval.

Syntax

[no] bfd interval *<interval>* **minrx** *<receive interval>* **multiplier** *<int>*

where:

Parameter	Description
<interval>	The transmit interval; 50-999 milliseconds.
minrx *<receive interval>*	The minimum receive interval; 50-999 milliseconds.
multiplier *<int>*	The Hello multiplier value; an integer from 3-50.

Using **no** before the command restores the default settings.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the BFD transmit interval to 60 milliseconds with a minimum receive interval of 60 milliseconds and a Hello multiplier of 10:

```
G8272(config-if)# bfd interval 60 minrx 60 multiplier 10
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv4 authentication keyed-md5

Configures IPv4 Bidirectional Forwarding Detection (BFD) with keyed message digest authentication.

Syntax

`[no] bfd ipv4 authentication keyed-md5` *<parameter> <argument>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv4 keyed message digest authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command configures IPv4 BFD for a keyed MD5 keychain called `my-keychain`:

```
G8272(config-if)# bfd ipv4 authentication keyed-md5 key-chain my-keychain
```

The following command configures IPv4 BFD for keyed MD5 authentication with the key ID `120` and the key `keystring`:

```
G8272(config-if)# bfd ipv4 authentication keyed-md5 key-id 120 key
keystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv4 authentication keyed-sha1

Configures IPv4 Bidirectional Forwarding Detection (BFD) with keyed Secure Hash Algorithm authentication.

Syntax

`[no] bfd ipv4 authentication keyed-sha1` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv4 keyed Secure Hash Algorithm authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures IPv4 BFD for a keyed SHA1 keychain called `mykeychain`:

```
G8272(config-if)# bfd ipv4 authentication keyed-sha1 key-chain mykeychain
```

The following command configures IPv4 BFD for keyed SHA1 with the key ID `120` and the key `mystring:`

```
G8272(config-if)# bfd ipv4 authentication keyed-sha1 key-id 120 key
mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv4 authentication meticulous-keyed-md5

Configures IPv4 Bidirectional Forwarding Detection (BFD) with meticulous keyed Message Digest authentication.

Syntax

`[no] bfd ipv4 authentication meticulous-keyed-md5` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv4 meticulous keyed Message Digest authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures IPv4 BFD for a meticulous keyed MD5 keychain called `mykeychain`:

```
G8272(config-if)# bfd ipv4 authentication meticulous-keyed-md5 key-chain
mykeychain
```

The following command configures IPv4 BFD for meticulous keyed MD5 with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd ipv4 authentication meticulous-keyed-md5 key-id 120
key mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv4 authentication meticulous-keyed-sha1

Configures IPv4 Bidirectional Forwarding Detection (BFD) with meticulous keyed Secure Hash Algorithm authentication.

Syntax

`[no] bfd ipv4 authentication meticulous-keyed-sha1` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv4 meticulous keyed Secure Hash Algorithm authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures IPv4 BFD for a meticulous keyed SHA1 keychain called `mykeychain:`

```
G8272(config-if)# bfd ipv4 authentication meticulous-keyed-sha1 key-chain
mykeychain
```

The following command configures IPv4 BFD for meticulous keyed SHA1 with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd ipv4 authentication meticulous-keyed-sha1 key-id
120 key mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv4 authentication simple

Configures IPv4 Bidirectional Forwarding Detection (BFD) with simple password authentication.

Syntax

`bfd ipv4 authentication simple` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv4 simple password authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command configures IPv4 BFD for a simple keychain called `mykeychain`:

```
G8272(config-if)# bfd ipv4 authentication simple key-chain mykeychain
```

The following command configures IPv4 BFD for simple authentication with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd ipv4 authentication simple key-id 120 key mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv4 interval

Sets the IPv4 BFD transmit interval.

Syntax

[no] bfd ipv4 interval *<interval>* **minrx** *<receive interval>* **multiplier** *<int>*

where:

Parameter	Description
<interval>	The transmit interval; 50-999 milliseconds.
`minrx` *<receive interval>*	The minimum receive interval; 50-999 milliseconds.
`multiplier` *<int>*	The Hello multiplier value; an integer from 3-50.

Using **no** before the command resets the values to 0.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the IPv4 BFD transmit interval to 60 milliseconds with a minimum receive interval of 60 milliseconds and a Hello multiplier of 10:

```
G8272(config-if)# bfd ipv4 interval 60 minrx 60 multiplier 10
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv6 authentication keyed-md5

Configures IPv6 Bidirectional Forwarding Detection (BFD) with keyed message digest authentication.

Syntax

`[no] bfd ipv6 authentication keyed-md5` *<parameter> <argument>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv6 keyed message digest authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command configures IPv6 BFD for a keyed MD5 keychain called `my-keychain`:

```
G8272(config-if)# bfd ipv6 authentication keyed-md5 key-chain my-keychain
```

The following command configures IPv6 BFD for keyed MD5 authentication with the key ID `120` and the key `keystring`:

```
G8272(config-if)# bfd ipv6 authentication keyed-md5 key-id 120 key
keystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv6 authentication keyed-sha1

Configures IPv6 Bidirectional Forwarding Detection (BFD) with keyed Secure Hash Algorithm authentication.

Syntax

`[no] bfd ipv6 authentication keyed-sha1` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv6 keyed Secure Hash Algorithm authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures IPv6 BFD for a keyed SHA1 keychain called `mykeychain`:

```
G8272(config-if)# bfd ipv6 authentication keyed-sha1 key-chain mykeychain
```

The following command configures IPv6 BFD for keyed SHA1 with the key ID `120` and the key `mystring:`

```
G8272(config-if)# bfd ipv6 authentication keyed-sha1 key-id 120 key
mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv6 authentication meticulous-keyed-md5

Configures IPv6 Bidirectional Forwarding Detection (BFD) with meticulous keyed Message Digest authentication.

Syntax

`[no] bfd ipv6 authentication meticulous-keyed-md5` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv6 meticulous keyed Message Digest authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures IPv6 BFD for a meticulous keyed MD5 keychain called `mykeychain`:

```
G8272(config-if)# bfd ipv6 authentication meticulous-keyed-md5 key-chain
mykeychain
```

The following command configures IPv6 BFD for meticulous keyed MD5 with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd ipv6 authentication meticulous-keyed-md5 key-id 120
key mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv6 authentication meticulous-keyed-sha1

Configures IPv6 Bidirectional Forwarding Detection (BFD) with meticulous keyed Secure Hash Algorithm authentication.

Syntax

`[no] bfd ipv6 authentication meticulous-keyed-sha1` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv6 meticulous keyed Secure Hash Algorithm authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures IPv6 BFD for a meticulous keyed SHA1 keychain called `mykeychain`:

```
G8272(config-if)# bfd ipv6 authentication meticulous-keyed-sha1 key-chain
mykeychain
```

The following command configures IPv6 BFD for meticulous keyed SHA1 with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd ipv6 authentication meticulous-keyed-sha1 key-id
120 key mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv6 authentication simple

Configures IPv6 Bidirectional Forwarding Detection (BFD) with simple password authentication.

Syntax

`bfd ipv6 authentication simple` *<parameter> <arguments>*

where:

Parameter	Description
`key-chain` *<name>*	The name of the authentication keychain.
`key-id` *<key ID>*	The authentication key ID; a number from 0-255.
`key` *<string>*	The authentication key string.

Using **no** before the command disables IPv6 simple password authentication.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command configures IPv6 BFD for a simple keychain called `mykeychain`:

```
G8272(config-if)# bfd ipv6 authentication simple key-chain mykeychain
```

The following command configures IPv6 BFD for simple authentication with the key ID `120` and the key `mystring`:

```
G8272(config-if)# bfd ipv6 authentication simple key-id 120 key mystring
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd ipv6 interval

Sets the IPv6 BFD transmit interval.

Syntax

[no] bfd ipv6 interval *<interval>* **minrx** *<receive interval>* **multiplier** *<int>*

where:

Parameter	Description
<interval>	The transmit interval; 50-999 milliseconds.
`minrx` *<receive interval>*	The minimum receive interval; 50-999 milliseconds.
`multiplier` *<int>*	The Hello multiplier value; an integer from 3-50.

Using **no** before the command resets the values to 0.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the IPv6 BFD transmit interval to `60` milliseconds, the minimum receive interval to `60` milliseconds, and the Hello multiplier value to `10`:

```
G8272(config-if)# bfd ipv6 interval 60 minrx 60 multiplier 10
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bfd neighbor

Configures the BFD neighbor.

Syntax

[no] bfd neighbor src-ip *<IP address>* **dest-ip** *<IP address>* **[multihop] [non-persistent] [admin-down]**

where:

Parameter	Description
<IP address>	An IPv4 or IPv6 address.
multi-hop	Multi-hop session.
non-persistent	Non-persistent sessions will be removed from the running configuration after they go down.
admin-down	Administrative shutdown of the session.

Using **no** before the command removes the neighbor.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the a BFD neighbor with the source IP address `10.32.4.55`, the destination IP address `10.32.4.56`, and designates it as a multi-hop, non-persistent session where the session admin is down:

```
G8272(config-if)# bfd neighbor src-ip 10.32.4.55 dest-ip 10.32.4.56
multihop non-persistent admin-down
```

Restrictions

The optional arguments `multihop`, `non-persistent`, and `admin-down` can be applied on the same line *only* if they are applied in the following order:

1. `multi-hop`
2. `non-persistent`
3. `admin`-down

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

aggregation-group

Assigns the interface to a Link Aggregation Group (LAG).

Syntax

aggregation-group *<LAG number>* **mode** {**active**|**on**|**passive**}

no aggregation-group

where:

Parameter	Description
<LAG number>	The LAG (an integer from 1-4096).
mode	The aggregation mode; one of: • **active** • **on** • **passive**

Using **no** before the command with no other arguments removes the interface from the LAG.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command assigns the current interface to LAG 1:

```
G8272(config-if)# aggregation-group 1 mode on
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

description

Sets the interface description.

Syntax

[no] description *<description>*

where:

Parameter	Description
<description>	Interface description (string up to 80 characters long).

Using **no** before the command with no other arguments removes the description.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the interface description to "`my interface`":

```
G8272(config-if)# description my interface
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

duplex

Sets the duplex mode for the interface.

The default duplex mode is auto-negotiate.

Syntax

[no] duplex {**auto**|**full**|**half**}

where:

Parameter	Description
auto	Auto-negotiate.
full	Full-duplex.
half	Half-duplex.

Using **no** before the command resets the duplex mode to the default setting.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following sets the duplex mode to auto-negotiate:

```
G8272(config-if)# duplex auto
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

flowcontrol

Turns IEEE 802.3x flow control on or off.

Syntax

[no] flowcontrol {**receive**|**send**} {**on**|**off**}

where:

Parameter	Description
receive on|**off**	Set flow control on receive.
send on|**off**	Set flow control on send.

Using **no** before the command with no other arguments turns off flow control.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example turns on flow control on send.

```
G8272(config-if)# flowcontrol send on
```

Restrictions

You cannot set flow control for both send and receive on the same line.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip access-group

Specifies access control for packets.

Syntax

[no] ip access-group *<group name>* {**in**|**out**}

where:

Parameter	Description
group name	The name of the access group.
in	Inbound packets.
out	Outbound packets.

Using **no** before the command with no other arguments turns off access control for the specified direction.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets access control for inbound packets for the group MyAccessGroup.

```
G8272(config-if)# ip access-group MyAccessGroup in
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip address

Sets the IP address for an interface.

Syntax

[no] ip address {*<IPv4 address>* *<IPv4 mask>*|*<IPv4 address>*/*<mask>*} **[secondary]**

where:

Parameter	Description
IPv4 address	IPv4 address (*n.n.n.n*).
IPv4 mask	IPv4 address/mask(n.n.n.n/m).
mask	Mask number (maximum value of 32).
secondary	Set this as a secondary IP address for the interface.

Using **no** before the command with no other arguments removes the IP address from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets 10.2.4.3 with a bitmask of 255.255.255.0 as the primary IP address for the interface:

```
G8272(config-if)# ip address 10.2.4.3 255.255.255.0
```

The following example sets 10.2.4.33 with a mask of 22 as a secondary IP address for the interface:

```
G8272(config-if)# ip address 10.2.4.33/22 secondary
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip address dhcp

Sets the interface to use Dynamic Host Configuration Protocol (DHCP).

Syntax

[no] ip address dhcp

Using **no** before the command unsets DHCP from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the interface to use DHCP:

```
G8272(config-if)# ip address dhcp
```

Restrictions

DHCP client service can not be enabled or disabled on a bridge-port.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip dhcp client

Sets the interface Dynamic Host Configuration Protocol (DHCP) client settings.

Syntax

[no] ip dhcp client {class-id *<vendor class identifier>***|request {host-name|log-server|ntp-server}}**

where:

Parameter	Description
client ID name	The vendor class identifier name.
request	Sets DHCP request options.
host-name	Host name request.
log-server	Log server request.
ntp-server	Ntp server request.

Using **no** before the command with no other arguments removes the DHCP previous settings.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the DHCP client class identifier to R2D2:

```
G8272(config-if)# ip dhcp client class-id R2D2
```

Restrictions

DHCP client service cannot be enabled or disabled on a bridge-port.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip dhcp relay

Sets the interface Dynamic Host Configuration Protocol (DHCP) relay IP address.

Syntax

[no] ip dhcp relay address *<IPv4 address>*

where:

Parameter	Description
IPv4 address	IPv4 address (*n.n.n.n*).

Using **no** before the command removes the specified DHCP relay address from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the DHCP relay address to 10.3.23.3:

```
G8272(config-if)# ip dhcp relay address 10.3.23.3
```

Restrictions

DHCP relay addresses cannot be enabled or disabled on a bridge-port.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf

Sets the interface Open Shortest Path First (OSPF) LSA outbound filter for the specified address.

Syntax

ip ospf *<IPv4 address>* **database-filter all out**

no ip ospf *<IPv4 address>* **database-filter all**

where:

Parameter	Description
IPv4 address	IPv4 address (*n.n.n.n*).
database-filter	Filter OSPF link-state advertisements (LSAs) during synchronization and flooding.
all	Filter all OSPF link-state advertisements (LSAs).
out	Filter all outbound OSPF link-state advertisements (LSAs).

Using **no** before the command with all but the **out** argument removes the OSPF filter from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF outbound LSA filter for IP address 10.2.3.22:

```
G8272(config-if)# ip ospf 10.2.3.22 database-filter all out
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf authentication

Sets the interface Open Shortest Path First (OSPF) authentication scheme.

Syntax

[no] ip ospf authentication {**message-digest**|**null**}

where:

Parameter	Description
message-digest	Use message-digest authentication.
null	Use no authentication.

Using **no** before the command with no argument removes OSPF authentication from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets OSPF message-digest authentication:

```
G8272(config-if)# ip ospf authentication message-digest
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf authentication-key

Sets the interface Open Shortest Path First (OSPF) authentication key.

Syntax

[no] ip ospf authentication-key [0] *<OSPF password>*

where:

Parameter	Description
0	Do not encrypt the authentication key.
OSPF password	The authentication key; a text string.

Using **no** before the command with no argument removes the OSPF authentication key from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF authentication key to Authkey and stores it in encrypted format:

```
G8272(config-if)# ip ospf authentication-key Authkey
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf bfd

Enables or disables Open Shortest Path First (OSPF) Bidirectional Forwarding Detection (BFD) for this interface.

Syntax

[no] ip ospf bfd [disable]

where:

Parameter	Description
disable	Disables Bidirectional Forwarding Detection for this interface.

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example enables OSPF Bidirectional Forwarding Detection:

```
G8272(config-if)# ip ospf bfd
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf cost

Sets the Open Shortest Path First (OSPF) cost for this interface.

Syntax

[no] ip ospf cost *<cost>*

where:

Parameter	Description
<cost>	The OSPF cost; an integer from 1-65535.

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF cost to 333:

```
G8272(config-if)# ip ospf cost 333
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf database-filter

Configures the local router to suppress all LSAs going out this interface during synchronization and flooding.

Syntax

ip ospf database-filter all out

no ip ospf database-filter all

where:

Parameter	Description
database-filter	Filter OSPF link-state advertisements (LSAs) during synchronization and flooding.
all	Filter all OSPF link-state advertisements (LSAs).
out	Filter all outbound OSPF link-state advertisements (LSAs).

Using **no** before the command with all but the **out** argument removes the OSPF filter from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example enables the OSPF outbound LSA filter:

```
G8272(config-if)# ip ospf database-filter all out
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf dead-interval

Sets the interface Open Shortest Path First (OSPF) interval in seconds after which a neighbor is declared "dead."

Syntax

[no] ip ospf dead interval *<seconds>*

where:

Parameter	Description
seconds	Timeout value in seconds; an integer from 1-65535.

Using **no** before the command with all but the last argument removes the OSPF dead-interval timeout from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF dead-interval timeout to 600 seconds (10 minutes):

```
G8272(config-if)# ip ospf dead-interval 600
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf hello-interval

Sets the time between transmission of "hello" packets in seconds for Open Shortest Path First (OSPF) for the interface.

Syntax

[no] ip ospf hello interval *<seconds>*

where:

Parameter	Description
seconds	Timeout value in seconds; an integer from 1-65535.

Using **no** before the command with all but the last argument removes the OSPF hello transmission interval time from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF hello-interval transmission interval to 600 seconds (10 minutes):

```
G8272(config-if)# ip ospf hello-interval 600
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf message-digest-key

Sets the interface Open Shortest Path First (OSPF) message digest authentication key.

Syntax

[no] ip ospf message-digest-key *<key ID>* **[0]** *<OSPF password>*

where:

Parameter	Description
key ID	The message digest key ID; an integer from 1-255.
0	Do not encrypt the authentication key.
OSPF password	The authentication key; a text string.

Using **no** before the command with no argument removes the OSPF message digest key from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF message digest key ID to 33, sets the key to Authkey, and stores it in encrypted format:

```
G8272(config-if)# ip ospf message-digest-key 33 Authkey
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf mtu

Sets the interface Open Shortest Path First (OSPF) Maximum Transmission Unit (MTU) size in bytes.

Syntax

[no] ip ospf mtu *<size>*

where:

Parameter	Description
size	The MTU size, in bytes; an integer from 576-65535.

Using **no** before the command with no argument removes the OSPF MTU from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF MTU to 50000 bytes:

```
G8272(config-if)# ip ospf mtu 50000
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf mtu-ignore

Sets the interface to ignore the Open Shortest Path First (OSPF) Maximum Transmission Unit (MTU) size when dealing with database descriptor (DBD) packets.

Syntax

[no] ip ospf mtu-ignore

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example tells the interface to ignore the OSPF MTU in DBD packets:

```
G8272(config-if)# ip ospf mtu-ignore
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf network

Sets the Open Shortest Path First (OSPF) network type.

Syntax

[no] ip ospf network {**broadcast**|**point-to-point**}

where:

Parameter	Description
broadcast	OSPF broadcast multi-access network.
point-to-point	OSPF point-to-point network.

Using **no** before the command removes the OSPF network type.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF network type to broadcast:

```
G8272(config-if)# ip ospf network broadcast
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf passive-interface

Suppress routing updates on this interface.

Syntax

[no] ip ospf passive-interface

Using **no** before the command enables routing updates on this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example suppresses routing updates on this interface:

```
G8272(config-if)# ip ospf passive-interface
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf priority

Sets the Open Shortest Path First (OSPF) router priority used in DR/BDR election process.

Syntax

[no] ip ospf priority *<priority>*

where:

Parameter	Description
priority	OSPF router priority; an integer from 0-255.

Using **no** before the command removes the OSPF priority.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF router priority to 10:

```
G8272(config-if)# ip ospf priority 10
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf retransmit-interval

Sets the Open Shortest Path First (OSPF) time, in seconds, between retransmission of lost link state advertisements.

Syntax

[no] ip ospf retransmit-interval *<retransmit interval>*

where:

Parameter	Description
retransmit interval	Time, in seconds, betwen retransmission of lost link state advertisements; an integer from 1-65535. The default value is 5.

Using **no** before the command removes the retransmisison interval.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF retransmission interval to 10:

```
G8272(config-if)# ip ospf retransmit-interval 10
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf shutdown

Shut down OSPF on this interface.

Syntax

[no] ip ospf shutdown

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example shuts down OSPF on this interface:

```
G8272(config-if)# ip ospf shutdown
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip ospf transmit-delay

Sets the Open Shortest Path First (OSPF) link state transmit delay in seconds.

Syntax

`[no] ip ospf transmit-delay` *<transmit delay>*

where:

Parameter	Description
transmit delay	Time, in seconds, between when the link state changes and the information is transmitted; an integer from 1-3600 (one hour). The default value is `1`

Using **no** before the command removes the link state transmit delay.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the OSPF link state transmit delay to 10:

```
G8272(config-if)# ip ospf transmit-delay 10
```

Restrictions

The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip port

Configures port policies.

Syntax

[no] ip port access-group *<list name>* **in**

where:

Parameter	Description
access-group	Specifies access control for packets.
list name	List of packets.
in	Inbound packets.

Using **no** before the command turns off the feature.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example configures port policies:

```
G8272(config-if)# ip port access-group aaaa in
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip port-unreachable

Enables sending ICMP port-unreachable.

Syntax

```
[no] ip port-unreachable
```

Using **no** before the command turns off the feature.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example enables sending ICMP port-unreachables:

```
G8272(config-if)# ip port-unreachable
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip redirects

Enables sending ICMP redirect messages.

Syntax

```
[no] ip redirects
```

Using **no** before the command turns off the feature.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example enables sending ICMP redirect messages:

```
G8272(config-if)# ip redirects
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip router ospf

Enables a routing process.

Syntax

[no] ip router ospf 0 {area|multi-area} {<*decimal value*>**|**<*IP address*>**}**

where:

Parameter	Description
area	Sets an OSPF area ID.
multi-area	Sets an OSPF multi-area-adjacency.
decimal value	Area ID as a decimal value (a number from 0 to 4294967295).
IP address	Area ID as an IP address.

Using **no** before the command turns off the feature.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets an OSPF routing process:

```
G8272(config-if)# ip router ospf 0 area 500
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ip unreachables

Enables sending ICMP unreachables (others than port-unreachable).

Syntax

[no] ip unreachables

Using **no** before the command turns off the feature.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example enables sending ICMP unreachables:

```
G8272(config-if)# ip unreachable
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 address

Sets the IPv6 address for an interface.

Syntax

[no] ipv6 address {*<IPv6 address>*/*<mask>*} **[anycast] [secondary]**

where:

Parameter	Description
IPv6 address	IPv6 address (*aaaa:bbbb::cccc:dddd*).
mask	Mask.
anycast	Set this as an anycast IP address for the interface.
secondary	Set this as a secondary IP address for the interface.

Using **no** before the command with no other arguments removes the IPv6 address from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets `dead:beef::1010:baba` with a mask of `22` as the primary IPv6 address for the interface:

```
G8272(config-if)# ipv6 address dead:beef::1010:baba/22
```

The following example sets `dead:beef::1010:caca` with a mask of `22` as a secondary IP address for the interface:

```
G8272(config-if)# ipv6 address dead:beef::1010:caca/22 secondary
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 address dhcp

Sets the IPv6 address to use Dynamic Host Configuration Protocol (DHCP).

Syntax

[no] ipv6 address dhcp

Using **no** before the command with no other arguments removes DHCP from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the interface to use DHCP:

```
G8272(config-if)# ipv6 address dhcp
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 dhcp relay

Sets the interface Dynamic Host Configuration Protocol (DHCP) relay IPv6 address.

Syntax

[no] ipv6 dhcp relay address *<IPv6 address>* **[interface {ethernet** *<chassis number>***|vlan** *<vlan interface>***}]**

where:

Parameter	Description
IPv6 address	IPv6 address (*n:n::n:n*).
interface	Sets outgoing interface parameters.
ethernet *<chassis number>*	Ethernet interface number.
vlan *<vlan interface>*	VLAN interface number (a number from 1 to 4094).

Using **no** before the command removes the specified DHCP relay address from this interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example sets the DHCP relay address to `dead:beef::baba:1010`:

```
G8272(config-if)# ipv6 dhcp relay address dead:beef::baba:1010
```

Restrictions

- DHCP relay addresses cannot be enabled or disabled on a bridge-port.
- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 link-local

Sets the IPv6 link local address.

Syntax

[no] ipv6 address link-local *<IPv6 address>*

where:

Parameter	Description
IPv6 address	IPv6 address (*n:n::n:n*).

Using **no** before the command with no other arguments removes the link-local address from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the link-local address to `aaaa:bbbb::dddd:ffff`:

```
G8272(config-if)# ipv6 address link-local aaaa:bbbb::dddd:ffff
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd dad attempts

Sets the IPv6 neighbor discovery Duplicate Address Detection (DAD) attempts.

Syntax

[no] ipv6 nd dad attempts *<DAD attempts>*

where:

Parameter	Description
DAD attempts	Number of DAD attempts available; an integer from 0-600. Default value is 1.

Using **no** before the command restores the default value.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the number of DAD attempts to 3:

```
G8272(config-if)# ipv6 nd attempts 3
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd hop-limit

Sets the IPv6 neighbor discovery hop limit to use in router advertisement (RA) messages when originating IPv6 packets.

Syntax

[no] ipv6 nd hop-limit *<number of hops>*

where:

Parameter	Description
number of hops	Maximum number of hops to use in an RA message; an integer from 0-255. Default value is 64.

Using **no** before the command with no other arguments removes the hop limit from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the hop limit to 30:

```
G8272(config-if)# ipv6 nd hop-limit 30
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd managed-config-flag

In IPv6 neighbor discovery router advertisement (RA) messages, tells the host to use DHCP for address configuration.

Syntax

[no] ipv6 nd managed-config-flag

Using **no** before the command with no other arguments negates the command.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example tells the host to use DHCP for address configuration:

```
G8272(config-if)# ipv6 nd managed-config-flag
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd mtu

Sets the IPv6 neighbor discovery advertised Maximum Transmission Unit (MTU) option.

Syntax

[no] ipv6 nd mtu *<link MTU value>*

where:

Parameter	Description
link MTU value	Maximum transmission unit size, in bytes; an integer from 1280-65535. Default value is 1500.

Using **no** before the command with no other arguments removes the MTU option from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the MTU size to 30000:

```
G8272(config-if)# ipv6 nd mtu 30000
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd other-config-flag

Sets IPv6 neighbor discovery to use DHCP for non-address configuration.

Syntax

[no] ipv6 nd other-config-flag

Using **no** before the command with no other arguments sets the IPv6 neighbor discovery to not use DHCP for non-address configuration on the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets IPv6 neighbor discovery to use DHCP for non-address configuration:

```
G8272(config-if)# ipv6 nd other-config-flag
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd prefix

Sets the interface IPv6 neighbor discovery prefix parameters.

Syntax

[no] ipv6 nd prefix [{*<valid-lifetime>* **| infinite} {***<preferred-lifetime>* **| infinite}] [no-advertise] [no-autoconfig] [no-onlink] [off-link]**

where:

Parameter	Description
IPv6 address	IPv6 address (*n:n::n:n*).
mask	Mask.
default	Set the default prefix parameters.
valid-lifetime	Valid lifetime, in seconds. Default value is 2592000.
preferred-lifetime	Preferred lifetime, in seconds. Default value is 604800.
infinite	Set an indefinite valid or preferred lifetime.
no-advertise	Do not advertise the prefix.
no-autoconfig	Do not use this prefix for autoconfiguration.
no-onlink	Use this prefix for offlink determination.
off-link	Do not use this prefix for onlink determination.

Using **no** before the command with no other arguments removes prefix from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the ND prefix to `dead:beef::caca:baba/38` with a lifetime of `60000` seconds, with no advertising, no autoconfiguration, offlink determination, and no onlink determination:

```
G8272(config-if)# ipv6 nd prefix dead:beef::caca:baba/38 60000 no-onlink
off-link no-autoconfig
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd ra-interval

Sets the interface IPv6 neighbor discovery Route Advertisement interval.

Syntax

[no] ipv6 nd ra-interval *<interval>*

where:

Parameter	Description
interval	The interval, in seconds, between sending RA messages; an integer from 4-1800. Default value is 600.

Using **no** before the command with no other arguments removes the RA interval from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the ND RA interval to 1200 seconds:

```
G8272(config-if)# ipv6 nd ra-interval 1200
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd ra-lifetime

Sets the interface IPv6 neighbor discovery Route Advertisement lifetime of a default router.

Syntax

[no] ipv6 nd ra-lifetime *<lifetime>*

where:

Parameter	Description
lifetime	The lifetime, in seconds, of a default router; an integer from 0-9000. Default value is 1800; a value of 0 means this is not the default router.

Using **no** before the command with no other arguments removes the RA lifetime from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the ND RA lifetime to 3600 seconds:

```
G8272(config-if)# ipv6 nd ra-lifetime 3600
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd reachable-time

Sets the interface IPv6 neighbor discovery advertised time when a node considers a neighbor to be up.

Syntax

[no] ipv6 nd reachable-time *<time>*

where:

Parameter	Description
time	The time, in milliseconds, sent via an RA message that determines when a node considers a neighbor to be up; an integer from 0-3600000. Default value is 0.

Using **no** before the command with no other arguments removes the reachable time from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the ND reachable time to 3600 milliseconds:

```
G8272(config-if)# ipv6 nd reachable-time 3600
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd retrans-timer

Sets the interface IPv6 neighbor discovery advertised retransmission timer.

Syntax

[no] ipv6 nd retrans-timer *<time>*

where:

Parameter	Description
time	The time, in milliseconds, between advertised retransmissions; an integer from 0-4294967295. Default value is 0.

Using **no** before the command with no other arguments removes the advertised retransmission timer from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the ND advertised retransmission timer to 6000 milliseconds:

```
G8272(config-if)# ipv6 nd retrans-timer 6000
```

Restrictions

- IPv6 commands do not work on LAG or ethernet interfaces.
- The “no” version of this command does not work in a nested configuration mode.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 nd suppress-ra

Sets the interface IPv6 neighbor discovery to suppress Router Advertisement messages.

Syntax

[no] ipv6 nd suppress-ra [mtu]

where:

Parameter	Description
mtu	Disables sending the MTU in Router Advertisement messages.

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example disables sending MTU in ND router advertisement messages:

```
G8272(config-if)# ipv6 nd suppress-ra mtu
```

Restrictions

IPv6 commands do not work on LAG or ethernet interfaces.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

ipv6 neighbor

Sets the interface IPv6 neighbor.

Syntax

[no] ipv6 neighbor *<IPv6 address> <MAC address>*

where:

Parameter	Description
IPv6 address	IPv6 address (*n:n::n:n*).
MAC address	MAC address (*NNNN.NNNN.NNNN)*

Using **no** before the command removes the neighbor.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the IPv6 neighbor to dead:beef::caca:baba with a MAC of AAAA.BBBB.CCCC:

```
G8272(config-if)# ipv6 neighbor dead:beef::caca:baba AAAA.BBBB.CCCC
```

Restrictions

- The neighbor must be on the local interface subnet.
- IPv6 commands do not work on LAG or ethernet interfaces.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

lacp port-priority

Sets the interface Link Aggregation Control Protocol (LACP) port priority.

Syntax

[no] lacp port-priority *<priority>*

where:

Parameter	Description
priority	The LACP port priority; an integer from 1-65535.

Using **no** before the command with no arguments removes the LACP port priority.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the LACP port priority to 2:

```
G8272(config-if)# lacp port-priority 2
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

lacp suspend-individual

Sets the interface Link Aggregation Control Protocol (LACP) port into a suspended state instead of an individual state if it does not get the LACP BPDU from the peer ports in the LAG.

Syntax

[no] lacp suspend-individual

Using **no** before the command removes the LACP port suspend-individual flag.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the LACP port suspend-individual flag:

```
G8272(config-if)# lacp suspend-individual
```

Restrictions

- This command will work only for LAGs.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

lacp timeout

Sets the interface Link Aggregation Control Protocol (LACP) timeout.

Syntax

[no] lacp timeout {**long**|**short**}

where:

Parameter	Description
long	Use a 90 second timeout. The default value is **long**.
short	Use a 3 second timeout.

Using **no** before the command with no arguments restores the default LACP timeout.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the LACP timeout to 90 seconds:

```
G8272(config-if)# lacp timeout long
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

lldp receive

Enables Link Layer Discovery Protocol (LLDP) reception on the interface

Syntax

[no] lldp receive

Using **no** before the command disables LLDP reception on interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables LLDP reception on the interface:

```
G8272(config-if)# lldp receive
```

Restrictions

LLDP must be supported on the interface.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

lldp tlv-select

Sets the optional Link Layer Discovery Protocol (LLDP) TLV (type-length-value) to be included in outgoing LLDP messages, along with the mandatory attributes.

Syntax

[no] lldp tlv-select *<TLV type>*

where *TLV type* is one of the following:

Parameter	Description
link-aggregation	Link Aggregation TLV
mac-phy-status	MAC/PHY Configuration/Status TLV
management-address	Management Address TLV (set by default).
max-frame-size	Maximum Frame Size TLV
port-description	Port Description TLV (set by default).
port-protocol-vlan	Port and Protocol VLAN ID TLV
port-vlan	Port VLAN ID TLV (set by default).
power-mdi	Power Via MDI TLV
protocol-identity	Protocol Identity TLV
system-capabilities	System Capabilities TLV (set by default).
system-description	System Description TLV (set by default).
system-name	System Name TLV (set by default).
vid-management	Vid Management TLV
vlan-name	VLAN Name TLV

Using **no** before the command removes the optional LLDP TLV from the outgoing LLDP messages.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the LLDP TLV type to be a port description:

```
G8272(config-if)# lldp tlv-select port-description
```

Restrictions

LLDP must be supported on the interface.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

lldp transmit

Enables Link Layer Discovery Protocol (LLDP) transmission on the interface

Syntax

[no] lldp transmit

Using **no** before the command disables the Link Layer Discovery Protocol (LLDP) transmission on the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables LLDP transmission on the interface:

```
G8272(config-if)# lldp transmit
```

Restrictions

LLDP must be supported on the interface.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

lldp trap-notification

Enables Link Layer Discovery Protocol (LLDP) trap-notification on the interface

Syntax

[no] lldp trap-notification

Using **no** before the command disables trap notification on the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables LLDP trap-notification on the interface:

```
G8272(config-if)# lldp trap-notification
```

Restrictions

LLDP must be supported on the interface.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

load-interval

Sets the interface load-interval delay.

Syntax

[no] load-interval [**counter** <*counter*>**]** <*delay*>

where:

Parameter	Description
counter	Specify a counter for this load interval (optional).
counter	The counter for the load interval; an integer from 1-3.
delay	The load interval delay, in seconds; an integer from 30-300. The default values for each counter are the following: • 1: 30 seconds; • 2: 300 seconds; • 3: not configured.

Using **no** before the command with no *delay* argument removes the load-interval delay.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the load-interval delay for counter 2 to 90 seconds:

```
G8272(config-if)# load-interval counter 2 90
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

mac port access-group

Sets the MAC port Access Group (AG) name.

Syntax

[no] mac port access-group *<name>*

where:

Parameter	Description
name	The name of the MAC access group.

Using **no** before the command removes the MAC port AG name.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the the MAC port AG name to `MyAG`:

```
G8272(config-if)# mac port access-group MyAG
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

mac address

Sets the MAC address for a switch virtual interface (SVI).

Syntax

[no] mac-address *<MAC address>*

where:

Parameter	Description
MAC address	MAC address (*NNNN.NNNN.NNNN)*

Using **no** before the command removes the MAC address.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the the MAC address of the virtual port to `aaaa.bbbb.cccc`:

```
G8272(config-if)# mac-address aaaa.bbbb.cccc
```

Restrictions

This command only works on SVIs.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

mac-learn disable

Disables MAC learning to use the switch as a HUB.

Syntax

[no] mac-learn disable

Using **no** before the command enables MAC learning.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example disables MAC learning:

```
G8272(config-if)# mac-learn disable
```

Restrictions

This command does not work on a VLAN interface.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

microburst-detection enable

Enables microburst detection on the interface.

Syntax

microburst-detection enable threshold *<threshold>*

no microburst-detection enable

where:

Parameter	Description
threshold	The threshold in unit of buffer cell (208 bytes).

Using **no** before the command without a threshold disables microburst-detection.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables microburst detection with a threshold of 200:

```
G8272(config-if)# microburst-detection enable threshold 200
```

Restrictions

The interface must support microburst detection.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

mtu

Sets the Maximum Transmission Unit (MTU) on the interface.

Syntax

[no] mtu *<MTU>*

where:

Parameter	Description
MTU	In bytes, the MTU: • L2 packet: An integer from 64-9216 • L3 IPv4 packet: An integer from 576-9216 • L3 IPv6 packet: An integer from 1280-9216

Using **no** before the command without an argument removes the MTU.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the MTU to 1000:

```
G8272(config-if)# mtu 1000
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

service

Enter Ethernet Virtual Connection (EVC) service configuration mode on the interface. For full information on the subcommands, see Chapter 26, "EVC Service Mode Commands."

Syntax

`service instance` *<Instance ID>* **`evc-id`** *<EVC ID>*

where:

Parameter	Description
Instance ID	The instance ID to map to the EVC
EVC ID	The EVC ID of the SVLAN.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enters EVC service configuration mode with instance ID 1 and EVC ID 1:

```
G8272(config-if)# service instance 1 evc-id 1
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

service-policy copp-system-policy

Attaches the specified Control Plane Policing (CoPP) service policy to the interface.

Syntax

[no] service-policy copp-system-policy class {<*COPP class*>|**all**}

where:

Parameter	Description
COPP class	The COPP class name to attach
all	Attach all COPP classes..

Using **no** before the command detaches the COPP class.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example attaches COPP class `MyClass` to the interface:

```
G8272(config-if)# service-policy copp-system-policy class MyClass
```

The following example attaches all COPP classes to the interface:

```
G8272(config-if)# service-policy copp-system-policy class all
```

Restrictions

This command only works on Ethernet interfaces and not on virtual interfaces.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

service-policy input

Attaches the specified ingress service policy to the interface.

Syntax

[no] service-policy input *<policy name>*

where:

Parameter	Description
policy name	The name of the policy to attach

Using **no** before the command detaches the policy.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example attaches service policy `MyPolicy` to incoming traffic on the interface:

```
G8272(config-if)# service-policy input MyPolicy
```

Restrictions

- This command only works on Ethernet interfaces and not on virtual interfaces.
- The policy map must exist before you can attach it to the interface.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

service-policy output

Attaches the specified egress service policy to the interface.

Syntax

[no] service-policy output *<policy name>*

where:

Parameter	Description
policy name	The name of the policy to attach

Using **no** before the command detaches the policy.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example attaches service policy `MyPolicy` to outgoing traffic on the interface:

```
G8272(config-if)# service-policy output MyPolicy
```

Restrictions

- This command only works on Ethernet interfaces and not on virtual interfaces.
- The policy map must exist before you can attach it to the interface.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

service-policy type qos

Attaches the specified Quality of Service (QoS) service policy to the interface in the specified direction.

Syntax

[no] service-policy type qos input|output *<policy name>*

where:

Parameter	Description
input	Attach an input QoS policy.
output	Attach an output QoS policy.
policy name	The name of the QoS policy to attach

Using **no** before the command detaches the policy.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example attaches QoS service policy `MyPolicy` to incoming traffic on the interface:

```
G8272(config-if)# service-policy type qos input MyPolicy
```

Restrictions

- This command only works on Ethernet interfaces and not on virtual interfaces.
- The QoS policy for the specified direction must exist before you can attach it to the interface.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

service-policy type queuing

Attaches the specified queuing service policy to the interface in the specified direction.

Syntax

[no] service-policy type queuing input|output *<policy name>*

where:

Parameter	Description
input	Attach an input queuing policy.
output	Attach an output queuing policy.
policy name	The name of the queuing policy to attach

Using **no** before the command detaches the policy.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example attaches queuing service policy `MyPolicy` to outgoing traffic on the interface:

```
G8272(config-if)# service-policy type queuing output MyPolicy
```

Restrictions

- This command only works on Ethernet interfaces and not on virtual interfaces.
- The queue policy for the specified direction must exist before you can attach it to the interface.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

shutdown

Shuts down the interface.

Syntax

[no] shutdown

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example shuts down the interface:

```
G8272(config-if)# shutdown
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

snmp trap link-status

Displays status for SNMP linkup and linkdown traps on the interface.

Syntax

```
snmp trap link-status
```

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example displays status for SNMP linkup and linkdown traps on the interface:

```
G8272(config-if)# snmp trap link-status
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

spanning-tree bpdufilter

Enables or disables the spanning-tree Bridge Protocol Data Unit (BPDU) filter on the interface.

Syntax

```
[no] spanning-tree bpdufilter enable|disable
```

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables the spanning-tree BPDU filter on the interface:

```
G8272(config-if)# spanning-tree bpdufilter enable
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

spanning-tree bpduguard

Enables or disables the blockage of spanning-tree Bridge Protocol Data Units (BPDUs) on the interface.

Syntax

[no] spanning-tree bpduguard enable|disable

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables the spanning-tree BPDU guard on the interface:

```
G8272(config-if)# spanning-tree bpduguard enable
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

spanning-tree cost

Sets the spanning-tree port path cost on the interface.

Syntax

[no] spanning-tree cost *<port path cost>*|**auto**

where:

Parameter	Description
port path cost	The port path cost; an integer from 1-200000000.
auto	Automatically determine the port path cost based on the media speed of this interface.

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables the spanning-tree port path cost to 100 for the interface:

```
G8272(config-if)# spanning-tree cost 100
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

spanning-tree disable

Disables spanning-tree protocol on the interface.

Syntax

```
spanning-tree disable
```

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example disables spanning-tree protocol on the interface:

```
G8272(config-if)# spanning-tree disable
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
spanning-tree enable	Enables spanning-tree protocol on the interface

spanning-tree enable

Enables spanning-tree protocol on the interface.

Syntax

```
spanning-tree enable
```

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables spanning-tree protocol on the interface:

```
G8272(config-if)# spanning-tree enable
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
spanning-tree disable	Disables spanning-tree protocol on the interface

spanning-tree guard

Sets the spanning-tree guard mode on the interface.

Syntax

[no] spanning-tree guard root

where:

Parameter	Description
root	Sets guard mode to root guard on interface.

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the spanning-tree guard mode to root guard on the interface:

```
G8272(config-if)# spanning-tree guard root
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

spanning-tree link-type

Sets the spanning-tree link type on the interface.

Syntax

[no] spanning-tree link-type {**auto**|**point-to-point**|**shared**}

where:

Parameter	Description
auto	Sets the spanning-tree link type based on the media duplex of the interface.
point-to-point	Sets the spanning-tree link type to point-to-point on the interface.
shared	Sets the spanning-tree link type to shared on the interface.

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the spanning-tree guard mode to root guard on the interface:

```
G8272(config-if)# spanning-tree link-type point-to-point
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

spanning-tree mst

Sets parameters for a multiple spanning-tree configuration on the interface.

Syntax

[no] spanning-tree mst *<instances>* {**cost** *<port path cost>*|**auto**}

[no] spanning-tree mst *<instances>* {**port-priority** *<port priority>*}

where:

Parameter	Description
instances	An instance or a range of instances.
port path cost	The port path cost; an integer from 1-200000000.
auto	Automatically determine the port path cost based on the media speed of this interface.
port priority	The port priority for interface; a multiple of 32 from 0-224.

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the spanning-tree port path cost to 300 for instances 0-3 on the interface:

```
G8272(config-if)# spanning-tree mst 0-3 cost 300
```

The following example sets the spanning-tree port priority to 128 for instances 7-9 on the interface:

```
G8272(config-if)# spanning-tree mst 7-9 port-priority 128
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

spanning-tree port

Sets the spanning-tree port type on the interface.

Syntax

[no] spanning-tree port type edge

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the spanning-tree port type to edge port on the interface:

```
G8272(config-if)# spanning-tree port type edge
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

spanning-tree port-priority

Sets the spanning-tree port priority for the interface.

Syntax

[no] spanning-tree port-priority *<port priority>*

where:

Parameter	Description
port priority	The port priority for interface; a multiple of 32 from 0-224.

Using **no** before the command with no argument removes the port priority from the interface.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the spanning-tree port priority to 128 on the interface:

```
G8272(config-if)# spanning-tree port-priority 150
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

speed

Sets the port speed for the interface.

Syntax

[no] speed {**1000**|**10000**|**40000**|**auto**}

where:

Parameter	Description
1000	Sets the port speed to 1 Gb/second.
10000	Sets the port speed to 10 Gb/second.
40000	Sets the port speed to 40 Gb/second.
auto	Auto-negotiates the port speed.

Using **no** before the command with no argument negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the port speed to 10 Gb/second on the interface:

```
G8272(config-if)# speed 10000
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

storm-control

Sets storm-control for the interface.

Syntax

[no] storm-control {**broadcast**|**multicast**|**unicast**} **level** *<level>*

where:

Parameter	Description
broadcast	Sets broadcast address storm control.
multicast	Sets multicast address storm control.
unicast	Sets unicast address storm control.
level	Level; a whole number or a decimal number.

Using **no** before the command with all but the last argument negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the broadcast storm control to 4.5 on the interface:

```
G8272(config-if)# storm-control broadcast level 4.5
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bridge-port access

Sets bridge-port access mode characteristics for the interface.

Syntax

[no] bridge-port access vlan *<VLAN ID>*

where:

Parameter	Description
VLAN ID	The VLAN ID of the VLAN when this port is in access mode; an integer from 1-3999.

Using **no** before the command with all but the last argument resets the VLAN ID to the default value.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets bridge-port access mode for VLAN 2 on the interface:

```
G8272(config-if)# bridge-port access vlan 2
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bridge-port mode

Sets bridge-port mode for the interface.

Syntax

[no] bridge-port mode {**access**|**trunk**}

where:

Parameter	Description
access	Sets bridge-port mode to port mode access for the interface.
trunk	Sets bridge-port mode to port mode trunk for the interface.

Using **no** before the command with all but the last argument restores the trunking characteristics to default when interface is in trunk mode.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets bridge-port mode to port mode access for the interface:

```
G8272(config-if)# bridge-port mode access
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bridge-port trunk allowed vlan

Sets the list of allowed VLANs in bridge-port trunk mode for the interface.

Syntax

[no] bridge-port trunk allowed vlan *<VLANs>*

where:

Parameter	Description
VLANs	The list of allowed VLANs for the interface when this port is in trunk mode.

Using **no** before the command with all but the last argument clears all VLANs from the list of allowed VLANs when this port is in trunk mode.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example sets the list of allowed VLANs in bridge-port trunk mode to 1-3 for the interface:

```
G8272(config-if)# bridge-port trunk allowed vlan 1-3
```

Restrictions

The switch must be in trunk mode for this command to work.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bridge-port trunk allowed vlan add

Adds VLANs to the list of allowed VLANs in bridge-port trunk mode for the interface.

Syntax

bridge-port trunk allowed vlan add *<VLANs>*

where:

Parameter	Description
VLANs	The list of VLANs added to allowed VLANs for the interface when this port is in trunk mode.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example adds VLANs 4-6 to the list of allowed VLANs in bridge-port trunk mode for the interface:

```
G8272(config-if)# bridge-port trunk allowed vlan add 4-6
```

Restrictions

The switch must be in trunk mode for this command to work.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bridge-port trunk allowed vlan all

Adds all VLANs to the list of allowed VLANs in bridge-port trunk mode for the interface.

Syntax

```
bridge-port trunk allowed vlan all
```

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example adds all VLANs to the list of allowed VLANs in bridge-port trunk mode for the interface:

```
G8272(config-if)# bridge-port trunk allowed vlan all
```

Restrictions

The switch must be in trunk mode for this command to work.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bridge-port trunk allowed vlan except

Adds all VLANs *except* for the specified VLANs to the list of allowed VLANs in bridge-port trunk mode for the interface.

Syntax

`bridge-port trunk allowed vlan except` *<VLANs>*

where:

Parameter	Description
VLANs	The list of VLANs that are not part of allowed VLANs for the interface when this port is in trunk mode.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example adds all VLANs except 4-6 to the list of allowed VLANs in bridge-port trunk mode for the interface:

```
G8272(config-if)# bridge-port trunk allowed vlan except 4-6
```

Restrictions

The switch must be in trunk mode for this command to work.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bridge-port trunk allowed vlan none

Allows no VLANs in bridge-port trunk mode for the interface.

Syntax

```
bridge-port trunk allowed vlan none
```

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example allows no VLANs in bridge-port trunk mode for the interface:

```
G8272(config-if)# bridge-port trunk allowed vlan none
```

Restrictions

The switch must be in trunk mode for this command to work.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

bridge-port trunk allowed vlan remove

Removes the specified VLANs from the list of allowed VLANs in bridge-port trunk mode for the interface.

Syntax

bridge-port trunk allowed vlan remove *<VLANs>*

where:

Parameter	Description
VLANs	The list of VLANs that are removed from allowed VLANs for the interface when this interface is in trunk mode.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example removes VLANs 4-6 from the list of allowed VLANs in bridge-port trunk mode for the interface:

```
G8272(config-if)# bridge-port trunk allowed vlan remove 4-6
```

Restrictions

The switch must be in trunk mode for this command to work.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

vlan dot1q tag native

Removes the specified VLANs from the list of allowed VLANs in bridge-port trunk mode for the interface.

Syntax

[no] vlan dot1q tag native {**enable**|**egress-only enable**|**disable**}

where:

Parameter	Description
enable	Enables IEEE 802.1Q native VLAN tagging on the interface.
egress-only enable	Enables IEEE 802.1Q native VLAN tagging on the interface for egress traffic only.
disable	Disables IEEE 802.1Q native VLAN tagging on the interface.

Using **no** before the command with all but the last argument negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enables IEEE 802.1Q native VLAN tagging on the interface for egress traffic only:

```
G8272(config-if)# vlan dot1q tag native egress-only enable
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

vrrp

Enters Virtual Router Redundancy Protocol (VRRP) configuration mode for the interface.

Syntax

vrrp *<virtual router identifier>* [**ipv6**]

where:

Parameter	Description
virtual router identifier	The virtual router identifier; an integer from 1-255.
ipv6	Optional; assume IPv6 address family.

Using **no** before the command negates it.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enters VRRP mode, configuring virtual router 2:

```
G8272(config-if)# vrrp 2
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

Chapter 6. Line Mode Commands

This chapter describes how to enter Line Configuration Mode and the commands available in this mode.

line

Enter Line Configuration Mode.

Syntax

[**no**] **line** {**console** *<console line>*}|{**vty** *<vty number>*

where:

Parameter	Function
console line	The console line number; default value is 0.
vty number	The virtual terminal number; an integer from 0-871.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enters Line Configuration Mode to configure virtual terminal 3:

```
G8272(config)# line vty 3
G8272(config-line)#
```

exec-timeout

Sets the length of idle time before the terminal is automatically logged out.

Syntax

[**no**] **exec-timeout** *<timeout>*

where:

Parameter	Function
timeout	The number of minutes of idle time before the terminal is logged out; an integer from 0-35791. Default value is 10. A value of 0 indicates infinite idle time (no automatic logout).

Using **no** before the command negates it.

Modes

Line Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the idle timeout to 60:

```
G8272(config-line)# exec-timeout 60
```

Related Commands

Command	Description
line	Enters Line Configuration Mode for the specified terminal.

history

Sets the maximum number of commands stored in history.

Syntax

[**no**] **history max** <*commands*>

where:

Parameter	Function
commands	The maximum number of commands to be kept in the CLI history; an integer from 0-2147483647.

Using **no** before the command without the last argument negates it.

Modes

Line Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the maximum number of commands to be retained in history to 60:

```
G8272(config-line)# history max 60
```

Related Commands

Command	Description
line	Enters Line Configuration Mode for the specified terminal.

privilege

Sets the default privilege level for the line.

Syntax

[**no**] **privilege level** *<privilege level>*

where:

Parameter	Function
privilege level	The privilege level for the line; an integer from 1-15, or 16 for the maximum privilege level.

Using **no** before the command negates it.

Modes

Line Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the privilege level for the line to 1:

```
G8272(config-line)# privilege level 1
```

Related Commands

Command	Description
line	Enters Line Configuration Mode for the specified terminal.

Chapter 7. Class Map Mode Commands

This chapter describes the commands for entering and using Class Map Configuration Mode, Quality of Service (QoS) Class Map Configuration Mode, and Queueing Class Map Configuration Mode.

class-map type qos

Adds or removes a Quality of Service (QoS) class map that is used to match packets to a specified class. After creating a class map, the user enters QoS Class Map Configuration mode.

Syntax

`[no] class-map [type qos] [{match-all|match-any}]` *<class map name>*

where:

Parameter	Function
`match-all`	Configures the class map to use the logical AND function for packet evaluation when dealing with multiple match rules.
`match-any`	Configures the class map to use the logical OR function for packet evaluation when dealing with multiple match rules.
class map name	The name of the class map.

Modes

Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds QoS class map 'cmap-qos-01' that uses the logical AND function when evaluating packets:

```
G8272(config)# class-map type qos match-all cmap-qos-01
```

Restrictions

For this release, the switch supports **`match-any`** only; **`match-all`** command will have the same effect as **`match-only`**.

class-map type control-plane

Adds or removes a control-plane class map that is used to match packets to a specified class.

Syntax

[no] class-map type control-plane match-any *<class map name>*

where:

Parameter	Function
`match-any`	Configures the class map to use the logical OR function for packet evaluation when dealing with multiple match rules.
class map name	The name of the class map.

Modes

Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds control-plane class map 'cmap-01' that uses the logical AND function when evaluating packets:

```
G8272(config)# class-map type control-plane match-any cmap-01
```

match

Defines the classification criteria when evaluating packets used for the current Quality of Service (QoS) class map.

Syntax

`[no] match [not] {access-group name` *<ACL name>***`|cos`** *<CoS value>***`| dscp`** *<DSCP value>***`|ip rtp`** *<TCP port>***`|precedence`** *<precedence value>***`| protocol`** *<protocol name>***`}`**

where:

Parameter	Function
`not`	Match all criteria except the specified one.
`access-group name` *ACL name*	Defines the specified Access Control List (ACL) as the classification criterion.
`cos` *CoS value*	Defines the specified Class of Service (CoS) as the classification criterion. The *CoS value* is from 0 to 7 and it can be specified as a range.
`dscp` *DSCP value*	Defines the specified DiffServ Code Point (DSCP) as the classification criterion. The *DSCP value* is from 0 to 63 or one of the following: • `af11` - AF11 DSCP (001010) • `af12` - AF12 DSCP (001100) • `af13` - AF13 DSCP (001110) • `af21` - AF21 DSCP (010010) • `af22` - AF22 DSCP (010100) • `af23` - AF23 DSCP (010110) • `af31` - AF31 DSCP (011010) • `af32` - AF32 DSCP (011100) • `af33` - AF33 DSCP (011110) • `af41` - AF41 DSCP (100010) • `af42` - AF42 DSCP (100100) • `af43` - AF43 DSCP (100110) • `cs1` - CS1(precedence 1) DSCP (001000) • `cs2` - CS2(precedence 2) DSCP (010000) • `cs3` - CS3(precedence 3) DSCP (011000) • `cs4` - CS4(precedence 4) DSCP (100000) • `cs5` - CS5(precedence 5) DSCP (101000) • `cs6` - CS6(precedence 6) DSCP (110000) • `cs7` - CS7(precedence 7) DSCP (111000) • `default` - Default DSCP (000000) • `ef` - EF DSCP (101110)

Parameter	Function
`ip rtp` *TCP port*	Defines the Transmission Control Protocol (TCP) port used by Real-time Transport Protocol (RTP) processes as the classification criterion. The *TCP port* can be from 2000 to 65535.
`precedence` *precedence value*	Defines the precedence as the classification criterion. The precedence value is from 0 to 7 or it can be one of the following: • `routine` - Routine precedence (0) • `priority` - Priority precedence (1) • `immediate` - Immediate precedence (2) • `flash` - Flash precedence (3) • `flash-override` - Flash override precedence (4) • `critical` - Critical precedence (5) • `internet` - Internetwork control precedence (6) • `network` - Network control precedence (7)
`protocol` *protocol name*	Defines a protocol as the classification criterion. The *protocol name* can be one of the following: • `arp` - Address Resolution Protocol • `bridging` - Bridging • `cdp` - CISCO Discovery Protocol • `clns` - Connectionless Network Service • `clns-es` - CLNS End Systems • `clns-is` - CLNS Intermediate Systems • `dhcp` - Dynamic Host Configuration • `isis` - Intermediate System to Intermediate System • `ldp` - Label Distribution Protocol • `netbios` - NetBIOS extended user interface

Modes

QoS Class Map Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command defines the classification criterion as protocol ARP:

```
G8272(config-cmap-qos)# match protocol arp
```

class-map type queuing

Adds or removes a queuing class map that is used to match packets to a specified class. After creating a class map, enters Queuing Class Map Configuration mode.

Syntax

`[no] class-map type queuing match-any` *<queue name>*

where:

Parameter	Function
`match-any`	Configures the class map to use the logical OR function for packet evaluation when dealing with multiple match rules.
queue name	The name of the queue. The possible options are: o `1p7q1t-out-q-default` (queue 0 or default queue) o `1p7q1t-out-pq1` (queue 1 or priority queue) o `1p7q1t-out-q2` (queue 2) o `1p7q1t-out-q3` (queue 3) o `1p7q1t-out-q4` (queue 4) o `1p7q1t-out-q5` (queue 5) o `1p7q1t-out-q6` (queue 6) o `1p7q1t-out-q7` (queue 7)

Modes

Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates queuing class map `1p7q1t-out-q3` that uses the logical OR function when evaluating packets:

```
G8272(config)# class-map type queuing match-any 1p7q1t-out-q3
```

match

Defines the classification criteria when evaluating packets used for the current queuing class map.

Syntax

[no] match {cos <*CoS value*>**|qos-group** <*QoS group value*>**}**

where:

Parameter	Function
`cos` *CoS value*	Defines the specified Class of Service (CoS) as the classification criterion. The *CoS value* is from 0 to 7 and it can be specified as a range.
`qos-group` *QoS group value*	Defines the specified Quality of Service (QoS) group as the classification criterion. The *QoS group value* is from 0 to 7 and it can be specified as a range.

Modes

Queuing Class Map Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command defines the classification criterion as CoS value 3:

```
G8272(config-cmap-que)# match cos 3
```

Chapter 8. Route Map Mode Commands

These commands enter you into an advanced configuration mode for the selected routing map.

route-map

Enters the Route Map Configuration Mode or creates a route map.

Syntax

`[no] route-map` *<route-map name>* **`{deny|permit}`** *<sequence number>*

where:

Parameter	Function
<route-map name>	Enters route map configuration mode for the named routing map.
`deny`	Denies to distribute route if the match criteria are met.
`permit`	Accepts to distribute route if the match criteria are met.
<sequence number>	Indicates the position of a new clause in the specified route map (an integer from 1-65535).

Using **no** before the command turns off route map or deletes an entry.

Mode

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example enters route map configuration for route map 'rmap-10' and clause '2330':

```
G8272(config)# route-map rmap-10 permit 2330
```

Restrictions

Specifying multiple match condition in a single match command is not supported.

Related Commands

Command	Description
configure device	Enter Configuration Mode.

match as-path

Matches a BGP autonomous system path access list.

Syntax

[no] match as-path *<name>*

where:

Parameter	Description
<name>	The name of AS path access list.

Using **no** before the command turns off the as-path matching.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures a matching BGP as-path access-list named *test*:

```
G8272(config-route-map)# match as-path test
```

Related Commands

Command	Description
ip as-path access-list	Creates or deletes a BGP AS access list.

match community

Matches a BGP community list in a route map.

Syntax

[no] match community *<name>* **[exact match]**

where:

Parameter	Description
<name>	The name of the BGP community list.
exact match	Indicates that an exact match is required. All of the communities and only those communities specified in the selected community list must be present.

Using **no** before the command removes BGP community list entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures a BGP community:

```
G8272(config-route-map)# match community test exact-match
```

Related Commands

Command	Description
ip community-list expanded	Adds or removes an expanded entry to or from the specified BGP community list.
ip community-list standard	Adds or removes a standard entry to or from the specified BGP community list.

match extcommunity

Matches a BGP extended community list in a route map.

Syntax

`[no] match extcommunity` *<name>* **`[exact match]`**

where:

Parameter	Description
<name>	The name of the BGP extended community.
`exact match`	Indicates that an exact match is required. All of the extended communities and only those communities specified in the selected extended community list must be present.

Using **no** before the command removes BGP extended community list entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures a BGP extended community:

```
G8272(config-route-map)# match extcommunity test exact-match
```

Related Commands

Command	Description
ip extcommunity-list expanded	Adds or removes an expanded entry to or from the specified BGP extended community list.
ip extcommunity-list standard	Adds or removes a standard entry to or from the specified BGP extended community list.

match interface

Specifies the next-hop interface name of a route to be matched.

Syntax

[no] match interface {*<interface name>***|ethernet** *<chassis number>* **|loopback** *<loopback interface number>***|port-aggregation** *<LAG number>***|vlan** *<VLAN number>***}**

where:

Parameter	Description
<interface name>	IP interface name.
ethernet *<chassis number>*	Ethernet chassis number.
loopback *<loopback interface number>*	Loopback interface value (a number from 0 to 7).
port-aggregation *<LAG number>*	LAG value (a number from 1 to 4096).
vlan *<VLAN number>*	VLAN interface number (a number from 1 to 4094).

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures a match on interface ethernet 1/12:

```
G8272(config-route-map)# match interface ethernet 1/12
```

match ip

Matches the IP prefix lists in a route map.

Syntax

[no] match {ip|ipv6} {address|next-hop} prefix-list *<name>*

where:

Parameter	Description
ip	Internet Protocol version 4.
ipv6	Internet Protocol version 6.
address	Destination IP address.
next-hop	Next-hop address of route.
prefix-list	Predefined list to match distributed routes.
<name>	Name of the prefix list.

Using **no** before the command removes the address or next-hop entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following distributes routes that have a next-hop router address passed by the prefix list named test:

```
G8272(config-route-map)# match ip next-hop prefix-list test
```

The following distributes routes that have a destination network number address passed by the prefix list named test:

```
G8272(config-route-map)# match ip address prefix-list test
```

Related Commands

Release	Modification
ip prefix-list	Adds or removes an IPv4 prefix list used to filter BGP routes.

match metric

Matches the metric values configured in a route map.

Syntax

[no] match metric *<metric-value>*

where:

Parameter	Description
<metric-value>	Route metric (a number from 0 to 4294967295).

Using **no** before the command removes the metric match.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following redistributes routes that match routing metric value 5:

```
G8272(config-route-map)# match metric 10
```

match origin

Redistributes routes that match the BGP origin code.

Syntax

[no] match origin {**egp|igp|incomplete**}>

where:

Parameter	Description
egp	Remote exterior gateway protocol (EGP) system.
igp	Local interior gateway protocol (IGP) system.
incomplete	Unknown origin.

Using **no** before the command removes the origin match.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following redistributes routes that match an unknown origin:

```
G8272(config-route-map)# match origin incomplete
```

match tag

Redistributes routes that match the specified tags.

Syntax

[no] match tag *<route tag value>*

where:

Parameter	Description
<route tag value>	List of route tag values (a number from 0 to 4294967295).

Using **no** before the command removes the tag match.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following redistributes routes that match the tag value 4:

```
G8272(config-route-map)# match tag 4
```

apply aggregator

Sets the BGP aggregator attribute.

Syntax

[no] apply aggregator as *<AS number> <IP address>*

where:

Parameter	Description
<AS number>	The aggregator's autonomous system path number.
<IP address>	The aggregator's BGP identifier of the originator router.

Using **no** before the command disables the function.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the BGP aggregator attribute:

```
G8272(config-route-map)# apply aggregator as 1 9.1.0.0
```

apply as-path

Modifies an autonomous system path (as-path) for BGP routes.

Syntax

[no] apply as-path {tag|prepend {<*AS number*>**|last-as** <*prepend number*>**}}**

where:

Parameter	Description
tag	Tag of a route.
prepend	Adds an as-path number to the AS path of the route.
<*AS number*>	Autonomous system path number.
last-as	Prepends the last AS to the AS path.
<*prepend number*>	The number of times the last AS is prepended to the AS path.

Using **no** before the command disables the function.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following prepends 50 to all routes:

```
G8272(config-route-map)# apply as-path prepend 50
```

apply atomic-aggregate

Sets the BGP atomic aggregate attribute.

Syntax

[no] apply atomic-aggregate

Using **no** before the command disables the function.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the BGP atomic aggregate attribute:

```
G8272(config-route-map)# apply atomic-aggregate
```

Restrictions

This parameter is set automatically when an aggregate route is created with the **aggregate-address** command.

apply comm-list

Removes the BGP community attribute from the route map configuration.

Syntax

[no] apply comm-list *<community list name>* **delete**

where:

Parameter	Description
<community list name>	The community list name. Communities from this list will be removed.

Using **no** before the command removes a previous **apply** command.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following delete the community named test:

```
G8272(config-route-map)# apply comm-list test delete
```

apply community

Sets the BGP community attribute.

Syntax

[no] apply community {**none|**{<*community number*>**[**<*community number list*>]**|additive|internet|local-AS|no-advertise|no-export**}}

where:

Parameter	Description
none	Removes the community attribute from prefix that passed the route-map.
<*community number*>	Sets the BGP community attribute (a number from 1 to 65535). Enter up to 32 communities strings using the format, `aa:nn`.
additive	Adds to existing community.
internet	Specifies the internet community.
local-AS	Specifies the local-AS community. Outside local AS are not sent.
no-advertise	Specifies the no-advertise community. Routes are not advertised to any peers.
no-export	Specifies the no-export community. Routes are not exported to the next AS.

Using **no** before the command removes the entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the BGP community attribute:

```
G8272(config-route-map)# apply community 3:1
```

apply dampening

Sets the BGP route dampening factors.

Syntax

[no] apply dampening [<*half-life*> **[**<*reuse*> **[**<*suppress*> **[**<*max-duration*> **[<***unreach half-life*>**]]]]]**

where:

Parameter	Description
<*half-life*>	Time after which a penalty is decreased by half (a number from 1 to 45). The default is 15 minutes.
<*reuse*>	Value to start reusing a route (a number from 1 to 20000). The default is 750.
<*suppress*>	Value to start supressing a route (a number from 1 to 20000). The default is 2000.
<*max-duration*>	Maximum duration to suppress a stable route (a number from 1 to 255). The default value is 4 times the half-life time (60 minutes).
<*unreach half-life*>	Time after which an unreachable route's penalty is decreased by half (a number from 1 to 45). The default is 15 minutes.

Using **no** before the command disables the feature.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the BGP route dampening factors:

```
G8272(config-route-map)# apply dampening 10 750 1500 20 15
```

apply extcommunity

Sets an extended community attribute.

Syntax

[no] apply extcommunity {rt|soo} *<aa:nn>* **[***<aa:nn list>***]**

where:

Parameter	Description
rt	Specifies the route target extended community.
soo	Specifies the site-of-origin extended community.
<aa:nn>	Extended community number (AS and network numbers).

Using **no** before the command removes the entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures an extended community attribute:

```
G8272(config-route-map)# apply extcommunity 3:1
```

apply ip next-hop

Sets the specified next-hop value.

Syntax

[no] apply ip next-hop {*<IP address>*|**peer-address**}

where:

Parameter	Description
<IP address>	Sets the IP addresses for the next-hop for the matched routes. When multiple addresses are specified they are prioritized in the order in which they are entered. Each next-hop must be an adjacent router.
peer-address	Applied on output, sets the next-hop of the advertised matching routes to the current local address of the local router. Applied on input, sets the next-hop of the received matching routes to the neighbor address, overriding other existing next-hops.

Using **no** before the command removes the next-hop configuration.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the next-hop IP address:

```
G8272(config-route-map)# apply ip next-hop 10.0.0.2
```

apply ipv6 next-hop

Sets the specified next-hop value.

Syntax

[no] apply ipv6 next-hop {*<IPv6 address>*|**peer-address**}

where:

Parameter	Description
<IPv6 address>	Sets the IP addresses for the next-hop for the matched routes. When multiple addresses are specified they are prioritized in the order in which they are entered. Each next-hop must be an adjacent router.
peer-address	Applied on output, sets the next-hop of the advertised matching routes to the current local address of the local router. Applied on input, sets the next-hop of the received matching routes to the neighbor address, overriding other existing next-hops.

Using **no** before the command removes the next-hop configuration.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the next-hop IP address:

```
G8272(config-route-map)# apply ipv6 next-hop 1111.2222.1111.0000
```

apply local-preference

Sets the local preference. The path with the higher value is preferred.

Syntax

[no] apply local-preference *<number value>*

where:

Parameter	Description
<number value>	Preference value (a number from 0 to 4294967295).

Using **no** before the command removes the entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the BGP community attribute:

```
G8272(config-route-map)# apply local-preference 5
```

apply metric

Sets a metric value for the matching routes.

Syntax

[no] apply metric *<metric value>*

where:

Parameter	Description
<metric value>	Metric value (a number from 1 to 4294967295).

Using **no** before the command removes the entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the metric value:

```
G8272(config-route-map)# apply metric 5
```

apply metric-type

Sets the type of OSPF metric.

Syntax

[no] apply metric-type {**type-1|type-2**}

where:

Parameter	Description
type-1	External routes are calculated using both internal and external metrics.
type-2	External routes are calculated using only the external metrics. Type 1 routes are preferred over Type 2.

Using **no** before the command removes the OSPF metric of the current route map.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the OSPF metric type to type-1:

```
G8272(config-route-map)# apply metric-type type-1
```

apply origin

Sets the BGP origin code. This attribute defines the origin of the path information.

Syntax

[no] apply origin {**egp** *<AS number>*|**igp**|**incomplete**}

where:

Parameter	Description
egp	Specifies the AS number for a remote exterior gateway protocol (EGP) system.
<AS number>	AS number value. You can specify the value also in ASDOT format.
igp	Specifies a local interior gateway protocol (IGP) system.
incomplete	Specifies an unknown heritage.

Using **no** before the command removes the entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the BGP origin:

```
G8272(config-route-map)# apply origin egp 5
```

apply originator-id

Sets the originator ID attribute.

Syntax

[no] apply originator-id *<IP address>*

where:

Parameter	Description
<IP address>	Identifier of the originator router.

Using **no** before the command removes the entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the originator ID attribute:

```
G8272(config-route-map)# apply originator-id 1.1.1.1
```

apply tag

Sets a tag value of the destination routing protocol.

Syntax

[no] apply tag *<tag value>*

where:

Parameter	Description
<tag value>	Identifier of the tag value (a number from 0 to 4294967295).

Using **no** before the command removes the tag.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the originator ID attribute:

```
G8272(config-route-map)# apply tag 4
```

apply weight

Sets the weight of matching routes.

Syntax

[no] apply weight *<number>*

where:

Parameter	Description
<number>	Weight value (a number from 0 to 65535).

Using **no** before the command removes the entry.

Modes

Route Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the weight:

```
G8272(config-route-map)# apply weight 5
```

Chapter 9. BGP Configuration Mode Commands

These commands enter you into an advanced configuration mode for configuring the switch to receive routes and to advertise static routes, fixed routes and virtual server IP addresses with other internal and external routers.

routing-protocol bgp

Assigns an autonomous system (AS) number to a router and enters the BGP configuration mode.

Syntax

[no] routing-protocol bgp *<AS number>*

where:

Parameter	Function
<AS-number>	Number of an AS (a number from 1 to 4294967295).

Using **no** before the command removes an AS assignment.

Mode

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example shows how to configure a BGP process for autonomous system 100:

```
G8272(config)# routing-protocol bgp 100
```

Related Commands

Command	Description
configure device	Enter Configuration Mode.

bestpath

Changes the default best path selection.

Syntax

[no] bestpath *<arguments>*

where:

Parameter	Description
always-compare-med	Compares the MED on paths from a different AS.
as-path ignore	Ignores as-path length in selecting a route.
as-path multipath-relax	Allows load sharing across providers with different (but equal- length) AS paths. The AS paths must be identical for load sharing.
compare-confed-aspath	Specifies that the AS confederation path length must be used when available in the BGP best path decision process.
compare-routerid	Compares the router IDs for identical eBGP paths.
dont-compare-originator-id	Avoids comparing an originator-ID for an identical eBGP path.
tie-break-on-age	Selects always the older preferred route even when the **compare-route-id** command is set.
med confed	Enables MED comparison among paths learned from confederation peers.
med missing-as-worst	Handles a missing MED as the highest MED.
med non-deterministic	Does not always select the best MED path from among the paths from the same AS numbers.
med remove-recv-med	Removes received MED attribute.
med remove-send-med	Remove send MED attribute.

Using **no** before the command returns the BGP routing process to the default operation.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following changes the default best-path selection algorithm to compare the MED on paths from different AS:

```
G8272(config-router)# bestpath always-compare-med
```

bgp

Configures additional BGP settings.

Syntax

[no] bgp {as-local-count *<number of times>***}**

where:

Parameter	Description
as-local-count	Appends local-as.
<number of times>	Number of times local-as to be appended.

Using **no** before the command turns off this feature.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following appends 4 times the local-as:

```
G8272(config-router)# bgp as-local-count 4
```

cluster-id

Specifies the router's Cluster ID used when operating as a route reflector. Route reflectors that are part of the same cluster (assigned to the same group of clients) must use identical Cluster IDs.

Syntax

[no] cluster-id {*<number>*|*<IP address>*}

where:

Parameter	Description
<number>	Cluster-ID as 32 bit quantity (a number from 1 to 4294967295).
<IP address>	Cluster-ID in IP address format.

Using **no** before the command removes router's Cluster ID.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures the cluster ID in IP address format:

```
G8272(config-router)# cluster-id 1.1.1.1
```

confederation

Sets AS confederation parameters for the BGP.

Syntax

[no] confederation {**identifier** <*AS number*>**|peers** <*AS numbers*>}

where:

Parameter	Description
identifier	The routing domain confederation AS number. It is an externally visible AS number that identifies a BGP confederation as a whole.
<*As number*>	Autonomous system path number (a number from 1 to 65535).
peers	The peer AS numbers for a BGP confederation. It is an identifier visible only within a BGP confederation and used to represent a Member-AS within that confederation.
<*AS numbers*>	List of AS peers (a number from 1 to 65535).

Using **no** before the command deletes the AS number or the peer AS.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the confederation identifier:

```
G8272(config-router)# confederation identifier 5
```

deterministic-med

Enables BGP route selection process to group paths from same AS in the same group and the best of each group is compared. The best route does not depend on the order of routes receiving.

Syntax

[no] deterministic-med

Using **no** before the command turns off this feature.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following specifies that the best-MED path among paths is selected from the same AS.:

```
G8272(config-router)# deterministic-med
```

enforce-first-as

Enforces the neighbor AS to be the first AS number listed in the AS_path attribute for eBGP.

Syntax

[no] enforce-first-as

Using **no** before the command turns off this enforcement.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enforce the neighbor AS to be the first AS number listed in the AS_path attribute:

```
G8272(config-router)# enforce-first-as
```

fast-external-failover

Enables BGP fast external failover.

Syntax

[no] fast-external-failover

Using **no** before the command turns off this feature.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows to enable BGP fast external failover:

```
G8272(config-router)# fast-external-failover 5
```

graceful-restart

Specifies the maximum time to keep a restarting peer's stale routes.

Syntax

[no] graceful-restart stalepath-time *<delay value>*

where:

Parameter	Description
<delay value>	Time value in seconds (a number from 1 to 3600). Default value is 360 seconds.

Using **no** before the command turns off the feature.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure graceful restart delay value:

```
G8272(config-router)# graceful-restart stalepath-time 180
```

graceful-restart-helper

Enables BGP gracefully restart helper mode feature. BGP router can work as receiving speaker.

Syntax

[no] graceful-restart-helper

Using **no** before the command turns off the feature.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to turn on BGP graceful restart mode:

```
G8272(config-router)# graceful-restart-helper 5
```

log-neighbor-changes

Generates a system message when a neighbor changes state.

Syntax

[no] log-neighbor-changes

Using **no** before the command turns off the feature.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure this feature:

```
G8272(config-router)# log-neighbor-changes
```

maxas-limit

Configures the eBGP to discard routes that have a high number of autonomous system (AS) numbers in the AS-path attribute.

Syntax

[no] maxas-limit *<number>*

where:

Parameter	Description
<number>	Maximum number of AS numbers (a number from 1 to 2000).

Using **no** before the command turns off this feature.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the maximum number of AS numbers to 10:

```
G8272(config-router)# maxas-limit 10
```

neighbor

Sets the remote autonomous system number for the specified peer or enters the Neighbor mode.

Syntax

[no] neighbor {<*IPv4 address*>**|**<*IPv4 prefix*>**|**<*IPv6 address*>**|**<*IPv6 prefix*>**}**
[remote-as <*AS number*>**]**

where:

Parameter	Description
<*IPv4 address*>	Neighbor IPv4 address.
<*IPv4 prefix*>	Neighbor IPv4 prefix.
<*IPv6 address*>	Neighbor IPv6 address.
<*IPv6 prefix*>	Neighbor IPv6 prefix.
<*AS number*>	AS value (a number from 1 to 4294967295).

Using **no** before the command removes an AS number.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the neighbor AS number for an IPv4 address:

```
G8272(config-router)# neighbor 1.1.1.1 remote-as 2
G8272(config-router-neighbor)#
```

router-id

Manually defines the router ID for a BGP speaker.

Syntax

[no] router-id *<IP address>*

where:

Parameter	Description
<IP address>	Router identifier.

Using **no** before the command reverts to the previous router ID behavior.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the router ID:

```
G8272(config-router)# router-id 1.1.1.1
```

synchronization

Prevents a BGP router from advertising routes learned from iBGP neighbors, unless those routes are also present in an IGP (for example, OSPF).

Syntax

[no] synchronization

Using **no** before the command turns off the feature.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable synchronization:

```
G8272(config-router)# synchronization
```

timers

Configures the routing timers.

Syntax

[no] timers *<keep alive interval> <hold time>*

where:

Parameter	Description
<keep alive interval>	Time interval (in seconds) the switch awaits before sending another keepalive message to the BGP neighbor (a number from 0 to 3600). The default is 60.
<hold time>	Time interval (in seconds) the switch awaits before transitioning the BGP neighbor to IDLE state, if the switch doesn't receive an update or keepalive message from the neighbor (a number from 0 to 3600). The default is 180.

Using **no** before the command turns off this feature.

Modes

BGP Configuration Mode

BGP Neighbor Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure timers:

```
G8272(config-router)# timers bgp 60 180
```

vrf

Enables or disables BGP to use the default VRF instance.

By default, this is enabled.

Syntax

```
[no] vrf default
```

Using **no** before the command turns off the feature.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following enables BGP to use the default VRF instance:

```
G8272(config-router)# vrf default
```

Chapter 10. Address Family Mode Commands

This chapter describes the commands for entering and using BGP Address Family mode.

address-family

Enters address family configuration modes while configuring BGP routing.

Syntax

[no] address-family {**ipv4|ipv6**} **unicast**

where:

Parameter	Description
ipv4	Internet Protocol version 4.
ipv6	Internet Protocol version 6.
unicast	Unicast address support.

Using **no** before the command turns off this feature.

Modes

- BGP Configuration Mode
- BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following places the router in global address family configuration mode for the IPv4 unicast address family:

```
G8272(config-router)# address-family ipv4 unicast
G8272(config-router-af)#
```

aggregate-address

Creates an aggregate entry in the BGP routing table if any more-specific BGP routes are available in the specified range.

Syntax

[no] aggregate-address {*<address>***|***<length>***} [as-set] [summary-only]**

where:

Parameter	Description
as-set	Generates the autonomous system set path information and community information from the contributing paths.
summary-only	Filters all more-specific routes from updates.

Using **no** before the command removes the summary address.

Modes

BGP Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to create an aggregate BGP address:

```
G8272(config-router-af)# aggregate-address 1.1.1.1 255.0.0.0 as-set
```

client-to-client reflection

Enables route reflection from a BGP route reflector to clients.

Syntax

[no] client-to-client reflection

Using **no** before the command turns off this feature.

Modes

BGP Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure router as a router reflection:

```
G8272(config-router-af)# client-to-client reflection
```

dampening

Enables BGP route dampening or changes BGP route dampening factors.

Syntax

[no] dampening [<*half-life*> **[**<*reuse*> <*suppress*> <*max-duration*> **[**<*unreach half-life*>**]]|route-map** <*name*>**]**

where:

Parameter	Description
<*half-life*>	Time after which a penalty is decreased by half (a number from 1 to 45). The default is 15 minutes.
<*reuse*>	Value to start reusing a route (a number from 1 to 20000). The default is 750.
<*suppress*>	Value to start suppressing a route (a number from 1 to 20000). The default is 2000.
<*max-duration*>	Maximum duration to suppress a stable route (a number from 1 to 255). The default value is 4 times the half-life time (60 minutes).
<*unreach half-life*>	Time after which an unreachable route's penalty is decreased by half (a number from 1 to 45). The default is 15 minutes.
route-map <*name*>	Name of the route map that controls where BGP route dampening is enabled.

Using **no** before the command turns off the feature.

Modes

BGP Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the maximum duration to 80 minutes:

```
G8272(config-route-af)# dampening 80
```

distance

Configures BGP administrative distances (AD).

Syntax

[no] distance *<external AD> <internal AD> <local AD>*

where:

Parameter	Description
<internal AD>	Administrative distance to routes inside the AS. The *internal AD* is from 1 to 255. The default is 200.
<external AD>	Administrative distance to routes outside the AS. The *external AD* is from 1 to 255. The default is 200.
<local AD>	Administrative distance for local routes. The *local AD* is from 1 to 255. The default is 200.

Using **no** before the command restore the system to its default value.

Modes

BGP Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets distance:

```
G8272(config-router-af)# distance 100 120 150
```

Restrictions

A higher distance value means a lower trust rating (e.g., an administrative distance of 255 means that the routing information source cannot be trusted and should be ignored).

maximum-paths

Sets maximum paths allowed for an internal or external route.

Syntax

[no] maximum-paths {**ebgp|ibgp**} *<multipath numbers*

where:

Parameter	Description
ebgp	The maximum paths allowed for an external route.
ibgp	The maximum paths allowed for an internal route.
<multipath numbers>	Value for maximum path numbers (a number from 2 to 32). The default value is 8.

Using **no** before the command resets the maximum paths allowed for a route to its default value.

Modes

BGP Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the maximum paths number:

```
G8272(config-router-af)# maximum-paths ibgp 4
```

network

Configures an IP prefix for advertisement.

Syntax

[no] **network** {*<IP address>* **[mask** *<network mask>*]**|***<IP prefix length>*} **[backdoor|route-map <name>]**

where:

Parameter	Description
<IP address>	IPv4 address in the format A.B.C.D.
mask *<network mask>*	IP subnet address mask.
<IP prefix length>	IPv4 address in the format A.B.C.D./length
backdoor	BGP backdoor route. The administrative distance assigned to the network is forced to the administrative distance of the local routes. IGP-learned routes are preferred. A network that is marked as a backdoor is not sourced by the local router, but should be learned from external neighbors.
route-map *<name>*	Route map attributes.

Using **no** before the command removes the IP prefix to advertise.

Modes

BGP Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure an IP prefix:

```
G8272(config-router-af)# network 1.1.1.1/2 backdoor
```

Restrictions

For the **backdoor** command, make sure to verify the route is in the BGP table. Otherwise, the command will not have the desired effect.

network synchronization

Performs IGP synchronisation on network routes.

Syntax

[no] network synchronization

Using **no** before the command turns off the feature.

Modes

BGP Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure IGP synchronization:

```
G8272(config-router-af)# network synchronisation
```

nexthop

Specifies the next-hop address tracking delay timer for critical or non-critical next-hop reachability routes

Syntax

[no] nexthop trigger-delay {**critical** *<delay value>*| **non-critical** *<delay value>*

where:

Parameter	Description
<delay value>	Delay value in milliseconds (a number from 1 to 4294967295).

Using **no** before the command turns off the feature.

Modes

BGP Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how delay timers:

```
G8272(config-router-af)# nexthop trigger-delay critical 5
```

redistribute

Redistributes routes from a routing domain to BGP.

Syntax

[no] redistribute {direct|ospf|static} [route-map *<map name>***]**

where:

Parameter	Description
direct	Routes directly connected on an interface.
ospf	Routes belonging to OSPF protocol.
static	IP static routes.
route-map *<map name>*	Specifies the route maps used for redistribution.

Using **no** before the command turns off the feature.

Modes

BGP Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to redistribute routes:

```
G8272(config-router-af)# redistribute direct route-map test
```

Chapter 11. Neighbor Mode Commands

This chapter describes the commands for entering and using BGP Neighbor mode.

neighbor

Sets the remote autonomous system number for the specified peer or enters the Neighbor mode.

Syntax

[no] neighbor {<*IPv4 address*>**|**<*IPv4 prefix*>**|**<*IPv6 address*>**|**<*IPv6 prefix*>**}**
[remote-as <*AS number*>**]**

where:

Parameter	Description
<*IPv4 address*>	Neighbor IPv4 address.
<*IPv4 prefix*>	Neighbor IPv4 prefix.
<*IPv6 address*>	Neighbor IPv6 address.
<*IPv6 prefix*>	Neighbor IPv6 prefix.
<*AS number*>	AS value (a number from 1 to 4294967295).

Using **no** before the command removes an AS number.

Modes

BGP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the neighbor AS number for an IPv4 address:

```
G8272(config-router)# neighbor 1.1.1.1 remote-as 2
G8272(config-router-neighbor)#
```

address-family

Enters neighbor address family configuration modes while configuring BGP routing.

Syntax

[no] address-family {**ipv4|ipv6**} **unicast**

where:

Parameter	Description
ipv4	Internet Protocol version 4.
ipv6	Internet Protocol version 6.
unicast	Unicast address support.

Using **no** before the command turns off this feature.

Modes

- BGP Configuration Mode
- BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following places the router in global address family configuration mode for the IPv4 unicast address family:

```
G8272(config-router)# address-family ipv4 unicast
G8272(config-router-neighbor-af)
```

advertisement-interval

Sets the minimum interval for sending BGP routing updates.

Syntax

[no] advertisement-interval *<time interval>*

where:

Parameter	Description
<time interval>	Advertisement time interval in seconds (a number from 1 to 65535). The default value is 5 seconds for IBGP and 30 seconds for EBGP.

Using **no** before the command restores the configuration to its default value.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the time interval:

```
G8272(config-router-neighbor)# advertisement-interval 10
```

bfd

Enables BFD for a BGP peer.

Syntax

`[no] bfd [multihop]`

where:

Parameter	Description
`multihop`	Configures the BFD session as multihop. Use this if the peer is multiple hops away.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following enables BFD on the current BGP neighbor:

```
G8272(config-router-neighbor)# bfd
```

connection-retry-time

Sets the connection retry time.

Syntax

[no] connection-retry-time *<time value>*

where:

Parameter	Description
<time value>	Connect timer in seconds (a number from 1 to 65535). The default value is 30.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the connection retry time:

```
G8272(config-router-neighbor)# connection-retry-time 120
```

description

Sets a description for the BGP peer.

Syntax

[no] description *<text>*

where:

Parameter	Description
<text>	Text description (a string from 1 to 80 alphanumeric characters).

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets a BGP peer description:

```
G8272(config-router-neighbor)# description BGP peer
```

disallow-infinite-holdtime

Disallows configuration of infinite hold-time.

Syntax

[no] disallow-infinite-holdtime

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to disallow configuration of infinite holdtime:

```
G8272(config-router-neighbor)# disallow-infinite-holdtime
```

dont-capability-negotiate

Disables capabilities negotiation.

Syntax

[no] dont-capability-negotiate

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to disable capabilities negotiation:

```
G8272(config-router-neighbor)# dont-capability-negotiate
```

Restrictions

BGP sessions must be manually reset after configuring this feature.

dynamic-capability

Enables dynamic capability. The command triggers an automatic notification and resets session for the BGP neighbor sessions.

Syntax

[no] dynamic-capability

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable dynamic capability:

```
G8272(config-router-neighbor)# dynamic-capability
```

ebgp-multihop

Configures the eBGP time-to-live (TTL) value to support eBGP multihop.

Syntax

[no] ebgp-multihop *<maximum hop count>*

where:

Parameter	Description
<maximum hop count>	Maximum hop count number (a number from 1 to 255).

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure an ebgp multihop value of 10:

```
G8272(config-router-neighbor)# ebgp-multihop 10
```

local-as

Specifies AS number to use with BGP neighbor.

Syntax

[no] local-as *<number>* **[no-prepend [replace-as [dual-as]]]**

where:

Parameter	Description
<number>	AS number (a number from 1 to 4294967295).
no-prepend	Prepends only the configured local-as number.
replace-as	Establishes eBGP using real AS or configured local-as.
dual-as	AS number.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the local AS number:

```
G8272(config-router-neighbor)# local-as 100
```

maximum-peers

Specifies maximum number of peers for a prefix.

Syntax

[no] maximum-peers *<number>*

where:

Parameter	Description
<number>	Peer limit value (a number form 1 to 96).

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the maximum number of peers:

```
G8272(config-router-neighbor)# maximum-peers 40
```

password

Configures BGP to use MD5 authentication.

Syntax

[no] password [0] *<string>*

where:

Parameter	Description
0	Uses an un-encrypted key.
<string>	Password string.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets a BGP password that will be stored in the local configuration file in an encrypted format:

```
G8272(config-router-neighbor)# password 1qaz2wsx
```

remote-private-AS

Removes private AS numbers from outbound route updates to an eBGP peer.

Syntax

[no] remote-private-AS

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets remote-private-AS:

```
G8272(config-router-neighbor)# remote-private-as
```

shutdown

Shuts down the neighbor. A session reset for the BGP neighbor sessions is performed.

Syntax

[no] shutdown

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to shut down a neighbor:

```
G8272(config-router-neighbor)# shutdown
```

timers

Configures the routing timers.

Syntax

[no] timers *<keep alive interval> <hold time>*

where:

Parameter	Description
<keep alive interval>	Time interval (in seconds) the switch awaits before sending another keepalive message to the BGP neighbor (a number from 0 to 3600). The default is 60.
<hold time>	Time interval (in seconds) the switch awaits before transitioning the BGP neighbor to IDLE state, if the switch doesn't receive an update or keepalive message from the neighbor (a number from 0 to 3600). The default is 180.

Using **no** before the command turns off this feature.

Modes

BGP Configuration Mode

BGP Neighbor Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure timers:

```
G8272(config-router)# timers bgp 60 180
```

transport

Configures the local system to not initiate TCP connections to this peer.

Syntax

```
[no] transport connection-mode passive
```

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to allow a single passive connection:

```
G8272(config-router-neighbor)# transport connection-mode passive
```

Restrictions

BGP speaker does not initiate a TCP connection to a BGP peer. You must manually reset the BGP sessions after configuring this command.

ttl-security

Sets the minimum number of TTL router hops an IP packet must have to not be discarded.

Syntax

[no] ttl-security hops *<number>*

where:

Parameter	Description
<number>	AS number (a number from 1 to 254).

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the minimum TTL value:

```
G8272(config-router-neighbor)# ttl-security hops 60
```

update-source

Sets the source of the BGP session and updates.

Syntax

[no] update-source {*<interface name>*| **ethernet** *<chassis number>* **|loopback** *<loopback interface number>*| **port-aggregation** *<LAG number>*| **vlan** *<id>*}

where:

Parameter	Description
<interface name>	IP interface name.
ethernet *<chassis number>*	Ethernet chassis number.
loopback *<loopback interface number>*	Loopback interface value (a number from 0 to 7).
port-aggregation *<LAG number>*	LAG value (a number from 1 to 4096).
vlan *<id>*	VLAN interface number (a number from 1 to 4094).

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the update source:

```
G8272(config-router-neighbor)# update-source loopback 2
```

weight

Sets the default weight for routes from a specific neighbor.

Syntax

[no] weight *<number>*

where:

Parameter	Description
<number>	Weight value (a number from 0 to 65535).

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the default weight:

```
G8272(config-router-neighbor)# weight 5
```

Chapter 12. Neighbor Address Family Commands

This chapter describes the commands for entering and using BGP Neighbor Address Family mode.

address-family

Enters neighbor address family configuration modes while configuring BGP routing.

Syntax

[no] address-family {**ipv4|ipv6**} **unicast**

where:

Parameter	Description
ipv4	Internet Protocol version 4.
ipv6	Internet Protocol version 6.
unicast	Unicast address support.

Using **no** before the command turns off this feature.

Modes

- BGP Configuration Mode
- BGP Neighbor Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following places the router in global address family configuration mode for the IPv4 unicast address family:

```
G8272(config-router-neighbor)# address-family ipv4 unicast
G8272(config-router-neighbor-af)
```

allowas-in

Enables the allowas-in feature for BGP and configures the number of occurrences of the AS number.

Syntax

[no] allowas-in [<*number*>]

where:

Parameter	Description
<*number*>	Number of occurrences of AS number (a number from 1 to 10). The default value is 3.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# allowas-in
```

default-originate

Sets a BGP routing process to distribute a default route.

Syntax

[no] default-originate [route-map *<name>*]

where:

Parameter	Description
route-map *<number>*	Name of the route map.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# default-originate
```

filter-list

Configures AS-path access-list to BGP neighbor.

Syntax

`[no] filter-list` *<access-list name>* **`{in|out}`**

where:

Parameter	Description
<access-list name>	AS-path access-list name.
`in`	Applies the filter to incoming routes.
`out`	Applies the filter to outgoing routes.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to apply an AS-path filter to outgoing routes via AS path access-list ACL1:

```
G8272(config-router-neighbor-af)# filter-list ACL1 out
```

maximum-prefix

Controls how many prefixes can be received from a neighbor.

Syntax

[no] maximum-prefix *<number>* **[***<threshold value>***] [warning-only]**

where:

Parameter	Description
<number>	Maximum number of prefix limit (a number from 1 to 15872).
<threshold value>	The percentage of the maximum-prefix limit at which the router starts to generate a warning message. (a number from 1 to 100).
warning-only	Sends warning messages only when the limit is exceeded.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# maximum-prefix 5 warning-only
```

next-hop-self

Sets the local BGP speaker address as the next-hop address in route updates.

Syntax

[no] next-hop-self

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# next-hop-self
```

prefix-list

Configures prefix-list for BGP neighbor.

Syntax

[no] prefix-list *<name>* {**in|out**}

where:

Parameter	Description
<name>	Name of a prefix list.
in	Applies the filter to incoming routes.
out	Applies the filter to outgoing routes.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# prefix-list test in
```

route-map

Adds route-map in incoming or outgoing direction to the neighbor.

Syntax

[no] route-map *<name>* {**in|out**}

where:

Parameter	Description
<name>	Name of a route map.
in	Applies the filter to incoming routes.
out	Applies the filter to outgoing routes.

Using **no** before the command removes all route maps or a specific route map from in-route or out-route map list.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# route-map test in
```

route-reflector-client

Enables the peer as a route reflector client. Configuring route reflector clients, implicitly sets up the local router as a route reflector.

Syntax

[no] route-reflector-client

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# route-reflector-client
```

send-community

Enables sending a community attribute to a BGP neighbor.

Syntax

[no] send-community [extended]

where:

Parameter	Description
extended	Sends extended community attributes.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# send-community
```

soft-reconfiguration

Sets the switch software to start storing BGP peer updates.

Syntax

[no] soft-reconfiguration inbound

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# soft-reconfiguration
```

unsuppress-map

Sets route map to selectively unsuppress suppressed routes.

Syntax

[no] unsuppress-map *<name>*

where:

Parameter	Description
<name>	Name of a route map.

Using **no** before the command turns off the feature.

Modes

BGP Neighbor Address Family Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router-neighbor-af)# unsuppress-map test
```

Chapter 13. OSPF Configuration Mode Commands

These commands enter you into an advanced configuration mode for configuring the Open Shortest Path First (OSPF) routing instances.

routing-protocol ospf

Configures an Open Shortest Path First (OSPF) routing instance and enters the OSPF configuration mode.

Syntax

```
[no] routing-protocol ospf
```

Using **no** before the command terminates an OSPF routing process.

Mode

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example shows how to enter OSPF configuration mode:

```
G8272(config)# routing-protocol ospf
G8272(config-router)#
```

area <area id> authentication

Enables authentication for a specific area.

Syntax

[no] area *<area id>* **authentication [message-digest]**

where:

Parameter	Description
<area id>	Decimal value (a number from 0 to 4294967295) or IP address.
message-digest	Enables MD5 authentication.

Using **no** before the command removes the authentication for a specific area.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable authentication for a specific area:

```
G8272(config-router)# area 1.1.1.1 authentication
```

area <area id> default-cost

Sets a cost for the default summary route sent into a stub or NSSA area.

Syntax

[no] area *<area id>* **default-cost** *<cost value>*

where:

Parameter	Description
<area id>	Decimal value (a number from 0 to 4294967295) or IP address.
<cost value>	Stub's advertised default summary cost (a number from 0 to 16777215).

Using **no** before the command removes the assigned default-cost route.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets a cost:

```
G8272(config-router)# area 1.1.1.1 default-cost 1000
```

Restrictions

Use this command only on an area border router that is attached to the NSSA or stub area.

area <area id> filter-list

Sets a filter to advertise summary routes on an Area Border Router (ABR). This command suppresses incoming and outgoing summary routes between the specified area and others.

Syntax

[no] area *<area id>* **filter-list route-map** *<map name>* {**in|out**}

where:

Parameter	Description
<area id>	Decimal value (a number from 0 to 4294967295) or IP address.
route-map *<map name>*	Name of the route map.
in	Applies the filter to incoming routes.
out	Applies the filter to outgoing routes.

Using **no** before the command removes a filter.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to apply an area filter to incoming routes:

```
G8272(config-router)# area 1.1.1.1 filter-list route-map test in
```

area <area id> nssa

Sets an area as a Not-So-Stubby-Area (NSSA).

Syntax

[no] **area** *<area id>* **nssa [default-information-originate [metric** *<metric value>*]**[metric-type** *<metric type value>*] **[route-map** *<map-name>*]] **[no-redistribution]** **[no-summary]** **[translate type7 always]** **[stability-interval** *<value>*]

where:

Parameter	Description
<area id>	Decimal value (a number from 0 to 4294967295) or IP address.
default-information-originate	Generates a Type7 default into the NSSA area.
metric *<metric value>*	OSPF default metric value (a number from 0 to 16777214).
metric-type *<metric type value>*	OSPF metric type for default routes (a number from 1 to 2).
route-map *<map name>*	Name of the route map.
no-redistribution	Blocks redistributed link-state advertisements (LSAs) from entering this NSSA area.
no-summary	Allows an area to be an NSSA area. Summay routes are not injected into it.
translate type7 always	Always translates Type 7 LSAs to type 5 LSAs.
stability-interval *<value>*	Time interval in seconds (a number from 0 to 2147483647).

Using **no** before the command removes this setting.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets a NSSA area:

```
G8272(config-router)# area 1.1.1.1 nssa
```

Restrictions

- You cannot redistribute from another protocol into a stub area.
- An area can be configured to be either a stub area or an NSSA, but not both.

area <area id> range

Sets the OSPF summary range.

Syntax

[no] area *<area-id>* **range** *<ip prefix>/<netnum> <mask>* **[advertise|not-advertise]**

where:

Parameter	Description
<area id>	Decimal value (a number from 0 to 4294967295) or IP address.
<ip prefix>	IPv4 address prefix.
<netnum>	Subnet mask length.
<mask>	Area range prefix mask.
advertise	Advertises a specific range.
not-advertise	Does not advertise a specific range.

Using **no** before the command turns off this feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets OSPF summary range:

```
G8272(config-router)# area 1.1.1.1 range 1.1.1.1 255.0.0.0 advertise
```

area <area id> stub

Sets an area as a stub area.

Syntax

[no] area *<area id>* **stub [no-summary]**

where:

Parameter	Description
<area id>	Decimal value (a number from 0 to 4294967295) or IP address.
no-summary	Sets a totally stubby area. Apply this command when routers in the area do not need to learn about summary LSAs from other areas.

Using **no** before the command turns off this feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets a stub area:

```
G8272(config-router)# area 1.1.1.1 stub
```

area <area id> virtual-link

Sets a link between two backbone areas that are physically separated through other non backbone area.

Enters the virtual link configuration mode.

Syntax

[no] area *<area id>* **virtual-link** *<IP address>*

where:

Parameter	Description
<area id>	Decimal value (a number from 0 to 4294967295) or IP address.
<IP address>	The router ID of the virtual link neighbor.

Using **no** before the command removes a virtual link.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure a virtual link:

```
G8272(config-router)# area 1.1.1.1 virtual-link 255.0.0.0
```

auto-cost reference-bandwidth

Controls how OSPF calculates the default metric for the interface.

Syntax

auto-cost reference-bandwidth {*<Gbps bandwidth>*|*<Mbps bandwidth>*} **[Gbps | Mbps]**

no auto-cost reference-bandwidth

where:

Parameter	Description
<Gbps bandwidth>	Bandwidth for Gbps (a number from 1 to 4294).
<Mbps bandwidth>	Bandwidth for Mbps (a number from 1 to 4294967).
Gbps	The reference bandwidth in terms of Gbits per second.
Mbps	The reference bandwidth in terms of Mbits per second.

Using **no** before the command assigns cost based only on the interface bandwidth.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to control OSPF bandwidth:

```
G8272(config-router)# auto-cost reference-bandwidth 2000
```

Restrictions

For multiple links with high bandwidth, please specify a larger reference bandwidth value to differentiate cost on those links.

bfd

Enables BFD on all interfaces.

Syntax

[no] bfd

Using **no** before the command turns off the feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable BFD:

```
G8272(config-router)# bfd
```

default-information originate

Creates a default external route into an OSPF routing domain.

Syntax

[no] default-information-originate [always] [metric *<metric value>*]**[metric-type** *<metric type value>*] **[route-map** *<map-name>*]

where:

Parameter	Description
always	Always advertise default route.
metric *<metric value>*	OSPF default metric value (a number from 0 to 16777214).
metric-type *<metric type value>*	OSPF metric type for the default route (a number from 1 to 2).
route-map *<map name>*	Name of the route map.

Using **no** before the command turns off the feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to create a default external route:

```
G8272(config-router)# default-information-originate route-map test
```

Restrictions

When using this command, you should specify a route-map to avoid a dependency on the default network in the routing table.

default-metric

Configures a default metric for OSPF external LSA. Use this command to have the same metric value for all redistributed routes.

Syntax

[no] default-metric *<value>*

where:

Parameter	Description
<value>	Default metric value (a number from 1 to16777214).

Using **no** before the command returns the configuration to the default state.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets a default metric for OSPF external LSA:

```
G8272(config-router)# default-metric 3000
```

distance

Configures OSPF administrative distance.

Syntax

[no] distance *<value>*

where:

Parameter	Description
<value>	Distance value. The default is 110.

Using **no** before the command restores the distance to its default value.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets distance :

```
G8272(config-router)# distance 120
```

Restrictions

A higher distance value means a lower trust rating (e.g., an administrative distance of 255 means that the routing information source cannot be trusted and should be ignored).

enable db-summary-op

Enables OSPF Database Summary Optimization. This feature is enabled by default.

Syntax

```
[no] enable db-summary-op
```

Using **no** before the command turns off this feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable this feature:

```
G8272(config-router)# enable db-summary-op
```

log-adjacency-changes

Configures the router to send a syslog message whenever the state of an OSPF neighbor changes.

Syntax

[no] log-adjacency-changes [detail]

where:

Parameter	Description
detail	Logs all state changes.

Using **no** before the command turns off this feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets a syslog message:

```
G8272(config-router)# log-adjacency-changes
```

max-concurrent-dd

Configures the number of neighbors that can negotiate adjacency at the same time.

Syntax

[no] max-concurrent-dd *<value>*

where:

Parameter	Description
<value>	Number of DD processes (a number from 1 to 32). The default value is 5.

Using **no** before the command turns off this feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets this feature:

```
G8272(config-router)# max-concurrent-dd 10
```

overflow

Sets the maximum number of LSAs that can be installed in LSDB. The feature is disabled by default.

Syntax

[no] overflow database {<*max lsas*>**[hard|soft]|external** <*max lsas*> <*recovery time*>}

where:

Parameter	Description
<*max lsas*>	Maximum number of LSAs (a number from 1 to 4294967294).
hard	Shutdowns the instance if the limit is exceeded.
soft	Sends a warning message if the limit is exceeded.
external <*max lsas*>	External link maximum number of LSAs (a number from 1 to 2147483647).
<*recovery time*>	Time to recover, in seconds (a number from 0 to 65535).

Using **no** before the command turns off this feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure this feature:

```
G8272(config-router)# overflow database 400 soft
```

redistribute

Redistributes routes from a routing protocol, static route, and connected routes into an OSPF routing table.

Syntax

redistribute {**bgp | direct | static**} **[metric** *<metriv value>*] **[metric-type** *<metric type value>*] **[route-map** *<map-name>*] **[tag** *<tag value>*]

no redistribute { **bgp | direct | static**} **[metric|metric-type|route-map | tag**]

where:

Parameter	Description
bgp	Routes belonging to BGP protocol.
direct	Routes directly connected on an interface.
static	IP static routes.
metric *<metric value>*	OSPF default metric value (a number from 0 to 16777214).
metric-type *<metric type value>*	OSPF metric type for default routes (a number from 1 to 2).
route-map *<map name>*	Name of the route map.
tag *<tag value>*	Tag value (a number from 0 to 4294967295).

Using **no** before the command turns off the feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable redistribution of routes into an OSPF routing table:

```
G8272(config-router)# redistribute bgp 100
```

rfc1583compatibility

Enables the RFC1583 compatibility flag and changes how summary and external routes are calculated.

Syntax

[no] rfc1583compatibility

Using **no** before the command turns off this feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable RFC 1583 compatibility:

```
G8272(config-router)# rfc1583compatibility
```

router-id

Manually defines the router ID for a OSPF speaker.

Syntax

[no] router-id *<IP address>*

where:

Parameter	Description
<IP address>	Router identifier.

Using **no** before the command reverts to the previous router ID behavior.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure the router ID:

```
G8272(config-router)# router-id 1.1.1.1
```

shutdown

Disables the OSPF process.

The **no** form of the command enables the OSPF process.

Syntax

[no] shutdown

Modes

OSPF Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the OSPF process:

```
G8272(config)# no shutdown
```

summary-address

Summarizes or suppresses external routes with the specified address range.

Syntax

[no] summary-address {*<ip address>*| *<ip-prefix/length>* *<ip mask>*}
[not-advertise] [tag *<tag value>*]

where:

Parameter	Description
<ip address>	IP summary prefix.
<ip-prefix/length>	IP summary prefix/length.
<ip mask>	IP summary prefix mask.
not-advertise	Suppresses routes that match the specified prefix.
tag *<tag value>*	Tag value (a number from 0 to 4294967295).

Using **no** before the command turns off the feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets summary address:

```
G8272(config-router)# summary-address 255.0.0.0 tag 19
```

timers lsa-arrival

Sets the minimum interval for accepting the same LSA from OSPF neighbors.

Syntax

[no] timers lsa-arrival *<delay value>*

where:

Parameter	Description
<delay value>	Minimum delay time, in milliseconds (a number from 10 to 600000). The default value is 1000.

Using **no** before the command restores the default value.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the lsa timer:

```
G8272(config-router)# timers lsa-arrival 2000
```

timers throttle lsa

Sets rate limiting values for OSPF LSA.

Syntax

timers throttle lsa *<start time> <hold interval> <max time>*

no timers throttle lsa

where:

Parameter	Description
<start time>	Starting delay for LSA generation calculation, in milliseconds (a number from 0 to 5000). The default value is 0.
<hold interval>	Incremental delay for LSA generation calculation, in milliseconds (a number from 50 to 30000). The default value is 5000.
<max time>	Maximum delay for LSA generation calculation, in milliseconds (a number from 50 to 30000). The default value is 5000.

Using **no** before the command restores the default values.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure rate limiting values for OSPF LSA:

```
G8272(config-router)# timers throttle lsa 100 6000 8000
```

timers throttle spf

Sets the SPF best-path schedule initial delay time and the minimum hold between SPF best-path calculation for OSPF.

Syntax

[no] timers throttle spf *<initial time> <min time> <max time>*

where:

Parameter	Description
<initial time>	Initial SPF scheduled delay, in milliseconds (a number from 1 to 600000).
<min time>	Minimum delay between two consecutive SPF calculations (a number from 1 to 600000).
<max time>	Maximum delay between two consecutive SPF calculations, in milliseconds (a number from 1 to 600000).

Using **no** before the command turns off the feature.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets SPF timers:

```
G8272(config-router)# timers throttle spf 200 400 1000
```

Chapter 14. Virtual Link Mode Commands

This chapter describes the commands for entering and using OSPF Virtual Link mode.

area <area id> virtual-link

Sets a link between two backbone areas that are physically separated through other non backbone area.

Enters the virtual link configuration mode.

Syntax

[no] area *<area id>* **virtual-link** *<IP address>*

where:

Parameter	Description
<area id>	Decimal value (a number from 0 to 4294967295) or IP address.
<IP address>	IPv4 address associated with virtual link neighbor.

Using **no** before the command removes a virtual link.

Modes

OSPF Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure a virtual link:

```
G8272(config-router)# area 1.1.1.1 virtual-link 255.0.0.0
```

authentication

Sets an authentication type between virtual-link neighbors.

Syntax

[no] authentication [message-digest|null]

where:

Parameter	Description
message-digest	Enables MD5 authentication.
null	Null authentication.

Using **no** before the command removes a virtual link authentication type.

Modes

OSPF Virtual Link Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets an authentication type:

```
G8272(config-router-vlink)# authentication
```

authentication-key

Sets an authentication key between virtual-link neighbors.

Syntax

[no] authentication-key [0] *<string>*

where:

Parameter	Description
0	Uses an un-encrypted key.
<string>	Password string.

Using **no** before the command removes a virtual link authentication.

Modes

OSPF Virtual Link Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets an authentication between virtual link neighbors:

```
G8272(config-router-vlink)# authentication-key password
```

dead-interval

Sets the health parameters of a hello packet, in seconds, before declaring a silent router to be down.

Syntax

[no] dead-interval *<seconds>*

where:

Parameter	Description
<seconds>	Time interval (a number from 1 to 65535). The default value is 40 seconds.

Using **no** before the command restores the default time.

Modes

OSPF Virtual Link Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets a dead interval value:

```
G8272(config-router-vlink)# dead-interval 120
```

hello-interval

Sets the interval, in seconds, between the hello packets.

Syntax

[no] hello-interval *<seconds>*

where:

Parameter	Description
<seconds>	Time interval (a number from 1 to 65535). The default value is 10 seconds.

Using **no** before the command restores the default time.

Modes

OSPF Virtual Link Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the interval between hello packets:

```
G8272(config-router-vlink)# hello-interval 50
```

message-digest-key

Configures a MD5 key on a virtual link for MD5 authentication.

Syntax

[no] message-digest-key *<key id>* **md5** {**0|***<string>*}

where:

Parameter	Description
<key id>	Key Identifier (a number from 1 to 255).
md5	MD5 authentication.
0	Uses an un-encrypted key.
<string>	Password string.

Using **no** before the command removes a previous configured password.

Modes

OSPF Virtual Link Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable MD5 authentication on a virtual link:

```
G8272(config-router-vlink)# message-digest-key 1 md5 0
```

retransmit-interval

Configures the interval in seconds, between LSA retransmissions for adjacencies belonging to the virtual link.

Syntax

[no] retransmit-interval *<seconds>*

where:

Parameter	Description
<seconds>	Time interval (a number from 1 to 65535). The default value is 1 seconds.

Using **no** before the command restores the default time.

Modes

OSPF Virtual Link Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the retransmit-interval value:

```
G8272(config-router-vlink)# retransmit-interval 100
```

transmit-delay

Configures the estimated time, in seconds, taken to transmit LS update packet over the specified virtual link.

Syntax

[no] transmit-delay *<seconds>*

where:

Parameter	Description
<seconds>	Time interval (a number from 1 to 3600). The default value is 5 seconds.

Using **no** before the command restores the default time.

Modes

OSPF Virtual Link Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following sets the transmit delay value:

```
G8272(config-router-vlink)# transmit-delay 100
```

Chapter 15. TACACS+ Server Mode Commands

This chapter explains how to enter TACACS+ Server Configuration Mode and the commands within that mode.

Note: TACACS+ has the following restrictions:

- Username: maximum 32 characters, only lowercase letters and numbers; must start with a letter.
- Password: maximum 255 characters, including uppercase lowercase numbers and special characters.

aaa group server tacacs+

Creates or deletes a group of Terminal Access Controller Access-Control System Plus (TACACS+) servers for Authentication, Authorization and Accounting (AAA). After creating a group, you enter TACACS+ configuration mode for that group.

Syntax

[no] aaa group server tacacs+ *<server group name>*

where:

Parameter	Function
server group name	The name of the TACACS+ server group. Its length can be up to a maximum of 127 characters, only lowercase letters and numbers and must start with a letter.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates TACACS+ server group 'tacacs-group-1':

```
G8272(config)# aaa group server tacacs+ tacacs-group-1
```

server

Adds or removes a server to or from the current Terminal Access Controller Access-Control System Plus (TACACS+) group.

Syntax

[no] server *<server address>*

where:

Parameter	Function
server address	The IPv4 or IPv6 address of the TACACS+ server.

Modes

TACACS+ Server Group Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds a TACACS+ server to the current group:

```
G8272(config-tacacs)# server 10.190.45.76
```

use-vrf

Sets the Virtual Routing and Forwarding (VRF) instance for this group. Only users who login from an interface that is in this VRF instance will have a chance to login. Other users will get a timeout when trying to authenticate to the servers.

Syntax

[no] use-vrf *<VRF instance>*

where:

Parameter	Function
VRF instance	The name of the VRF instance. It can be default or management.

Modes

TACACS+ Server Group Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the current group to use the default VRF instance:

```
G8272(config-tacacs)# use-vrf default
```

Chapter 16. SPAN Session Mode Commands

This chapter describes how to enter SPAN Session Configuration Mode and the commands in this mode.

monitor session

Adds or removes a Switch Port Analyzer (SPAN) session. After the creation of a SPAN session, enters SPAN Session Configuration Mode.

Syntax

[**no**] **monitor session** *<session number>*

where:

Parameter	Function
session number	The SPAN session number. The *session number* is from 1 to 18.

The **no** version of this command with the argument **all** removes all SPAN sessions:

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds a SPAN session:

```
G8272(config)# monitor session 7
```

description

Adds or removes a short description of the current Switch Port Analyzer (SPAN) session.

Syntax

[**no**] **description** <*description*>

where:

Parameter	Function
description	The description string of the SPAN session. Its length can be up to a maximum of 32 characters.

Modes

SPAN Session Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command describes the current SPAN session as 'SPAN session 3':

```
G8272(config-monitor)# description SPAN session 3
```

destination

Adds or removes a destination interface for the current Switch Port Analyzer (SPAN) session.

Syntax

[**no**] **destination interface** {**ethernet** <*chassis number*/*port number*>| **port-aggregation** <*LAG number*>}

where:

Parameter	Function
`ethernet` *chassis number*/*port number*	Sets the specified ethernet interface as the SPAN session destination interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`port-aggregation` *LAG number*	Sets the specified Link Aggregation Group (LAG) as the SPAN session destination interface. The *VLAN number* is from 1 to 4096.

Modes

SPAN Session Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets ethernet interface 1/8 as the SPAN session destination interface:

```
G8272(config-monitor)# destination interface ethernet 1/8
```

shut

Configures the Switch Port Analyzer (SPAN) session as being shut down for monitoring.

Using the **no** form of the command configures the SPAN session as not being shut down for monitor.

Syntax

[**no**] **shut**

Modes

SPAN Session Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures the SPAN session as being shut down:

```
G8272(config)# shut
```

source

Adds or removes a source interface for the current Switch Port Analyzer (SPAN) session.

Syntax

[**no**] **source interface** {**ethernet** *<chassis number/port number>*| **port-aggregation** *<LAG number>*}

where:

Parameter	Function
`ethernet` *chassis number/port number*	Sets the specified ethernet interface as the SPAN session source interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`port-aggregation` *LAG number*	Sets the specified Link Aggregation Group (LAG) as the SPAN session source interface. The *VLAN number* is from 1 to 4096.

Modes

SPAN Session Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets ethernet interface 1/8 as the SPAN session source interface:

```
G8272(config-monitor)# source interface ethernet 1/8
```

Chapter 17. Control Plane Mode Commands

This chapter describes how to enter Control Plane Configuration Mode and the commands available in this mode.

control-plane

Enters Control Plane Configuration mode.

Syntax

control-plane

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enters Control Plane Configuration Mode:

```
G8272(config)# control-plane
```

service-policy

Defines the control plane service policy.

Syntax

`service-policy input` *copp-system-policy*

where:

Parameter	Function
`input`	Defines the ingress service policy.
copp-system-policy	The name of the control plane service policy.

Modes

Control Plane Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command defines the control plane ingress service policy as `copp-system-policy`:

```
G8272(config-cp)# service-policy input copp-system-policy
```

Chapter 18. Key Chain Mode Commands

This chapter describes commands for configuring authentication keychains and keys.

key chain

Adds an authentication keychain and enters Key Chain Configuration mode.

Syntax

[no] key chain *<key chain name>*

where:

Parameter	Function
key chain name	The name of the authentication keychain.

Using **no** before this command removes the authentication keychain.

Modes

- Configuration Mode
- Key Chain Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds an authentication keychain named 'kc-30':

```
G8272(config)# key chain kc-30
```

key

Adds or removes an authentication key. After creating an authentication key, the user enters Key Configuration mode.

Syntax

[no] key *<key ID>*

where:

Parameter	Function
key ID	The authentication key identification number. The *key ID* is from 0 to 2147483647.

Modes

- Key Chain Configuration Mode
- Key Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds an authentication key '1900':

```
G8272(config-keychain)# key 1900
```

accept-lifetime

Configures the time interval during which the authentication key on the key chain is accepted as valid when received.

The earliest acceptable starting date is January 1, 1993.

Syntax

[no] accept-lifetime *<start time> <start day> <start month> <start year>* **{***<end time> <end day> <end month> <end year>***|duration** *<duration>***| infinite}**

where:

Parameter	Function
start time	The key is considered valid starting with this time. The *start time* format is *HH:mm:ss*, where: • *HH* is the hour of the day (range is 00 to 24) • *mm* is the minute of the hour (range is 00 to 60) • *ss* is the second of the minute (range is 00 to 60)
start day	The key is considered valid starting with this day. The *start day* is from 1 to 31. Default value is 1.
start month	The key is considered valid starting with this month. The *start month* is from January to December. Default value is 1.
start year	The key is considered valid starting with this year. The *start year* is from 1993 to 2035. Default value is 1993.
end time	The key is considered valid until this time. The *end time* format is *HH:mm:ss*, where: • *HH* is the hour of the day (range is 00 to 24) • *mm* is the minute of the hour (range is 00 to 60) • *ss* is the second of the minute (range is 00 to 60)
end day	The key is considered valid until this day. The *end day* is from 1 to 31.
end month	The key is considered valid until this month. The *end month* is from January to December.
end year	The key is considered valid until this year. The *end year* is from 1993 to 2035.
`duration` *duration*	The key is valid for specified amount of seconds. The *duration* is from 1 to 2147483646.
`infinite`	The key never expires.

Using the **no** form of the command resets the accept lifetime interval to its default value.

Modes

Key Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures an authentication key to be valid from January 20, 2016 starting at 8 AM for one year, as specified in seconds:

```
G8272(config-keychain-key)# accept-lifetime 8:0:0 30 January 2016
duration 31536000
```

key-string

Adds or removes an authentication key string. The key string must be included in sent or received packets by the routing protocol being authenticated.

Syntax

`[no] key-string` *<key string>*

where:

Parameter	Function
key string	The *key string* has a length of up to a maximum of 80 alphanumeric characters.

Modes

Key Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command adds the string 'key01' to the current authentication key:

```
G8272(config-keychain-key)# key-string key01
```

send-lifetime

Configures the time interval during which the authentication key on the key chain is valid when sent.

The earliest acceptable starting date is January 1, 1993.

Syntax

`[no] send-lifetime` *<start time> <start day> <start month> <start year>* **`{`***<end time> <end day> <end month> <end year>***`|duration`** *<duration>***`|infinite}`**

where:

Parameter	Function
start time	The key is considered valid starting with this time. The *start time* format is *HH:mm:ss*, where: • *HH* is the hour of the day (range is 00 to 24) • *mm* is the minute of the hour (range is 00 to 60) • *ss* is the second of the minute (range is 00 to 60)
start day	The key is considered valid starting with this day. The *start day* is from 1 to 31. Default value is 1.
start month	The key is considered valid starting with this month. The *start month* is from January to December. Default value is January.
start year	The key is considered valid starting with this year. The *start year* is from 1993 to 2035. Default value is 1993.
end time	The key is considered valid until this time. The *end time* format is *HH:mm:ss*, where: • *HH* is the hour of the day (range is 00 to 24) • *mm* is the minute of the hour (range is 00 to 60) • *ss* is the second of the minute (range is 00 to 60)
end day	The key is considered valid until this day. The *end day* is from 1 to 31.
end month	The key is considered valid until this month. The *end month* is from January to December.
end year	The key is considered valid until this year. The *end year* is from 1993 to 2035.
`duration` *duration*	The key is valid for specified amount of seconds. The *duration* is from 1 to 2147483646.
`infinite`	The key never expires.

Using the **no** form of the command resets the send lifetime interval to its default value.

Modes

Key Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures an authentication key to be valid from January 30, 2016, starting at 8 AM, for one year, as specified in seconds:

```
G8272(config-keychain-key)# send-lifetime 8:0:0 30 January 2016 duration
31536000
```

Chapter 19. IP ACL Mode Commands

This chapter describes the commands available to configure IP Access Control Lists (ACL).

ip access-list

Adds or removes an Access Control List (ACL). After creating an ACL, the user enters ACL Configuration Mode.

Syntax

[no] ip access-list *<ACL name>*

where:

Parameter	Function
ACL name	The name of ACL.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates an ACL named 'acl-03':

```
G8272(config)# ip access-list acl-03
```

deny

Enables or disables the discarding of packets.

Syntax

[no] [*<ACL sequence number>***] deny {***<IANA protocol number>***|ahp|any|eigrp|esp|gre|igmp|ip|nos|ospf|pcp|pim} {***<source address>***|any|host** *<single source address>***} {***<destination address>***|any|host** *<single destination address>***} [dscp** *<dscp value>***|precedence** *<precedence value>***] [fragments]**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
IANA protocol number	Discards packets based on the protocol number assigned by the Internet Assigned Numbers Authority (IANA). The *IANA protocol number* is from 1 to 255.
`ahp`	Discards Authentication Header (AH) packets.
`any`	Depending on the position where this parameter is used it can mean the discarding of: • packets regardless of their source protocol, or • packets regardless of their source address, or • packets regardless of their destination address.
`eigrp`	Discards Enhanced Interior Gateway Routing Protocol (EIGRP) packets.
`esp`	Discards Encapsulating Security Payload (ESP) packets.
`gre`	Discards Generic Routing Encapsulation (GRE) packets.
`igmp`	Discards Internet Group Management Protocol (IGMP) packets.
`ip`	Discards Internet Protocol version 4 (IPv4) encapsulation packets.
`nos`	Discards KA9Q NOS compatible IP over IP tunneling packets.
`ospf`	Discards Open Shortest Path First (OSPF) packets.
`pcp`	Discards IP Payload Compression Protocol (PCP) packets.
`pim`	Discards Protocol Independent Multicast (PIM) packets.

Parameter	Function
source address	Discards packets received from the specified source address. It can be written as: • *source IPv4 address source wildcard mask* • *source IPv4 address/network mask length*
`host` *single source address*	Discards packets received from the specified single source IPv4 address.
destination address	Discards packets sent to the specified destination address. It can be written as: • *destination IPv4 address destination wildcard mask* • *destination IPv4 address/network mask length*
`host` *single destination address*	Discards packets sent to the specified single destination IPv4 address.
`dscp` *dscp value*	Discards packets based on their DiffServ Code Point (DSCP) value. The *DSCP value* is from 0 to 63 or one of the following: • `af11` - AF11 DSCP (001010) • `af12` - AF12 DSCP (001100) • `af13` - AF13 DSCP (001110) • `af21` - AF21 DSCP (010010) • `af22` - AF22 DSCP (010100) • `af23` - AF23 DSCP (010110) • `af31` - AF31 DSCP (011010) • `af32` - AF32 DSCP (011100) • `af33` - AF33 DSCP (011110) • `af41` - AF41 DSCP (100010) • `af42` - AF42 DSCP (100100) • `af43` - AF43 DSCP (100110) • `cs1` - CS1(precedence 1) DSCP (001000) • `cs2` - CS2(precedence 2) DSCP (010000) • `cs3` - CS3(precedence 3) DSCP (011000) • `cs4` - CS4(precedence 4) DSCP (100000) • `cs5` - CS5(precedence 5) DSCP (101000) • `cs6` - CS6(precedence 6) DSCP (110000) • `cs7` - CS7(precedence 7) DSCP (111000) • `default` - Default DSCP (000000) • `ef` - EF DSCP (101110)

Parameter	Function
`precedence` *precedence value*	Discards packets based on their precedence value. The *precedence value* is from 0 to 7 or it can be one of the following: • `routine` - Routine precedence (0) • `priority` - Priority precedence (1) • `immediate` - Immediate precedence (2) • `flash` - Flash precedence (3) • `flash-override` - Flash override precedence (4) • `critical` - Critical precedence (5) • `internet` - Internetwork control precedence (6) • `network` - Network control precedence (7)
`fragments`	Checks non-initial fragments.

Modes

ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the discarding of OSPF packets received from the single source address 10.240.35.78 with any destination:

```
G8272(config-acl)# deny ospf host 10.240.35.78 any
```

deny icmp

Enables or disables the discarding of Internet Control Message Protocol (ICMP) packets.

Syntax

[no] [<*ACL sequence number*>**] deny icmp {**<*source address*>**|any|host** <*single source address*>**} {**<*destination address*>**|any|host** <*single destination address*>**} [**<*ICMP type*>**|administratively-prohibited|alternate-address|conversion-error|dod-host-prohibited|dod-net-prohibited|dscp** <*dscp value*>**|echo|echo-reply|general-parameter-problem|host-isolated|host-precedence-unreachable|host-redirect|host-tos-redirect|host-tos-unreachable|host-unknown|host-unreachable|information-reply|information-request|mask-reply|mask-request|mobile-redirect|net-redirect|net-tos-redirect|net-tos-unreachable|net-unreachable|network-unknown|no-room-for-option|option-missing|packet-too-big|parameter-problem|port-unreachable|precedence** <*precedence value*>**|precedence-unreachable|protocol-unreachable|reassembly-timeout|redirect|router-advertisement|router-solicitation|source-quench|source-route-failed|time-exceeded|timestamp-reply|timestamp-request|traceroute|ttl-exceeded|unreachable] [fragments]**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
source address	Discards ICMP packets received from the specified source address. It can be written as: • *source IPv4 address source wildcard mask* • *source IPv4 address/network mask length*
`any`	Discards ICMP packets received or sent from or to any source or destination address.
`host` *single source address*	Discards ICMP packets received from the specified single source IPv4 address.
destination address	Discards ICMP packets sent to the specified destination address. It can be written as: • *destination IPv4 address destination wildcard mask* • *destination IPv4 address/network mask length*
`host` *single destination address*	Discards ICMP packets sent to the specified single destination IPv4 address.

Parameter	Function
ICMP type	Discards ICMP packets based on their type. The *ICMP type* is from 0 to 255.
`administratively-prohibited`	Discards ICMP administratively prohibited packets.
`alternate-address`	Discards ICMP alternate address packets.
`conversion-error`	Discards ICMP datagram conversion error packets.
`dod-host-prohibited`	Discards ICMP host prohibited packets.
`dod-net-prohibited`	Discards ICMP network prohibited packets.
`dscp` *dscp value*	Discards ICMP packets based on their DiffServ Code Point (DSCP) value. The *DSCP value* is from 0 to 63 or one of the following: • `af11` - AF11 DSCP (001010) • `af12` - AF12 DSCP (001100) • `af13` - AF13 DSCP (001110) • `af21` - AF21 DSCP (010010) • `af22` - AF22 DSCP (010100) • `af23` - AF23 DSCP (010110) • `af31` - AF31 DSCP (011010) • `af32` - AF32 DSCP (011100) • `af33` - AF33 DSCP (011110) • `af41` - AF41 DSCP (100010) • `af42` - AF42 DSCP (100100) • `af43` - AF43 DSCP (100110) • `cs1` - CS1(precedence 1) DSCP (001000) • `cs2` - CS2(precedence 2) DSCP (010000) • `cs3` - CS3(precedence 3) DSCP (011000) • `cs4` - CS4(precedence 4) DSCP (100000) • `cs5` - CS5(precedence 5) DSCP (101000) • `cs6` - CS6(precedence 6) DSCP (110000) • `cs7` - CS7(precedence 7) DSCP (111000) • `default` - Default DSCP (000000) • `ef` - EF DSCP (101110)
`echo`	Discards ICMP echo packets.
`echo-reply`	Discards ICMP echo replies.
`general-parameter-problem`	Discards ICMP packets that have a problem.
`host-isolated`	Discards ICMP host isolated packets.
`host-precedence-unreachable`	Discards ICMP host unreachable for precedence packets.

Parameter	Function
`host-redirect`	Discards ICMP host redirect packets.
`host-tos-redirect`	Discards ICMP host redirects for Type of Services (ToS).
`host-tos-unreachable`	Discards ICMP host unreachable for ToS packets.
`host-unknown`	Discards ICMP host unknown packets.
`host-unreachable`	Discards ICMP host unreachable packets.
`information-reply`	Discards ICMP information replies.
`information-request`	Discards ICMP information requests.
`mask-reply`	Discards ICMP network mask replies.
`mask-request`	Discards ICMP network mask requests.
`mobile-redirect`	Discards ICMP mobile redirects.
`net-redirect`	Discards ICMP network redirects.
`net-tos-redirect`	Discards ICMP network redirects for ToS.
`net-tos-unreachable`	Discards ICMP network unreachable for ToS packets.
`net-unreachable`	Discards ICMP network unreachable packets.
`network-unknown`	Discards ICMP network unknown packets.
`no-room-for-option`	Discards ICMP packets where a parameter is required but there is no space available.
`option-missing`	Discards ICMP packets where a parameter is required but it is missing.
`packet-too-big`	Discards ICMP packets that are too large requiring fragmentation.
`parameter-problem`	Discards all ICMP packets with parameter problems.
`port-unreachable`	Discards ICMP port unreachable packets.

Parameter	Function
`precedence` *precedence value*	Discards ICMP packets based on their precedence value. The *precedence value* is from 0 to 7 or it can be one of the following: • `routine` - Routine precedence (0) • `priority` - Priority precedence (1) • `immediate` - Immediate precedence (2) • `flash` - Flash precedence (3) • `flash-override` - Flash override precedence (4) • `critical` - Critical precedence (5) • `internet` - Internetwork control precedence (6) • `network` - Network control precedence (7)
`precedence-unreachable`	Discards ICMP precedence cutoff packets.
`protocol-unreachable`	Discards ICMP protocol unreachable packets.
`reassembly-timeout`	Discards ICMP reassembly timeouts.
`redirect`	Discards all ICMP redirects.
`router-advertisement`	Discards ICMP router discovery advertisements.
`router-solicitation`	Discards ICMP router discovery solicitations.
`source-quench`	Discards ICMP source quenches.
`source-route-failed`	Discards ICMP source route failed packets.
`time-exceeded`	Discards all ICMP time exceeded messages.
`timestamp-reply`	Discards ICMP timestamp replies.
`timestamp-request`	Discards ICMP timestamp requests.
`traceroute`	Discards ICMP trace route packets.
`ttl-exceeded`	Discards ICMP Time to Live (TTL) exceeded packets.
`unreachable`	Discards all ICMP unreachable packets.
`fragments`	Checks non-initial fragments.

Modes

ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the discarding of ICMP packets received from the single source address 10.240.35.78 with any destination:

```
G8272(config-acl)# deny icmp host 10.240.35.78 any
```

deny tcp

Enables or disables the discarding of Transmission Control Protocol (TCP) packets.

Syntax

[no] [*<ACL sequence number>***] deny tcp {***<source address>***|any|host** *<single source address>***} [{eq|gt|lt|neq}** *<source port>***|range** *<source port range>***] {***<destination address>***|any|host** *<single destination address>***} [{eq|gt|lt|neq}** *<destination port>***|range** *<destination port range>***] [ack] [established] [fin] [psh] [rst] [syn] [urg] [dscp** *<dscp value>***| precedence** *<precedence value>***] [fragments]**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
source address	Discards TCP packets received from the specified source address. It can be written as: • *source IPv4 address source wildcard mask* • *source IPv4 address/network mask length*
`any`	Discards TCP packets received or sent from or to any source or destination address.
`eq`	Discards TCP packets with source port number equal to the specified value.
`gt`	Discards TCP packets with source port number greater than the specified value.
`lt`	Discards TCP packets with source port number lower than the specified value.
`neq`	Discards TCP packets with source port number not equal to the specified value.
source port	The TCP source port number. It is from 0 to 65535.
destination port	The TCP destination port number. It is from 0 to 65535.
`range`	Discards TCP packets with port numbers included in the specified port range.
source port range	The TCP source port range. It is from 0 to 65535.
destination port range	The TCP destination port range. It is from 0 to 65535.
`host` *single source address*	Discards TCP packets received from the specified single source IPv4 address.

Parameter	Function
destination address	Discards TCP packets sent to the specified destination address. It can be written as: • *destination IPv4 address destination wildcard mask* • *destination IPv4 address/network mask length*
`host` *single destination address*	Discards TCP packets sent to the specified single destination IPv4 address.
`ack`	Discards TCP packets that have matching acknowledgment bits.
`established`	Discards TCP packets that belong to an established TCP connection.
`fin`	Discards TCP packets that have matching finish bits.
`psh`	Discards TCP packets that have matching push bits.
`rst`	Discards TCP packets that have matching reset bits.
`syn`	Discards TCP packets that have matching synchronize bits.
`urg`	Discards TCP packets that have matching urgent bits.
`dscp` *dscp value*	Discards TCP packets based on their DiffServ Code Point (DSCP) value. The *DSCP value* is from 0 to 63 or one of the following: • `af11` - AF11 DSCP (001010) • `af12` - AF12 DSCP (001100) • `af13` - AF13 DSCP (001110) • `af21` - AF21 DSCP (010010) • `af22` - AF22 DSCP (010100) • `af23` - AF23 DSCP (010110) • `af31` - AF31 DSCP (011010) • `af32` - AF32 DSCP (011100) • `af33` - AF33 DSCP (011110) • `af41` - AF41 DSCP (100010) • `af42` - AF42 DSCP (100100) • `af43` - AF43 DSCP (100110) • `cs1` - CS1(precedence 1) DSCP (001000) • `cs2` - CS2(precedence 2) DSCP (010000) • `cs3` - CS3(precedence 3) DSCP (011000) • `cs4` - CS4(precedence 4) DSCP (100000) • `cs5` - CS5(precedence 5) DSCP (101000) • `cs6` - CS6(precedence 6) DSCP (110000) • `cs7` - CS7(precedence 7) DSCP (111000) • `default` - Default DSCP (000000) • `ef` - EF DSCP (101110)

Parameter	Function
`precedence` *precedence value*	Discards TCP packets based on their precedence value. The *precedence value* is from 0 to 7 or it can be one of the following: • `routine` - Routine precedence (0) • `priority` - Priority precedence (1) • `immediate` - Immediate precedence (2) • `flash` - Flash precedence (3) • `flash-override` - Flash override precedence (4) • `critical` - Critical precedence (5) • `internet` - Internetwork control precedence (6) • `network` - Network control precedence (7)

Modes

ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the discarding of TCP packets received from any source with any destination with source and destination ports 540 that match on their acknowledgment bits:

```
G8272(config-acl)# deny tcp any eq 540 any eq 540 ack
```

deny udp

Enables or disables the discarding of User Datagram Protocol (UDP) packets.

Syntax

[no] [<*ACL sequence number*>**] deny udp {**<*source address*>**|any|host** <*single source address*>**} [{eq|gt|lt|neq}** <*source port*>**|range** <*source port range*>**] {**<*destination address*>**|any|host** <*single destination address*>**} [{eq|gt|lt|neq}** <*destination port*>**|range** <*destination port range*>**] [ack] [established] [fin] [psh] [rst] [syn] [urg] [dscp** <*dscp value*>**| precedence** <*precedence value*>**] [fragments]**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
source address	Discards UDP packets received from the specified source address. It can be written as: • *source IPv4 address source wildcard mask* • *source IPv4 address/network mask length*
`any`	Discards UDP packets received or sent from or to any source or destination address.
`eq`	Discards UDP packets with source port number equal to the specified value.
`gt`	Discards UDP packets with source port number greater than the specified value.
`lt`	Discards UDP packets with source port number lower than the specified value.
`neq`	Discards UDP packets with source port number not equal to the specified value.
source port	The UDP source port number. It is from 0 to 65535.
destination port	The UDP destination port number. It is from 0 to 65535.
`range`	Discards UDP packets with port numbers included in the specified port range.
source port range	The UDP source port range. It is from 0 to 65535.
destination port range	The UDP destination port range. It is from 0 to 65535.
`host` *single source address*	Discards UDP packets received from the specified single source IPv4 address.

Parameter	Function
destination address	Discards UDP packets sent to the specified destination address. It can be written as: • *destination IPv4 address destination wildcard mask* • *destination IPv4 address/network mask length*
`host` *single destination address*	Discards UDP packets sent to the specified single destination IPv4 address.
`dscp` *dscp value*	Discards UDP packets based on their DiffServ Code Point (DSCP) value. The *DSCP value* is from 0 to 63 or one of the following: • `af11` - AF11 DSCP (001010) • `af12` - AF12 DSCP (001100) • `af13` - AF13 DSCP (001110) • `af21` - AF21 DSCP (010010) • `af22` - AF22 DSCP (010100) • `af23` - AF23 DSCP (010110) • `af31` - AF31 DSCP (011010) • `af32` - AF32 DSCP (011100) • `af33` - AF33 DSCP (011110) • `af41` - AF41 DSCP (100010) • `af42` - AF42 DSCP (100100) • `af43` - AF43 DSCP (100110) • `cs1` - CS1(precedence 1) DSCP (001000) • `cs2` - CS2(precedence 2) DSCP (010000) • `cs3` - CS3(precedence 3) DSCP (011000) • `cs4` - CS4(precedence 4) DSCP (100000) • `cs5` - CS5(precedence 5) DSCP (101000) • `cs6` - CS6(precedence 6) DSCP (110000) • `cs7` - CS7(precedence 7) DSCP (111000) • `default` - Default DSCP (000000) • `ef` - EF DSCP (101110)
`precedence` *precedence value*	Discards UDP packets based on their precedence value. The *precedence value* is from 0 to 7 or it can be one of the following: • `routine` - Routine precedence (0) • `priority` - Priority precedence (1) • `immediate` - Immediate precedence (2) • `flash` - Flash precedence (3) • `flash-override` - Flash override precedence (4) • `critical` - Critical precedence (5) • `internet` - Internetwork control precedence (6) • `network` - Network control precedence (7)

Modes

ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the discarding of UDP packets received from any source with source ports between 240 and 500 that have any destination with destination ports greater than 1000:

```
G8272(config-acl)# deny udp any range 240-500 any gt 1000
```

permit

Enables or disables the forwarding of packets.

Syntax

[no] [<*ACL sequence number*>**] permit {**<*IANA protocol number*>**|ahp|any|eigrp|esp|gre|igmp|ip|nos|ospf|pcp|pim} {**<*source address*>**|any|host** <*single source address*>**} {**<*destination address*>**|any|host** <*single destination address*>**} [dscp** <*dscp value*>**|precedence** <*precedence value*>**] [fragments]**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
IANA protocol number	Forwards packets based on the protocol number assigned by the Internet Assigned Numbers Authority (IANA). The *IANA protocol number* is from 1 to 255.
`ahp`	Forwards Authentication Header (AH) packets.
`any`	Depending on the position where this parameter is used it can mean the forwarding of: • packets regardless of their source protocol, or • packets regardless of their source address, or • packets regardless of their destination address.
`eigrp`	Forwards Enhanced Interior Gateway Routing Protocol (EIGRP) packets.
`esp`	Forwards Encapsulating Security Payload (ESP) packets.
`gre`	Forwards Generic Routing Encapsulation (GRE) packets.
`igmp`	Forwards Internet Group Management Protocol (IGMP) packets.
`ip`	Forwards Internet Protocol version 4 (IPv4) encapsulation packets.
`nos`	Forwards KA9Q NOS compatible IP over IP tunneling packets.
`ospf`	Forwards Open Shortest Path First (OSPF) packets.
`pcp`	Forwards IP Payload Compression Protocol (PCP) packets.
`pim`	Forwards Protocol Independent Multicast (PIM) packets.

Parameter	Function
source address	Forwards packets received from the specified source address. It can be written as: • *source IPv4 address source wildcard mask* • *source IPv4 address/network mask length*
`host` *single source address*	Forwards packets received from the specified single source IPv4 address.
destination address	Forwards packets sent to the specified destination address. It can be written as: • *destination IPv4 address destination wildcard mask* • *destination IPv4 address/network mask length*
`host` *single destination address*	Forwards packets sent to the specified single destination IPv4 address.
`dscp` *dscp value*	Forwards packets based on their DiffServ Code Point (DSCP) value. The *DSCP value* is from 0 to 63 or one of the following: • `af11` - AF11 DSCP (001010) • `af12` - AF12 DSCP (001100) • `af13` - AF13 DSCP (001110) • `af21` - AF21 DSCP (010010) • `af22` - AF22 DSCP (010100) • `af23` - AF23 DSCP (010110) • `af31` - AF31 DSCP (011010) • `af32` - AF32 DSCP (011100) • `af33` - AF33 DSCP (011110) • `af41` - AF41 DSCP (100010) • `af42` - AF42 DSCP (100100) • `af43` - AF43 DSCP (100110) • `cs1` - CS1(precedence 1) DSCP (001000) • `cs2` - CS2(precedence 2) DSCP (010000) • `cs3` - CS3(precedence 3) DSCP (011000) • `cs4` - CS4(precedence 4) DSCP (100000) • `cs5` - CS5(precedence 5) DSCP (101000) • `cs6` - CS6(precedence 6) DSCP (110000) • `cs7` - CS7(precedence 7) DSCP (111000) • `default` - Default DSCP (000000) • `ef` - EF DSCP (101110)

Parameter	Function
`precedence` *precedence value*	Forwards packets based on their precedence value. The *precedence value* is from 0 to 7 or it can be one of the following: • `routine` - Routine precedence (0) • `priority` - Priority precedence (1) • `immediate` - Immediate precedence (2) • `flash` - Flash precedence (3) • `flash-override` - Flash override precedence (4) • `critical` - Critical precedence (5) • `internet` - Internetwork control precedence (6) • `network` - Network control precedence (7)
`fragments`	Checks non-initial fragments.

Modes

ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the forwarding of EIGRP packets received from any source with any destination:

```
G8272(config-acl)# deny eigrp any any
```

permit icmp

Enables or disables the forwarding of Internet Control Message Protocol (ICMP) packets.

Syntax

[no] [<*ACL sequence number*>**] permit icmp {**<*source address*>**|any|host** <*single source address*>**} {**<*destination address*>**|any|host** <*single destination address*>**} [**<*ICMP type*>**|administratively-prohibited|alternate-address|conversion-error|dod-host-prohibited|dod-net-prohibited|dscp** <*dscp value*>**|echo|echo-reply|general-parameter-problem|host-isolated|host-precedence-unreachable|host-redirect|host-tos-redirect|host-tos-unreachable|host-unknown|host-unreachable|information-reply|information-request|mask-reply|mask-request|mobile-redirect|net-redirect|net-tos-redirect|net-tos-unreachable|net-unreachable|network-unknown|no-room-for-option|option-missing|packet-too-big|parameter-problem|port-unreachable|precedence** <*precedence value*>**|precedence-unreachable|protocol-unreachable|reassembly-timeout|redirect|router-advertisement|router-solicitation|source-quench|source-route-failed|time-exceeded|timestamp-reply|timestamp-request|traceroute|ttl-exceeded|unreachable] [fragments]**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
source address	Forwards ICMP packets received from the specified source address. It can be written as: • *source IPv4 address source wildcard mask* • *source IPv4 address/network mask length*
`any`	Forwards ICMP packets received or sent from or to any source or destination address.
`host` *single source address*	Forwards ICMP packets received from the specified single source IPv4 address.
destination address	Forwards ICMP packets sent to the specified destination address. It can be written as: • *destination IPv4 address destination wildcard mask* • *destination IPv4 address/network mask length*
`host` *single destination address*	Forwards ICMP packets sent to the specified single destination IPv4 address.

Parameter	Function
ICMP type	Forwards ICMP packets based on their type. The *ICMP type* is from 0 to 255.
`administratively-prohibited`	Forwards ICMP administratively prohibited packets.
`alternate-address`	Forwards ICMP alternate address packets.
`conversion-error`	Forwards ICMP datagram conversion error packets.
`dod-host-prohibited`	Forwards ICMP host prohibited packets.
`dod-net-prohibited`	Forwards ICMP network prohibited packets.
`dscp` *dscp value*	Forwards ICMP packets based on their DiffServ Code Point (DSCP) value. The *DSCP value* is from 0 to 63 or one of the following: • `af11` - AF11 DSCP (001010) • `af12` - AF12 DSCP (001100) • `af13` - AF13 DSCP (001110) • `af21` - AF21 DSCP (010010) • `af22` - AF22 DSCP (010100) • `af23` - AF23 DSCP (010110) • `af31` - AF31 DSCP (011010) • `af32` - AF32 DSCP (011100) • `af33` - AF33 DSCP (011110) • `af41` - AF41 DSCP (100010) • `af42` - AF42 DSCP (100100) • `af43` - AF43 DSCP (100110) • `cs1` - CS1(precedence 1) DSCP (001000) • `cs2` - CS2(precedence 2) DSCP (010000) • `cs3` - CS3(precedence 3) DSCP (011000) • `cs4` - CS4(precedence 4) DSCP (100000) • `cs5` - CS5(precedence 5) DSCP (101000) • `cs6` - CS6(precedence 6) DSCP (110000) • `cs7` - CS7(precedence 7) DSCP (111000) • `default` - Default DSCP (000000) • `ef` - EF DSCP (101110)
`echo`	Forwards ICMP echo packets.
`echo-reply`	Forwards ICMP echo replies.
`general-parameter-problem`	Forwards ICMP packets that have a problem.
`host-isolated`	Forwards ICMP host isolated packets.
`host-precedence-unreachable`	Forwards ICMP host unreachable for precedence packets.

Parameter	Function
`host-redirect`	Forwards ICMP host redirect packets.
`host-tos-redirect`	Forwards ICMP host redirects for Type of Services (ToS).
`host-tos-unreachable`	Forwards ICMP host unreachable for ToS packets.
`host-unknown`	Forwards ICMP host unknown packets.
`host-unreachable`	Forwards ICMP host unreachable packets.
`information-reply`	Forwards ICMP information replies.
`information-request`	Forwards ICMP information requests.
`mask-reply`	Forwards ICMP network mask replies.
`mask-request`	Forwards ICMP network mask requests.
`mobile-redirect`	Forwards ICMP mobile redirects.
`net-redirect`	Forwards ICMP network redirects.
`net-tos-redirect`	Forwards ICMP network redirects for ToS.
`net-tos-unreachable`	Forwards ICMP network unreachable for ToS packets.
`net-unreachable`	Forwards ICMP network unreachable packets.
`network-unknown`	Forwards ICMP network unknown packets.
`no-room-for-option`	Forwards ICMP packets where a parameter is required but there is no space available.
`option-missing`	Forwards ICMP packets where a parameter is required but it is missing.
`packet-too-big`	Forwards ICMP packets that are too large requiring fragmentation.
`parameter-problem`	Forwards all ICMP packets with parameter problems.
`port-unreachable`	Forwards ICMP port unreachable packets.

Parameter	Function
`precedence` *precedence value*	Forwards ICMP packets based on their precedence value. The *precedence value* is from 0 to 7 or it can be one of the following: • `routine` - Routine precedence (0) • `priority` - Priority precedence (1) • `immediate` - Immediate precedence (2) • `flash` - Flash precedence (3) • `flash-override` - Flash override precedence (4) • `critical` - Critical precedence (5) • `internet` - Internetwork control precedence (6) • `network` - Network control precedence (7)
`precedence-unreachable`	Forwards ICMP precedence cutoff packets.
`protocol-unreachable`	Forwards ICMP protocol unreachable packets.
`reassembly-timeout`	Forwards ICMP reassembly timeouts.
`redirect`	Forwards all ICMP redirects.
`router-advertisement`	Forwards ICMP router discovery advertisements.
`router-solicitation`	Forwards ICMP router discovery solicitations.
`source-quench`	Forwards ICMP source quenches.
`source-route-failed`	Forwards ICMP source route failed packets.
`time-exceeded`	Forwards all ICMP time exceeded messages.
`timestamp-reply`	Forwards ICMP timestamp replies.
`timestamp-request`	Forwards ICMP timestamp requests.
`traceroute`	Forwards ICMP trace route packets.
`ttl-exceeded`	Forwards ICMP Time to Live (TTL) exceeded packets.
`unreachable`	Forwards all ICMP unreachable packets.
`fragments`	Checks non-initial fragments.

Modes

ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the forwarding of ICMP packets received from the single source address 10.240.35.78 with any destination:

```
G8272(config-acl)# permit icmp host 10.240.35.78 any
```

permit tcp

Enables or disables the forwarding of Transmission Control Protocol (TCP) packets.

Syntax

[no] [<*ACL sequence number*>**] permit tcp {**<*source address*>**|any|host** <*single source address*>**} [{eq|gt|lt|neq}** <*source port*>**|range** <*source port range*>**] {**<*destination address*>**|any|host** <*single destination address*>**} [{eq|gt|lt|neq}** <*destination port*>**|range** <*destination port range*>**] [ack] [established] [fin] [psh] [rst] [syn] [urg] [dscp** <*dscp value*>**| precedence** <*precedence value*>**] [fragments]**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
source address	Forwards TCP packets received from the specified source address. It can be written as: • *source IPv4 address source wildcard mask* • *source IPv4 address/network mask length*
`any`	Forwards TCP packets received or sent from or to any source or destination address.
`eq`	Forwards TCP packets with source port number equal to the specified value.
`gt`	Forwards TCP packets with source port number greater than the specified value.
`lt`	Forwards TCP packets with source port number lower than the specified value.
`neq`	Forwards TCP packets with source port number not equal to the specified value.
source port	The TCP source port number. It is from 0 to 65535.
destination port	The TCP destination port number. It is from 0 to 65535.
`range`	Forwards TCP packets with port numbers included in the specified port range.
source port range	The TCP source port range. It is from 0 to 65535.
destination port range	The TCP destination port range. It is from 0 to 65535.
`host` *single source address*	Forwards TCP packets received from the specified single source IPv4 address.

Parameter	Function
destination address	Forwards TCP packets sent to the specified destination address. It can be written as: • *destination IPv4 address destination wildcard mask* • *destination IPv4 address/network mask length*
`host` *single destination address*	Forwards TCP packets sent to the specified single destination IPv4 address.
`ack`	Forwards TCP packets that have matching acknowledgment bits.
`established`	Forwards TCP packets that belong to an established TCP connection.
`fin`	Forwards TCP packets that have matching finish bits.
`psh`	Forwards TCP packets that have matching push bits.
`rst`	Forwards TCP packets that have matching reset bits.
`syn`	Forwards TCP packets that have matching synchronize bits.
`urg`	Forwards TCP packets that have matching urgent bits.
`dscp` *dscp value*	Forwards TCP packets based on their DiffServ Code Point (DSCP) value. The *DSCP value* is from 0 to 63 or one of the following: • `af11` - AF11 DSCP (001010) • `af12` - AF12 DSCP (001100) • `af13` - AF13 DSCP (001110) • `af21` - AF21 DSCP (010010) • `af22` - AF22 DSCP (010100) • `af23` - AF23 DSCP (010110) • `af31` - AF31 DSCP (011010) • `af32` - AF32 DSCP (011100) • `af33` - AF33 DSCP (011110) • `af41` - AF41 DSCP (100010) • `af42` - AF42 DSCP (100100) • `af43` - AF43 DSCP (100110) • `cs1` - CS1(precedence 1) DSCP (001000) • `cs2` - CS2(precedence 2) DSCP (010000) • `cs3` - CS3(precedence 3) DSCP (011000) • `cs4` - CS4(precedence 4) DSCP (100000) • `cs5` - CS5(precedence 5) DSCP (101000) • `cs6` - CS6(precedence 6) DSCP (110000) • `cs7` - CS7(precedence 7) DSCP (111000) • `default` - Default DSCP (000000) • `ef` - EF DSCP (101110)

Parameter	Function
`precedence` *precedence value*	Forwards TCP packets based on their precedence value. The *precedence value* is from 0 to 7 or it can be one of the following: • `routine` - Routine precedence (0) • `priority` - Priority precedence (1) • `immediate` - Immediate precedence (2) • `flash` - Flash precedence (3) • `flash-override` - Flash override precedence (4) • `critical` - Critical precedence (5) • `internet` - Internetwork control precedence (6) • `network` - Network control precedence (7)

Modes

ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the forwarding of TCP packets received from any source with any destination with source and destination ports 540 that match on their acknowledgment bits:

```
G8272(config-acl)# permit tcp any eq 540 any eq 540 ack
```

permit udp

Enables or disables the forwarding of User Datagram Protocol (UDP) packets.

Syntax

[no] [<*ACL sequence number*>**] permit udp {**<*source address*>**|any|host** <*single source address*>**} [{eq|gt|lt|neq}** <*source port*>**|range** <*source port range*>**] {**<*destination address*>**|any|host** <*single destination address*>**} [{eq|gt|lt|neq}** <*destination port*>**|range** <*destination port range*>**] [ack] [established] [fin] [psh] [rst] [syn] [urg] [dscp** <*dscp value*>**| precedence** <*precedence value*>**] [fragments]**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
source address	Forwards UDP packets received from the specified source address. It can be written as: • *source IPv4 address source wildcard mask* • *source IPv4 address/network mask length*
`any`	Forwards UDP packets received or sent from or to any source or destination address.
`eq`	Forwards UDP packets with source port number equal to the specified value.
`gt`	Forwards UDP packets with source port number greater than the specified value.
`lt`	Forwards UDP packets with source port number lower than the specified value.
`neq`	Forwards UDP packets with source port number not equal to the specified value.
source port	The UDP source port number. It is from 0 to 65535.
destination port	The UDP destination port number. It is from 0 to 65535.
`range`	Forwards UDP packets with port numbers included in the specified port range.
source port range	The UDP source port range. It is from 0 to 65535.
destination port range	The UDP destination port range. It is from 0 to 65535.
`host` *single source address*	Forwards UDP packets received from the specified single source IPv4 address.

Parameter	Function
destination address	Forwards UDP packets sent to the specified destination address. It can be written as: • *destination IPv4 address destination wildcard mask* • *destination IPv4 address/network mask length*
`host` *single destination address*	Forwards UDP packets sent to the specified single destination IPv4 address.
`dscp` *dscp value*	Forwards UDP packets based on their DiffServ Code Point (DSCP) value. The *DSCP value* is from 0 to 63 or one of the following: • `af11` - AF11 DSCP (001010) • `af12` - AF12 DSCP (001100) • `af13` - AF13 DSCP (001110) • `af21` - AF21 DSCP (010010) • `af22` - AF22 DSCP (010100) • `af23` - AF23 DSCP (010110) • `af31` - AF31 DSCP (011010) • `af32` - AF32 DSCP (011100) • `af33` - AF33 DSCP (011110) • `af41` - AF41 DSCP (100010) • `af42` - AF42 DSCP (100100) • `af43` - AF43 DSCP (100110) • `cs1` - CS1(precedence 1) DSCP (001000) • `cs2` - CS2(precedence 2) DSCP (010000) • `cs3` - CS3(precedence 3) DSCP (011000) • `cs4` - CS4(precedence 4) DSCP (100000) • `cs5` - CS5(precedence 5) DSCP (101000) • `cs6` - CS6(precedence 6) DSCP (110000) • `cs7` - CS7(precedence 7) DSCP (111000) • `default` - Default DSCP (000000) • `ef` - EF DSCP (101110)
`precedence` *precedence value*	Forwards UDP packets based on their precedence value. The *precedence value* is from 0 to 7 or it can be one of the following: • `routine` - Routine precedence (0) • `priority` - Priority precedence (1) • `immediate` - Immediate precedence (2) • `flash` - Flash precedence (3) • `flash-override` - Flash override precedence (4) • `critical` - Critical precedence (5) • `internet` - Internetwork control precedence (6) • `network` - Network control precedence (7)

Modes

ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the forwarding of UDP packets received from any source with source ports between 240 and 500 that have any destination with destination ports greater than 1000:

```
G8272(config-acl)# permit udp any range 240-500 any gt 1000
```

statistics per-entry

Enables or disables the collection of statistics for each Access Control List (ACL) entry.

Syntax

```
[no] statistics per-entry
```

Modes

ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the collection of statistics for each ACL entry:

```
G8272(config-acl)# statistics per-entry
```

Chapter 20. ARP ACL Mode Commands

This chapter describes the commands available in Address Resolution Protocol (ARP) Access Control List (ACL) Configuration Mode.

arp access-list

Creates an Address Resolution Protocol (ARP) Access Control List (ACL). After creating an ARP ACL, enters ARP ACL Configuration mode.

Syntax

[no] arp access-list *<ACL name>*

where:

Parameter	Function
ACL name	The name of ACL.

Using **no** before the command deletes the ARP ACL.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates an ARP ACL named `acl-03`:

```
G8272(config)# arp access-list acl-03
```

deny

Enables or disables the discarding of Address Resolution Protocol (ARP) packets.

Syntax

[no] [*<ACL sequence number>***] deny [request|response] ip {***<source IPv4 address>***|any|host** *<single source address>* **{mac {***<source MAC address>* *<MAC wildcard>***|any|host** *<source MAC address>***}}}**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
`request`	Discards only ARP request packets.
`response`	Discards only ARP response packets.
source address	The IPv4 address of the ARP source. The source address can be specified in one of two formats: • *<IPv4 address> <IPv4 wildcard mask>* • *<IPv4 address/network mask length>*
`any`	Discards ARP packets from any source address.
`host`	Discards ARP packets from the specified source.
single source address	The IPv4 address of the ARP source. The single source address is specified in *<IPv4 address>*.
`mac`	Discards ARP packets from source MAC address.
source MAC address	The MAC address of the ARP source. It can be specified in one of the following formats: • X.X.X • XX-XX-XX-XX-XX-XX • XX:XX:XX:XX:XX:XX • XXXX.XXXX.XXXX
source MAC wildcard	The wildcard for the source MAC address.

Modes

ARP ACL Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command discards ARP packets from any source with source MAC address `a3:46:78:be:01:98` and MAC wildcard `0000.0000.ffff`:

```
G8272(config-arp-acl)# deny ip any mac a3:46:78:be:01:98 0000.0000.ffff
```

permit

Enables or disables the forwarding of Address Resolution Protocol (ARP) packets.

Syntax

[no] [*<ACL sequence number>***] permit [request|response] ip {***<source address>***|any|host** *<single source address>* **{mac {***<source MAC address>* *<MAC wildcard>***|any|host** *<source MAC address>***}}}**

where:

Parameter	Function
ACL sequence number	The sequence number of the IPv4 Access Control List (ACL). The *ACL sequence number* is from 1 to 2147483645.
`request`	Forwards only ARP request packets.
`response`	Forwards only ARP response packets.
source address	The IPv4 address of the ARP source. The source address can be specified in one of two formats: • *<IPv4 address> <IPv4 wildcard mask>* • *<IPv4 address/network mask length>*
`any`	Forwards ARP packets from any source IPv4 address.
`host`	Forwards ARP packets from the specified source.
single source address	The IPv4 address of the ARP source. The single source address is specified in *<IPv4 address>*.
`mac`	Forwards ARP packets from source MAC address.
source MAC address	The MAC address of the ARP source. It can be specified in one of the following formats: • X.X.X • XX-XX-XX-XX-XX-XX • XX:XX:XX:XX:XX:XX • XXXX.XXXX.XXXX
source MAC wildcard	The wildcard for the source MAC address.

Modes

ARP ACL Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command forwards ARP packets from any source with source MAC address `a3:46:78:be:01:98` and MAC wildcard `0000.0000.ffff`:

```
G8272(config-arp-acl)# permit ip any mac a3:46:78:be:01:98 0000.0000.ffff
```

statistics per-entry

Enables or disables the collection of statistics for each Address Resolution Protocol (ARP) entry.

Syntax

```
[no] statistics per-entry
```

Modes

ARP ACL Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the collection of statistics for each ARP entry:

```
G8272(config-arp-acl)# statistics per-entry
```

Chapter 21. MAC ACL Mode Commands

This chapter describes the commands you need to get into and use MAC ACL Mode.

mac access-list

Creates a MAC access control list and enters MAC ACL Configuration Mode.

Syntax

[**no**] **mac access-list** *<MAC ACL>*

where:

Parameter	Definition
MAC ACL	The name of the MAC access control list; a string up to 64 characters long.

Using **no** before the command removes the MAC ACL.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command creates MAC ACL `MyACL`:

```
G8272(config)# mac access-list MyACL
G8272(config-mac-acl)#
```

Related Commands

Command	Description
configure	Configures terminal parameters.

deny

Specifies which packets to reject.

Syntax

deny [<*sequence number*>] {{<*source MAC*> [<*source wildcard*>]}|**any**|
host <*source MAC*>} {{<*destination MAC*> [<*destination wildcard*>]}|**any**|
host <*destination MAC*>} {<*protocol*>|**cos** <*cos*>|**vlan** <*vlan*>}
[**cos** <*cos*>] [**vlan** <*vlan*>]

where:

Parameter	Definition
sequence number	ACL sequence number; an integer from 1-2147483645.
source MAC	The source MAC address in the format *XXXX.XXXX.XXXX*.
source wildcard	Optional source wildcard MAC address in the format *XXXX.XXXX.XXXX*.
any	Any source or destination
host	A single source or destination host
destination MAC	The destination MAC address in the format *XXXX.XXXX.XXXX*.
destination MAC	Optional destination wildcard MAC address in the format *XXXX.XXXX.XXXX*.
protocol	The protocol; one of the following: • *protocol*: any Ethertype value (text) • **aarp**: AARP Ethertype - 0x80f3 • **appletalk**: Appletalk Ethertype - 0x80b • **decnet-iv**: DECNET-IV Ethertype - 0x6003 • **diagnostic**: Diagnostic Ethertype - 0x6005 • **etype-6000**: Etype-6000 Ethertype - 0x6000 • **etype-8042**: Etype-8042 Ethertype - 0x8042 • **ip**: IP Ethertype - 0x0800 • **lat**: LAT Ethertype - 0x6004 • **lavc-sca**: LAVC-SCA Ethertype - 0x6007 • **mop-console**: MOP-Console Ethertype - 0x6002 • **mop-dump**: MOP-Dump Ethertype - 0x6001 • **vines-echo**: Vines-Echo Ethertype - 0x0baf
cos *cos*	The Class of Service number; an integer from 0-7.
vlan *vlan*	The VLAN number; an integer from 1-3999.

Using **no** before the command negates it.

Modes

MAC ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command denies packets from ACL sequence 2 with source `aaaa.bbbb.cccc` with wildcard `dddd.eeee.ffff` and destination host `1111.2222.3333` using IP protocol:

```
G8272(config-mst)# 2 deny aaaa.bbbb.cccc dddd.eeee.ffff host
1111.2222.3333 ip
```

The following command denies packets from any source and destination host `aaaa.bbbb.cccc` with Class of Service 2:

```
G8272(config-mst)# deny any host aaaa.bbbb.cccc cos 2
```

Related Commands

Command	Description
configure	Configures terminal parameters.
mac access-list	Creates a MAC access control list.
permit	Specifies which packets to allow through..

permit

Specifies which packets to allow through.

Syntax

permit [<*sequence number*>] {{<*source MAC*> [<*source wildcard*>]}|**any**|
host <*source MAC*>} {{<*destination MAC*> [<*destination wildcard*>]}|**any**|
host <*destination MAC*>} {<*protocol*>|**cos** <*cos*>|**vlan** <*vlan*>}
[**cos** <*cos*>] [**vlan** <*vlan*>]

where:

Parameter	Definition
sequence number	ACL sequence number; an integer from 1-2147483645.
source MAC	The source MAC address in the format *XXXX.XXXX.XXXX*.
source wildcard	Optional source wildcard MAC address in the format *XXXX.XXXX.XXXX*.
any	Any source or destination
host	A single source or destination host
destination MAC	The destination MAC address in the format *XXXX.XXXX.XXXX*.
destination MAC	Optional destination wildcard MAC address in the format *XXXX.XXXX.XXXX*.
protocol	The protocol; one of the following: • *protocol*: any Ethertype value (text) • **aarp**: AARP Ethertype - 0x80f3 • **appletalk**: Appletalk Ethertype - 0x80b • **decnet-iv**: DECNET-IV Ethertype - 0x6003 • **diagnostic**: Diagnostic Ethertype - 0x6005 • **etype-6000**: Etype-6000 Ethertype - 0x6000 • **etype-8042**: Etype-8042 Ethertype - 0x8042 • **ip**: IP Ethertype - 0x0800 • **lat**: LAT Ethertype - 0x6004 • **lavc-sca**: LAVC-SCA Ethertype - 0x6007 • **mop-console**: MOP-Console Ethertype - 0x6002 • **mop-dump**: MOP-Dump Ethertype - 0x6001 • **vines-echo**: Vines-Echo Ethertype - 0x0baf
cos *cos*	The Class of Service number; an integer from 0-7.
vlan *vlan*	The VLAN number; an integer from 1-3999.

Using **no** before the command negates it.

Modes

MAC ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command accepts packets from ACL sequence 2 with source `aaaa.bbbb.cccc` with wildcard `dddd.eeee.ffff` and destination host `1111.2222.3333` using IP protocol:

```
G8272(config-mst)# 2 permit aaaa.bbbb.cccc dddd.eeee.ffff host
1111.2222.3333 ip
```

The following command permits packets from any source and destination host `aaaa.bbbb.cccc` with Class of Service 2:

```
G8272(config-mst)# deny any host aaaa.bbbb.cccc cos 2
```

Related Commands

Command	Description
configure	Configures terminal parameters.
mac access-list	Creates a MAC access control list.
deny	Specifies which packets to reject.

statistics

Collects statistics for each ACL entry.

Syntax

```
statistics per-entry
```

Modes

MAC ACL Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command collects statistics from each ACL entry:

```
G8272(config-mst)# statistics per-entry
```

Related Commands

Command	Description
configure	Configures terminal parameters.
mac access-list	Creates a MAC access control list.

Chapter 22. MST Mode Commands

This chapter describes how to enter Multiple Spanning Tree (MST) Configuration Mode and the commands in this mode.

spanning-tree mst configuration

Enters MST configuration mode.

Syntax

`[no] spanning-tree mst configuration`

Using **no** before the command restores the default MST configuration.

Modes

Global Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to enable MST configuration mode:

```
G8272(config)# spanning-tree mst configuration
G8272(config-mst)#
```

cancel

Exits MST configuration mode and aborts changes.

Syntax

cancel

Modes

MST Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following exits MST Configuration Mode without saving changes:

```
G8272(config-mst)# cancel
G8272(config)
```

instance

Maps the specified VLANs to the Spanning Tree instance. If a VLAN does not exist, it is not created automatically.

Syntax

[no] instance <*number*> **vlan** <*vlan number*>

where:

Parameter	Description
number	Instance number; an integer from 0-64. Instance 0 refers to CIST.
vlan number	VLAN number; an integer from 1-4094.

Using **no** before the command removes the specified VLANs or all VLANs from the Spanning Tree instance and adds them to CIST.

Modes

MST Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command maps instance 5 to VLAN 4094:

```
G8272(config-mst)# instance 5 vlan 4094
```

name

Configures a name for the MSTP region. All devices within an MSTP region must have the same region name.

Syntax

[no] name *<region name>*

where:

Parameter	Description
region name	MSTP region name (up to 32 alphanumeric characters).

Using **no** before the command removes a specified region name.

Modes

MST Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures a region name:

```
G8272(config-mst)# name test
```

revision

Configures a revision number for the MSTP region. The revision is used as a numerical identifier for the region. All devices within an MSTP region must have the same revision number.

Syntax

[no] revision *<number>*

where:

Parameter	Description
<number>	Revision number for the MST region (a number from 0 to 65535). The default value is 0.

Using **no** before the command restores the default setting.

Modes

MST Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures a revision number:

```
G8272(config-mst)# revision 200
```

Chapter 23. Policy Map Mode Commands

This chapter describes how to enter Policy Map Configuration Mode and the commands in this mode.

policy-map

Enters Policy-Map Configuration Mode or creates a policy map that can be attached to one or more interfaces to specify a service policy.

Syntax

[no] policy-map *<name>*

where:

Parameter	Description
name	Policy map name.

Using **no** before the command removes a specified policy map.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following configures a policy map named `test`:

```
G8272(config)# policy-map test
G8272(config-pmap-qos)#
```

class

Sets class map properties.

Syntax

[no] class {<*name*>**|class-default|type qos {**<*name*>**|class-default}}**

where:

Parameter	Description
<*name*>	Class map name.
class-default	Default class map name.
type qos <*name*>	Class map type.

Using **no** before the command

Modes

Policy-Map Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to attach a class map to a policy map:

```
G8272(config-pmap-qos)# class test
```

Chapter 24. VLAN Mode Commands

These commands enter you into an advanced configuration mode for configuring the VLAN attributes, change the status of each VLAN, change the port membership of each VLAN, and delete VLANs.

vlan

Creates a VLAN and enters into the VLAN configuration mode.

Syntax

[no] vlan *<vlan list>*

where:

Parameter	Description
<vlan list>	Individual VLAN ID or range(s) of VLANs.

Using **no** before the command deletes the VLAN or range of VLANs.

Modes

Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to create lists of VLANs:

```
G8272(config)# vlan 1-5,10
```

```
G8272(config)# vlan 2-5,7-19
```

Restrictions

- If the specified VLAN(s) doesn't exist, it will be created.
- By default, VLAN 1 is the only VLAN configured on the switch. All ports are members of VLAN 1 by default. Up to 3999 VLANs can be configured on the switch.
- VLANs can be assigned any number between 1 and 3999. VLANs 4000-4094 are reserved for switch management.

flood

Enables or disables the switch to flood unregistered IP multicast traffic to all ports. The default setting is enabled.

Syntax

[no] flood [ipv4|ipv6]

where:

Parameter	Description
ipv4	IPv4 packets.
ipv6	IPv6 packets.

Using **no** before the command turns off the feature.

Modes

VLAN Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following command enables flood management:

```
G8272(config-vlan)# flood ipv4
```

ip igmp snooping

Enables or disables Internet Group Management Protocol (IGMP) snooping on the current VLAN.

By default, IGMP Snooping is enabled.

Syntax

```
[no] ip igmp snooping
```

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables IGMP Snooping on the current VLAN:

```
G8272(config-vlan)# ip igmp snooping
```

ip igmp snooping fast-leave

Enables or disables Internet Group Management Protocol (IGMP) snooping fast-leave processing on the current VLAN.

Syntax

```
[no] ip igmp snooping fast-leave
```

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables IGMP Snooping fast-leave:

```
G8272(config-vlan)# ip igmp snooping fast-leave
```

ip igmp snooping last-member-query-interval

When a multicast host leaves an Internet Group Management Protocol (IGMP) group, the host sends an IGMP leave message. To check if this host is the last to leave the group, an IGMP query is sent out as soon as the leave message is received and a timer (last-member-query-interval) is started.

If fast-leave processing is disabled, the switch waits until the timer expires and then removes the switch port from the group. If fast-leave processing is enabled, the timer is ignored and the switch immediately removes the switch port from the IGMP group.

This command configures the last-member-query-interval.

Use the **no** form of this command to reset the timer to its default value.

The default last-member-query-interval value is 1 second.

Syntax

[no] ip igmp snooping last-member-query-interval *<time interval>*

where:

Parameter	Function
time interval	The time, in seconds, a switch waits until it removes an IGMP group from a switch port if no reports are received. The *time interva*l is from 1 to 25.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures a last-member-query-interval of 3 seconds:

```
G8272(config-vlan)# ip igmp snooping last-member-query-interval 3
```

ip igmp snooping mrouter interface

Adds or removes a layer 2 interface as a static multicast router port.

Syntax

[no] ip igmp snooping mrouter interface {ethernet *<chassis number/port number>***|port-aggregation** *<LAG number>***}**

where:

Parameter	Function
`ethernet` *chassis number/port number*	Configures a static mrouter on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`port-aggregation` *LAG number*	Configures a static mrouter on the specified LAG. The *LAG number* is from 1 to 4096.

To remove all static multicast router ports, use the following command:

no ip igmp snooping mrouter interface all

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command configures interface ethernet 1/12 as a static mrouter port:

```
G8272(config-vlan)# ip igmp snooping mrouter interface ethernet 1/12
```

ip igmp snooping querier

Enables or disables the Internet Group Management Protocol (IGMP) snooping querier on the current VLAN.

Syntax

[no] ip igmp snooping querier *<querier address>*

where:

Parameter	Function
querier address	The IPv4 address of the snooping querier.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables the IGMP Snooping querier:

```
G8272(config-vlan)# ip igmp snooping querier 10.124.54.66
```

ip igmp snooping querier-timeout

Configures the querier timeout interval.

Syntax

[no] ip igmp snooping querier-timeout <*timeout interval*>

where:

Parameter	Function
timeout interval	Querier timeout interval, in seconds (a number from1 to 65535). The default value is 255.

Using **no** before the command restores the default settings.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the querier timeout interval to 400:

```
G8272(config-vlan)# ip igmp snooping querier-timeout 400
```

ip igmp snooping query-interval

Configures the IGMP router query interval, in seconds.

Syntax

[no] ip igmp snooping query-interval *<time interval>*

where:

Parameter	Function
time interval	IGMP query interval, in seconds (a number from 1 to 18000). The default value is 125.

Using **no** before the command restores the default settings.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the query interval to 200:

```
G8272(config-vlan)# ip igmp snooping query-interval 200
```

ip igmp snooping query-max-response-time

Configures the maximum time, in seconds, allowed before responding to a Membership Query message.

Syntax

[no] ip igmp snooping query-max-response-time *<time interval>*

where:

Parameter	Function
time interval	Maximum response time allowed before responding to a query message (a number from 1 to 25). The default value is 10.

Using **no** before the command restores the default settings.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the maximum response time to 25:

```
G8272(config-vlan)# ip igmp snooping query-max-response-time 25
```

ip igmp snooping report-suppression

Enables or disables the suppression of Internet Group Management Protocol (IGMP) snooping reports.

When enabled, the snooping switch only sends the first report for a group to the multicast routers. Subsequent reports for the same group are not forwarded to the multicast router.

When disabled, all reports are forwarded to multicast routers. This report suppression is applied only for IGMP v1 and v2 reports.

By default, report suppression is enabled.

Syntax

```
[no] ip igmp snooping report-suppression
```

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command enables IGMP Snooping report suppression:

```
G8272(config-vlan)# ip igmp snooping report-suppression
```

ip igmp snooping robustness-variable

Configures the IGMP Robustness variable.

Syntax

[no] ip igmp snooping robustness-variable *<robustness value>*

where:

Parameter	Function
robustness value	Robustness value (a number from 1 to 7). The default value is 2.

Using **no** before the command restores the default settings.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets IGMP robustness value to 5:

```
G8272(config-vlan)# ip igmp snooping robustness-variable 5
```

ip igmp snooping startup-query-count

Configures the Startup Query Count, which is the number of IGMP Queries sent out at startup. Each Query is separated by the Startup Query Interval.

Syntax

`[no] ip igmp snooping startup-query-count` *<number of queries>*

where:

Parameter	Function
number of queries	Number of queries (a number from 1 to 10). The default value is 2.

Using **no** before the command restores the default settings.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the startup query count value to 5:

```
G8272(config-vlan)# ip igmp snooping startup-query-count 5
```

ip igmp snooping startup-query-interval

Configures the Startup Query Interval, which is the interval between General Queries sent out at startup.

Syntax

`[no] ip igmp snooping startup-query-interval` *<time interval>*

where:

Parameter	Function
time interval	Query interval at startup, in seconds. (a number from 1 to 18000). The default value is 31.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets the startup query interval to 100 seconds:

```
G8272(config-vlan)# ip igmp snooping startup-query-interval 100
```

ip igmp snooping static-group

Configures a static member for a multicast group on a VLAN.

Syntax

[no] ip igmp snooping static-group *<multicast address>* **[source** *<IP address>***] interface {ethernet** *<chassis number/port number>***|port-aggregation** *<LAG number>***}**

where:

Parameter	Function
multicast address	Specified multicast IP address.
source *<IP address>*	Configures a Multicast Address to join.
ethernet *<chassis number/port number>*	Ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
port-aggregation *<LAG number>*	Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets a new static member for a multicast group on a VLAN:

```
G8272(config-vlan)# ip igmp snooping static-group source 1.1.1.1
interface port-aggregation 5
```

ip igmp snooping version

Configures the IGMP Snooping version.

Syntax

[no] ip igmp snooping version *<version number>*

where:

Parameter	Function
version number	IGMP Snooping version number (2 or 3). The default version is 3.

Modes

VLAN Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command sets IGMP Snooping version number 2:

```
G8272(config-vlan)# ip igmp snooping version 2
```

name

Assigns a name to the VLAN or changes the existing name. The default VLAN name is the first one.

Syntax

[no] name

Using **no** before the command sets the VLAN name to default VLAN name.

Modes

VLAN Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to configure a VLAN name:

```
G8272(config-vlan)# name VLAN0002
```

state

Activates or suspends a VLAN. The default state is active.

Syntax

[no] state {**active|suspend**}

Using **no** before the command restores the default settings.

Modes

VLAN Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following shows how to suspend a VLAN:

```
G8272(config-vlan)# state suspend
```

Chapter 25. VRRP Mode Commands

Virtual Router Redundancy Protocol (VRRP) Configuration Mode commands are a subset of Interface Mode commands. This chapter describes the commands needed to enter and use VRRP Configuration Mode.

vrrp

Enters Virtual Router Redundancy Protocol (VRRP) configuration mode for an interface.

Syntax

vrrp *<virtual router identifier>* [**ipv6**]

where:

Parameter	Description
virtual router identifier	The virtual router identifier; an integer from 1-255.
ipv6	Optional; assume IPv6 address family.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

This command only works on virtual routers.

Examples

The following example enters VRRP mode, configuring virtual router 2:

```
G8272(config-if)# vrrp 2
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

accept-mode

Sets accept mode for the session for a virtual router.

Syntax

[no] accept-mode

Using **no** before the command negates it.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

This command only works on virtual routers.

Examples

The following example sets accept mode for the virtual router:

```
G8272(config-if-vrrp)# accept-mode
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

address

Sets the IP address for the session for a virtual router.

Syntax

[no] address *<IP address>*

where:

Parameter	Description
IP address	An IPv4 or IPv6 address.

Using **no** before the command removes the IP address.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

This command only works on virtual routers.

Examples

The following example sets the IP address to 10.2.2.55 for the virtual router:

```
G8272(config-if-vrrp)# address 10.2.2.55
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

advertisement-interval

Sets the advertisement interval for the session for a virtual router.

Syntax

[no] advertisement-interval *<interval>*

where:

Parameter	Description
interval	The advertisement interval, in hundredths of a second, in multiples of 5; an integer from 5-4095.

Using **no** before the command removes the advertisement interval.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

This command only works on virtual routers.

Examples

The following example sets the advertisement interval to 1000 (ten seconds) for the virtual router:

```
G8272(config-if-vrrp)# advertisement-interval 1000
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

preempt

Sets preempt for the session for a virtual router.

Syntax

[no] preempt

Using **no** before the command removes preempt mode.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

This command only works on virtual routers.

Examples

The following example sets preempt mode for the session for the virtual router:

```
G8272(config-if-vrrp)# preempt
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

priority

Sets the router priority within the virtual router.

Syntax

[no] priority *<priority>*

where:

Parameter	Description
priority	The router priority within virtual router; an integer from 1-254, or 255 if your own router.

Using **no** before the command removes the priority.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

This command only works on virtual routers.

Examples

The following example sets the priority to 2 for the virtual router:

```
G8272(config-if-vrrp)# priority 2
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

shutdown

Disables VRRP for this session on this virtual router.

Syntax

shutdown

Using **no** before the command negates it.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Example

The following example disables VRRP for this session on this virtual router:

```
G8272(config-if-vrrp)# shutdown
```

Restrictions

This command only works on virtual routers.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

switch-back-delay

Sets the virtual router switch-back delay interval.

Syntax

[no] switch-back-delay *<interval>*

where:

Parameter	Description
interval	The switch-back delay, in milliseconds; an integer from 1-500000.

Using **no** before the command without any argument removes the switch-back delay.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

This command only works on virtual routers.

Examples

The following example sets the switch-back delay to 3000 milliseconds for the virtual router:

```
G8272(config-if-vrrp)# switch-back-delay 3000
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

track interface

Enables failover tracking for the specified interface for this VRRP session.

Syntax

[no] track interface *<interface name>* **priority** *<priority>*

where:

Parameter	Description
interface name	The name of the interface.
priority	The priority delta; an integer from 1-253.

Using **no** before the command removes failover tracking from the specified interface.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

- This command only works on virtual routers.
- The interface must already exist for this command to work.
- VRRP tracking cannot be applied to a VRRP bound interface.
- VRRP tracking can be applied only to Layer 3 interfaces.

Examples

The following example enables failover tracking for the interface `MyInterface` with a priority of 2 on the virtual router:

```
G8272(config-if-vrrp)# track interface MyInterface priority 2
```

When MyInterface goes down, the priority is decremented by 2 of this VR.

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

track interface ethernet

Enables failover tracking for the specified ethernet interface for this VRRP session.

Syntax

[no] track interface ethernet *<slot>/<chassis>* **priority** *<priority>*

where:

Parameter	Description
slot	The ethernet slot number.
chassis	The ethernet chassis number
priority	The priority delta; an integer from 1-253.

Using **no** before the command removes failover tracking from the specified interface.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

- This command only works on virtual interfaces.
- The interface must already exist for this command to work.
- VRRP tracking cannot be applied to a VRRP bound interface.
- VRRP tracking can be applied only to Layer 3 interfaces.

Examples

The following example enables failover tracking for the interface `1/1` with a priority delta of 3 on the virtual router:

```
G8272(config-if-vrrp)# track interface ethernet 1/1 priority 3
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

track interface vlan

Enables failover tracking for the specified VLAN interface for this VRRP session.

Syntax

[no] track interface vlan *<VLAN number>* **priority** *<priority>*

where:

Parameter	Description
VLAN number	The VLAN number; an integer from 1-4094.
priority	The priority delta; an integer from 1-253.

Using **no** before the command removes failover tracking from the specified interface.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

- This command only works on virtual interfaces.
- The VLAN must already exist for this command to work.
- VRRP tracking cannot be applied to a VRRP bound interface.
- VRRP tracking can be applied only to Layer 3 interfaces.

Examples

The following example enables failover tracking for vlan 2 with a priority delta of 3 on the virtual router:

```
G8272(config-if-vrrp)# track interface vlan 2 priority 3
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

v2-compatible

Enables backwards compatibility for the specified VLAN interface for this VRRP session.

Syntax

[no] v2-compatible

Using **no** before the command disables backwards compatibility for the specified interface.

Modes

VRRP Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Restrictions

This command only works on virtual routers.

Examples

The following example enables backwards compatibility on the virtual router:

```
G8272(config-if-vrrp)# v2-compatible
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
vrrp	Enter VRRP Configuration Mode.

Chapter 26. EVC Service Mode Commands

Ethernet Virtual Connection (EVC) service commands configure an EVC service. To execute them, you must first enter Interface Mode. For more information on Interface Mode, see Chapter 5, “Interface Mode Commands.”

service

Enter EVC Service Mode.

Syntax

`service instance` *<Instance ID>* **`evc-id`** *<EVC ID>*

where:

Parameter	Description
Instance ID	The instance ID to map to the EVC
EVC ID	The EVC ID of the SVLAN.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enters EVC service configuration mode with instance ID `1` and EVC ID `1`:

```
G8272(config-if)# service instance 1 evc-id 1
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.

exit-service-instance-mode

Exit EVC Service Mode and return to Interface mode

Syntax

exit-service-instance-mode

where:

Parameter	Description
Instance ID	The instance ID to map to the EVC
EVC ID	The EVC ID of the SVLAN.

Modes

Service Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example exits EVC service configuration mode:

```
G8272(if-service-instance)# exit-service-instance-mode
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
service	Enter EVC Service Configuration Mode

service instance

Enter an EVC Service Mode instance.

Syntax

`service instance` *<Instance ID>* **`evc-id`** *<EVC ID>*

where:

Parameter	Description
Instance ID	The instance ID to map to the EVC
EVC ID	The EVC ID of the SVLAN.

Modes

Interface Configuration Mode

History

Release	Modification
10.1	The command was introduced.

Examples

The following example enters an EVC service with instance ID `1` and EVC ID `1`:

```
G8272(if-service-instance)# service instance 1 evc-id 1
```

Related Commands

Command	Description
interface	Enter Interface Configuration Mode.
service	Enter EVC Service Configuration Mode

Chapter 27. Display Commands

The commands in this chapter display information and statistics about the switch.

display aaa accounting

Displays the current Authentication, Authorization and Accounting (AAA) accounting settings.

Syntax

```
display aaa accounting
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the current accounting settings:

```
G8272> display aaa accounting

               default: local
```

display aaa authentication

Displays the current Authentication, Authorization and Accounting (AAA) authentication settings.

Syntax

display aaa authentication [login error-enable]

where:

Parameter	Function
login error-enable	Displays the status of the error-enable option.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the current authentication settings:

```
G8272> display aaa authentication

               default: local
               console: local
```

The following command displays the current status of the error-enable option:

```
G8272> display aaa authentication login error-enable

disabled
```

display aaa authorization

Displays the current Authentication, Authorization and Accounting (AAA) authorization settings.

Syntax

`display aaa authorization [all]`

where:

Parameter	Function
`all`	Displays all authorization settings, including the switch default configuration.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the current authorization settings:

```
G8272> display aaa authorization
```

The following command displays the current authorization and default switch configuration:

```
G8272> display aaa authorization all

AAA command authorization:
 local
AAA config-command authorization:
 local
```

display aaa groups

Displays the current configured Authentication, Authorization and Accounting (AAA) groups.

Syntax

```
display aaa groups
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the currently configured AAA groups:

```
G8272> display aaa groups
```

display aaa user default-role

Displays the default role a user takes if authenticated by Authentication, Authorization and Accounting (AAA) and the server does not reply with user role information.

Syntax

```
display aaa user default-role
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the user's current default role:

```
G8272> display aaa user default-role

enabled
```

display access-lists

Displays all the configured Access Control Lists (ACLs).

Syntax

`display access-lists [`*<access-list name>***`] [expanded|summary]`**

where:

Parameter	Function
access-list name	The name of the ACL.
`expanded`	Displays the contents of each ACE (Access Control Entry).
`summary`	Displays a summary of each ACL, including the total number of configured ACEs and the interfaces on which the ACL is configured or active.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following commands display ACLs:

```
G8272> display access-lists

IP access list  copp-system-acl-authentication
        10 permit tcp any eq 389 any
        20 permit udp any eq 1812 any
        30 permit udp any eq 1813 any
IP access list  copp-system-acl-domain
        10 permit tcp any eq domain any
        20 permit udp any eq domain any
IP access list  copp-system-acl-igmp
        10 permit igmp any any
IP access list  copp-system-acl-igmp-query
        10 permit igmp any any 17
IP access list  copp-system-acl-ntp
        10 permit udp any eq ntp any
IP access list  copp-system-acl-pim
        10 permit pim any any
...
```

display arp access-lists

Displays Access Control Lists (ACLs) applied to Address Resolution Protocol (ARP) packets.

Syntax

display arp access-lists [<*access-list name*>**]**

where:

Parameter	Function
access-list name	The name of the ACL.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays ACLs applied to ARP packets:

```
G8272> display arp access-lists
```

display banner motd

Displays the login banner or motd (message of the day).

Syntax

```
display banner motd
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the login banner:

```
G8272> display banner motd

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```

display bfd

Displays Bidirectional Forwarding Detection (BFD) information.

Syntax

```
display bfd
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BFD information:

```
G8272> display bfd

BFD ID: 00      Start Time:Thu Jan  1 00:00:32 1970
BFD Admin State: DOWN
Number of Sessions:    0
Slow Timer: 2000
BFD Notifications disabled
Next Session Discriminator:    1
```

display bfd neighbors

Displays Bidirectional Forwarding Detection (BFD) neighbors.

Syntax

`display bfd neighbors [details]`

where:

Parameter	Function
`details`	Displays all BFD protocol parameters and timers for each neighbor.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BFD neighbor information:

```
G8272> display bfd neighbors
Codes: LD/RD         - Local Discriminator/Remote Discriminator
       RH/RD         - Remote Heard/Remote State
OurAddr            NeighAddr           LD/RD  RH/RS      Holdown(mult) State
Interface
23.1.1.1           23.1.1.2              2/1      UP          300( 3)
UP    Vlan23

OurAddr            NeighAddr           LD/RD  RH/RS      Holdown(mult) State
Interface
24.1.1.1            24.1.1.2                4/2      ADMIN_DOWN 6000( 3)   DOWN
Vlan24

OurAddr            NeighAddr           LD/RD  RH/RS      Holdown(mult) State
Interface
190.1.1.1          190.1.1.2             5/0      DOWN      0( 0)
DOWN  Ethernet1/2
```

display bfd neighbors application

Displays Bidirectional Forwarding Detection (BFD) information for the specified protocol on which BFD is enabled.

Syntax

`display bfd neighbors application` *<protocol name>* **`[details]`**

where:

Parameter	Function
protocol name	The name of the protocol. The *protocol name* parameter can have only one of the following values: • `bgp` • `ospf`
`details`	Displays all BFD protocol parameters and timers for each neighbor.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BFD neighbor information for BGP:

```
G8272> display bfd neighbors application bgp
```

display bfd neighbors dest-ip

Displays Bidirectional Forwarding Detection (BFD) information for the specified destination IPv4 or IPv6 address.

Syntax

`display bfd neighbors dest-ip` *<destination IPv4 or IPv6 address>* **`[src-ip`** *<source IPv4 or IPv6 address>***`] [details]`**

where:

Parameter	Function
destination IPv4 or IPv6 address	The destination IPv4 or IPv6 address.
`src-ip` *<source IPv4 or IPv6 address>*	Displays BFD neighbor information for the specified pair of destination and source IPv4 or IPv6 addresses. **Note:** The destination and source IP addresses must be of the same type, either IPv4 or IPv6.
`details`	Displays all BFD protocol parameters and timers for each neighbor.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BFD neighbor information for destination IPv4 address `10.245.34.22`:

```
G8272> display bfd neighbors dest-ip 10.245.34.22
```

display bfd neighbors interface

Displays Bidirectional Forwarding Detection (BFD) information for the specified interface.

Syntax

`display bfd neighbors interface` *<interface name>* **`[details]`**

where:

Parameter	Function
interface name	The name of the interface.
`details`	Displays all BFD protocol parameters and timers for each neighbor.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BFD information for interface Ethernet 1/12:

```
G8272> display bfd neighbors interface ethernet1/12
```

display bfd neighbors src-ip

Displays Bidirectional Forwarding Detection (BFD) information for the specified source IPv4 or IPv6 address.

Syntax

`display bfd neighbors src-ip` *<source IPv4 or IPv6 address>* **`[dest-ip`** *<destination IPv4 or IPv6 address>***`] [details]`**

where:

Parameter	Function
source IPv4 or IPv6 address	The source IPv4 or IPv6 address.
`dest-ip` *<destination IPv4 or IPv6 address>*	Displays BFD neighbor information for the specified pair of source and destination IPv4 or IPv6 addresses. **Note:** The source and destination IP addresses must be of the same type, either IPv4 or IPv6.
`details`	Displays all BFD protocol parameters and timers for each neighbor.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BFD neighbor information for source IPv4 address `10.245.34.22`:

```
G8272> display bfd neighbors src-ip 10.245.34.22
```

display bgp

Displays Border Gateway Protocol (BGP) route information.

Syntax

display bgp [{ipv4|ipv6} unicast] [*<IPv4 or IPv6 network address>***[/***<prefix length>*** [longer-prefixes]]]**

where:

Parameter	Function
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
IPv4 or IPv6 network address	The IPv4 or IPv6 network address.
prefix length	The IPv4 or IPv6 network mask length.
`longer-prefixes`	Displays BGP route information for the specified network and any subnetworks with a prefix length equal to or greater than the prefix specified.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP route information:

```
G8272> display bgp
```

display bgp community

Displays Border Gateway Protocol (BGP) routes that match the specified community.

Syntax

`display bgp [all|{ip|ipv4|ipv6} unicast] community [`<*community number*> **`[exact-match]] [local-AS] [no-advertise] [no-export]`**

where:

Parameter	Function
`all`	Displays BGP information for all IP address families.
`ip/ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
community number	The number of the BGP community. The format for the community number is AA:NN (autonomous system number: community number).
`exact-match`	Displays only an exact match for the specified community.
`local-AS`	Displays BGP routes not advertised outside the local autonomous system (AS).
`no-advertise`	Displays BGP routes not advertised to any peer (internal or external).
`no-export`	Displays BGP routes advertised only to peers in the same AS.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching any community `10:23`:

```
G8272> display bgp community 10:23
```

display bgp community vrf

Displays Border Gateway Protocol (BGP) routes that match any community associated with the specified Virtual Routing and Forwarding (VRF) instance.

Syntax

`display bgp [all|{ip|ipv4|ipv6} unicast] community vrf {all|default}`

where:

Parameter	Function
`all`	Displays BGP information for all IP address families.
`ip/ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
`all`	Displays BGP routes matching communities associated with any VRF instance.
`default`	Displays BGP routes matching communities associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes for communities associated with the default VRF instance:

```
G8272> display bgp community vrf default
```

display bgp community-list

Displays Border Gateway Protocol (BGP) routes that match the specified community list.

Syntax

`display bgp [all|{ip|ipv4|ipv6} unicast] community-list` <*community list name*> **`[exact-match]`**

where:

Parameter	Function
`all`	Displays BGP information for all IP address families.
`ip/ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
community list name	The name of the BGP community list.
`exact-match`	Displays only an exact match for the specified community list.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the community list 'comlist1':

```
G8272> display bgp community-list comlist1
```

display bgp community-list vrf

Displays Border Gateway Protocol (BGP) routes that match the specified community list associated with the selected Virtual Routing and Forwarding (VRF) instance.

Syntax

`display bgp [all|{ip|ipv4|ipv6} unicast] community-list` <*community list name*> **`vrf {all|default}`**

where:

Parameter	Function
`all`	Displays BGP information for all IP address families.
`ip/ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
community list name	The name of the BGP community list.
`all`	Displays BGP routes matching the specified community list associated with any VRF instance.
`default`	Displays BGP routes matching the specified community list associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching community list 'comlist1' associated with the default VRF instance:

```
G8272> display bgp community comlist1 vrf default
```

display bgp dampening

Displays Border Gateway Protocol (BGP) dampening information.

Syntax

```
display bgp [{ipv4|ipv6} unicast] dampening {dampened-paths|
flap-statistics|parameters}
```

where:

Parameter	Function
ipv4	Displays BGP information for the IPv4 address family.
ipv6	Displays BGP information for the IPv6 address family.
unicast	Displays BGP information for the unicast address family.
dampened-paths	Displays all dampened paths.
flap-statistics	Displays flap statistics for BGP routes.
parameters	Displays all dampening parameters.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all dampened paths:

```
G8272> display bgp dampening dampened-paths
```

The following command displays flap statistics for BGP routes:

```
G8272> display bgp dampening flap-statistics
```

The following command displays all dampening parameters:

```
G8272> display bgp dampening parameters
```

display bgp extcommunity-list

Displays Border Gateway Protocol (BGP) routes that match the specified extended community list.

Syntax

`display bgp {ipv4|ipv6} unicast extcommunity-list` *<extended community list name>* **`[vrf default] [exact-match]`**

where:

Parameter	Function
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
extended community list name	The name of the extended community list.
`vrf default`	Displays BGP routes matching the extended community list associated with the default Virtual Routing and Forwarding (VRF) instance.
`exact-match`	Displays BGP routes exactly matching the specified extended community list.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the extended community list 'extcomlist1':

```
G8272> display bgp ipv4 unicast extcommunity-list extcomlist1
```

display bgp filter-list

Displays Border Gateway Protocol (BGP) routes matching a specified filter list.

Syntax

`display bgp [{ipv4|ipv6} unicast] filter-list` *<filter list name>*

where:

Parameter	Function
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
filter list name	The name of the BGP filter list.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes that match filter list 'flist3':

```
G8272> display bgp filter-list flist3
```

display bgp inconsistent-as

Displays Border Gateway Protocol (BGP) routes with inconsistent Autonomous System (AS) paths.

Syntax

```
display bgp inconsistent-as
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes with inconsistent AS paths:

```
G8272> display bgp inconsistent-as
```

display bgp neighbors

Displays Border Gateway Protocol (BGP) neighbors.

Syntax

display bgp [{ip|ipv4|ipv6} unicast] neighbors [*<IPv4 or IPv6 address>* **[advertised-routes|received-routes]]**

where:

Parameter	Function
ip/ipv4	Displays BGP information for the IPv4 address family.
ipv6	Displays BGP information for the IPv6 address family.
unicast	Displays BGP information for the unicast address family.
IPv4 or IPv6 address	The IPv4 or IPv6 address of the BGP neighbor.
advertised-routes	Displays the BGP routes advertised for the specified neighbor.
received-routes	Displays the BGP routes received from the specified neighbor.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP neighbors:

```
G8272> display bgp neighbors
```

display bgp neighbors flap-statistics

Displays Border Gateway Protocol (BGP) neighbors.

Syntax

`display bgp {ip|ipv4|ipv6} unicast neighbors` *<IPv4 or IPv6 address>* **`flap-statistics`**

where:

Parameter	Function
`ip/ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
IPv4 or IPv6 address	The IPv4 or IPv6 address of the BGP neighbor.
`flap-statistics`	Displays the flap statistics for the BGP routes received from the specified neighbor.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays flap statistics for the BGP routes received from the neighbor with IPv4 address `10.243.2.54`:

```
G8272> display bgp ipv4 unicast neighbors 10.243.2.54 flap-statistics
```

display bgp neighbors routes

Displays Border Gateway Protocol (BGP) routes received or advertised to or from the specified neighbor.

Syntax

`display bgp neighbors` *<IPv4 or IPv6 address>* **`routes`**

where:

Parameter	Function
IPv4 or IPv6 address	The IPv4 or IPv6 address of the BGP neighbor.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all BGP routes received or advertised to or from the neighbor with IPv4 address `10.254.22.36`:

```
G8272> display bgp neighbors 10.254.22.36 routes
```

display bgp ip neighbors routes

Displays Border Gateway Protocol (BGP) routes received or advertised to or from the specified neighbor for the IP unicast address family.

Syntax

`display bgp {ip|ipv4|ipv6} unicast neighbors` *<IPv4 or IPv6 address>* **`routes [advertised|dampened|received] [vrf {all|default}]`**

where:

Parameter	Function
`ip/ipv4`	Displays BGP routes for the IPv4 address family.
`ipv6`	Displays BGP routes for the IPv6 address family.
`unicast`	Displays BGP routes for the unicast address family.
IPv4 or IPv6 address	The IPv4 or IPv6 address of the BGP neighbor.
`advertised`	Displays BGP routes advertised for the neighbor.
`dampened`	Displays all BGP dampened routes received from the specified neighbor.
`received`	Displays all BGP routes received from the neighbor.
`vrf all`	Displays all BGP routes associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays all BGP routes associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all BGP routes received or advertised to or from the neighbor with IPv4 address `10.254.22.36`:

```
G8272> display bgp ip unicast neighbors 10.254.22.36 routes
```

display bgp neighbors vrf

Displays Border Gateway Protocol (BGP) neighbors associated with the specified Virtual Routing and Forwarding (VRF) instance.

Syntax

display bgp {ip|ipv4|ipv6} unicast neighbors [*<IPv4 or IPv6 address>***] vrf {all|default}**

where:

Parameter	Function
`ip/ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
IPv4 or IPv6 address	The IPv4 or IPv6 address of the BGP neighbor.
`all`	Displays BGP neighbors associated with any VRF instance.
`default`	Displays BGP neighbors associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP neighbors associated with the default VRF instance:

```
G8272> display bgp ip unicast neighbors vrf default
```

display bgp nexthop-tracking

Displays Border Gateway Protocol (BGP) next-hop tracking information.

Syntax

display bgp nexthop-tracking

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP next-hop tracking information:

```
G8272> display bgp nexthop-tracking

Configured NHT: ENABLED
NHT Critical Delay time-interval for afi 1 safi 1 : 3000 ms
NHT Non Critical Delay time-interval for afi 1 safi 1 : 10000 ms
NHT Critical Delay time-interval for afi 1 safi 2 : 3000 ms
NHT Non Critical Delay time-interval for afi 1 safi 2 : 10000 ms
NHT Critical Delay time-interval for afi 2 safi 1 : 3000 ms
NHT Non Critical Delay time-interval for afi 2 safi 1 : 10000 ms
BGP VRF: (Default) VRF_ID 0
BGP Instance: (Default), AS: 23, router-id 10.241.41.21
NHT is Enabled
Recvd Msg count from NSM: 0
NHT delay-timer [Index:0] remaining seconds: 0
NHT delay-timer [Index:1] remaining seconds: 0
NHT delay-timer [Index:2] remaining seconds: 0
NHT delay-timer [Index:3] remaining seconds: 0
NHT delay-timer [Index:4] remaining seconds: 0
NHT delay-timer [Index:5] remaining seconds: 0
BGP nexthop(s):
Total number of IPV4 nexthops : 0
Total number of IPV6 nexthops : 0
```

display bgp nexthop-tree-details

Displays Border Gateway Protocol (BGP) next-hop tree information.

Syntax

```
display bgp nexthop-tree-details
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP next-hop tree information:

```
G8272> display bgp nexthop-tree-details
```

display bgp paths

Displays all the Border Gateway Protocol (BGP) paths stored in the database.

Syntax

display bgp [{ipv4|ipv6} unicast] paths

where:

Parameter	Function
ipv4	Displays BGP information for the IPv4 address family.
ipv6	Displays BGP information for the IPv6 address family.
unicast	Displays BGP information for the unicast address family.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP path information:

```
G8272> display bgp paths
```

display bgp policy

Displays Border Gateway Protocol (BGP) policy statistics.

Syntax

```
display bgp {ipv4|ipv6} unicast policy statistics
redistribute {all|direct|static} [vrf {all|default}]
```

where:

Parameter	Function
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
`all`	Displays BGP policy statistics for all redistributed routes.
`direct`	Displays BGP policy statistics for direct redistributed routes.
`static`	Displays BGP policy statistics for static redistributed routes.
`vrf all`	Displays BGP policy statistics associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP policy statistics associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP policy statistics for all redistributed routes:

```
G8272> display bgp ipv4 unicast policy statistics redistribute all
```

display bgp prefix-list

Displays Border Gateway Protocol (BGP) routes matching the specified prefix list.

Syntax

`display bgp prefix-list` *<prefix list name>*

where:

Parameter	Function
prefix list name	The name of the prefix list used to filter BGP routes.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the prefix list ‘preflist1’:

```
G8272> display bgp prefix-list preflist1
```

display bgp process

Displays Border Gateway Protocol (BGP) process information.

Syntax

```
display bgp process
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP process information:

```
G8272> display bgp process

BGP Process Information
BGP Process ID                 : 2202
BGP Protocol Tag               : 23
BGP Protocol State             : Running

BGP attributes information
BGP AS path entries            : 0

Information regarding configured VRFs:

BGP Information for VRF default
VRF Id                         : 0
VRF state                      : UP
Router-ID                      : 10.241.41.21
Configured Router-ID           : 10.241.41.21
...
```

display bgp quote-regexp

Displays Border Gateway Protocol (BGP) routes matching the autonomous system (AS) path regular expression.

Syntax

`display bgp [{ipv4|ipv6} unicast] quote-regexp` *<regular expression>*

where:

Parameter	Function
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
regular expression	The regular expression to match the AS path.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the AS path regular expression “65550”:

```
G8272> display bgp quote-regexp “65550”
```

display bgp regexp

Displays Border Gateway Protocol (BGP) routes matching the autonomous system (AS) path regular expression.

Syntax

`display bgp regexp` *<regular expression>*

where:

Parameter	Function
regular expression	The regular expression to match the AS path.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the AS path regular expression "172":

```
G8272> display bgp regexp 172
```

display bgp route-map

Displays Border Gateway Protocol (BGP) route maps.

Syntax

`display bgp [{ipv4|ipv6} unicast] route-map` *<route map name>*

where:

Parameter	Function
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
route map name	The name of the route map.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP route map 'path-34':

```
G8272> display bgp route-map path-34
```

display bgp sessions

Displays Border Gateway Protocol (BGP) session information for all BGP peers.

Syntax

```
display bgp sessions [vrf {all|default}]
```

where:

Parameter	Function
`vrf all`	Displays BGP session information for peers associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP session information only for peers associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP session information:

```
G8272> display bgp sessions
```

display bgp statistics

Displays Border Gateway Protocol (BGP) traffic statistics.

Syntax

```
display bgp statistics
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP traffic statistics:

```
G8272> display bgp statistics
```

display bgp vrf

Displays Border Gateway Protocol (BGP) information for the specified Virtual Routing and Forwarding (VRF) instance.

Syntax

`display bgp [{ipv4|ipv6} unicast] vrf {all|default}`

where:

Parameter	Function
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
`all`	Displays BGP information for all the VRF instances.
`default`	Displays BGP information for the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP information for all VRF instances:

```
G8272> display bgp vrf all
```

display boot

Displays the contents of the BOOT variable, including the versions of the active and standby images, the configured boot image and the scheduled reboot time.

Syntax

`display boot [portmode]`

where:

Parameter	Function
`portmode`	Displays only the current portmode settings.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the contents of the BOOT variable:

```
G8272> display boot

Current FLASH software:
  active image: version 10.1.1.0, downloaded 02:05:34 UTC Sun May 15 2016
  standby image: version 10.1.1.0, downloaded 01:22:52 UTC Mon May 16 2016
  Uboot: version 10.1.1.0, downloaded 02:05:36 UTC Sun May 15 2016
Currently set to boot software active image
Currently scheduled reboot time: none
Current port mode: default mode
```

display class-map

Displays the specified class maps.

Syntax

display class-map [<*class map name*>**]**

where:

Parameter	Function
class map name	The name of the class map.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays class maps:

```
G8272> display class-map

  Type qos class-maps
  ===================
      class-map type qos match-any class-default


  Type queuing class-maps
  =======================
      class-map type queuing match-any 1p7q1t-out-q4

      class-map type queuing match-any 1p7q1t-out-q2

      class-map type queuing match-any 1p7q1t-out-pq1
         match cos 5-7

      class-map type queuing match-any 1p7q1t-out-q-default
         match qos-group 0-7
         match cos 0-4

      class-map type queuing match-any 1p7q1t-out-q3

      class-map type queuing match-any 1p7q1t-out-q6
...
```

display class-map type

Displays class maps of the specified type.

Syntax

display class-map type {control-plane|qos|queuing} [<*class map name*>**]**

where:

Parameter	Function
control-plane	Displays Control Plane Protection (CoPP) class maps.
qos	Displays Quality of Service (QoS) class maps.
queuing	Displays Class of Service queue (COSq) class maps.
class map name	The name of the class map.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays CoPP class maps:

```
G8272> display class-map type control-plane

  Type control plane class-maps
  =============================
      class-map match-any copp-s-lacp

      class-map match-any copp-s-default

      class-map match-any copp-s-bfd

      class-map match-any copp-s-arpresponse

      class-map match-any copp-s-arprequest
...
```

display cli

Displays the Command Line Interface (CLI) tree for the current command mode.

Syntax

`display cli [history]`

where:

Parameter	Function
`history`	Displays the session command history.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the CLI tree:

```
G8272> display cli

Exec mode:
+-clear
  +-aaa
    +-local
      +-user
        +-lockout
          +-username
            +-USERNAME [remove aaa local user lockout username USERNAME]
  +-access-list
    +-counters [remove access-list counters (WORD|)]
      +-WORD [remove access-list counters (WORD|)]
  +-arp
    +-access-list
      +-counters [remove arp access-list counters(WORD|)]
        +-WORD [remove arp access-list counters(WORD|)]
```

The following command displays the session command history:

```
G8272> display cli history

   1 enable
   2 configure device
   3 vlan 130
   4 name VLAN-SEC
   5 display vlan
   6 exit
   7 disable
   8 display cli history
```

Restrictions

The following command is available only in User EXEC and Privileged EXEC modes:

- **display cli history**

display clock

Displays the current switch time and date.

Syntax

```
display clock
```

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the current switch time:

```
G8272> display clock

07:29:25 PM UTC Sun Dec 27 2015
```

display cores

Displays the process core dumps of the switch.

Syntax

```
display cores
```

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the process core dumps:

```
G8272# display cores

Process Name   PID        Datetime
------------   --------   -------------------
bgpd           gz         2015-09-10 17:05:26
hostmibd       gz         2015-09-10 17:05:31
l2mribd        gz         2015-09-10 17:05:28
lacpd          gz         2015-09-10 17:05:28
mstpd          gz         2015-09-10 17:05:28
nsm            gz         2015-09-10 17:04:18
ospfd          gz         2015-09-10 17:05:28
ribd           gz         2015-09-10 17:05:28
vrrpd          gz         2015-09-10 17:05:28
```

display current

Displays the Multiple Spanning Tree (MST) configuration currently in use.

Syntax

display current

Modes

MST Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the currently used MST configuration:

```
G8272(config-mst)# display current
Current MST Configuration
Name     []
Revision 0 Instances configured 0
Instance  Vlans mapped
--------
---------------------------------------------------------------------
0        1-4094
---------------------------------------------------------------------
------
Mars1(config-mst)#sho pending
Pending MST Configuration
Name     [region]
Revision 65535 Instances configured 3
Instance  Vlans mapped
--------
---------------------------------------------------------------------
0        4-4094
1        1
2        2
3        3
---------------------------------------------------------------------
```

display dbg

Displays the current debug settings.

Syntax

`display dbg [aaa|bfd|bgp|hsl|ip arp|ipv6 nd|lacp|lldp|mstp|nsm|ospf|rib|snmp-server|spanning-tree|ssh-server|syslog|tacacs+|telnet-server|vlag|vlan|vrrp-engine]`

where:

Parameter	Function
`aaa`	Displays the current Authentication, Authorization and Accounting (AAA) debug settings.
`bfd`	Displays the current Bidirectional Forwarding Detection (BFD) debug settings.
`bgp`	Displays the current Border Gateway Protocol (BGP) debug settings.
`hsl`	Displays the current Hardware Specific Layer (HSL) debug settings.
`ip arp`	Displays the current Internet Protocol (IP) Address Resolution Protocol (ARP) debug settings.
`ipv6 nd`	Displays the current Internet Protocol version 6 (IPv6) Neighbor Discovery (ND) debug settings.
`lacp`	Displays the current Link Aggregation Control Protocol (LACP) debug settings.
`lldp`	Displays the current Link Layer Discovery Protocol (LLDP) debug settings.
`mstp`	Displays the current Multiple Spanning Tree Protocol (MSTP) debug settings.
`nsm`	Displays the current Network Service Module (NSM) debug settings.
`ospf`	Displays the current Open Shortest Path First (OSPF) debug settings.
`rib`	Displays the current Routing Information Base (RIB) debug settings.
`snmp-server`	Displays the current Simple Network Management Protocol (SNMP) agent debug settings.
`spanning-tree`	Displays the current spanning tree debug settings.
`ssh-server`	Displays the current Secure Shell (SSH) server debug settings.

Parameter	Function
`syslog`	Displays the current system log debug settings.
`tacacs+`	Displays the current Terminal Access Controller Access-Control System Plus (TACACS+) debug settings.
`telnet-server`	Displays the current telnet server debug settings.
`vlag`	Displays the current Virtual Link Aggregation (VLAG) debug settings.
`vlan`	Displays the current Virtual LAN (VLAN) debug settings.
`vrrp-engine`	Displays the current Virtual Router Redundancy Protocol (VRRP) engine debug settings.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the current debug settings for LACP:

```
G8272> display dbg lacp

LACP debugging status:
 LACP cli debugging is off
 LACP sync debugging is off
 LACP error debugging is off
 LACP timer debugging is off
 LACP event debugging is off
 LACP trace debugging is off
 LACP individual debugging is off
 LACP packet(rx) debugging is off
 LACP packet(tx) debugging is off
 LACP message(recv) debugging is off
 LACP message(send) debugging is off
 LACP debugging on interface: all
```

display env

Displays hardware environment status information.

Syntax

`display env {fan [detail]|power [input]|temperature}`

where:

Parameter	Function
`fan`	Displays fan environment information.
`detail`	Displays fan environment detailed information.
`power`	Displays power environment information.
`input`	Displays power input environment information.
`temperature`	Displays temperature environment information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays fan environment detailed information:

```
G8272> display env fan detail

Total Fan: 8
+--------+-----+-----------------+---------------+-------+--------+
| Module | Fan | Name            | Air-Flow      | Speed | Speed  |
| Number | ID  |                 | Direction     | (%)   | (RPM)  |
+--------+-----+-----------------+---------------+-------+--------+
  01       01    Fan 1             Front-to-Back   0       4035
  01       02    Fan 2             Front-to-Back   25      4295
  02       03    Fan 3             Front-to-Back   0       4017
  02       04    Fan 4             Front-to-Back   26      4337
  03       05    Fan 5             Front-to-Back   0       4251
  03       06    Fan 6             Front-to-Back   24      4386
  04       07    Fan 7             Front-to-Back   0       4313
  04       08    Fan 8             Front-to-Back   25      4455
```

The following command displays power environment information:

```
G8272> display env power

Total Power Supplies: 2
+----+-----------------+---------------+-----------------+-------------+
| ID | Name            | Manufacturer  | Model           | State       |
+----+-----------------+---------------+-----------------+-------------+
  O1   Power Supply 1                                      Normal ON
  O2   Power Supply 2                                      Alert Fault
```

The following command displays temperature environment information:

```
G8272> display env temperature

+----+------------------+----------+--------+
| ID | Name             | Temp     | State  |
|    |                  | (Celsius)|        |
+----+------------------+----------+--------+
  O1   CPU Local          38         OK
  O2   Ambient            41         OK
  O3   Hot Spot           57         OK
  O4   Asic Max           0          FAULT
```

display errdisable recovery

Displays error disable recovery information.

Syntax

```
display errdisable recovery
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays error disable recovery information:

```
G8272> display errdisable recovery
Global ErrDisable recovery enabled, timeout 45 sec

------------------------------------------------
Interface       Errdisable reason   Time left(sec)
------------------------------------------------
Ethernet1/48    bpduguard           40
```

display faults

Displays system fault information.

Syntax

`display faults {active|all|cleared} [`<*process name*>**`]`**

where:

Parameter	Function
`active`	Displays only active faults.
`all`	Displays all faults.
`cleared`	Displays only cleared faults.
process name	The process for which to display the faults. Available *process names* are listed below.

To display the system faults for a specific process, use any of the following:

- `bgpd` - Border Gateway Protocol (BGP)
- `hostmibd` - Host Management Information Base (MIB)
- `hostpd` - Host Protocols
- `hsl` - Hardware Specific Layer (HSL)
- `hsl_ras_mgr` - Hardware Specific Layer (HSL)
- `imi` - Integrated Management Interface (IMI)
- `l2mribd` - Layer 2 Multicast Routing Information Base (MRIB)
- `lacpd` - Link Aggregation Control Protocol (LACP)
- `mstpd` - Multiple Spanning Tree Protocol (MSTP)
- `ndd` - Neighbor Discovery Daemon (NDD)
- `nsm` - Network Service Module (NSM)
- `oamd` - Operations, Administration and Maintenance (OAM)
- `onmd` - Network Management
- `ospfd` - Open Shortest Path First (OSPF)
- `ribd` - Routing Information Base (RIB)
- `vlagd` - Virtual Link Aggregation Group (VLAG)
- `vlogd` - VLOG Daemon
- `vrrpd` - Virtual Router Redundancy Protocol (VRRP)

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays system faults information:

```
G8272> display faults

Faults detected in process: nsm

    NSM:VLAN PORT MODE CHANGE ALARM (7)
    Event:COMM    Sev:UNKNOWN  Rec:NONE       Cause:64
    State:Active  Count:1  SeqNum:1  Loc:smi/smi_nsm_fm.c:217
    First:Thu Jan  1 00:00:43 ::197762 [us]
    Last :Thu Jan  1 00:00:43 ::197762 [us]
    DataLen:32  DataPtr:0x106ee608
      up¿€â€00:  45 74 68 65 72 6e 65 74 31 2f 31 00 00 00 00 00
      up¿€â€10:  00 00 00 00 00 00 00 00 00 00 00 03 00 00 00 03


Faults detected in process: ospfd

Faults detected in process: hostpd

Faults detected in process: lacpd
...
```

display hardware internal

Displays Peripheral Component Interconnect (PCI) configuration space hardware information.

Syntax

display hardware internal [pci]

where:

Parameter	Function
pci	Displays PCI configuration space for the device.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays PCI information:

```
G8272> display hardware internal

PCI Config Space for Device: 0
0000000 5719 7100 0601 1000 2100 200b 0800 0100
0000010 0000 f0df 0000 0000 0001 0100 0000 0000
0000020 00e0 f0ff f1ff 0100 0000 0000 0000 0000
0000030 0000 0000 4400 0000 0000 0000 0000 0000

PCI Config Space for Device: 1
0000000 e414 54b8 0600 1000 0300 0002 0800 0000
0000010 0400 00e0 0000 0000 0000 0000 0000 0000
0000020 0000 0000 0000 0000 0000 0000 e414 54b8
0000030 0000 0000 4800 0000 0000 0000 0001 0000
```

display hardware internal buffer

Displays buffer information.

Syntax

`display hardware internal buffer info {egress|ingress}`

where:

Parameter	Function
`egress`	Displays egress information for each switch port.
`ingress`	Displays ingress information for each switch port.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays ingress buffer information:

```
G8272> display hardware internal buffer info ingress

-----------------------------------------------------
Instant ingress buffer utilization in terms of cells
One cell represents approximately 208 bytes

----------------+-----------------------+------------
 Ethernet Port  |  Ingress Buffer Usage  |  XOFF
----------------+-----------------------+------------
 Ethernet1/1    |                     0  |
 Ethernet1/2    |                     0  |
 Ethernet1/3    |                     0  |
 Ethernet1/4    |                     0  |
 Ethernet1/5    |                     0  |
 Ethernet1/6    |                     0  |
 Ethernet1/7    |                     0  |
 Ethernet1/8    |                     0  |
 Ethernet1/9    |                     0  |
 Ethernet1/10   |                     0  |
 Ethernet1/11   |                     0  |
 Ethernet1/12   |                     0  |
 Ethernet1/13   |                     0  |
 Ethernet1/14   |                     0  |
 Ethernet1/15   |                     0  |
...
```

display hardware internal cpu-mac

Displays hardware MAC information.

Syntax

display hardware internal cpu-mac [inband|mgmt] stats

where:

Parameter	Function
inband	Displays inband port related information.
mgmt	Displays management port related information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays inband port related information:

```
G8272> display hardware internal cpu-mac inband stats

mgmt0      Link encap:Management Ethernet          inet
addr:10.241.41.21/25 Bca
st:10.241.41.127
          inet6 addr:fe80::aa97:dcff:fede:2500/64
          UP BROADCAST RUNNING ALLMULTI MULTICAST MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 carrier:0
          collisions:0
          RX bytes:0  TX bytes:0
```

Restrictions

The following command is available only in User EXEC and Privileged EXEC modes:

- **display hardware internal cpu-mac inband stats**

The following command is not available in User EXEC mode:

- **display hardware internal cpu-mac mgmt stats**

display hostname

Displays the switch's network name.

Syntax

```
display hostname
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the switch's network name:

```
G8272> display hostname

G8272
```

display interface

Displays interface status and configuration information.

Syntax

`display interface [`<*interface name*>**`]`**
`[brief|capabilities|description|`
`flowcontrol|mac-address|snmp-ifindex|bridge-port|transceiver]`

where:

Parameter	Function
interface name	The name of the interface.
`brief`	Displays a short interface configuration summary.
`capabilities`	Displays interface capabilities (speed, duplex etc.).
`description`	Displays interface description.
`flowcontrol`	Displays interface IEEE 802.3x flow control status.
`mac-address`	Displays interface MAC address.
`snmp-ifindex`	Displays Simple Network Management Protocol (SNMP) interface index (ifindex).
`bridge-port`	Displays interface bridging configuration.
`transceiver`	Displays interface transceiver information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a short summary of the interface configuration:

```
G8272> display interface brief

------------------------------------------------------------------------------
Ethernet        VLAN   Type Mode   Status  Reason                   Speed    Port
Interface                                                                    Agg#
------------------------------------------------------------------------------
Ethernet1/1     10     eth  trunk  up      none                     10000    1000
Ethernet1/2     10     eth  trunk  up      none                     10000    1000
Ethernet1/3     1      eth  access down    Link not connected       auto     --
Ethernet1/4     1      eth  access down    Link not connected       auto     --
Ethernet1/5     1      eth  access down    Link not connected       auto     --
Ethernet1/6     1      eth  access down    Link not connected       auto     --
Ethernet1/7     1      eth  access down    Link not connected       auto     --
Ethernet1/8     1      eth  access down    Link not connected       auto     --
Ethernet1/9     10     eth  trunk  up      none                     10000    2000
Ethernet1/10    10     eth  trunk  up      none                     10000    2000
Ethernet1/11    10     eth  trunk  up      none                     10000    2000
Ethernet1/12    10     eth  trunk  up      none                     10000    2000
Ethernet1/13    1      eth  access down    Link not connected       auto     --
Ethernet1/14    1      eth  access down    Link not connected       auto     --
Ethernet1/15    1      eth  access down    Link not connected       auto     --
Ethernet1/16    1      eth  access down    Link not connected       auto     --
Ethernet1/17    1      eth  access down    Link not connected       auto     --
Ethernet1/18    1      eth  access down    Link not connected       auto     --
```

The following command displays interface flow control status:

```
G8272> display interface flow control

Port           Send FlowControl  Receive FlowControl  RxPause TxPause
               admin   oper      admin   oper
------------   ------- --------  ------- -----------  ------- -------
Ethernet1/1    off     off       on      on                 0       0
Ethernet1/2    off     off       on      on                 0       0
Ethernet1/3    off     off       on      on                 0       0
Ethernet1/4    off     off       on      on                 0       0
Ethernet1/5    off     off       on      on                 0       0
Ethernet1/6    off     off       on      on                 0       0
Ethernet1/7    off     off       on      on                 0       0
Ethernet1/8    off     off       on      on                 0       0
Ethernet1/9    off     off       on      on                 0       0
Ethernet1/10   off     off       on      on                 0       0
Ethernet1/11   off     off       on      on                 0       0
Ethernet1/12   off     off       on      on                 0       0
Ethernet1/13   off     off       on      on                 0       0
Ethernet1/14   off     off       on      on                 0       0
Ethernet1/15   off     off       on      on                 0       0
...
```

The following command displays interface MAC address:

```
G8272> display interface mac-address
------------------------------------------------------------------------------
-------
Interface                  Mac-Address     Burn-in Mac-Address
------------------------------------------------------------------------------
-------
Ethernet1/1                0817.f48b.bf03  0817.f48b.bf03
Ethernet1/2                0817.f48b.bf04  0817.f48b.bf04
Ethernet1/3                0817.f48b.bf05  0817.f48b.bf05
.......
```

display interface ethernet

Displays ethernet interface configuration information.

Syntax

`display interface ethernet` *<chassis number/port number>*
`[brief|capabilities|description|flowcontrol|mac-address|bridge-port|transceiver]`

where:

Parameter	Function
chassis number/port number	The ethernet interface chassis and port numbers. The *chassis number* is 1 and the *port number* is from 1 to 128.
`brief`	Displays a short interface configuration summary.
`capabilities`	Displays interface capabilities (speed, duplex etc.).
`description`	Displays interface description.
`flowcontrol`	Displays interface IEEE 802.3x flow control status.
`mac-address`	Displays interface MAC address.
`bridge-port`	Displays interface bridging configuration.
`transceiver`	Displays interface transceiver information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays configuration information for ethernet interface 1/12:

```
G8272> display interface ethernet 1/12

Interface Ethernet1/12
  Hardware is Ethernet  Current HW addr: a897.dcde.250e
  Physical:a897.dcde.250e  Logical:(not set)
  index 410120 metric 1 MTU 1500 Bandwidth 10000000 Kbit
  Port Mode is access
  <BROADCAST,MULTICAST>
  VRF Binding: Not bound
  Speed 10000 Mb/s Duplex full
  Last link flapped never
  Last clearing of "display interface" counters never
  30 seconds input rate 0 bits/sec, 0 bytes/sec, 0 packets/sec
  30 seconds output rate 0 bits/sec, 0 bytes/sec, 0 packets/sec
  Load-Interval #2: 5 minute (300 seconds)
     input rate 0 bps, 0 pps; output rate 0 bps, 0 pps
  RX
    0 unicast packets  0 multicast packets  0 broadcast packets
    0 input packets  0 bytes
    0 jumbo packets  0 storm suppression packets
    0 giants  0 input error  0 short frame  0 overrun  0 underrun
    0 watchdog  0 if down drop
    0 input with dribble  0 input discard(includes ACL drops)
    0 Rx pause
  TX
    0 unicast packets  0 multicast packets  0 broadcast packets
    0 output packets  0 bytes
    0 jumbo packets
    0 output errors  0 collision  0 deferred  0 late collision
    0 lost carrier  0 no carrier  0 babble
    0 Tx pause
  0 interface resets
```

display interface loopback

Displays loopback interface configuration information.

Syntax

`display interface loopback` *<loopback interface>* **`[brief|capabilities|description|flowcontrol|mac-address|transceiver]`**

where:

Parameter	Function
loopback interface	The loopback interface number. Range is from 0 to 7.
`brief`	Displays a short interface configuration summary.
`capabilities`	Displays interface capabilities (speed, duplex etc.).
`description`	Displays interface description.
`flowcontrol`	Displays interface IEEE 802.3x flow control status.
`mac-address`	Displays interface MAC address.
`transceiver`	Displays interface transceiver information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays configuration information for loopback interface 0:

```
G8272> display interface loopback 0

Interface loopback0
  Hardware is Loopback
  index 8 metric 1 MTU 1500 Bandwidth 0 Kbit
  no bridge-port
  arp ageing timeout 1500
  <UP,LOOPBACK,RUNNING>
  VRF Binding: Not bound
  DHCP client is disabled.
  Encapsulation LOOPBACK
    0 packets input 0 bytes
    0 multicast frames 0 compressed
    0 input errors 0 frame 0 overrun 0 fifo
    0 packets output 0 bytes 0 underruns
    0 output errors 0 collisions 0 fifo
```

display interface mgmt

Displays management interface configuration information.

Syntax

`display interface mgmt` *<management interface>* **`[brief|capabilities|description|flowcontrol|mac-address|transceiver]`**

where:

Parameter	Function
management interface	The management interface number. The number is 0.
`brief`	Displays a short interface configuration summary.
`capabilities`	Displays interface capabilities (speed, duplex etc.).
`description`	Displays interface description.
`flowcontrol`	Displays interface IEEE 802.3x flow control status.
`mac-address`	Displays interface MAC address.
`transceiver`	Displays interface transceiver information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays configuration information for management interface 0:

```
G8272> display interface mgmt 0

Interface mgmt0
  Hardware is Management Ethernet  Current HW addr: a897.dcde.2500
  Physical:a897.dcde.2500  Logical:(not set)
  index 3 metric 1 MTU 1500 Bandwidth 1000000 Kbit
  no bridge-port
  arp ageing timeout 1500
  <UP,BROADCAST,RUNNING,ALLMULTI,MULTICAST>
  VRF Binding: Not bound
  Speed 1000 Mb/s Duplex full
  IPV6 DHCP IA-NA client is enabled.
  inet 10.241.41.21/25 broadcast 10.241.41.127
  inet6 fe80::aa97:dcff:fede:2500/64
  RX
    1604059 input packets 8 unicast packets 1504132 multicast packets
    99919 broadcast packets 316897210 bytes
  TX
    63636 output packets 182 unicast packets 63453 multicast packets
    1 broadcast packets 9846996 bytes
```

display interface port-aggregation

Displays Link Aggregation Group (LAG) interface configuration information.

Syntax

`display interface port-aggregation` *<LAG number>* **`[brief|capabilities|description|flowcontrol|mac-address|bridge-port|transceiver]`**

where:

Parameter	Function
LAG number	The LAG number. Range is from 1 to 4096.
`brief`	Displays a short interface configuration summary.
`capabilities`	Displays interface capabilities (speed, duplex etc.).
`description`	Displays interface description.
`flowcontrol`	Displays interface IEEE 802.3x flow control status.
`mac-address`	Displays interface MAC address.
`bridge-port`	Displays interface bridging configuration.
`transceiver`	Displays interface transceiver information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays configuration information for LAG 12:

```
G8272> display interface port-aggregation 12

Interface po12
  Hardware is AGGREGATE  Current HW addr: 0e00.0000.0003
  Physical:(not set)  Logical:(not set)
  index 100012 metric 1 MTU 1500 Bandwidth 0 Kbit
  Port Mode is access
  <UP,BROADCAST,MULTICAST>
  VRF Binding: Not bound
  No members
  30 seconds input rate 0 bits/sec, 0 bytes/sec, 0 packets/sec
  30 seconds output rate 0 bits/sec, 0 bytes/sec, 0 packets/sec
  Load-Interval #2: 5 minute (300 seconds)
     input rate 0 bps, 0 pps; output rate 0 bps, 0 pps
  RX
    0 unicast packets  0 multicast packets  0 broadcast packets
    0 input packets  0 bytes
    0 jumbo packets  0 storm suppression packets
    0 giants  0 input error  0 short frame  0 overrun  0 underrun
    0 watchdog  0 if down drop
    0 input with dribble  0 input discard(includes ACL drops)
    0 Rx pause
  TX
    0 unicast packets  0 multicast packets  0 broadcast packets
    0 output packets  0 bytes
    0 jumbo packets
    0 output errors  0 collision  0 deferred  0 late collision
    0 lost carrier  0 no carrier  0 babble
    0 Tx pause
  0 interface resets
```

display interface vlan

Displays Virtual LAN (VLAN) interface configuration information.

Syntax

display interface vlan {*<VLAN number>* **[brief|capabilities|description|flowcontrol|mac-address|bridge-port|transceiver]|all}**

where:

Parameter	Function
VLAN number	The VLAN number. Range is from 1 to 4094.
`all`	Displays interface configuration information for all VLANs.
`brief`	Displays a short interface configuration summary.
`capabilities`	Displays interface capabilities (speed, duplex etc.).
`description`	Displays interface description.
`flowcontrol`	Displays interface IEEE 802.3x flow control status.
`mac-address`	Displays interface MAC address.
`transceiver`	Displays interface transceiver information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays interface configuration information for VLAN 1:

```
G8272> display interface vlan 1

Interface Vlan1
  Hardware is VLAN  Current HW addr: a897.dcde.2501
  Physical:(not set)  Logical:(not set)
  index 9 metric 1 MTU 1500 Bandwidth 0 Kbit
  no bridge-port
  arp ageing timeout 1500
  <UP,BROADCAST,RUNNING,MULTICAST>
  VRF Binding: Not bound
  DHCP client is disabled.
```

display interface counters

Displays interface traffic statistics.

Syntax

display interface counters [brief|detailed [all|snmp]|errors|snmp|storm-control|trunk]

where:

Parameter	Function
brief	Displays interface input and output rates.
detailed	Displays non-zero interface counters.
detailed all	Displays all interface counters.
detailed snmp	Displays Simple Network Management Protocol (SNMP) Management Information Base (MIB) interface counters.
errors	Displays interface error counters.
snmp	Displays interface SNMP MIB values.
storm-control	Displays interface storm-control counters.
trunk	Displays trunk port counters.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays interface counter information:

```
G8272> display interface counters
-------------------------------------------------------------------------------
Port                          InOctets                        InUcastPkts
-------------------------------------------------------------------------------
Eth1/1                           0                                0
Eth1/2                           0                                0
Eth1/3                           0                                0
Eth1/4                           0                                0
Eth1/5                           0                                0
Eth1/6                           0                                0
Eth1/7                           0                                0
Eth1/8                           0                                0
Eth1/9                           0                                0
Eth1/10                          0                                0
.......
Port                         InMcastPkts              InBcastPkts
-------------------------------------------------------------------------------
Eth1/1                           0                                0
Eth1/2                           0                                0
Eth1/3                           0                                0
Eth1/4                           0                                0
Eth1/5                           0                                0
Eth1/6                           0                                0
Eth1/7                           0                                0
Eth1/8                           0                                0
Eth1/9                           0                                0
Eth1/10                          0                                0
......
Port                         OutOctets                OutUcastPkts
-------------------------------------------------------------------------------
Eth1/1                           0                                0
Eth1/2                           0                                0
Eth1/3                           0                                0
Eth1/4                           0                                0
Eth1/5                           0                                0
Eth1/6                           0                                0
Eth1/7                           0                                0
Eth1/8                           0                                0
Eth1/9                           0                                0
Eth1/10                          0                                0
......
Port                         OutMcastPkts             OutBcastPkts
-------------------------------------------------------------------------------
Eth1/1                           0                                0
Eth1/2                           0                                0
Eth1/3                           0                                0
Eth1/4                           0                                0
Eth1/5                           0                                0
Eth1/6                           0                                0
Eth1/7                           0                                0
Eth1/8                           0                                0
Eth1/9                           0                                0
Eth1/10                          0                                0
```

display interface status

Displays interface configuration information, including interface name and number, link status (up, down or error disabled), VLAN membership, duplex mode (half, full or auto), port speed and interface type.

Syntax

`display interface [`*<interface name>***`|ethernet`** *<chassis number/port number>***`|loopback`** *<loopback interface>***`|mgmt`** *<management interface>***`| port-aggregation`** *<LAG number>***`|vlan`** *<VLAN number>***`] status [down| err-disabled|up]`**

where:

Parameter	Function
interface name	The name of the interface.
`ethernet` *chassis number/port number*	Displays configuration information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays configuration information for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays configuration information for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays configuration information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays configuration information for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`down`	Displays only interfaces in the down state.
`err-disabled`	Displays only interfaces in the error disabled state.
`up`	Displays only interfaces in the up state.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays configuration information for all interfaces:

```
G8272> display interface status

------------------------------------------------------------------------------
Port            Name               Status    Vlan      Duplex  Speed   Type
------------------------------------------------------------------------------
Ethernet1/1     ethernet 1/1       notconnec trunk     full    10000   eth
Ethernet1/2     --                 notconnec 2         full    10000   eth
Ethernet1/3     --                 notconnec 3         full    10000   eth
Ethernet1/4     --                 notconnec 4         full    10000   eth
Ethernet1/5     --                 notconnec 5         full    10000   eth
Ethernet1/6     --                 notconnec 6         full    10000   eth
Ethernet1/7     --                 disabled  7         full    10000   eth
Ethernet1/8     --                 disabled  8         full    10000   eth
Ethernet1/9     --                 disabled  9         full    10000   eth
Ethernet1/10    --                 disabled  10        full    10000   eth
...
```

display interface trunk

Display switch trunk port information.

Syntax

`display interface trunk [vlan` *<VLAN range>*`]`

where:

Parameter	Function
`vlan` *VLAN range*	Displays switch trunk port information associated to any Virtual LANs (VLANs) specified in the VLAN range. The *VLAN range* is from 1 to 3999.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays switch trunk port information:

```
G8272> display interface trunk
------------------------------------------------------------
Port           Native        Status    Port
               Vlan                    Aggregation
------------------------------------------------------------
Ethernet1/1    10            trunk       1000
Ethernet1/2    10            trunk       1000
Ethernet1/9    10            trunk       2000
Ethernet1/10   10            trunk       2000
Ethernet1/11   10            trunk       2000
Ethernet1/12   10            trunk       2000
Ethernet1/25   10            trunk       4096
Ethernet1/33   10            trunk       --
Ethernet1/49/1 10            trunk       100
Ethernet1/49/2 10            trunk       100
Ethernet1/49/3 10            trunk       100
Ethernet1/49/4 10            trunk       100
Ethernet1/50/1 10            trunk       100
Ethernet1/50/2 10            trunk       100
Ethernet1/50/3 10            trunk       100
Ethernet1/50/4 10            trunk       100
po100          10            trunk       --
po1000         10            trunk       --

------------------------------------------------------------
Port           Vlans Allowed on Trunk
------------------------------------------------------------
Ethernet1/1    10-15
Ethernet1/2    10-15
Ethernet1/9    10-15
Ethernet1/10   10-15
Ethernet1/11   10-15
Ethernet1/12   10-15
Ethernet1/25   10-15
Ethernet1/33   10-15
Ethernet1/49/1 10-15
Ethernet1/49/2 10-15
Ethernet1/49/3 10-15
Ethernet1/49/4 10-15
Ethernet1/50/1 10-15
Ethernet1/50/2 10-15
Ethernet1/50/3 10-15
Ethernet1/50/4 10-15
po100          10-15
po1000         10-15
po2000         10-15
po4096         10-15
------------------------------------------------------------
Port           STP Forwarding
------------------------------------------------------------
Ethernet1/25   none
Ethernet1/33   10-15
Ethernet1/49/1 none
Ethernet1/49/2 none
Ethernet1/49/3 none
Ethernet1/49/4 none
Ethernet1/50/1 none
Ethernet1/50/3 none
Ethernet1/50/4 none
po100          10-15
po1000         10-15
po2000         10-15
po4096         none
```

display inventory

Displays the switch's physical inventory information, such as chassis, power supplies or fans.

Syntax

```
display inventory
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays physical inventory information:

```
G8272> display inventory

+----+----------------+---------------+---------------+------+-------------+
| ID | Name           | Description   | PID           | REV  | SN#         |
+----+----------------+---------------+---------------+------+-------------+
  01   Chassis          System Board    GSXXXX          XXXX   YO52MV4CRO26
  02   Power Supply 1   Power Supply
  03   Power Supply 2   Power Supply
  04   Fan 1            Fan Module
  05   Fan 2            Fan Module
  06   Fan 3            Fan Module
  07   Fan 4            Fan Module
  08   Fan 5            Fan Module
  09   Fan 6            Fan Module
  10   Fan 7            Fan Module
  11   Fan 8            Fan Module
```

display ip access-lists

Displays all the configured IPv4 Access Control Lists (ACLs).

Syntax

`display ip access-lists [`<*access-list name*>**`] [expanded|summary]`**

where:

Parameter	Function
access-list name	The name of the ACL.
`expanded`	Displays the contents of each ACE (Access Control Entry).
`summary`	Displays a summary of each ACL, including the total number of configured ACEs and the interfaces on which the ACL is configured or active.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following commands display ACLs:

```
G8272> display ip access-lists

IP access list  copp-system-acl-authentication
        10 permit tcp any eq 389 any
        20 permit udp any eq 1812 any
        30 permit udp any eq 1813 any
IP access list  copp-system-acl-domain
        10 permit tcp any eq domain any
        20 permit udp any eq domain any
IP access list  copp-system-acl-igmp
        10 permit igmp any any
IP access list  copp-system-acl-igmp-query
        10 permit igmp any any 17
IP access list  copp-system-acl-ntp
        10 permit udp any eq ntp any
IP access list  copp-system-acl-pim
        10 permit pim any any
...
```

display ip arp

Displays Address Resolution Protocol (ARP) entries.

Syntax

`display ip arp [`*<IPv4 address>***`|`***<interface name>***`|detail|ethernet`** *<chassis number/port number>* **`|mgmt`** *<management interface>* **`|port-aggregation`** *<LAG number>* **`|static|vlan`** *<VLAN number>* **`] [vrf {all|default|management}]`**

where:

Parameter	Function
IPv4 address	Displays ARP entries for the specified IPv4 address.
interface name	Displays ARP entries for the specified interface.
`detail`	Displays detailed ARP information.
`ethernet` *chassis number/port number*	Displays ARP entries for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`mgmt` *management interface*	Displays ARP entries for the specified management interface. The *management interface* is 1.
`port-aggregation` *LAG number*	Displays ARP entries for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`static`	Displays static ARP entries.
`vlan` *VLAN number*	Displays ARP entries for the specified VLAN. The *VLAN number* is from 1 to 4094.
`vrf all`	Displays ARP entries associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays ARP entries associated with the default VRF instance.
`vrf management`	Displays ARP entries associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all ARP entries:

```
G8272> display ip arp

Flags: D - Static Adjacencies attached to down interface
IP ARP Table for context default
Total number of entries: 6
Address         Age       MAC Address     Interface   State
5.0.0.2      00:00:35   0817.f462.6400   Ethernet9   REACHABLE
5.0.0.20     00:00:03   0000.0000.0001   Ethernet9   REACHABLE
5.0.0.21     00:00:03   0000.0000.0002   Ethernet9   REACHABLE
5.0.0.22     00:00:03   0000.0000.0003   Ethernet9   REACHABLE
5.0.0.23     00:01:22   0000.0000.0004   Ethernet9   STALE
5.0.0.200           -   0000.0000.0200   Ethernet9   PERMANENT
10.100.121.1 00:01:46   0022.00ad.4500   mgmt0       REACHABLE
```

The following command displays ARP entries for interface ethernet 1/12:

```
G8272> display ip arp ethernet 1/12
```

The following command displays all static ARP entries:

```
G8272> display ip arp static
```

display ip arp inspection

Displays the current Dynamic ARP Inspection (DAI) configuration.

Syntax

`display ip arp inspection [filter` *<ARP filter name>***`|vlan`** *<VLAN number>***`]`**

where:

Parameter	Function
`filter` *<ARP filter name>*	Displays the current DAI configuration for the specified ARP filter.
`vlan` *<VLAN number>*	Displays the current DAI configuration for the specified VLAN. The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays DAI configuration:

```
G8272> display ip arp inspection
```

display ip arp statistics

Displays Address Resolution Protocol (ARP) statistics.

Syntax

display ip arp statistics [<*interface name*>**|ethernet** <*chassis number*/*port number*>**|interface-all|loopback** <*loopback interface*>**|mgmt** <*management interface*>**|port-aggregation** <*LAG number*>**|vlan** <*VLAN number*>**] [vrf {all|default|management}]**

where:

Parameter	Function
interface name	The name of the interface.
`ethernet` *chassis number*/*port number*	Displays ARP statistics for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface-all`	Displays ARP statistics for all interfaces.
`loopback` *loopback interface*	Displays ARP statistics for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays ARP statistics for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays ARP statistics for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays ARP statistics for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`vrf all`	Displays ARP statistics for entries associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays ARP statistics for entries associated with the default VRF instance.
`vrf management`	Displays ARP statistics for entries associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays ARP statistics:

```
G8272> display ip arp statistics

ARP statistics for context default

ARP Adjacency statistics

  Adds 5, Deletes 0, Timeouts 0
```

display ip arp summary

Displays Address Resolution Protocol (ARP) adjacency summary.

Syntax

display ip arp summary [<*interface name*>**|ethernet** <*chassis number*/*port number*>**|loopback** <*loopback interface*>**|mgmt** <*management interface*>**| port-aggregation** <*LAG number*>**|vlan** <*VLAN number*>**] [vrf {all| default|management}]**

where:

Parameter	Function
interface name	The name of the interface.
`ethernet` *chassis number*/*port number*	Displays ARP adjacency summary for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays ARP adjacency summary for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays ARP adjacency summary for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays ARP adjacency summary for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays ARP adjacency summary for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`vrf all`	Displays ARP adjacency summary for entries associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays ARP adjacency summary for entries associated with the default VRF instance.
`vrf management`	Displays ARP adjacency summary for entries associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays ARP adjacency summary:

```
G8272> display ip arp summary

IP ARP Table - Adjacency Summary
Resolved : 2
Incomplete : 0
Unknown : 0
Total : 2
```

display ip as-path-access-list

Displays Autonomous System (AS) path access lists.

Syntax

display ip as-path-access-list [<*AS path access list name*>**]**

where:

Parameter	Function
AS path access list name	The name of the AS path access list.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays AS path access lists:

```
G8272> display ip as-path-access-list
AS path access list as_acl_1
    permit ^1000$
    deny ^1500.+
    permit _100_200$
AS path access list as_acl_2
    deny _2000_
    permit .*
G8272#
```

display ip bgp

Displays Border Gateway Protocol (BGP) route information.

Syntax

`display ip bgp [ipv4 unicast] [`*<IPv4 network address>***`[/`***<prefix length>***`[longer-prefixes]]] [vrf {all|default}]`**

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.
IPv4 network address	The IPv4 network address.
prefix length	The IPv4 network mask length.
`longer-prefixes`	Displays BGP route information for the specified network and any subnetworks with a prefix length equal to or greater than the prefix specified.
`vrf all`	Displays BGP route associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP route associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP route information:

```
G8272> display ip bgp
BGP routing table information for VRF default address family IPV4 unicast
BGP table version is 226, local router ID is 20.211.2.2
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
l - labeled
              S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete, |- multipath

    Network          Next Hop        Metric      LocPrf   Weight   Path
*>  9.3.11.0/24        0.0.0.0                                32768    ?
*>i 9.4.12.0/24        20.111.1.1                100      0        ?
* i|                   20.111.2.1                100      0        ?
* i|                   20.211.1.1                100      0        ?
* i|                   20.211.2.1                100      0        ?
*>i 9.5.13.0/24        20.111.1.1                100      0        ?
* i|                   20.111.2.1                100      0        ?
* i|                   20.211.1.1                100      0        ?
* i|                   20.211.2.1                100      0        ?
*>i 9.6.14.0/24        20.111.1.1                100      0        ?
* i|                   20.111.2.1                100      0        ?
* i|                   20.211.1.1                100      0        ?
* i|                   20.211.2.1                100      0        ?
*>i 10.3.21.0/24       20.111.1.1                100      0        ?
...
```

display ip bgp attribute-info

Displays Border Gateway Protocol (BGP) attribute information.

Syntax

```
display ip bgp attribute-info
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP attribute information:

```
G8272> display ip bgp attribute-info
attr[5] nexthop 0.0.0.0
attr[1000] nexthop 20.111.2.1
attr[1000] nexthop 20.211.2.1
attr[1000] nexthop 20.111.2.1
attr[1000] nexthop 20.211.2.1
attr[1000] nexthop 20.111.2.1
attr[1000] nexthop 20.211.2.1
attr[1000] nexthop 20.111.2.1
attr[1000] nexthop 20.211.2.1
attr[5] nexthop 9.3.11.254
attr[5] nexthop 20.111.2.1
attr[5] nexthop 20.111.2.1
attr[5] nexthop 20.111.2.1
attr[5] nexthop 20.111.2.1
attr[5] nexthop 20.211.2.1
attr[5] nexthop 20.211.2.1
attr[5] nexthop 20.211.2.1
attr[5] nexthop 20.211.2.1
attr[5] nexthop 20.111.1.2
attr[5] nexthop 20.211.1.2
attr[2000] nexthop 20.111.1.1
attr[1000] nexthop 20.211.1.1
attr[2000] nexthop 20.111.1.1
...
```

display ip bgp cidr-only

Displays Border Gateway Protocol (BGP) routes with Classless Interdomain Routing (CIDR).

Syntax

`display ip bgp [ipv4 unicast] cidr-only`

where:

Parameter	Function
`ipv4 unicast`	Displays BGP routes with CIDR only for the IPv4 unicast address family.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes with CIDR:

```
G8272> display ip bgp cidr-only
LP11#display ip bgp cidr-only
BGP routing table information for VRF default address family IPV4 unicast
BGP table version is 226, local router ID is 20.211.2.2
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
l - labeled
              S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete, |- multipath

    Network          Next Hop        Metric      LocPrf   Weight   Path
*>  9.3.11.0/24        0.0.0.0                              32768    ?
*>i 9.4.12.0/24        20.111.1.1                100        0        ?
* i|                   20.111.2.1                100        0        ?
* i|                   20.211.1.1                100        0        ?
* i|                   20.211.2.1                100        0        ?
*>i 9.5.13.0/24        20.111.1.1                100        0        ?
* i|                   20.111.2.1                100        0        ?
* i|                   20.211.1.1                100        0        ?
* i|                   20.211.2.1                100        0        ?
*>i 9.6.14.0/24        20.111.1.1                100        0        ?
...
```

display ip bgp community

Displays Border Gateway Protocol (BGP) routes that match the specified community.

Syntax

display ip bgp [ipv4 unicast] community [<*community number*>**] [exact-match]] [internet] [local-AS] [no-advertise] [no-export]**

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.
community number	The number of the BGP community. The format for the community number is AA:NN (autonomous system number: community number).
`exact-match`	Displays only an exact match for the specified community.
`internet`	Displays BGP routes that are part of the well-known internet community.
`local-AS`	Displays BGP routes not advertised outside the local autonomous system (AS).
`no-advertise`	Displays BGP routes not advertised to any peers (internal or external).
`no-export`	Displays BGP routes only advertised to peers in the same AS.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching any community:

```
G8272> display ip bgp community
```

display ip bgp community vrf

Displays Border Gateway Protocol (BGP) routes that match any communities associated with the specified Virtual Routing and Forwarding (VRF) instance.

Syntax

```
display ip bgp [ipv4 unicast] community vrf {all|default}
```

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.
`all`	Displays BGP routes matching communities associated with any VRF instance.
`default`	Displays BGP routes matching communities associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching communities associated with the default VRF instance:

```
G8272> display ip bgp community vrf all
```

display ip bgp community-info

Display Border Gateway Protocol (BGP) community information.

Syntax

```
display ip bgp community-info
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP community information:

```
G8272> display ip bgp community-info
```

display ip bgp community-list

Displays Border Gateway Protocol (BGP) routes that match the specified community list.

Syntax

`display ip bgp [all|{ipv4|ipv6} unicast] community-list` <*community list name*> **`[exact-match]`**

where:

Parameter	Function
`all`	Displays BGP information for all IP address families.
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
community list name	The name of the BGP community list.
`exact-match`	Displays only an exact match for the specified community list.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching community list 'comlist1':

```
G8272> display ip bgp community-list comlist1
```

display ip bgp community-list vrf

Displays Border Gateway Protocol (BGP) routes that match the specified community list associated with the selected Virtual Routing and Forwarding (VRF) instance.

Syntax

`display ip bgp [all|{ipv4|ipv6} unicast] community-list` <*community list name*> **`vrf {all|default}`**

where:

Parameter	Function
`all`	Displays BGP information for all IP address families.
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
community list name	The name of the BGP community list.
`all`	Displays BGP routes matching the community list associated with any VRF instance.
`default`	Displays BGP routes matching the community list associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the community list 'comlist1' associated with any VRF instance:

```
G8272> display ip bgp community comlist1 vrf all
```

display ip bgp dampening

Displays Border Gateway Protocol (BGP) dampening information.

Syntax

```
display ip bgp [all|{ipv4|ipv6} unicast] dampening
{dampened-paths|
flap-statistics|parameters} [vrf {all|default}]
```

where:

Parameter	Function
`all`	Displays BGP information for all IP address families.
`ipv4`	Displays BGP information for the IPv4 address family.
`ipv6`	Displays BGP information for the IPv6 address family.
`unicast`	Displays BGP information for the unicast address family.
`dampened-paths`	Displays all dampened paths.
`flap-statistics`	Displays flap statistics for BGP routes.
`parameters`	Displays all dampening parameters.
`vrf all`	Displays BGP dampening information for all Virtual Routing and Forwarding (VRF) instances.
`vrf default`	Displays BGP dampening information for the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all dampened paths:

```
G8272> display ip bgp dampening dampened-paths
```

display ip bgp extcommunity-list

Displays Border Gateway Protocol (BGP) routes matching the specified extended community list.

Syntax

`display ip bgp extcommunity-list` *<extended community list name>* **`[vrf default] [exact-match]`**

where:

Parameter	Function
extended community list name	The name of the extended community list.
`vrf default`	Displays BGP routes matching the extended community list associated with the default Virtual Routing and Forwarding (VRF) instance.
`exact-match`	Displays BGP routes exactly matching the specified extended community list.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the extended community list 'extcomlist1':

```
G8272> display ip bgp extcommunity-list extcomlist1
```

display ip bgp filter-list

Displays Border Gateway Protocol (BGP) routes matching a specified filter list.

Syntax

display ip bgp [ipv4 unicast] filter-list *<filter list name>* **vrf {all|
default}**

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 address family.
filter list name	The name of the BGP filter list.
`vrf all`	Displays BGP routes matching the filter list associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP routes matching the filter list associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes that match filter list 'flist3':

```
G8272> display ip bgp filter-list flist3
```

display ip bgp inconsistent-as

Displays Border Gateway Protocol (BGP) routes with inconsistent Autonomous System (AS) paths.

Syntax

`display ip bgp [ipv4 unicast] inconsistent-as`

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes with inconsistent AS paths:

```
G8272> display ip bgp inconsistent-as
```

display ip bgp neighbors

Displays Border Gateway Protocol (BGP) neighbors.

Syntax

display ip bgp [ipv4 unicast] neighbors [*<IPv4 or IPv6 address>***] [advertised-routes|connection-retrytime|hold-time|keepalive| keepalive-interval|notification|open|rcvd-msgs| received-routes|sent-msgs|update]]**

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.
IPv4 or IPv6 address	The IPv4 or IPv6 address of the BGP neighbor.
`advertised-routes`	Displays the BGP routes advertised for the specified neighbor.
`connection-retryti me`	Displays the time interval the switch waits until it tries to contact the BGP neighbor.
`hold-time`	Displays the time interval the switch waits until it will transition the BGP neighbor to IDLE state, if the switch doesn't receive an update or keepalive message from the neighbor.
`keepalive`	Displays keepalive messages. Keepalive messages are sent to determine if a connection has failed or is unavailable.
`keepalive-interval`	Displays the time interval the switch waits until it sends another keepalive message to the BGP neighbor.
`notification`	Displays notification messages. Notification messages are sent when an error is detected.
`open`	Displays open messages. Open Messages are sent to create a BGP session between neighbors.
`rcvd-msgs`	Displays packets received from the BGP neighbor.
`received-routes`	Displays the BGP routes received from the specified neighbor.
`sent-msgs`	Displays packets sent to the BGP neighbor.
`update`	Displays update messages. Update messages are used to transfer routing information between BGP neighbors.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP neighbors:

```
G8272> display ip bgp neighbors

BGP neighbor is 9.9.9.1, remote AS 100, local AS 200, external link
BGP version 4, remote router ID 0.0.0.0
BGP state = Idle
Last read , hold time is 90, keepalive interval is 30 seconds
Received 11020 messages, 6234 notifications, 0 in queue
Sent 17226 messages, 9 notifications, 0 in queue
Route refresh request: received 4, sent 0
Minimum time between advertisement runs is 30 seconds
For address family: IPv4 Unicast
BGP table version 2308, neighbor version 0
Index 1, Offset 0, Mask 0x2
Community attribute sent to this neighbor (both)
0 accepted prefixes
0 announced prefixes

Connections established 12; dropped 13
External BGP neighbor may be up to 10 hops away.
Last Reset: 00:00:03, due to BGP Notification received
Notification Error Message: (OPEN Message Error/Bad Peer AS.)
```

The following command displays the connection retry timer for a BGP neighbor:

```
G8272> display ip bgp neighbors 10.243.2.54 connection-retrytime
```

The following command displays the hold timer for a BGP neighbor:

```
G8272> display ip bgp neighbors 10.243.2.54 hold-time
```

The following command displays the keepalive timer:

```
G8272> display ip bgp neighbors 10.243.2.54 keepalive-interval
```

The following command displays the BGP routes received from a neighbor:

```
G8272> display ip bgp neighbors 10.243.2.54 received-routes
```

The following command displays BGP packets sent to a neighbor:

```
G8272> display ip bgp neighbors 10.243.2.54 sent-msgs
```

Restrictions

When using the parameter `ipv4 unicast`, the only available commands are:

- **display ip bgp ipv4 unicast neighbors**
- **display ip bgp ipv4 unicast neighbors** *<IPv4 or IPv6 address>*
- **display ip bgp ipv4 unicast neighbors** *<IPv4 or IPv6 address>* **advertised-routes**
- **display ip bgp ipv4 unicast neighbors** *<IPv4 or IPv6 address>* **received-routes**

display ip bgp neighbors routes

Displays Border Gateway Protocol (BGP) routes received or advertised to or from the specified neighbor.

Syntax

`display ip bgp [ipv4 unicast] neighbors` *<IPv4 or IPv6 address>* **`routes [advertised|received] [vrf all|default]`**

where:

Parameter	Function
`ipv4 unicast`	Displays BGP routes only for the IPv4 unicast address family.
IPv4 or IPv6 address	The IPv4 or IPv6 address of the BGP neighbor.
`advertised`	Displays BGP routes advertised to the neighbor.
`received`	Displays BGP routes received from the neighbor.
`vrf all`	Displays BGP routes for neighbors associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP routes for neighbors associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes received or advertised to or from the neighbor with IPv4 address `10.254.22.36`:

```
G8272> display ip bgp neighbors 10.254.22.36 routes
BGP routing table information for VRF default address family IPV4 unicast
BGP table version is 228, local router ID is 20.211.2.2
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
l - labeled
              S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete, |- multipath

    Network          Next Hop        Metric      LocPrf   Weight   Path
*>i 50.11.0.1/32       9.3.11.1                   0        0        i

Total number of prefixes 1
```

Restrictions

When using the `ipv4 unicast` parameter, the only available command is:

- **`display ip bgp ipv4 unicast neighbors`** *<IPv4 or IPv6 address>* **`routes`**

display ip bgp neighbors vrf

Displays Border Gateway Protocol (BGP) neighbors associated with the specified Virtual Routing and Forwarding (VRF) instance.

Syntax

`display ip bgp neighbors [`*<IPv4 or IPv6 address>***`] vrf {all|default}`**

where:

Parameter	Function
IPv4 or IPv6 address	The IPv4 or IPv6 address of the BGP neighbor.
`all`	Displays BGP neighbors associated with any VRF instance.
`default`	Displays BGP neighbors associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP neighbors associated with the default VRF instance:

```
G8272> display ip bgp neighbors vrf default
```

display ip bgp paths

Displays all the Border Gateway Protocol (BGP) paths stored in the database.

Syntax

`display ip bgp [ipv4 unicast] paths`

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP path information:

```
G8272> display ip bgp paths
Address       Refcnt Path
[0x10560fe8:0] (55305)
```

display ip bgp prefix-list

Displays Border Gateway Protocol (BGP) routes matching the specified prefix list.

Syntax

`display ip bgp [ipv4 unicast] prefix-list` *<prefix list name>* **`[exact-match] [vrf {all|default}]`**

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.
prefix list name	The name of the prefix list used to filter BGP routes.
`exact-match`	Displays BGP routes exactly matching the specified prefix list.
`vrf all`	Displays BGP routes matching the prefix list associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP routes matching the prefix list associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the prefix list 'preflist1':

```
G8272> display ip bgp prefix-list preflist1
```

display ip bgp quote-regexp

Displays Border Gateway Protocol (BGP) routes matching the autonomous system (AS) path regular expression.

Syntax

`display ip bgp [ipv4 unicast] quote-regexp` *<regular expression>*

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.
regular expression	The regular expression to match the AS path.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the AS path regular expression “65550”:

```
G8272> display ip bgp quote-regexp “65550”
```

display ip bgp received-paths

Displays Border Gateway Protocol (BGP) routes received from other neighbors.

Syntax

```
display ip bgp received-paths [vrf {all|default}]
```

where:

Parameter	Function
`vrf all`	Displays BGP routes received from other neighbors associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP routes received from other neighbors associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes received from other neighbors:

```
G8272> display ip bgp received-paths
```

display ip bgp regexp

Displays Border Gateway Protocol (BGP) routes matching the autonomous system (AS) path regular expression.

Syntax

`display ip bgp [ipv4 unicast] regexp` *<regular expression>*

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.
regular expression	The regular expression to match the AS path.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes matching the AS path regular expression "172":

```
G8272> display ip bgp regexp 172
```

display ip bgp route-map

Displays Border Gateway Protocol (BGP) route maps.

Syntax

display ip bgp [ipv4 unicast] route-map *<route map name>* **[vrf {all|**
default}]

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.
route map name	The name of the route map.
`vrf all`	Displays BGP route maps associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP route maps associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP route map 'path-34':

```
G8272> display ip bgp route-map path-34
```

display ip bgp scan

Displays Border Gateway Protocol (BGP) scan statistics.

Syntax

```
display ip bgp scan
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP scan statistics:

```
G8272> display ip bgp scan
BGP VRF: (Default) VRF_ID 0
BGP scan interval is 60
scan remain-time: 3
Current BGP nexthop cache:
 9.3.11.1 valid [IGP metric 0]
 20.111.1.1 valid [IGP metric 0]
 20.111.2.1 valid [IGP metric 0]
 20.211.1.1 valid [IGP metric 0]
 20.211.2.1 valid [IGP metric 0]
```

display ip bgp statistic

Displays Border Gateway Protocol (BGP) traffic statistics.

Syntax

```
display ip bgp statistic
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP traffic statistics:

```
G8272> display ip bgp statistic
Neighbor aggregated statistics (sent/received)
Msgs          Bytes           Opens          Updates
140275/140375           3518604/0           5/5          151/272
Keepalives  Notifications  Route-refresh  Capabilities
140119/140098            0/0           0/0          0/0

RIB routes statistics for Default
  Route additions sent: 48865
  Route additions sent failed: 0
  Route deletions sent: 1
  Route deletions sent failed: 0
  Redistributed routes received: 5
  Redistributed routes additions: 5
    - Routes additions failed: 0
    - Routes matching route-maps: 0
  Redistributed route deletions: 0
    - Routes deletions failed: 0

BGP I/O Information
Active Open attempts            : 0
Passive Open attempts           : 0
BGP I/O Open loops              : 0
BGP I/O Open calls              : 0
BGP I/O Open recv calls         : 0
BGP I/O Send calls              : 0
BGP I/O Recv calls              : 0
BGP I/O Write calls             : 0
BGP I/O Write loops             : 0
BGP I/O Write loop yields       : 0
BGP I/O Read calls              : 0
BGP I/O Read loops              : 0
BGP I/O Read loop yields        : 0
BGP I/O process nlri yields     : 0
BGP I/O process withdraw yields : 0
BGP Read time exceeded          : 0
BGP Update send pending         : 0
BGP Update buffer not available : 0
BGP Update walk suspended       : 0
BGP Yielded in updates          : 0
BGP Yielded in packing          : 0
BGP No sendbuf for peer         : 0
BGP No withdraw buf for peer    : 0
BGP Yields in update peer loop  : 0
No updates pending or no buffers: 0
No data to write                : 0
Msg queue recv errors           : 0
Sockets create/accept/close     : 2/4/5
Sockets create retries/failures : 0/0
Socket fd-close session         : 0
```

display ip bgp summary

Displays the status of all Border Gateway Protocol (BGP) neighbors.

Syntax

`display ip bgp [ipv4 unicast] summary [vrf {all|default}]`

where:

Parameter	Function
`ipv4 unicast`	Displays BGP information for the IPv4 unicast address family.
`vrf all`	Displays BGP connection status for neighbors associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP connection status for neighbors associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the connection status for all BGP neighbors:

```
G8272> display ip bgp summary
BGP router identifier 20.211.2.2, local AS number 64800
BGP table version is 228
1 BGP AS-PATH entries
0 BGP community entries
1  Configured ebgp ECMP multipath: Currently set at 1
32  Configured ibgp ECMP multipath: Currently set at 32

Neighbor            V     AS MsgRcv MsgSen TblVer InQ OutQ Up/Down
State/PfxRcd
9.3.11.1            4  64800 28049  28279    225    0    0 3d05h54m
1
20.111.1.1          4  64800 28062  28027    227    0    0 3d05h54m
11055
20.111.2.1          4  64800 28061  28029    227    0    0 3d05h54m
11055
20.211.1.1          4  64800 28061  28030    227    0    0 3d05h54m
11055
20.211.2.1          4  64800 28061  28028    227    0    0 3d05h54m
11055

Total number of neighbors 5

Total number of Established sessions 5
```

display ip bgp vrf

Displays Border Gateway Protocol (BGP) information for the specified Virtual Routing and Forwarding (VRF) instance.

Syntax

```
display ip bgp vrf {all|default}
```

where:

Parameter	Function
`all`	Displays BGP information for all VRF instances.
`default`	Displays BGP information for the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP information for the default VRF instance:

```
G8272> display ip bgp vrf default
```

display ip community-list

Displays Border Gateway Protocol (BGP) community lists.

Syntax

```
display ip community-list
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP community lists:

```
G8272> display ip community-list
Named Community standard list commlist_1
    permit 100:200
    deny 30:40
    permit local-AS
Named Community expanded list commlist_2
    permit ^100:1_100:2$
    deny ^100:1$
    deny 200:100.200:200.+
    permit .*
```

display ip dhcp relay

Displays Dynamic Host Configuration Protocol version 4 (DHCPv4) relay service configuration and statistics.

Syntax

`display ip dhcp relay [address [interface {ethernet [`*<chassis number/port number>***`]|vlan [`***<VLAN number>***`]}] [vrf {`***<VRF instance>***`| all|default}]`**

where:

Parameter	Function
`address`	Displays configured DHCPv4 addresses.
`interface ethernet`	Displays configured DHCPv4 address on all ethernet interfaces.
chassis number`/`*port number*	Displays configured DHCPv4 address on the specified ethernet interface. The ethernet interface chassis and port numbers. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface vlan`	Displays configured DHCPv4 addresses on all Virtual LAN (VLAN) interfaces.
VLAN number	Displays configured DHCPv4 addresses on the specified VLAN interface. The *VLAN number* is from 1 to 4094.
`vrf` *VRF instance*	Displays DHCPv4 information for the specified Virtual Routing and Forwarding (VRF) instance.
`vrf all`	Displays DHCPv4 information for all the VRF instances.
`vrf default`	Displays DHCPv4 information for the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the DHCPv4 configuration:

```
G8272> display ip dhcp relay
```

display ip extcommunity-list

Displays Border Gateway Protocol (BGP) extended community lists.

Syntax

`display ip extcommunity-list` *<community name>*

where:

Parameter	Function
<community name>	Name of the community.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP extended community lists:

```
G8272> display ip extcommunity-list
Named extended community standard list ecommlist_1
    permit 100000:2
    deny 200002:300
    permit 11000:30
Named extended community expanded list ecommlist_2
    permit ^50000:5_50000:6$
    deny ^50000:5.+
    permit .*
```

display ip forwarding

Displays IPv4 forwarding status.

Syntax

```
display ip forwarding
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv4 forwarding status:

```
G8272> display ip forwarding

IP forwarding is on.
```

display ip igmp snooping

Displays Internet Group Management Protocol (IGMP) snooping information.

Syntax

`display ip igmp snooping [vlan` *<VLAN number>***`]`**

where:

Parameter	Function
`vlan` *<VLAN number>*	Displays IGMP Snooping information for the specified VLAN. The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IGMP Snooping information:

```
G8272> display ip igmp snooping

Global IGMP Snooping information
 IGMP Snooping Enabled
 IGMP Snooping V1/V2 Report Suppression Enabled
 General query transmission on TCN Enabled

IGMP Snooping information for Vlan1
 IGMP Snooping enabled
 IGMP Snooping Version: 3
 Robustness: 2 (operational: 2)
 Query Interval: 125 seconds (operational: 125 seconds)
 Group Membership Interval: 260 seconds
 Query Response Interval: 10 seconds
 Last Member Query Count: 2
 Last Member Query Interval: 1000 milliseconds
 IGMPv2 fast-leave: disabled
 IGMPv1/v2 Report suppression: enabled
 IGMPv3 Report suppression: disabled
 Router port detection using: IGMP Queries
 Snooping Querier disabled
 Querier timeout: 255 seconds (default, operational: 255 seconds)
 Querier Startup Query Count: 2
 Querier Startup Query Interval: 31 seconds
 Number of router-ports: 0
 Number of Groups: 0
 Number of Joins: 0
 Number of Leaves: 0
 Active Ports:
  Ethernet1/1
```

display ip igmp snooping groups

Displays Internet Group Management Protocol (IGMP) snooping groups membership information.

Syntax

`display ip igmp snooping groups [[`*<multicast group IPv4 address>***`] [`***<source IPv4 address>***`] [vlan`** ***<VLAN number>***`] [detail]|interface {ethernet`** ***<chassis number/port number>***`|port-aggregation`** ***<LAG number>***`}]`**

where:

Parameter	Function
multicast group IPv4 address	The group IPv4 address.
source IPv4 address	The source IPv4 address.
`vlan` *<VLAN number>*	Displays IGMP Snooping information for the specified VLAN. The *VLAN number* is from 1 to 4094.
`detail`	Displays detailed IGMP Snooping group membership information.
`interface ethernet` *chassis number/port number*	Displays IGMP entries for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface port-aggregation` *LAG number*	Displays IGMP entries for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IGMP Snooping group membership information:

```
G8272> display ip igmp snooping groups

Total entries: 100 Total IGMP groups: 100
Note: The <Total IGMP groups> number is computed as
      the number of unique (Group/Source, Vlan) entries.
IGMP Connected Group Membership
Flags: D - Dynamic, S - Static
Vlan  Grp/Src Addr     Interface       Flags  Expires  Version
10    237.1.1.1        Ethernet1/1       D    00:04:02   V2
10    237.1.1.2        Ethernet1/1       D    00:04:02   V2
10    237.1.1.3        Ethernet1/1       D    00:04:02   V2
10    237.1.1.4        Ethernet1/1       D    00:04:02   V2
10    237.1.1.5        Ethernet1/1       D    00:04:02   V2
10    237.1.1.6        Ethernet1/1       D    00:04:02   V2
10    237.1.1.7        Ethernet1/1       D    00:04:02   V2
10    237.1.1.8        Ethernet1/1       D    00:04:02   V2
10    237.1.1.9        Ethernet1/1       D    00:04:02   V2
10    237.1.1.10       Ethernet1/1       D    00:04:02   V2
```

display ip igmp snooping mrouter

Displays multicast routers detected by Internet Group Management Protocol (IGMP) snooping.

Syntax

`display ip igmp snooping mrouter [interface {ethernet` *<chassis number/port number>*`|port-aggregation`** *<LAG number>*`}|vlan`** *<VLAN number>*`]`**

where:

Parameter	Function
`interface ethernet` *chassis number/port number*	Displays multicast routers detected by IGMP Snooping on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface port-aggregation` *LAG number*	Displays multicast routers detected by IGMP Snooping on the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *<VLAN number>*	Displays multicast routers detected by IGMP Snooping on the specified VLAN. The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays multicast routers detected by IGMP Snooping:

```
G8272> display ip igmp snooping mrouter
Total entries: 1 (0 static, 1 dynamic)
VLAN   Interface                    IP-address      Expires
10     Ethernet1/1(dynamic)         77.88.99.111    00:04:00
```

display ip igmp snooping querier

Displays Internet Group Management Protocol (IGMP) snooping querier information.

Syntax

`display ip igmp snooping querier [vlan` *<VLAN number>***`] [detail]`**

where:

Parameter	Function
`vlan` *<VLAN number>*	Displays IGMP Snooping querier information for the specified VLAN. The *VLAN number* is from 1 to 4094.
`detail`	Displays detailed IGMP Snooping querier information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IGMP Snooping querier information:

```
G8272> display ip igmp snooping querier
IGMP Querier Information
Vlan    IP Address      Version       Expires     Port
10      10.1.1.0        3             00:00:27    Querier
```

```
G8272> display ip igmp snooping querier detail
IGMP Querier Information
Vlan    IP Address      Version       Expires     Port
10      10.1.1.0        3             00:00:24    Querier

IGMP Snooping Querier configuration for Vlan10
Snooping Querier version    : 3 (operational: 3)
Robustness variable         : 2 (operational: 2)
Query Interval              : 125 seconds (operational: 125 seconds)
Startup Query Count         : 2
Startup Query Interval      : 31 seconds
Last Member Query Count     : 2
Last Member Query Interval  : 1000 milliseconds
Query Response Interval     : 10 seconds
Querier timeout             : 255 seconds (default, operational: 255
seconds)
```

display ip igmp snooping statistics

Displays Internet Groups Management Protocol (IGMP) snooping statistics.

Syntax

`display ip igmp snooping statistics [global|vlan` *<VLAN number>***`]`**

where:

Parameter	Function
`global`	Displays IGMP Snooping global statistics.
`vlan` *<VLAN number>*	Displays IGMP Snooping statistics for the specified VLAN. The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IGMP Snooping statistics:

```
G8272> display ip igmp snooping statistics 10
Vlan10 IGMP snooping statistics, last reset: 00:00:32
  Packets received: 10
  IGMPv1 reports received: 0
  IGMPv2 reports received: 10
  IGMPv3 reports received: 0
  IGMPv1 queries received: 0
  IGMPv2 queries received: 0
         general queries received: 0
         group queries received: 0
  IGMPv3 queries received: 0
         general queries received: 0
         group queries received: 0
         group source queries received: 0
  IGMPv2 leaves received: 0
  Invalid reports received: 0
  Invalid queries received: 0
  IGMPv1 reports suppressed: 0
  IGMPv2 reports suppressed: 0
  IGMPv2 leaves suppressed: 0
  Queries originated: 0
  Packets sent to routers: 0
  STP TCN received: 0
  Report version mismatch: 0
  Unknown packets received: 0
  Checksum errors: 0, Packet length errors: 0
  Invalid v1 reports: 0, Invalid v2 reports: 0, Invalid v3 reports: 0
```

display ip interface

Displays interface status and configuration settings.

Syntax

`display ip interface [`*<interface name>***`|ethernet`** *<chassis number/port number>***`|loopback`** *<loopback interface>***`|mgmt`** *<management interface>***`|vlan`** *<VLAN number>***`] [brief] [vrf {`***<VRF instance>***`|all|default}]`**

where:

Parameter	Function
interface name	The name of the interface.
`ethernet` *chassis number/port number*	Displays ethernet interface configuration information. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays loopback interface configuration information. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays management interface configuration information. The *management interface* is 0.
`vlan` *VLAN number*	Displays Virtual LAN (VLAN) interface configuration information. The *VLAN number* is from 1 to 4094.
`brief`	Displays a short interface configuration summary.
`vrf` *VRF instance*	Displays configuration information for interfaces associated with the specified Virtual Routing and Forwarding (VRF) instance.
`vrf all`	Displays configuration information for interfaces associated with any VRF instance.
`vrf default`	Displays configuration information for interfaces associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a short interface configuration summary:

```
G8272> display ip interface brief
Interface            IP-Address      Admin-Status         Link-Status
Ethernet1/6        4.4.4.1               up                 up
Ethernet1/8        6.6.6.3               up                 up
Ethernet1/23       9.9.9.1               up                 up
Ethernet1/30       8.8.8.1               up                 up
Ethernet1/36       1.0.0.1               up                 up
Ethernet1/50       11.0.0.2              up                 down
mgmt0             10.241.37.40           up                 up
Vlan2             2.2.2.1                up                 down
Vlan10              182.124.0.10         up                    down
```

The following command displays interface configuration for management interface 0:

```
G8272> display ip interface mgmt 0

IP Interface Status for VRF (default)
IP Interface Status for VRF (management)
 mgmt0, Interface Status: link up/admin up
 IP address: 10.241.41.21, IP subnet: 10.241.41.0/25
 IP MTU:1500 bytes (using link MTU)
 IP icmp redirects: enabled
 IP icmp unreachables (except port): disabled
 IP icmp port-unreachable: enabled
```

The following command displays configuration information for all interfaces associated with the default VRF instance:

```
G8272> display ip interface vrf default

IP Interface Status for VRF (default)
 mgmt0, Interface Status: link up/admin up
 IP address: 10.241.41.21, IP subnet: 10.241.41.0/25
 IP MTU:1500 bytes (using link MTU)
 IP icmp redirects: enabled
 IP icmp unreachables (except port): disabled
 IP icmp port-unreachable: enabled

 loopback0, Interface Status: link up/admin up
 IP MTU:1500 bytes (using link MTU)
 IP icmp redirects: enabled
 IP icmp unreachables (except port): disabled
 IP icmp port-unreachable: enabled

 Vlan1, Interface Status: link up/admin up
 IP MTU:1500 bytes (using link MTU)
 IP icmp redirects: enabled
 IP icmp unreachables (except port): disabled
 IP icmp port-unreachable: enabled
...
```

display ip internal

Displays internal IP information.

Syntax

`display ip internal {arp|interface [`*<interface name>***`|ethernet`** *<chassis number/port number>* **`|loopback`** *<loopback interface>* **`|mgmt`** *<management interface>* **`|port-aggregation`** *<LAG number>* **`|vlan`** *<VLAN number>* **`]|route}`**

where:

Parameter	Function
`arp`	Displays internal IP information for ARP entries.
`interface` *interface name*	The name of the interface.
`interface ethernet` *chassis number/port number*	Displays internal IP information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface loopback` *loopback interface*	Displays internal IP information for the specified loopback interface. The *loopback interface* is from 0 to 7.
`interface mgmt` *management interface*	Displays internal IP information for the specified management interface. The *management interface* is 0.
`interface port-aggregation` *LAG number*	Displays internal IP information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`interface vlan` *VLAN number*	Displays internal IP information for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
`route`	Displays the IP routing table.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays internal IP information for all interfaces:

```
G8272> display ip internal interface

Vlan1     Link encap:Ethernet  HWaddr a8:97:dc:de:25:01
          inet6 addr: fe80::aa97:dcff:fede:2501/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

internal0 Link encap:Ethernet  HWaddr 02:10:18:d1:34:aa
          inet6 addr: fe80::10:18ff:fed1:34aa/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:6 errors:0 dropped:1 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:484 (484.0 B)

internal1 Link encap:Ethernet  HWaddr 02:10:18:d1:34:ab
          inet6 addr: fe80::10:18ff:fed1:34ab/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:14 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:1548 (1.5 KiB)

...
```

display ip load-sharing

Displays global IP load balancing information.

Syntax

```
display ip load-sharing
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays global IP load balancing information:

```
G8272> display ip load-sharing

IP ECMP load sharing information:
universal-id (Random seed): 1431655765
Load-share mode: source-dest-ip source-dest-port
```

display ip ospf

Displays general Open Shortest Path First (OSPF) information.

Syntax

display ip ospf

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays general OSPF information:

```
G8272> display ip ospf
Routing Process "ospf 0" with ID 2.2.2.2
 Process uptime is 3 days 3 hours 31 minutes
 Process bound to VRF default
 Conforms to RFC2328, and RFC1583 Compatibility flag is disabled
 Supports only single TOS(TOS0) routes
 Supports opaque LSA
 Do not support Restarting
 SPF schedule delay initial 0 secs 500 msecs
 SPF schedule delay min 0 secs 500 msecs
 SPF schedule delay max 40 secs 0 msecs
 Refresh timer 10 secs
 Number of incomming current DD exchange neighbors 0/4
 Number of outgoing current DD exchange neighbors 0/4
 Initial LSA throttle delay 0 secs 0 msecs
 Minimum hold time for LSA throttle 5 secs 0 msecs
 Maximum wait time for LSA throttle 5 secs 0 msecs
 Minimum LSA arrival 1 secs 0 msecs
 Number of external LSA 0. Checksum 0x000000
 Number of opaque AS LSA 0. Checksum 0x000000
 Number of non-default external LSA 0
 External LSA database is unlimited.
 Number of LSA originated 1
 Number of LSA received 1524
 Number of areas attached to this router: 1
    Area 0.0.0.0 (BACKBONE)
        Number of interfaces in this area is 100(100)
        Number of fully adjacent neighbors in this area is 4
        Area has no authentication
        SPF algorithm last executed 75:29:40.323 ago
        SPF algorithm executed 8 times
        Number of LSA 11. Checksum 0x04480a
```

display ip ospf border-routers

Displays Open Shortest Path First (OSPF) routing table entries to an Area Border Router (ABR) and Autonomous System Boundary Router (ASBR).

Syntax

```
display ip ospf border-routers
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays OSPF routing table entries to an ABR or ASBR:

```
G8272> display ip ospf border-routers
OSPF process 0 VRF (default) internal Routing Table

Codes: i - Intra-area route, I - Inter-area route

i 2.2.2.2 [1] via 5.0.0.2, Ethernet1/33, ABR, Area 0.0.0.1
I 1.1.1.1 [2] via 5.0.0.2, Ethernet1/33, ASBR, Area 0.0.0.1
```

display ip ospf database

Displays the Open Shortest Path First (OSPF) database.

Syntax

`display ip ospf [`*<OSPF instance>***`] database [detail]`**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`detail`	Displays detailed OSPF database information.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database:

```
G8272> display ip ospf database
 OSPF Router with ID (2.2.2.2) (Process ID 0 VRF default)

                Router Link States (Area 0.0.0.0)

Link ID         ADV Router      Age  Seq#       CkSum  Link count
2.2.2.2         2.2.2.2          129 0x8000009e 0xe528 100
3.3.3.3         3.3.3.3         1241 0x8000009c 0xc093 100
4.4.4.4         4.4.4.4         1126 0x8000009f 0x1d0d 8

                Net Link States (Area 0.0.0.0)

Link ID         ADV Router      Age  Seq#       CkSum
21.0.0.4        4.4.4.4          306 0x80000098 0x8cf4
22.0.0.4        4.4.4.4         1317 0x80000098 0x7f01
23.0.0.4        4.4.4.4          406 0x80000098 0x720d
24.0.0.4        4.4.4.4          756 0x80000098 0x6519
31.0.0.4        4.4.4.4         1577 0x80000098 0x3c37
32.0.0.4        4.4.4.4         1287 0x80000098 0x2f43
33.0.0.4        4.4.4.4         1277 0x80000098 0x224f
34.0.0.4        4.4.4.4         1527 0x80000098 0x155b

                Summary Link States (Area 0.0.0.0)

Link ID         ADV Router      Age  Seq#       CkSum  Route
4.0.0.0         2.2.2.2          129 0x80000001 0x054b 4.0.0.0/24

                Router Link States (Area 0.0.0.1)

Link ID         ADV Router      Age  Seq#       CkSum  Link count
1.1.1.1         1.1.1.1           89 0x800000a3 0x68fd 3
2.2.2.2         2.2.2.2           84 0x80000004 0xaa88 1

                Net Link States (Area 0.0.0.1)

Link ID         ADV Router      Age  Seq#       CkSum
4.0.0.2         2.2.2.2           89 0x80000001 0x73cc

                Summary Link States (Area 0.0.0.1)

Link ID         ADV Router      Age  Seq#       CkSum  Route
21.0.0.0        2.2.2.2          129 0x80000001 0x2718 21.0.0.0/24
22.0.0.0        2.2.2.2          129 0x80000001 0x1a24 22.0.0.0/24
23.0.0.0        2.2.2.2          129 0x80000001 0x0d30 23.0.0.0/24
24.0.0.0        2.2.2.2          129 0x80000001 0xff3c 24.0.0.0/24
31.0.0.0        2.2.2.2          129 0x80000001 0xae85 31.0.0.0/24
32.0.0.0        2.2.2.2          129 0x80000001 0xa191 32.0.0.0/24
33.0.0.0        2.2.2.2          129 0x80000001 0x949d 33.0.0.0/24
34.0.0.0        2.2.2.2          129 0x80000001 0x87a9 34.0.0.0/24
45.0.1.0        2.2.2.2          129 0x80000001 0xe243 45.0.1.0/24
45.0.2.0        2.2.2.2          129 0x80000001 0xd74d 45.0.2.0/24
45.0.3.0        2.2.2.2          129 0x80000001 0xcc57 45.0.3.0/24
45.0.4.0        2.2.2.2          129 0x80000001 0xc161 45.0.4.0/24
45.0.5.0        2.2.2.2          129 0x80000001 0xb66b 45.0.5.0/24
45.0.6.0        2.2.2.2          129 0x80000001 0xab75 45.0.6.0/24
45.0.7.0        2.2.2.2          129 0x80000001 0xa07f 45.0.7.0/24
45.0.8.0        2.2.2.2          129 0x80000001 0x9589 45.0.8.0/24
45.0.9.0        2.2.2.2          129 0x80000001 0x8a93 45.0.9.0/24
45.0.10.0       2.2.2.2          129 0x80000001 0x7f9d 45.0.10.0/24
```

display ip ospf database <*link-state ID*>

Displays the Open Shortest Path First (OSPF) database entries for a specified LSA.

Syntax

`display ip ospf [`*<OSPF instance>***`] database`** *<link-state ID>*
`[adv-router` *<advertising router ID>***`|self-originated] [detail]`**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for the OSPF router with link-state ID `10.243.79.34`:

```
G8272> display ip ospf database 10.243.79.34
```

display ip ospf database adv-router

Displays the Open Shortest Path First (OSPF) database for an advertising router.

Syntax

`display ip ospf [`*<OSPF instance>***`] database adv-router`** *<advertising router ID>* **`[detail]`**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
advertising router ID	The advertising router ID in IPv4 address format.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for the advertising router with ID `10.156.36.11`:

```
G8272> display ip ospf database 10.156.36.11
```

display ip ospf database area

Displays the Open Shortest Path First (OSPF) database for a specified OSPF area.

Syntax

display ip ospf [<*OSPF instance*>**] database area {**<*area ID*>**|** <*area IPv4 address*>**} [**<*link-state ID*>**] [adv-router** <*advertising router ID*>**| self-originated] [detail]**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
area ID	The ID of the OSPF area in decimal format. The *area ID* is from 1 to 4294967295.
area IPv4 address	The ID of the OSPF area in IPv4 address format.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for OSPF area '230':

```
G8272> display ip ospf database area 230
```

display ip ospf database asbr-summary

Displays a summary of the Open Shortest Path First (OSPF) database for Autonomous System Boundary Routers (ASBRs).

Syntax

display ip ospf [*<OSPF instance>***] database asbr-summary [area {***<area ID>***|***<area IPv4 address>***}] [***<link-state ID>***] [adv-router** *<advertising router ID>***|self-originated] [detail]**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`area` *area ID*	Displays OSPF database information for the OSPF area specified in decimal format. The *area ID* is from 1 to 4294967295.
`area` *area IPv4 address*	Displays OSPF database information for the OSPF area specified in IPv4 address format.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a summary of the OSPF database for all ASBRs:

```
G8272> display ip ospf database asbr-summary
```

display ip ospf database database-summary

Displays a summary of the Open Shortest Path First (OSPF) database, including the types of link-state advertisements (LSAs) in each OSPF area and their total number.

Syntax

display ip ospf [<*OSPF instance*>**] database database-summary**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a summary of the OSPF database:

```
G8272> display ip ospf database database-summary
```

display ip ospf database external

Displays the Open Shortest Path First (OSPF) database for external link-state advertisements (LSAs).

Syntax

`display ip ospf [`*<OSPF instance>***`] database external [ext-tag`** ***<external tag number>*** **`] [`***<link-state ID>***`] [adv-router`** ***<advertising router ID>*** **`| self-originated] [detail]`**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`ext-tag` *external tag number*	Displays OSPF information for the specified external tag. The *external tag number* is from 1 to 4294967295.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for external LSAs:

```
G8272> display ip ospf database external
```

display ip ospf database network

Displays the Open Shortest Path First (OSPF) database for network link-state advertisements (LSAs).

Syntax

display ip ospf [<*OSPF instance*>**] database network [area {**<*area ID*>**|**
<*area IPv4 address*>**}] [**<*link-state ID*>**] [adv-router** <*advertising router ID*>**|**
self-originated] [detail]

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`area` *area ID*	Displays OSPF database information for the OSPF area specified in decimal format. The *area ID* is from 1 to 4294967295.
`area` *area IPv4 address*	Displays OSPF database information for the OSPF area specified in IPv4 address format.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for network LSAs:

```
G8272> display ip ospf database network
```

display ip ospf database nssa-external

Displays the Open Shortest Path First (OSPF) database for not-so-stubby area (NSSA) external link-state advertisements (LSAs).

Syntax

display ip ospf [*<OSPF instance>***] database network [area {***<area ID>***|***<area IPv4 address>***}] [***<link-state ID>***] [adv-router** *<advertising router ID>***| self-originated] [detail]**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`area` *area ID*	Displays OSPF database information for the OSPF area specified in decimal format. The *area ID* is from 1 to 4294967295.
`area` *area IPv4 address*	Displays OSPF database information for the OSPF area specified in IPv4 address format.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for NSSA external LSAs:

```
G8272> display ip ospf database nssa-external
```

display ip ospf database opaque-area

Displays the Open Shortest Path First (OSPF) database for link area opaque link-state advertisements (LSAs).

Syntax

display ip ospf [<*OSPF instance*>**] database opaque-area [area {**<*area ID*>**|**<*area IPv4 address*>**}] [**<*link-state ID*>**] [adv-router** <*advertising router ID*>**|self-originated] [detail]**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`area` *area ID*	Displays OSPF database information for the OSPF area specified in decimal format. The *area ID* is from 1 to 4294967295.
`area` *area IPv4 address*	Displays OSPF database information for the OSPF area specified in IPv4 address format.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for link area opaque LSAs:

```
G8272> display ip ospf database opaque-area
```

display ip ospf database opaque-as

Displays the Open Shortest Path First (OSPF) database for link autonomous system (AS) opaque link-state advertisements (LSAs).

Syntax

display ip ospf [*<OSPF instance>***] database opaque-as [area {***<area ID>***|***<area IPv4 address>***}] [***<link-state ID>***] [adv-router** *<advertising router ID>***| self-originated] [detail]**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`area` *area ID*	Displays OSPF database information for the OSPF area specified in decimal format. The *area ID* is from 1 to 4294967295.
`area` *area IPv4 address*	Displays OSPF database information for the OSPF area specified in IPv4 address format.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for link AS opaque LSAs:

```
G8272> display ip ospf database opaque-as
```

display ip ospf database opaque-link

Displays the Open Shortest Path First (OSPF) database for link local opaque link-state advertisements (LSAs).

Syntax

display ip ospf [<*OSPF instance*>**] database opaque-link [area {**<*area ID*>**|**<*area IPv4 address*>**}] [**<*link-state ID*>**] [adv-router** <*advertising router ID*>**|self-originated] [detail]**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`area` *area ID*	Displays OSPF database information for the OSPF area specified in decimal format. The *area ID* is from 1 to 4294967295.
`area` *area IPv4 address*	Displays OSPF database information for the OSPF area specified in IPv4 address format.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for link local opaque LSAs:

```
G8272> display ip ospf database opaque-link
```

display ip ospf database router

Displays the Open Shortest Path First (OSPF) database for router link-state advertisements (LSAs).

Syntax

display ip ospf [<*OSPF instance*>**] database router [area {**<*area ID*>**|** <*area IPv4 address*>**}] [**<*link-state ID*>**] [adv-router** <*advertising router ID*>**| self-originated] [detail]**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`area` *area ID*	Displays OSPF database information for the OSPF area specified in decimal format. The *area ID* is from 1 to 4294967295.
`area` *area IPv4 address*	Displays OSPF database information for the OSPF area specified in IPv4 address format.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for router LSAs:

```
G8272> display ip ospf database router
```

display ip ospf database self-originated

Displays the Open Shortest Path First (OSPF) database for link-state advertisements (LSAs) originated from the local router.

Syntax

display ip ospf [<*OSPF instance*>**] database self-originated [detail]**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
detail	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for LSAs originated from the local router:

```
G8272> display ip ospf database self-originated
```

display ip ospf database summary

Displays the Open Shortest Path First (OSPF) database for network summary link-state advertisements (LSAs).

Syntax

display ip ospf [<*OSPF instance*>**] database summary [area {**<*area ID*>**|**
<*area IPv4 address*>**}] [**<*link-state ID*>**] [adv-router** <*advertising router ID*>**| self-originated] [detail]**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`area` *area ID*	Displays OSPF database information for the OSPF area specified in decimal format. The *area ID* is from 1 to 4294967295.
`area` *area IPv4 address*	Displays OSPF database information for the OSPF area specified in IPv4 address format.
link-state ID	Link-state advertisement (LSA) communicates the router's local routing topology to all other routers in the local OSPF area. The value depends on the LSA type and must be entered in IPv4 address format.
`adv-router` *advertising router ID*	Displays all LSAs for the specified advertising router ID in IPv4 address format.
`self-originated`	Displays LSAs originated from the local router.
`detail`	Displays detailed database information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF database for summary LSAs:

```
G8272> display ip ospf database router
```

display ip ospf interface

Displays Open Shortest Path First (OSPF) interface related information.

Syntax

`display ip ospf interface [`<*interface name*>**`|ethernet`** <*chassis number*`/`*port number*>**`|vlan`** <*VLAN number*>**`] [brief]`**

where:

Parameter	Function
interface name	The name of the interface.
`ethernet` *chassis number*`/`*port number*	Displays OSPF information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`vlan` *VLAN number*	Displays OSPF information for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
`brief`	Displays a short interface information summary.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays OSPF interface related information:

```
G8272> display ip ospf interface ethernet 1/50
Ethernet1/50 is up, line protocol is up
  Internet Address 4.0.0.2/24, Area 0.0.0.1, MTU 1500
  Process ID 0, VRF (default), Router ID 2.2.2.2, Network Type BROADCAST,
Cost:
1
  Transmit Delay is 1 sec,  State DR, Priority 1
  Designated Router (ID) 2.2.2.2, Interface Address 4.0.0.2
  Backup Designated Router (ID) 1.1.1.1, Interface Address 4.0.0.1
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello due in 00:00:10
  Neighbor Count is 1, Adjacent neighbor count is 1
  Hello received 18 sent 19, DD received 10 sent 5
  LS-Req received 2 sent 1, LS-Upd received 3 sent 8
  LS-Ack received 4 sent 2, Discarded 0
  No authentication

G8272#display ip ospf interface vlan 101
Vlan101 is up, line protocol is up
  Internet Address 45.0.1.2/24, Area 0.0.0.0, MTU 1500
  Process ID 0, VRF (default), Router ID 2.2.2.2, Network Type BROADCAST,
Cost:
1
  Transmit Delay is 1 sec,  State DR, Priority 1
  Designated Router (ID) 2.2.2.2, Interface Address 45.0.1.2
  No backup designated router on this network
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello due in 00:00:02
  Neighbor Count is 0, Adjacent neighbor count is 0
  Hello received 0 sent 27181, DD received 0 sent 0
  LS-Req received 0 sent 0, LS-Upd received 0 sent 0
  LS-Ack received 0 sent 0, Discarded 0
  No authentication
```

display ip ospf multi-area-adjacencies

Displays Open Shortest Path First (OSPF) multiple area link adjacencies.

Syntax

display ip ospf [<*OSPF instance*>**] multi-area-adjacencies**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays OSPF multiple area link adjacencies:

```
G8272> display ip ospf multi-area-adjacencies
Multi-area-adjacency link on interface Ethernet1/50 to neighbor 4.0.0.2
  Internet Address 4.0.0.1/24, Area 0.0.0.1, MTU 1500
  Process ID 0, Router ID 1.1.1.1, Network Type Point-To-Point, Cost: 1
  Transmit Delay is 1 sec, State Point-To-Point
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello due in 00:00:10
  Neighbor Count is 1, Adjacent neighbor count is 1
  Hello received 2 sent 3, DD received 3 sent 4
  LS-Req received 1 sent 1, LS-Upd received 4 sent 3
  LS-Ack received 2 sent 3, Discarded 0
  No authentication
  Multi-area-adjacency link on interface Ethernet1/50 to neighbor 4.0.0.2
  Internet Address 4.0.0.1/24, Area 0.0.0.2, MTU 1500
  Process ID 0, Router ID 1.1.1.1, Network Type Point-To-Point, Cost: 1
  Transmit Delay is 1 sec, State Point-To-Point
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello due in 00:00:03
  Neighbor Count is 1, Adjacent neighbor count is 1
  Hello received 2 sent 2, DD received 3 sent 4
  LS-Req received 1 sent 1, LS-Upd received 3 sent 2
  LS-Ack received 1 sent 1, Discarded 0
  No authentication
```

display ip ospf neighbors

Displays Open Shortest Path First (OSPF) neighbor information.

Syntax

`display ip ospf [`*<OSPF instance>***`] neighbors [interface`** *<interface IPv4 address>***`|`***<interface name>***`|ethernet`** *<chassis number/port number>***`|loopback`** *<loopback interface>***`|mgmt`** *<management interface>***`|port-aggregation`** *<LAG number>***`|vlan`** *<VLAN number>***`] [`***<neighbor ID>***`] [all|detail [all]|summary]`**

where:

Parameter	Function
OSPF instance	Displays OSPF information only for the specified OSPF instance. The *OSPF instance* is 0.
`interface` *interface IPv4 address*	Displays OSPF neighbor information for the specified interface in IPv4 address format.
`interface` *interface name*	Displays OSPF neighbor information for the specified interface by name.
`interface ethernet` *chassis number/port number*	Displays OSPF neighbor information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface loopback` *loopback interface*	Displays OSPF neighbor information for the specified loopback interface. The *loopback interface* is from 0 to 7.
`interface mgmt` *management interface*	Displays OSPF neighbor information for the specified management interface. The *management interface* is 0.
`interface port-aggregation` *LAG number*	Displays OSPF neighbor information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`interface vlan` *VLAN number*	Displays OSPF neighbor information for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
neighbor ID	The router ID of the neighbor in IPv4 address format.
`all`	Displays OSPF neighbor information, including neighbors that are in the DOWN link state.
`detail`	Displays detailed OSPF neighbor information.
`summary`	Displays a summary of the OSPF neighbors.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays OSPF neighbor information:

```
G8272> display ip ospf neighbors
Total number of full neighbors: 5

OSPF process 0 VRF(default):
Neighbor ID     Pri   State           Dead Time   Address
Interface
1.1.1.1           1   Full/Backup     00:00:33    4.0.0.1
Ethernet1/50

4.4.4.4         1   Full/DR        00:00:36    21.0.0.4       Vlan201

4.4.4.4         1   Full/DR        00:00:29    22.0.0.4       Vlan202

4.4.4.4         1   Full/DR        00:00:36    23.0.0.4       Vlan203

4.4.4.4          1   Full/DR         00:00:32    24.0.0.4        Vlan204
```

display ip ospf policy statistics redistribute

Displays Open Shortest Path First (OSPF) policy redistribution statistics.

Syntax

```
display ip ospf statistics redistribute
{all|bgp|direct|static}
```

where:

Parameter	Function
`all`	Displays OSPF policy redistribution statistics for all processes and protocols.
`bgp`	Displays OSPF policy redistribution statistics for Border Gateway Protocol (BGP).
`direct`	Displays OSPF policy redistribution statistics for directly connected routes.
`static`	Displays OSPF policy redistribution statistics for IP static routes.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all OSPF policy redistribution statistics:

```
G8272> display ip ospf policy statistics redistribute all
OSPF process 0: Redistribute: direct
  Total compared count : 8
  Total matched count: 8
```

display ip ospf retransmission-list

Displays a list of all link-state advertisements (LSAs) that are waiting to be resent to the specified Open Shortest Path First (OSPF) neighbor.

Syntax

`display ip ospf retransmission-list` *<neighbor ID>* **`{`***<interface name>***`|`** **`ethernet`** *<chassis number/port number>***`|loopback`** *<loopback interface>***`|`** **`mgmt`** *<management interface>***`|port-aggregation`** *<LAG number>***`|vlan`** *<VLAN number>***`}`**

where:

Parameter	Function
neighbor ID	The router ID of the neighbor in IPv4 address format.
interface name	Displays LSAs waiting to be resent to the OSPF neighbor on the specified interface by name.
`ethernet` *chassis number/port number*	Displays LSAs waiting to be resent to the OSPF neighbor on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays LSAs waiting to be resent to the OSPF neighbor on the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays LSAs waiting to be resent to the OSPF neighbor on the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays LSAs waiting to be resent to the OSPF neighbor on the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays LSAs waiting to be resent to the OSPF neighbor on the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the LSAs waiting to be resent to the OSPF neighbor with router ID `10.80.135.6` on the ethernet interface `1/12`:

```
G8272> display ip ospf retransmission-list 10.80.135.6 ethernet 1/12
```

display ip ospf rib counters

Displays Open Shortest Path First (OSPF) Routing Information Base (RIB) statistics.

Syntax

```
display ip ospf rib counters
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays RIB statistics:

```
G8272> display ip ospf rib counters
 Global
    Routes received from RIB with invalid VR-Id: 0
    Routes received from RIB with invalid VRF-Id: 0

  OSPF VRF default
    Route ADDs sent to RIB: 104
    Failed while sending route ADDs to RIB: 0
    Route DELETEs sent to RIB: 0
    Failed while sending route DELETEs to RIB: 0
    Route ADDs received from RIB: 0
    Failed to process route ADDs received from RIB: 0
    Route DELETEs received from RIB: 0
    Failed to process route DELETEs received from RIB: 0
```

display ip ospf route

Displays the Open Shortest Path First (OSPF) topology table.

Syntax

`display ip ospf route [`<*OSPF instance*>**`] [`**<*route IPv4 address*>**`[/`**<*prefix length*>**`]|summary]`**

where:

Parameter	Function
OSPF instance	Displays the OSPF topology table only for the specified OSPF instance. The *OSPF instance* is 0.
route IPv4 address	The IPv4 address of the route.
prefix length	The length of the IPv4 network mask.
`summary`	Displays a summary of all routes.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the OSPF topology table:

```
G8272> display ip ospf route
OSPF process 0:
Codes: C - connected, D - Discard, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2

C  4.0.0.0/24 [1] is directly connected, Ethernet1/50, Area 0.0.0.1
C  21.0.0.0/24 [1] is directly connected, Vlan201, Area 0.0.0.0
C  22.0.0.0/24 [1] is directly connected, Vlan202, Area 0.0.0.0
C  23.0.0.0/24 [1] is directly connected, Vlan203, Area 0.0.0.0
C  24.0.0.0/24 [1] is directly connected, Vlan204, Area 0.0.0.0
O  31.0.0.0/24 [2] via 22.0.0.4, Vlan202, Area 0.0.0.0
                   via 23.0.0.4, Vlan203, Area 0.0.0.0
                   via 24.0.0.4, Vlan204, Area 0.0.0.0
                   via 21.0.0.4, Vlan201, Area 0.0.0.0
O  32.0.0.0/24 [2] via 22.0.0.4, Vlan202, Area 0.0.0.0
                   via 23.0.0.4, Vlan203, Area 0.0.0.0
                   via 24.0.0.4, Vlan204, Area 0.0.0.0
                   via 21.0.0.4, Vlan201, Area 0.0.0.0
O  33.0.0.0/24 [2] via 22.0.0.4, Vlan202, Area 0.0.0.0
                   via 23.0.0.4, Vlan203, Area 0.0.0.0
                   via 24.0.0.4, Vlan204, Area 0.0.0.0
                   via 21.0.0.4, Vlan201, Area 0.0.0.0
O  34.0.0.0/24 [2] via 22.0.0.4, Vlan202, Area 0.0.0.0
                   via 23.0.0.4, Vlan203, Area 0.0.0.0
                   via 24.0.0.4, Vlan204, Area 0.0.0.0
                   via 21.0.0.4, Vlan201, Area 0.0.0.0
C  45.0.1.0/24 [1] is directly connected, Vlan101, Area 0.0.0.0
```

display ip ospf statistics

Displays Open Shortest Path First (OSPF) statistics.

Syntax

`display ip ospf [`<*OSPF instance*>**`] statistics`**

where:

Parameter	Function
OSPF instance	Displays OSPF statistics only for the specified OSPF instance. The *OSPF instance* is 0.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays OSPF statistics:

```
G8272> display ip ospf statistics
OSPF Process ID 0 VRF default, Event statistics (cleared 75:38:55 ago)
   Router ID changes: 1
   DR elections: 101
   Older LSAs received: 1
   Neighbor state changes: 33
   Neighbor dead interval expirations: 0
   Neighbor bad lsreqs: 0
   Neighbor sequence number mismatches: 0
   SPF computations: 13 full, 0 summary, 0 external

               LSA Type  Generated  Refreshed    Flushed   Aged out
             Router-LSA          2        160          0          0
            Network-LSA          1          0          0          0
            Summary-LSA        201          0          0          0
         ASBR-summary-LSA          0          0          0          0
          AS-external-LSA          0          0          0          0
              AS-NSSA-LSA          0          0          0          0
               Type-8 LSA          0          0          0          0
   Link-Local Opaque-LSA          0          0          0          0
   Area-Local Opaque-LSA          0          0          0          0
  AS-external Opaque-LSA          0          0          0          0

  Following counters can not be reset:
    Packet SEND buffer: 2048 bytes
    LSA buffer: 2048 bytes
    Packet unused list: 6/200 packets
    LSA unused list: 9/200 LSAs
    DD packets in Q 0
    ACK packets in Q 0
    LSU packets in Q 0
```

display ip ospf summary-address

Displays Open Shortest Path First (OSPF) summary address redistribution information.

Syntax

display ip ospf [<*OSPF instance*>**] summary-address**

where:

Parameter	Function
OSPF instance	Displays OSPF summary address redistribution information only for the specified OSPF instance. The *OSPF instance* is 0.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays OSPF summary address redistribution information:

```
G8272> display ip ospf summary-address
OSPF Router with ID (2.2.2.2) (Process ID 0 VRF default)

Configured summary-address

55.0.1.0/24 Metric -1, tag 0
```

display ip ospf traffic

Displays Open Shortest Path First (OSPF) traffic statistics.

Syntax

display ip ospf [<*OSPF instance*>**] traffic [**<*interface name*>**|ethernet** <*chassis number*/*port number*>**|loopback** <*loopback interface*>**|mgmt** <*management interface*>**|port-aggregation** <*LAG number*>**|vlan** <*VLAN number*>**]**

where:

Parameter	Function
OSPF instance	Displays OSPF traffic statistics only for the specified OSPF instance. The *OSPF instance* is 0.
interface name	Displays OSPF traffic statistics for the specified interface by name.
`ethernet` *chassis number*/*port number*	Displays OSPF traffic statistics for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays OSPF traffic statistics for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays OSPF traffic statistics for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays OSPF traffic statistics for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays OSPF traffic statistics for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays OSPF traffic statistics:

```
G8272> display ip ospf traffic
OSPF Process ID 0 VRF default, Packet Counters (cleared 75:39:36 ago)
  Total: 115536 in, 2729928 out
  Errors: drops in           0, drops out           0, hellos in
0
,
         dbds in             0, lsreq in            0, lsu in
0
,
         lsacks in           0, unknown in          0, unknown out
0
,
         bad version         0, bad crc             0, invalid src
0
,
         invalid dst         0, no nbr              0, passive
0
,
         wrong area          0, pkt length          0, bad auth
0
,

              hello          dbds         lsreq          lsus
acks
   In       108946            25             3          5943
619
  Out      2723349            22             5           626
5926
```

display ip ospf virtual-links

Displays Open Shortest Path First (OSPF) virtual links information.

Syntax

display ip ospf [<*OSPF instance*>**] virtual-links [brief]**

where:

Parameter	Function
OSPF instance	Displays OSPF virtual links information only for the specified OSPF instance. The *OSPF instance* is 0.
`brief`	Displays a short summary of the OSPF virtual links.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays OSPF virtual links information:

```
G8272> display ip ospf virtual-links
```

display ip prefix-list

Displays IPv4 prefix list information and statistics.

Syntax

display ip prefix-list [detail *<prefix list name>***|summary** *<prefix list name>***|**
<prefix list name> **[***<IPv4 address***/***prefix length>* **[first-match|longer]| seq** *<sequence number>***]]**

where:

Parameter	Function
prefix list name	The name of the prefix list.
*IPv4 address***/***prefix length*	Displays the entries of the prefix list that match the specified IPv4 address and network mask length.
`first-match`	Displays the first entry of the prefix list that match the specified IPv4 address and network mask length.
`longer`	Displays all entries of the prefix list that are more specific than the selected IPv4 address and network mask length.
`seq` *sequence number*	Displays the entry with the specified sequence number from the selected prefix list. The *sequence number* is from 1 to 4294967295.
`detail`	Displays detailed IPv4 prefix list information.
`summary`	Displays a summary of all IPv4 prefix lists.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv4 prefix list information and statistics:

```
G8272> display ip prefix-list
ip prefix-list pf_1: 4 entries
     seq 5 permit 111.0.0.0/24
     seq 10 deny 100.45.0.0/16
     seq 15 deny 156.2.0.0/24 eq 25
     seq 20 permit any
ip prefix-list pf_2: 3 entries
     seq 5 deny 50.0.0.0/24 le 28
     seq 10 permit 80.0.0.0/24 ge 25
     seq 15 permit 85.0.0.64/24 ge 25 le 28
ip prefix-list pf_3: 1 entries
   Description: permit all
     seq 5 permit 0.0.0.0/0 le 32
```

display ip protocols

Displays parameters and statistics for the active routing protocol process.

Syntax

`display ip protocols [bgp|ospf]`

where:

Parameter	Function
`bgp`	Displays Border Gateway Protocol (BGP) parameters and statistics.
`ospf`	Displays Open Shortest Path First (OSPF) parameters and statistics.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays parameters and statistics for the active routing protocol process:

```
G8272> display ip protocols
Routing Protocol is "ospf 0"
  Redistributing: direct 0
  Routing for Networks:
    23.1.1.0/24
  Distance: (default is 110)

Routing Protocol is "bgp 3000"
  IGP synchronization is disabled
  Automatic route summarization is disabled
  Default local-preference applied to incoming route is 100
  Redistributing: static, ospf
  Neighbor(s):
  Address          AddressFamily  FiltIn  FiltOut  DistIn  DistOut
RouteMapIn  RouteMapOut  Weight
23.1.1.2         unicast      as_acl_1
rmap_1
24.1.1.2          unicast             as_acl_2
113.0.0.100          unicast
rmap_2                                      50
  Incoming Route Filter:
```

display ip route

Displays the IPv4 routing table.

Syntax

display ip route [vrf {all|default|management}] [<*route address*>**[/**<*prefix length*>**]|all|bgp|connected|next-hop** <*next-hop address*>**|ospf|static]**

where:

Parameter	Function
`vrf all`	Displays the IPv4 routing table associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays the IPv4 routing table associated with the default VRF instance.
`vrf management`	Displays the IPv4 routing table associated with the management VRF instance.
route address	The IPv4 address of the route.
prefix length	The length of the IPv4 network mask.
`all`	Displays all IPv4 routes.
`bgp`	Displays only Border Gateway Protocol (BGP) routes.
`connected`	Displays only directly connected routes.
`next-hop` *next-hop address*	Displays only routes with the specified next hop address in IPv4 address format.
`ospf`	Displays only Open Shortest Path First (OSPF) routes.
`static`	Displays only static routes.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the IPv4 routing table:

```
G8272> display ip route
Codes: C - connected, S - static, R - RIP, B - BGP
       O - OSPF, IA - OSPF inter area, D - DHCP
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       * - candidate default

IP Route Table for VRF "default"
C       23.1.1.0/24 is directly connected, Vlan23
C       24.1.1.0/24 is directly connected, Vlan24
S       45.0.0.0/8 [1/0] via 113.0.0.105, Vlan113
                   [1/0] via 24.1.1.2, Vlan24
O E1    57.61.0.0/24 [110/125] via 23.1.1.2, Vlan23, 00:02:20
B       100.0.0.0/24 [20/0] via 113.0.0.100, Vlan113, 00:05:54
B       100.0.1.0/24 [20/0] via 113.0.0.100, Vlan113, 00:05:54
C       113.0.0.0/24 is directly connected, Vlan113
O       116.0.0.0/24 [110/124] via 23.1.1.2, Vlan23, 00:09:21
O IA    117.1.1.1/32 [110/124] via 23.1.1.2, Vlan23, 00:09:11
B       145.45.0.0/16 [200/0] via 23.1.1.2, Vlan23, 00:03:29
O E2    190.20.20.20/32 [110/20] via 23.1.1.2, Vlan23, 00:05:07
C       192.168.1.2/32 is directly connected, loopback0

Gateway of last resort is not set
```

display ip route database

Displays the IPv4 routing table database.

Syntax

```
display ip route [vrf {all|default|management}] database
[all|
bgp|connected|ospf|static]
```

where:

Parameter	Function
`vrf all`	Displays the IPv4 routing table database associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays the IPv4 routing table database associated with the default VRF instance.
`vrf management`	Displays the IPv4 routing table database associated with the management VRF instance.
`all`	Displays all IPv4 routes.
`bgp`	Displays only Border Gateway Protocol (BGP) routes.
`connected`	Displays only directly connected routes.
`ospf`	Displays only Open Shortest Path First (OSPF) routes.
`static`	Displays only static routes.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv4 routing table database:

```
G8272> display ip route database
Codes: C - connected, S - static, R - RIP, B - BGP
       O - OSPF, IA - OSPF inter area, D - DHCP
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       > - selected route, * - FIB route, p - stale info

IP Route Table for VRF "default"
C    *> 23.1.1.0/24 is directly connected, Vlan23
C    *> 24.1.1.0/24 is directly connected, Vlan24
S    *> 45.0.0.0/8 [1/0] via 113.0.0.105, Vlan113
      *>                    [1/0] via 24.1.1.2, Vlan24
B         45.0.0.0/8 [200/0] via 24.1.1.2, Vlan24, 00:00:01
O E1 *> 57.61.0.0/24 [110/125] via 23.1.1.2, Vlan23, 00:08:58
S    *> 100.0.0.0/24 [5/0] via 24.1.1.2, Vlan24
O        100.0.0.0/24 [110/124] via 23.1.1.2, Vlan23, 00:01:21
B         100.0.0.0/24 [20/0] via 113.0.0.100, Vlan113, 00:12:32
B    *> 100.0.1.0/24 [20/0] via 113.0.0.100, Vlan113, 00:12:32
C    *> 113.0.0.0/24 is directly connected, Vlan113
O      *> 116.0.0.0/24 [110/124] via 23.1.1.2, Vlan23, 00:15:59
O IA *> 117.1.1.1/32 [110/124] via 23.1.1.2, Vlan23, 00:15:49
O E2 *> 145.45.0.0/16 [110/20] via 23.1.1.2, Vlan23, 00:03:44
B            145.45.0.0/16 [200/0] via 23.1.1.2, Vlan23, 00:12:27
O E2 *> 190.20.20.20/32 [110/20] via 23.1.1.2, Vlan23, 00:11:45
C     *> 192.168.1.2/32 is directly connected, loopback0

Gateway of last resort is not set
```

display ip route interface

Displays IPv4 routing table for the specified interface.

Syntax

display ip route [vrf {all|default|management}] interface {<*interface name*>**|ethernet** <*chassis number*/*port number*>**|loopback** <*loopback interface*>**|mgmt** <*management interface*>**|port-aggregation** <*LAG number*>**| vlan** <*VLAN number*>**}**

where:

Parameter	Function
`vrf all`	Displays the IPv4 routing table associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays the IPv4 routing table associated with the default VRF instance.
`vrf management`	Displays the IPv4 routing table associated with the management VRF instance.
interface name	Displays IPv4 routes for the specified interface by name.
`ethernet` *chassis number*/*port number*	Displays IPv4 routes for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays IPv4 routes for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays IPv4 routes for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays IPv4 routes for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays IPv4 routes for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the IPv4 routing table for ethernet interface 1/12:

```
G8272> display ip route interface ethernet 1/12
```

display ip route summary

Displays a summary of all IPv4 routes.

Syntax

`display ip route summary [vrf {all|default|management}]`

where:

Parameter	Function
`vrf all`	Displays a summary of IPv4 routes associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays a summary of IPv4 routes associated with the default VRF instance.
`vrf management`	Displays a summary of IPv4 routes associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a summary of all IPv4 routes:

```
G8272> display ip route summary
IPv4 routing table name is Default-IPv4-Routing-Table
IPv4 routing table maximum-paths   : 32
Total number of IPv4 routes      : 12
Total number of IPv4 paths       : 13
Route Source    Networks
connected       4
static          1
ospf            5
bgp             2
Total           12
FIB             12

ECMP statistics (active in ASIC):
---------------------------------
 Maximum IPv4 ECMP routes supported : 15872
 Total number of IPv4 ECMP routes   : 1
 Total number of IPv4 ECMP paths    : 2
 Number of routes with  2 ECMP paths: 1
```

display ip router-id vrf all

Displays the router ID.

Syntax

```
display ip router-id vrf all
```

where:

Parameter	Function
`vrf all`	Displays the router ID associated with all existing Virtual Routing and Forwarding (VRF) instances.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the router ID:

```
G8272> display ip router-id vrf all

VRF management
IP Router ID 10.241.41.21 (automatic)
```

display ip static-route

Displays static IPv4 route information.

Syntax

```
display ip static-route [[vrf {all|default|management}]
database]
```

where:

Parameter	Function
`vrf all`	Displays static routes associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays static routes associated with the default VRF instance.
`vrf management`	Displays static routes associated with the management VRF instance.
`database`	Displays static routes stored in the IP routing table.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays static IPv4 routes:

```
G8272> display ip static-route
IP Route Table for VRF "default"
S       122.0.0.0/24 [1/0] via 11.0.0.10, Ethernet1/38

Gateway of last resort is not set
```

display ip traffic

Displays IPv4 traffic statistics.

Syntax

display ip traffic

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv4 traffic statistics:

```
G8272> display ip traffic
IP Software Processed Traffic Statistics
----------------------------------------
Transmission and reception:
  Packets received:495983 sent:495545 forward:0      deliver:495983
  IpInHdrErrors       :0
  IpInAddrErrors      :0
  IpInUnknownProtos   :0
  IpInDiscards        :0
  IpOutDiscards       :0
  IpOutNoRoutes       :62152

Fragmentation and reassembly
  Packets FragCreats   :0      FragOKs :0      FragFails :0
  Packets ReasmRequests:0      ReasmOKs:0      ReasmFails:0

ICMP Software Processed Traffic Statistics
----------------------------------------
Transmission:
  Packets sent    :16     echo:3      reply:5      error:0
Reception:
  Packets received:16     echo:5      reply:3      error:0
```

display ip vrf

Displays Virtual Routing and Forwarding (VRF) instance information.

Syntax

display ip vrf [<*VRF name*>**]**

where:

Parameter	Function
VRF name	The name of the VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VRF instance information:

```
G8272> display ip vrf
VRF management, FIB ID 1
Router ID: 10.241.40.101 (automatic)
Interfaces:
  mgmt0
!
no VRF is defined.
```

display ipv6 adjacency

Displays IPv6 adjacency information.

Syntax

`display ipv6 adjacency [`*<interface name>***`|`***<source IPv6 address>***`|detail| ethernet`** *<chassis number/port number>* **`|loopback`** *<loopback interface>* **`|mgmt`** *<management interface>* **`|port-aggregation`** *<LAG number>* **`|static|vlan`** *<VLAN number>* **`} [vrf {all|default|management}]`**

where:

Parameter	Function
interface name	Displays IPv6 adjacency information for the specified interface by name.
source IPv6 address	Displays IPv6 adjacency information for the specified IPv6 source address.
`detail`	Displays detailed IPv6 adjacency information.
`ethernet` *chassis number/port number*	Displays IPv6 adjacency information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays IPv6 adjacency information for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays IPv6 adjacency information for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays IPv6 adjacency information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`static`	Displays IPv6 adjacency information for static routes.
`vlan` *VLAN number*	Displays IPv6 adjacency information for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
`vrf all`	Displays IPv6 adjacency information associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays IPv6 adjacency information associated with the default VRF instance.
`vrf management`	Displays IPv6 adjacency information associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 adjacency information:

```
G8272> display ipv6 adjacency
```

display ipv6 adjacency summary

Displays a summary of IPv6 adjacencies.

Syntax

`display ipv6 adjacency summary [`*<interface name>***`|ethernet`** *<chassis number/port number>***`|loopback`** *<loopback interface>***`|mgmt`** *<management interface>***`|port-aggregation`** *<LAG number>***`|vlan`** *<VLAN number>***`} [vrf {all|default|management}]`**

where:

Parameter	Function
interface name	Displays IPv6 adjacency information for the specified interface by name.
`ethernet` *chassis number/port number*	Displays IPv6 adjacency information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays IPv6 adjacency information for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays IPv6 adjacency information for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays IPv6 adjacency information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays IPv6 adjacency information for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.
`vrf all`	Displays IPv6 adjacency information associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays IPv6 adjacency information associated with the default VRF instance.
`vrf management`	Displays IPv6 adjacency information associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a summary of IPv6 adjacencies:

```
G8272> display ipv6 adjacency summary
```

display ipv6 bgp

Displays IPv6 Border Gateway Protocol (BGP) route information.

Syntax

`display ipv6 bgp [`*<IPv6 network address>***`[/`***<prefix length>***`**
`[longer-prefixes]]] [vrf {all|default}]`

where:

Parameter	Function
IPv6 network address	The IPv6 network address.
prefix length	The IPv6 network mask length.
`longer-prefixes`	Displays IPv6 BGP route information for the specified network and any subnetworks with a prefix length equal to or greater than the prefix specified.
`vrf all`	Displays IPv6 BGP route associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays IPv6 BGP route associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 BGP route information:

```
G8272> display ipv6 bgp
BGP routing table information for VRF default address family IPV6 unicast
BGP table version is 24, local router ID is 1.1.1.1
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
l - labeled
              S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete, |- multipath

    Network          Next Hop        Metric      LocPrf   Weight   Path
*>  3333::/64         ::
32768       ?
*>  aaa1::/64        9000::2                      100       0
300e
*>  aaa2::/64          9000::2       1234                        0
     300i
*>  6666::/64        9000::2                                  0
300  {123}e


Total number of prefixes 4
MA_05#
```

display ipv6 bgp dampening

Displays IPv6 Border Gateway Protocol (BGP) dampening information.

Syntax

`display ipv6 bgp dampening {dampened-paths|flap-statistics| parameters}`

where:

Parameter	Function
`dampened-paths`	Displays all dampened paths.
`flap-statistics`	Displays flap statistics for IPv6 BGP routes.
`parameters`	Displays all dampening parameters.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all dampened paths:

```
G8272> display ipv6 bgp dampening dampened-paths
BGP routing table information for VRF default address family IPV6 unicast
BGP table version is 7, local router ID is 1.1.1.1
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
l - labeled
              S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete, |- multipath

    Network          Next Hop        Metric      LocPrf   Weight   Path
*d  6666::/64          9000::2
0            300e

Total number of prefixes 1
```

display ipv6 bgp neighbors

Displays IPv6 Border Gateway Protocol (BGP) neighbors.

Syntax

`display ipv6 bgp neighbors` *<neighbor address>*

where:

Parameter	Function
neighbor address	The IPv4 or IPv6 address of the BGP neighbor.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 BGP neighbors:

```
G8272> display ipv6 bgp neighbors 9000::2
BGP neighbor is 9000::2, remote AS 300, local AS 400, external link
  BGP version 4, remote router ID 7.5.0.16
  BGP state = Established, up for 00:13:01
  Last read 00:00:02, hold time is 90, keepalive interval is 30 seconds
  Configured hold time is 15, keepalive interval is 5 seconds
  Neighbor capabilities:
    Route refresh: advertised and received (new)
    4-Octet ASN Capability: advertised
    Address family IPv4 Unicast: received
    Address family IPv4 Multicast: received
    Address family IPv6 Unicast: advertised and received
  Received 17010 messages, 0 notifications, 0 in queue
  Sent 16965 messages, 8 notifications, 0 in queue
  Route refresh request: received 0, sent 0
  Minimum time between advertisement runs is 30 seconds
 For address family: IPv6 Unicast
  BGP table version 13, neighbor version 13
  Index 2, Offset 0, Mask 0x4
  Inbound path policy configured
  Route map for incoming advertisements is *a
  1 accepted prefixes, maximum limit 6144
  Threshold for warning message 75(%)
  0 announced prefixes

 Connections established 9; dropped 8
  TTL: 1, TTL Security hops: 0
Local host: 9000::1, Local port: 41516
Foreign host: 9000::2, Foreign port: 179
Nexthop: 1.1.1.1
Nexthop global: 9000::1
Nexthop local: fe80::3a41:45ff:fe53:eeef
BGP connection: shared network
Last Reset: 00:13:06, due to BGP Notification sent
Notification Error Message: (Cease/Administratively Reset.)

Update packets: 31
Update packets dropped: 6
 - Decode error drops: 6
 - Internal error drops: 0

 For address family: IPv6 Unicast
Withdraw prefixes: 4
Withdraw prefixes dropped: 0
 - Decode error drops: 0
 - Internal error drops: 0
NLRI prefixes: 21
NLRI prefixes dropped: 0
 - Decode error drops: 0
 - Internal error drops: 0
 - Route-map drops: 0
 - Filter drops: 0
 - AS-path loop drops: 0
 - Route reflector drops: 0
 - Next-hop drops: 0
 - Other drops: 0
```

display ipv6 bgp received-paths

Displays IPv6 Border Gateway Protocol (BGP) routes received from other neighbors.

Syntax

```
display ipv6 bgp received-paths
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 BGP routes received from other neighbors:

```
G8272> display ipv6 bgp received-paths
BGP table version is 3, local router ID is 1.1.1.2
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal
Origin codes: i - IGP, e - EGP, ? - incomplete

    Network          Next Hop        Metric      LocPrf   Weight   Path
*>i 6666::/64        9000::2                       100        0
300i

Total number of prefixes 1
```

display ipv6 bgp summary

Displays the status of all IPv6 Border Gateway Protocol (BGP) neighbors.

Syntax

`display ipv6 bgp summary [vrf {all|default}]`

where:

Parameter	Function
`vrf all`	Displays BGP connection status for neighbors associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP connection status for neighbors associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the connection status for all IPv6 BGP neighbors:

```
G8272> display ipv6 bgp summary
BGP router identifier 1.1.1.1, local AS number 400
BGP table version is 2
0 BGP AS-PATH entries
0 BGP community entries

Neighbor                                        V     AS MsgRcv MsgSen
TblVer InQ O
utQ Up/Down State/PfxRcd
2001::2                                     4    400    70     72      2
0
  0 01:09:28       0
2020::2                                     4    400     0      2      0
0
  0 00:00:41 OpenSent
9000::2                                     4    400   142    140      2
0
  0 01:09:26       1

Total number of neighbors 3

Total number of Established sessions 2
```

display ipv6 bgp unicast neighbors

Displays IPv6 unicast Border Gateway Protocol (BGP) neighbors.

Syntax

`display ipv6 bgp unicast neighbors [`*<neighbor address>***`**
`[advertised-routes|flap-statistics|received-routes]]`
`[vrf {all|default}]`

where:

Parameter	Function
neighbor address	The IPv4 or IPv6 address of the BGP neighbor.
`advertised-routes`	Displays BGP routes advertised to the specified neighbor.
`flap-statistics`	Displays flap statistics for the BGP routes received from the specified neighbor.
`received-routes`	Displays BGP routes received from the specified neighbor.
`vrf all`	Displays BGP neighbors associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP neighbors associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 unicast BGP neighbors:

```
G8272> display ipv6 unicast bgp neighbors
BGP neighbor is 2001::2, remote AS 400, local AS 400, internal link
  BGP version 4, remote router ID 0.0.0.0
  BGP state = Active
  Last read 00:02:28, hold time is 180, keepalive interval is 60 seconds
  Received 71 messages, 1 notifications, 0 in queue
  Sent 73 messages, 0 notifications, 0 in queue
  Route refresh request: received 0, sent 0
  Minimum time between advertisement runs is 5 seconds
  Update source is loopback1
 For address family: IPv6 Unicast
  BGP table version 3, neighbor version 0
  Index 4, Offset 0, Mask 0x10
  Route-Reflector Client
  0 accepted prefixes, maximum limit 6144
  Threshold for warning message 75(%)
  0 announced prefixes

 Connections established 1; dropped 1
  TTL: 255, TTL Security hops: 0
Next connect timer due in 12 seconds
Last Reset: 00:02:28, due to BGP Notification received
Notification Error Message: (Hold Timer Expired/Unspecified Error
Subcode)

Update packets: 0
Update packets dropped: 0
 - Decode error drops: 0
 - Internal error drops: 0

 For address family: IPv6 Unicast
Withdraw prefixes: 0
Withdraw prefixes dropped: 0
 - Decode error drops: 0
 - Internal error drops: 0
NLRI prefixes: 0
NLRI prefixes dropped: 0
 - Decode error drops: 0
 - Internal error drops: 0
 - Route-map drops: 0
 - Filter drops: 0
 - AS-path loop drops: 0
 - Route reflector drops: 0
 - Next-hop drops: 0
 - Other drops: 0
```

```
 BGP neighbor is 2020::2, remote AS 400, local AS 400, internal link
  BGP version 4, remote router ID 1.1.1.2
  BGP state = OpenConfirm
  Last read 00:03:34, hold time is 180, keepalive interval is 60 seconds
  Received 1 messages, 0 notifications, 0 in queue
  Sent 5 messages, 0 notifications, 0 in queue
  Route refresh request: received 0, sent 0
  Minimum time between advertisement runs is 5 seconds
 For address family: IPv6 Unicast
  BGP table version 3, neighbor version 0
  Index 10, Offset 1, Mask 0x4
  0 accepted prefixes, maximum limit 6144
  Threshold for warning message 75(%)
  0 announced prefixes

 Connections established 0; dropped 0
  TTL: 255, TTL Security hops: 0
Local host: 2020::1, Local port: 43349
Foreign host: 2020::2, Foreign port: 179
Nexthop: 1.1.1.1
Nexthop global: 2020::1
Nexthop local: fe80::3a41:45ff:fe53:eeef
BGP connection: shared network

Update packets: 0
Update packets dropped: 0
 - Decode error drops: 0
 - Internal error drops: 0

 For address family: IPv6 Unicast
Withdraw prefixes: 0
Withdraw prefixes dropped: 0
 - Decode error drops: 0
 - Internal error drops: 0
NLRI prefixes: 0
NLRI prefixes dropped: 0
 - Decode error drops: 0
 - Internal error drops: 0
 - Route-map drops: 0
 - Filter drops: 0
 - AS-path loop drops: 0
 - Route reflector drops: 0
 - Next-hop drops: 0
 - Other drops: 0
```

display ipv6 bgp unicast neighbors routes

Displays IPv6 unicast Border Gateway Protocol (BGP) routes received or advertised to or from the specified neighbor.

Syntax

`display ipv6 bgp unicast neighbors` *<neighbor address>* **`routes [advertised|dampened|received] [vrf {all|default}]`**

where:

Parameter	Function
neighbor address	The IPv4 or IPv6 address of the BGP neighbor.
`advertised`	Displays BGP routes advertised to the neighbor.
`dampened`	Displays dampened BGP routes received from the neighbor.
`received`	Displays BGP routes received from the neighbor.
`vrf all`	Displays BGP routes for neighbors associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays BGP routes for neighbors associated with the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP routes received or advertised to or from the neighbor with IPv4 address `10.254.22.36`:

```
G8272> display ipv6 bgp neighbors 10.254.22.36 routes
```

display ipv6 dhcp relay

Displays Dynamic Host Configuration Protocol version 6 (DHCPv6) relay service configuration and statistics.

Syntax

`display ipv6 dhcp relay [address [interface {ethernet [`*<chassis number/port number>***`]|vlan [`***<VLAN number>***`]}] [vrf {`***<VRF instance>***`|all|default}]`**

where:

Parameter	Function
`address`	Displays configured DHCPv6 addresses.
`interface ethernet`	Displays configured DHCPv6 address on all ethernet interfaces.
chassis number`/`*port number*	Displays configured DHCPv6 address on the specified ethernet interface. The ethernet interface chassis and port numbers. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface vlan`	Displays configured DHCPv6 addresses on all Virtual LAN (VLAN) interfaces.
VLAN number	Displays configured DHCPv6 addresses on the specified VLAN interface. The *VLAN number* is from 1 to 4094.
`vrf` *VRF instance*	Displays DHCPv6 information for the specified Virtual Routing and Forwarding (VRF) instance.
`vrf all`	Displays DHCPv6 information for all the VRF instances.
`vrf default`	Displays DHCPv6 information for the default VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the DHCPv6 configuration:

```
G8272> display ipv6 dhcp relay

DHCPv6 relay service is Enabled.
Helper addresses are configured on the following interfaces:
Interface            Relay Address                     Output Interface

--------             -------------                     ----------------

Ethernet1/20         2004::101
Ethernet1/20         2005::4
Ethernet1/20         fe80::1234
Ethernet1/20         fe80::124                               Vlan1
```

display ipv6 forwarding

Displays IPv6 forwarding status.

Syntax

```
display ipv6 forwarding
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 forwarding status:

```
G8272> display ipv6 forwarding

IPv6 forwarding is on.
```

display ipv6 interface

Displays IPv6 interface status and configuration settings.

Syntax

`display ipv6 interface {`<*interface name*>**`|ethernet`** <*chassis number*`/`*port number*>**`|loopback`** <*loopback interface*>**`|mgmt`** <*management interface*>**`|vlan`** <*VLAN number*>**`} brief`**

where:

Parameter	Function
interface name	The name of the interface.
`ethernet` *chassis number*`/`*port number*	Displays ethernet interface configuration information. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays loopback interface configuration information. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays management interface configuration information. The *management interface* is 0.
`vlan` *VLAN number*	Displays Virtual LAN (VLAN) interface configuration information. The *VLAN number* is from 1 to 4094.
`brief`	Displays a short interface configuration summary.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays interface configuration for management interface `0`:

```
G8272> display ipv6 interface mgmt 0 brief

mgmt0                       [up/up]
    fe80::aa97:dcff:fede:2500
```

display ipv6 nd interface

Displays IPv6 neighbor discovery (ND) information for the specified interface.

Syntax

`display ipv6 nd interface [`*<interface name>***`|ethernet`** *<chassis number/port number>***`|loopback`** *<loopback interface>***`|mgmt`** *<management interface>***`|`**
`port-aggregation` *<LAG number>***`|vlan`** *<VLAN number>***`]`**

where:

Parameter	Function
interface name	The name of the interface.
`ethernet` *chassis number/port number*	Displays neighbor discovery (ND) information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays neighbor discovery (ND) information for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays neighbor discovery (ND) information for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays neighbor discovery (ND) information for the specified Link Aggregation Group (LAG). The *LAG number* is from 0 to 4096.
`vlan` *VLAN number*	Displays neighbor discovery (ND) information for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 ND information for all interfaces:

```
G8272> display ipv6 nd interface

Interface mgmt0, Interface status: protocol-up/link-up/admin-up
  IPv6 address: fe80::aa97:dcff:fede:2500
  IPv6 interface DAD attempts: 1
  ICMPv6 active timers:
      Last Router-Advertisement sent: never
      Next Router-Advertisement sent in: 0 secs
  Router-Advertisement parameters:
      Suppress RAs: true
      Periodic interval: 0 secs
      Minimum interval: 198 secs
      Maximum interval: 600 secs
      Send 'Managed Address Configuration' flag: false
      Send 'Other Configuration' flag: false
      Send 'Current Hop Limit' field: 64 hops
      Send 'MTU' option value: 1500 bytes
      Send 'Router Lifetime' field: 1800 secs
      Send 'Reachable Time' field: 0 ms
      Send 'Retrans Timer' field: 0 ms
      Prefix parameters:
        Valid-lifetime: 2592000, preferred-lifetime: 604800
        Off-link flag: false, no-autoconf flag: false
        Advertised prefixes:
  Neighbor-Solicitation parameters:
      NS retransmit interval: 1 sec
  ICMPv6 error message parameters:
      Send redirects: true
```

display ipv6 neighbor

Displays IPv6 neighbor information.

Syntax

display ipv6 neighbor [*<interface name>***|***<neighbor address>***|detail| ethernet** *<chassis number/port number>***|loopback** *<loopback interface>***| mgmt** *<management interface>***|port-aggregation** *<LAG number>***|static| vlan** *<VLAN number>***] [vrf {all|default|management}]**

where:

Parameter	Function
interface name	Displays information for IPv6 neighbors on the specified interface by name.
neighbor address	Displays IPv6 information for the specified neighbor in IPv6 address format.
`detail`	Displays detailed IPv6 neighbor information.
`ethernet` *chassis number/port number*	Displays information about IPv6 neighbors on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays information about IPv6 neighbors on the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays information about IPv6 neighbors on the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays information about IPv6 neighbors on the specified Link Aggregation Group (LAG). The *LAG number* is from 0 to 4096.
`static`	Displays information for static IPv6 neighbors.
`vlan` *VLAN number*	Displays information about IPv6 neighbors on the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`vrf all`	Displays information for IPv6 neighbors associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays information for IPv6 neighbors associated with the default VRF instance.
`vrf management`	Displays information for IPv6 neighbors associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 neighbor information:

```
G8272> display ipv6 neighbor

R - Reachable, I - Incomplete, S - Stale, F - Failed, P - Probe,
D - Delay, PR - Permanent

Flags: (D) - Static neighbors attached to down interface
Flags: (N) - Static neighbors with null phy interface

IPv6 Neighbor Table for context default
Total number of entries:2
Address                   Age       MAC Address     Source  Interface      State
2004::101                 00:00:06  0000.34b0.73ec  icmpv6  Ethernet1/20   R
fe80::200:34ff:feb0:73ec  00:00:01  0000.34b0.73ec  icmpv6  Ethernet1/20   D
```

display ipv6 neighbor summary

Displays summary adjacency information about the specified IPv6 neighbor.

Syntax

`display ipv6 neighbor summary [`*<interface name>***`|ethernet`** *<chassis number/port number>***`|loopback`** *<loopback interface>***`|mgmt`** *<management interface>***`|port-aggregation`** *<LAG number>***`|vlan`** *<VLAN number>***`] [vrf {all|default|management}]`**

where:

Parameter	Function
interface name	Displays summary adjacency information about IPv6 neighbors on the specified interface by name.
`ethernet` *chassis number/port number*	Displays summary adjacency information about IPv6 neighbors on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays summary adjacency information about IPv6 neighbors on the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays summary adjacency information about IPv6 neighbors on the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays summary adjacency information about IPv6 neighbors on the specified Link Aggregation Group (LAG). The *LAG number* is from 0 to 4096.
`vlan` *VLAN number*	Displays summary adjacency information about IPv6 neighbors on the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`vrf all`	Displays summary adjacency information for neighbors associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays summary adjacency information for neighbors associated with the default VRF instance.
`vrf management`	Displays summary adjacency information for neighbors associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays summary IPv6 neighbor adjacency information:

```
G8272> display ipv6 neighbor summary

IPv6 Neighbors Table - Adjacency Summary

  Resolved   : 2
  Incomplete : 0
  Unknown    : 0
  Total      : 2
```

display ipv6 prefix-list

Displays IPv6 prefix list information and statistics.

Syntax

display ipv6 prefix-list [detail *<prefix list name>***|summary** *<prefix list name>***|**
<prefix list name> **[***<IPv6 address/prefix length>* **[first-match|longer]| seq** *<sequence number>***]]**

where:

Parameter	Function
prefix list name	The name of the prefix list.
IPv6 address/prefix length	Displays the entries of the prefix list that match the specified IPv6 address and network mask length.
`first-match`	Displays the first entry of the prefix list that match the specified IPv6 address and network mask length.
`longer`	Displays all entries of the prefix list that are more specific than the selected IPv6 address and network mask length.
`seq` *sequence number*	Displays the entry with the specified sequence number from the selected prefix list. The *sequence number* is from 1 to 4294967295.
`detail`	Displays detailed IPv6 prefix list information.
`summary`	Displays a summary of all IPv6 prefix lists.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 prefix list information and statistics:

```
G8272# display ipv6 prefix-list

ipv6 prefix-list aaaa: 1 entries
     seq 5 deny 2003::/64 le 128
```

display ipv6 route

Displays the IPv6 routing table.

Syntax

`display ipv6 route [vrf {all|default|management}] [`*<route address>*
`[/`*<prefix length>***`]|all|bgp|connected|next-hop`** *<next-hop address>***`|static]`**

where:

Parameter	Function
`vrf all`	Displays the IPv6 routing table associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays the IPv6 routing table associated with the default VRF instance.
`vrf management`	Displays the IPv6 routing table associated with the management VRF instance.
route address	The IPv6 address of the route.
prefix length	The length of the IPv6 network mask.
`all`	Displays all IPv6 routes.
`bgp`	Displays only Border Gateway Protocol (BGP) routes.
`connected`	Displays only directly connected routes.
`next-hop` *next-hop address*	Displays only routes with the specified next hop address in IPv6 address format.
`static`	Displays only static routes.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the IPv6 routing table:

```
G8272> display ipv6 route

IPv6 Routing Table
Codes: C - connected, S - static, R - RIP, O - OSPF
       IA - OSPF inter area, E1 - OSPF external type 1,
       E2 - OSPF external type 2, B - BGP
Timers: Uptime

IP Route Table for VRF "default"
C      2001::/64 via ::, Vlan1, 01:14:21
C      2004::/64 via ::, Ethernet1/20, 01:53:25
C      fe80::/64 via ::, Vlan1, 02:01:50
C      fe80::/64 via ::, Ethernet1/20, 02:01:50
```

display ipv6 route database

Displays the IPv6 routing table database.

Syntax

```
display ipv6 route [vrf {all|default|management}] database
[all|bgp|connected|static]
```

where:

Parameter	Function
`vrf all`	Displays the IPv6 routing table database associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays the IPv6 routing table database associated with the default VRF instance.
`vrf management`	Displays the IPv6 routing table database associated with the management VRF instance.
`all`	Displays all IPv6 routes.
`bgp`	Displays only Border Gateway Protocol (BGP) routes.
`connected`	Displays only directly connected routes.
`static`	Displays only static routes.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 routing table database:

```
G8272> display ipv6 route database

IPv6 Routing Table
Codes: C - connected, S - static, R - RIP, O - OSPF,
       IA - OSPF inter area, E1 - OSPF external type 1,
       E2 - OSPF external type 2, B - BGP
       > - selected route, * - FIB route, p - stale info
Timers: Uptime

IP Route Table for VRF "default"
C   *> 2001::/64 via ::, Vlan1, 01:14:29
C   *> 2004::/64 via ::, Ethernet1/20, 01:53:33
C   *> fe80::/64 via ::, Vlan1, 01:14:29
C   *> fe80::/64 via ::, Ethernet1/20, 01:53:33
```

display ipv6 route interface

Displays IP routing table for the specified interface.

Syntax

display ipv6 route [vrf {all|default|management}] interface {<*interface name*>**|ethernet** <*chassis number*/*port number*>**|loopback** <*loopback interface*>**|mgmt** <*management interface*>**|port-aggregation** <*LAG number*>**| vlan** <*VLAN number*>**}**

where:

Parameter	Function
`vrf all`	Displays the IPv6 routing table associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays the IPv6 routing table associated with the default VRF instance.
`vrf management`	Displays the IPv6 routing table associated with the management VRF instance.
interface name	Displays IPv6 routes for the specified interface by name.
`ethernet` *chassis number/port number*	Displays IPv6 routes for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays IPv6 routes for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays IPv6 routes for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays IPv6 routes for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays IPv6 routes for the specified Virtual LAN (VLAN) interface. The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the IPv6 routing table for ethernet interface 1/12:

```
G8272> display ipv6 route interface ethernet 1/12
```

display ipv6 route summary

Displays a summary of all IPv6 routes.

Syntax

`display ipv6 route summary [vrf {all|default|management}]`

where:

Parameter	Function
`vrf all`	Displays a summary of IPv6 routes associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays a summary of IPv6 routes associated with the default VRF instance.
`vrf management`	Displays a summary of IPv6 routes associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a summary of all IPv6 routes:

```
G8272> display ipv6 route summary

IPv6 routing table name is Default-IPv6-Routing-Table
IPv6 routing table maximum-paths   : 32
Total number of IPv6 routes      : 2
Total number of IPv6 paths       : 2
Route Source    Networks
connected       2
Total           2
FIB             2

ECMP statistics (active in ASIC):
---------------------------------
 Maximum IPv6 ECMP routes supported : 6144
 Total number of IPv6 ECMP routes   : 0
 Total number of IPv6 ECMP paths    : 0
```

display ipv6 static-route

Displays static IPv6 route information.

Syntax

```
display ipv6 static-route [[vrf {all|default|management}]
database]
```

where:

Parameter	Function
`vrf all`	Displays static IPv6 routes associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays static IPv6 routes associated with the default VRF instance.
`vrf management`	Displays static IPv6 routes associated with the management VRF instance.
`database`	Displays static IPv6 routes stored in the IPv6 routing table.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays static IPv6 routes:

```
G8272> display ipv6 static-route

IP Route Table for VRF "default"
S      4000::/64 [1/0] via 2004::101, Ethernet1/20, 00:00:03
```

display ipv6 traffic

Displays IPv6 traffic statistics.

Syntax

```
display ipv6 traffic
```

Modes

- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 traffic statistics:

```
G8272# display ipv6 traffic
```

display lacp counters

Displays Link Aggregation Control Protocol (LACP) statistics.

Syntax

`display lacp counters [interface port-aggregation` *<LAG number>*`]`

where:

Parameter	Function
`interface port-aggregation` *LAG number*	Displays LACP statistics for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LACP statistics:

```
G8272> display lacp counters

                   LACPDUs           Marker        Marker Respnose    LACPDUs
Port             Sent     Recv     Sent     Recv     Sent     Recv     Pkts Err
--------------------------------------------------------------------------------
po1000
Ethernet1/1       31       31       0        0        0        0        0
Ethernet1/2       32       31       0        0        0        0        0

po2000
Ethernet1/9       35       36       0        0        0        0        0
Ethernet1/10      36       34       0        0        0        0        0
Ethernet1/11      42       37       0        0        0        0        0
Ethernet1/12      41       36       0        0        0        0        0
```

display lacp interface ethernet

Displays Link Aggregation Control Protocol (LACP) interface configuration.

Syntax

display lacp interface ethernet *<chassis number/port number>*

where:

Parameter	Function
chassis number/port number	Displays LACP information for the specified ethernet interface. The *chassis number* is 1.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LACP configuration for ethernet interface 1/12:

```
G8272> display lacp interface ethernet 1/9

% Interface Ethernet1/9 is up
%   Aggregation-group is 2000 port-aggregation is po2000
%   PDUs sent: 374
%   PDUs rcvd: 375
%   Markers sent: 0
%   Markers rcvd: 0
%   Markers response sent: 0
%   Markers response rcvd: 0
%   Unknown packets rcvd: 0
% Lag Id: [(8000, a8-97-dc-f7-d5-00, 07d0, 8000, 005a),(8000,
08-17-f4-c3-df-00,
 0040, 8000, 005a)]
% Local Port: Ethernet1/9   MAC Address=a8-97-dc-f7-d5-00
%   System Identifier=0x8000, a8-97-dc-f7-d5-00
%   Port Identifier=0x8000, 0x005a
%   Operational key=2000
%   LACP_Activity=Active
%   LACP_Timeout=Long Timeout (30s)
%   Synchronization=IN_SYNC
%   Collecting=True
%   Distributing=True
% Actor Admin State=(ACT:1 TIM:0 AGG:1 SYN:0 COL:0 DIS:0 DEF:1 EXP:0)
% Actor Oper  State=(ACT:1 TIM:0 AGG:1 SYN:1 COL:1 DIS:1 DEF:0 EXP:0)
% Neighbor: 90    MAC Address=08-17-f4-c3-df-00
%   System Identifier=0x8000, 08-17-f4-c3-df-00
%   Port Identifier=0x8000, 0x005a
%   Operational key=64
%   LACP_Activity=Active
%   LACP_Timeout=Long Timeout (30s)
%   Synchronization=IN_SYNC
%   Collecting=True
%   Distributing=True
% Partner Admin State=(ACT:0 TIM:0 AGG:1 SYN:0 COL:0 DIS:0 DEF:1 EXP:0)
% Partner Oper  State=(ACT:1 TIM:0 AGG:1 SYN:1 COL:1 DIS:1 DEF:0 EXP:0)
```

display lacp internal event-history

Displays Link Aggregation Control Protocol (LACP) event logs.

Syntax

display lacp internal event-history {buffer-size all|errors| interface {ethernet *<chassis number/port number>***|port-aggregation** *<LAG number>***}|msgs}**

where:

Parameter	Function
`buffer-size all`	Displays the buffer size for all types of LACP events.
`errors`	Displays LACP error logs.
`interface ethernet` *chassis number/port number*	Displays LACP event logs for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface port-aggregation` *LAG number*	Displays LACP event logs for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`msgs`	Displays LACP message logs.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LACP message logs:

```
G8272> display lacp internal event-history msgs

Event: MESSAGES, length:77, at 884329 usecs after Fri Jan  8 04:58:39 2016
 [mgmt0] @ lacp_nsm_recv_interface_add(79):
 [MSG_RECV]: Add interface mgmt0

Event: MESSAGES, length:77, at 884558 usecs after Fri Jan  8 04:58:39 2016
 [Vlan1] @ lacp_nsm_recv_interface_add(79):
 [MSG_RECV]: Add interface Vlan1

Event: MESSAGES, length:89, at 884654 usecs after Fri Jan  8 04:58:39 2016
 [Ethernet1/1] @ lacp_nsm_recv_interface_add(79):
 [MSG_RECV]: Add interface Ethernet1/1

Event: MESSAGES, length:89, at 884768 usecs after Fri Jan  8 04:58:39 2016
 [Ethernet1/2] @ lacp_nsm_recv_interface_add(79):
 [MSG_RECV]: Add interface Ethernet1/2

Event: MESSAGES, length:89, at 884871 usecs after Fri Jan  8 04:58:39 2016
 [Ethernet1/3] @ lacp_nsm_recv_interface_add(79):
 [MSG_RECV]: Add interface Ethernet1/3

Event: MESSAGES, length:89, at 884972 usecs after Fri Jan  8 04:58:39 2016
 [Ethernet1/4] @ lacp_nsm_recv_interface_add(79):
 [MSG_RECV]: Add interface Ethernet1/4
...
```

The following command displays LACP buffer size:

```
G8272> display lacp internal event-history buffer-size all

Name      Current     Max
ERRORS    0           8388608
MESSAGES  17589       8388608
EVENT_SM  0           8388608
```

display lacp internal info

Displays Link Aggregation Control Protocol (LACP) internal information.

Syntax

display lacp internal info {aggregator|all|interface {ethernet *<chassis number/port number>***|port-aggregation** *<LAG number>* **[detail fsmlog|mem-dump]}}**

where:

Parameter	Function
`aggregator`	Displays information about the LACP aggregator.
`all`	Displays all LACP internal information.
`interface ethernet` *chassis number/port number*	Displays LACP internal information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface port-aggregation` *LAG number*	Displays LACP internal information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`detail fsmlog`	Displays detailed LACP state-machine information.
`mem-dump`	Displays LACP memory dump information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LACP internal aggregator information:

```
G8272> display lacp internal info aggregator
Static and None Aggregator:
    Aggregator po1OO, member num 2
        Member interface Ethernet1/49 ,locates at 0.
        Member interface Ethernet1/5O ,locates at 1.
    Aggregate po1OO's vLAG configuration
        vLAG global enable = True
        vLAG instance id = O
        vLAG instance enable = False
        vLAG tier id = O
        vLAG's LACP actor system mac = 0x0O:0O:0O:0O:0O:0O
        vLAG's LACP partner key = 0xO
        vLAG's LACP partner priority = 0xO
        vLAG's LACP partner system mac = 0x0O:0O:0O:0O:0O:0O
        vLAG's LACP actor priority = 0xO

    Aggregator po1OOO, member num 2
        Member interface Ethernet1/1 ,locates at O.
        Member interface Ethernet1/2 ,locates at 1.
    Aggregate po1OOO's vLAG configuration
        vLAG global enable = True
        vLAG instance id = 1
        vLAG instance enable = True
        vLAG tier id = 1
        vLAG's LACP actor system mac = 0xO8:17:f4:c3:dd:01
        vLAG's LACP partner key = 0xO
        vLAG's LACP partner priority = 0xO
        vLAG's LACP partner system mac = 0x0O:0O:0O:0O:0O:0O
        vLAG's LACP actor priority = 0xO

    Aggregator po2OOO, member num 4
        Member interface Ethernet1/9 ,locates at O.
        Member interface Ethernet1/10 ,locates at 1.
        Member interface Ethernet1/11 ,locates at 2.
        Member interface Ethernet1/12 ,locates at 3.
    Aggregate po2OOO's vLAG configuration
        vLAG global enable = True
        vLAG instance id = 64
        vLAG instance enable = True
        vLAG tier id = 1
        vLAG's LACP actor system mac = 0xO8:17:f4:c3:dd:01
        vLAG's LACP partner key = 0xO
        vLAG's LACP partner priority = 0xO
        vLAG's LACP partner system mac = 0x0O:0O:0O:0O:0O:0O
        vLAG's LACP actor priority = 0xO

LACP Aggregator:
```

display lacp neighbor

Displays Link Aggregation Control Protocol (LACP) neighbor information.

Syntax

display lacp neighbor [interface port-aggregation *<LAG number>***]**

where:

Parameter	Function
`interface port-aggregation` *LAG number*	Displays LACP information for neighbor on the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LACP neighbor information:

```
G8272> display lacp neighbor

Flags:  S - Device is sending Slow LACPDUs F - Device is sending Fast LACPDUs
        A - Device is in Active mode       P - Device is in Passive mode
po1000 neighbors
Partner's information
           Partner                Partner                    Partner
Port       System ID              Port Number     Age        Flags
Ethernet1/1 32768,74-99-75-d3-ce-00 0x1            453        SA

           LACP Partner           Partner                    Partner
           Port Priority          Oper Key                   Port State
           32768                  0x3e8                      0x3d

Partner's information
           Partner                Partner                    Partner
Port       System ID              Port Number     Age        Flags
Ethernet1/2 32768,74-99-75-d3-ce-00 0x2            453        SA

           LACP Partner           Partner                    Partner
           Port Priority          Oper Key                   Port State
           32768                  0x3e8                      0x3d
...
```

display lacp nsm internal info

Displays Link Aggregation Control Protocol (LACP) Network Service Module (NSM) information.

Syntax

display lacp nsm internal info {global|interface {ethernet *<chassis number/port number>* **|port-aggregation** *<LAG number>* **} {aggregation|**
nsm [mem-dump]}}

where:

Parameter	Function
`global`	Displays LACP NSM global information.
`interface ethernet` *chassis number/port number*	Displays LACP NSM information for the specified ethernet interface. The *chassis number* is 1.
`interface port-aggregation` *LAG number*	Displays LACP NSM information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`aggregation`	Displays LACP aggregation information.
`nsm`	Displays LACP NSM information.
`mem-dump`	Displays LACP NSM memory dump information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LACP NSM information:

```
G8272> display lacp nsm internal info global

System allows the maximum number is 72 for aggregator
Aggregator allows the largest member number is 32
System has 1 aggregator(s)
```

display lacp port-aggregation

Displays Link Aggregation Control Protocol (LACP) Link Aggregation Groups (LAGs) information.

Syntax

display lacp port-aggregation [interface port-aggregation <*LAG number*>**]**

where:

Parameter	Function
`interface port-aggregation` *LAG number*	Displays LACP information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LACP LAG information:

```
G8272> display lacp port-aggregation

po1000
  System Mac=a8-97-dc-dd-ed-00
  Local System Identifier=0x8000,a8-97-dc-dd-ed-00
  Admin key=0x3e8
  Operational key=0x3e8
  Partner System Identifier=0x8000,74-99-75-d3-ce-00
  Operational key=0x3e8
  Max delay=5
  Aggregate or individual=0(aggregate)
  Member Port List=1,2
po2000
  System Mac=a8-97-dc-dd-ed-00
  Local System Identifier=0x8000,a8-97-dc-dd-ed-00
  Admin key=0x7d0
  Operational key=0x7d0
  Partner System Identifier=0x8000,08-17-f4-c3-df-00
  Operational key=0x40
  Max delay=5
  Aggregate or individual=0(aggregate)
  Member Port List=9,10,11,12
```

display lacp system-identifier

Displays the switch Link Aggregation Control Protocol (LACP) system identifier.

Syntax

```
display lacp system-identifier
```

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the switch LACP system identifier:

```
G8272> display lacp system-identifier

% System 32768,a8-97-dc-de-25-00
```

display license

Displays information about Feature on Demand (FoD) license files.

Syntax

`display license {`<*FoD license*>**`|brief|host-id}`**

where:

Parameter	Function
FoD license	The name of the FoD license file.
`brief`	Displays a short FoD license summary.
`host-id`	Displays the host ID for the FoD license files.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the host ID for the FoD license files:

```
G8272> display license host-id

System serial number: YO52MV4CRO26
```

display lldp interface

Displays Link Layer Discovery Protocol (LLDP) interface configuration.

Syntax

`display lldp interface {all|ethernet` *<chassis number/port number>* **`|mgmt`** *<management interface>* **`}`**

where:

Parameter	Function
`all`	Displays LLDP configuration for all interfaces.
`ethernet` *chassis number/port number*	Displays LLDP configuration for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`mgmt` *management interface*	Displays LLDP configuration for the specified management interface. The *management interface* is 0.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LLDP configuration for management interface 0:

```
G8272> display lldp interface mgmt 0

Interface Name: mgmtO
--------------
Interface Information
 Enable (tx/rx/trap): Y/Y/N   Port Mac address: a8:97:dc:de:25:OO
```

display lldp internal event-history

Displays Link Layer Discovery Protocol (LLDP) event logs.

Syntax

display lldp internal event-history {buffer-size all|{errors|event|msgs|trace} interface ethernet *<chassis number/port number>***}**

where:

Parameter	Function
`buffer-size all`	Displays the LLDP buffer size for all types of events.
`errors`	Displays the LLDP error logs.
`event`	Displays the LLDP event logs.
`msgs`	Displays the LLDP message logs.
`trace`	Displays the LLDP trace logs.
`interface ethernet` *chassis number/port number*	Displays LLDP logs for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LLDP buffer size:

```
G8272> display lldp internal event-history buffer-size all

Name      Current     Max
errors    279         16384
msgs      16374       16384
trace     130943      131072
event     16367       16384
```

The following command displays LLDP error logs for ethernet interface 1/12:

```
G8272> display lldp internal event-history errors interface ethernet 1/12

Event: errors, length:66, at 234001 usecs after Fri Jan  8 04:58:40 2016
 [GLOBAL] @{lldp_mgmt_recv:711}
 receive failed (-1) on 0x3(mgmt0)

Event: errors, length:66, at 93092 usecs after Fri Jan  8 09:39:43 2016
 [GLOBAL] @{lldp_mgmt_recv:711}
 receive failed (-1) on 0x3(mgmt0)
```

display lldp internal info

Displays Link Layer Discovery Protocol (LLDP) internal information.

Syntax

`display lldp internal info {global|interface {all|ethernet` *<chassis number/port number>* **`|mgmt`** *<management interface>* **`}|neighbors}`**

where:

Parameter	Function
`global`	Displays global LLDP internal information.
`interface all`	Displays LLDP internal information for all interfaces.
`interface ethernet` *chassis number/port number*	Displays LLDP internal information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface mgmt` *management interface*	Displays LLDP internal information for the specified management interface. The *management interface* is 0.
`neighbors`	Displays LLDP internal neighbor information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays global LLDP internal information:

```
G8272> display lldp internal info global

sockfd                              :10
lldp_rcv_thread                     :0x10347ff0
lldp_if_list                        :0x1033b4f0
lldp_mgmt_if_list                   :0x1033b6d8
if_cnt                              :0
syscap                              :0x7
sys_cap_enabled                     :0x14
lldp_stats_rem_drops                :0
lldp_stats_rem_inserts              :1
lldp_stats_rem_deletes              :0
sys_name                            :LENOVO G8272
sys_descr                           :LENOVO RackSwitch G8272, LENOVO
Networking
 OS version 10.1.1.0
lldp_stats_rem_last_change_time     :69
lldp_dest_addr                      :0180-c200-000e
lldp_ntfy_interval                  :5
mgmt_addr                           :0.0.0.0
conf_flag                           :0
```

display lldp neighbors

Displays Link Layer Discovery Protocol (LLDP) neighbor information.

Syntax

display lldp neighbors [interface {ethernet *<chassis number/port number>***|mgmt** *<management interface>***}] [detail]**

where:

Parameter	Function
`interface ethernet` *chassis number/port number*	Displays LLDP information for neighbors on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface mgmt` *management interface*	Displays LLDP information for neighbors on the specified management interface. The *management interface* is 0.
`detail`	Displays detailed LLDP neighbor information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LLDP neighbor information:

```
G8272> display lldp neighbors
```

display lldp timers

Displays Link Layer Discovery Protocol (LLDP) timer information.

Syntax

```
display lldp timers
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LLDP timers:

```
G8272> display lldp timers

LLDP Timers:

Holdtime in seconds: 120
Reinit-time in seconds: 2
Transmit interval in seconds: 30
Transmit delay in seconds: 2
Trap interval in seconds: 5
```

display lldp tlv-select

Displays the selected Link Layer Discovery Protocol (LLDP) type-length-value (TLV) structures.

Syntax

display lldp tlv-select [interface {ethernet *<chassis number/port number>***|mgmt** *<management interface>***}]**

where:

Parameter	Function
`interface ethernet` *chassis number/port number*	Displays the selected LLDP TLVs on the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface mgmt` *management interface*	Displays the selected LLDP TLVs on the specified management interface. The *management interface* is 0.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the selected LLDP TLVs on management interface 0:

```
G8272> display lldp tlv-select interface mgmt 0

Interface information: mgmt0
  management-address
  port-description
  port-vlan
  system-capabilities
  system-description
  system-name
```

display lldp traffic

Displays Link Layer Discovery Protocol (LLDP) traffic statistics, including the number of transmitted or discarded messages.

Syntax

`display lldp traffic [interface {ethernet` *<chassis number/port number>* **`|mgmt`** *<management interface>* **`}]`**

where:

Parameter	Function
`interface ethernet` *chassis number/port number*	Displays LLDP traffic statistics for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface mgmt` *management interface*	Displays LLDP traffic statistics for the specified management interface. The *management interface* is 0.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LLDP traffic statistics:

```
G8272> display lldp traffic

LLDP traffic statistics:

Total frames transmitted: 80816
Total entries aged: 0
Total frames received: 80797
Total frames received in error: 0
Total frames discarded: 0
Total unrecognized TLVs: 0
```

display logging console

Displays the console logging configuration, including the administrative status (enabled/disabled), the severity level and console flood control operational status. The flood control can be enabled, or disabled, by the user by typing CTRL-C consecutively three within a 3 seconds time window. When flood control is enabled, logging to the console is suspended.

Syntax

```
display logging console
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the console logging configuration:

```
G8272> display logging console

Logging console:                enabled (Severity: informational)
Console flood control:          disabled
```

display logging info

Displays logging configuration, including console, monitor, server, log file, time stamp and severity levels configured for each facility.

Syntax

```
display logging info
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays logging information:

```
G8272> display logging info
Logging console:                enabled (Severity: informational)
Console flood control:          disabled
Logging monitor:                enabled (Severity: notifications)
Logging timestamp:              seconds
Logging logfile:                enabled
        Name - messages: Severity - informational Size - 10485760
Logging server:                 disabled

Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
aaa                     5                       5
bgp                     5                       5
ecp                     6                       6
hostmib                 6                       6
hostp                   5                       5
hsl                     3                       3
imi                     6                       6
imish                   6                       6
khsl                    6                       6
l2mrib                  5                       3
lacp                    5                       5
lldp                    5                       5
mstp                    5                       5
ndd                     6                       6
nlog                    6                       6
nsm                     5                       5
nsxgw                   6                       6
...
```

display logging last

Displays the most recent lines in the logging file.

Syntax

`display logging last` *<number of lines>* **`[tail]`**

where:

Parameter	Function
number of lines	The number of lines to be displayed. The *number of lines* is from 1 to 9999.
`tail`	The display will be updated as new lines are added to the logging file. Press **<CTRL + C>** to quit the display.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the most recent 10 lines in the logging file:

```
G8272> display logging last 10

2015-12-27T18:57:00+00:00 G8272 %IMISH-5-USER_LOGIN: User admin logged in
2015-12-27T18:59:09+00:00 G8272 %IMI-5-USER_LOGOUT: User admin logged out
2015-12-27T18:59:13+00:00 G8272 %IMISH-6-SYSLOG_INIT: Syslog service initialized
2015-12-27T18:59:13+00:00 G8272 %IMISH-5-USER_LOGIN: User admin logged in
2015-12-27T19:13:56+00:00 G8272 %IMI-5-USER_LOGOUT: User admin logged out
2015-12-27T19:14:01+00:00 G8272 %IMISH-6-SYSLOG_INIT: Syslog service initialized
2015-12-27T19:14:01+00:00 G8272 %IMISH-5-USER_LOGIN: User admin logged in
2015-12-27T21:02:24+00:00 G8272 %IMI-5-USER_LOGOUT: User admin logged out
2015-12-27T21:54:19+00:00 G8272 %IMISH-6-SYSLOG_INIT: Syslog service initialized
2015-12-27T21:54:19+00:00 G8272 %IMISH-5-USER_LOGIN: User admin logged in
```

display logging level

Displays the logging level for each facility in the system. Each facility corresponds to an application, process, protocol, or module.

Syntax

`display logging level [`<*facility*>**`]`**

where:

Parameter	Function
facility	Displays the severity level configured for the specified facility. A facility is a keyword used to identify the application, process, protocol, or module that logs a message. The list of supported facilities is shown below.

To display the severity level for a certain *facility* use one of the following:

- `aaa` - Authentication, Authorization and Accounting (AAA)
- `bfd` - Bidirectional Forwarding Detection (BFD)
- `bgp` - Border Gateway Protocol (BGP)
- `ecp` - Edge Control Protocol (ECP)
- `hostmib` - Host Management Information Base (MIB)
- `hostp` - Host Protocols
- `hsl` - Hardware Services Layer (HSL)
- `imi` - Integrated Management Interface (IMI)
- `imish` - Integrated Management Interface Shell (IMISH)
- `khsl` - Kernel Hardware Services Layer (KHSL) module
- `l2mrib` - Layer 2 Multicast Routing Information Base (MRIB)
- `lacp` - Link Aggregation Control Protocol (LACP)
- `lldp` - Link Layer Discovery Protocol (LLDP)
- `mstp` - Multiple Spanning Tree Protocol (MSTP)
- `ndd` - Neighbor Discovery Daemon (NDD)
- `nlog` - Logging Control Daemon (NLOG)
- `nsm` - Network Service Module (NSM)
- `nsxgw` - NSX Gateway
- `ntp` - Network Time Protocol (NTP)
- `onm` - Network Management
- `ospf` - Open Shortest Path First (OSPF)
- `ovsdb` - Open vSwitch Database Management Protocol (OVSDB)

- `platform-mgr` - Platform Manager
- `pubsub` - Publisher/Subscriber Inter Process Communication Module
- `pyrun` - Python Runtime Environment
- `pysched` - Python Scheduler
- `rest` - REpresentational State Transfer (REST)
- `rib` - Routing Information Base (RIB)
- `service-mgr` - Service Manager
- `smiacl2mrib` - Simple Management Interface (SMI) API Client (AC) Layer 2 Multicast Routing Information Base (MRIB)
- `smi-ac-lacp` - SMI AC Link Aggregation Control Protocol (LACP)
- `smi-ac-mstp` - SMI AC Multiple Spanning Tree Protocol (MSTP)
- `smi-ac-ndd` - SMI AC Neighbor Discovery Daemon (NDD)
- `smi-ac-nsm` - SMI AC Network Service Module (NSM)
- `smi-ac-onm` - SMI AC Open Network Management (ONM)
- `smi-ac-rib` - SMI AC Routing Information Base (RIB)
- `smi-ac-vrrp` - SMI AC Virtual Router Redundancy Protocol (VRRP)
- `snmp` - Simple Network Management Protocol (SNMP)
- `ssh` - Secure Shell (SSH)
- `syslog` - System Log Host Protocol
- `sysmgmt` - System Management Host Protocol
- `sysmgr` - System Manager
- `tacacs` - Terminal Access Controller Access-Control System Plus (TACACS+)
- `telnet` - Telnet Control Host Protocol
- `um` - User Management
- `vlag` - Virtual Link Aggregation Group (VLAG)
- `vlan` - Virtual Local Area Network (VLAN)
- `vlog` - Virtual Terminal Logging Control Daemon
- `vrrp` - Virtual Router Redundancy Protocol (VRRP)
- `ztp` - Zero Touch Provisioning

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays severity levels configured for each feature:

```
G8272> display logging level

Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
aaa                     5                       5
bgp                     5                       5
ecp                     6                       6
hostmib                 6                       6
hostp                   5                       5
hsl                     3                       3
imi                     6                       6
imish                   6                       6
khsl                    6                       6
l2mrib                  5                       3
lacp                    5                       5
lldp                    5                       5
...
um                      5                       5
vlan                    5                       5
vlog                    6                       6
vrrp                    6                       6
vlag                    6                       6
ztp                     6                       6

0(emergencies)          1(alerts)       2(critical)
3(errors)               4(warnings)     5(notifications)
6(information)          7(debugging)
```

display logging library

Displays the severity level configured for system library facilities.

Syntax

`display logging library [`<*system-library*>**`] [facility`** <*app-process*>**`]`**

where:

Parameter	Function
<*system-library*>	Displays the severity level configured for the specified library. The list of supported libraries is shown below.
`facility` <*app-process*>	Displays the severity level configured for the specified application process facility and selected system library facility. The list of supported facilities is shown below.

To display the severity level for a certain *library* use one of the following:

- `hsl-nos-ipcclib` - HSL Inter-Process-Communication Client library
- `hsl-nos-ipcslib` - HSL Inter-Process-Communication Server library
- `llilib` - Low level drivers interface library
- `log` - Log logging library
- `mcast` - Multicast logging library
- `secureimg` - Secure image logging library
- `sysinfolib` - System information library

To display the severity level for a certain *facility* use one of the following:

- `bfd` - Bidirectional Forwarding Detection (BFD)
- `bgp` - Border Gateway Protocol (BGP)
- `ecp` - Edge Control Protocol (ECP)
- `hostmib` - Host Management Information Base (MIB)
- `hostp` - Host Protocols
- `hsl` - Hardware Services Layer (HSL)
- `imi` - Integrated Management Interface (IMI)
- `imish` - Integrated Management Interface Shell (IMISH)
- `l2mrib` - Layer 2 Multicast Routing Information Base (MRIB)
- `lacp` - Link Aggregation Control Protocol (LACP)
- `mstp` - Multiple Spanning Tree Protocol (MSTP)
- `ndd` - Neighbor Discovery Daemon (NDD)
- `nlog` - Logging Control Daemon (NLOG)

- `nsm` - Network Service Module (NSM)
- `nsxgw` - NSX Gateway
- `onm` - Network Management
- `ospf` - Open Shortest Path First (OSPF)
- `ovsdb` - Open vSwitch Database Management Protocol (OVSDB)
- `platform-mgr` - Platform Manager
- `pubsub` - Publisher/Subscriber Inter Process Communication Module
- `pyrun` - Python Runtime Environment
- `pysched` - Python Scheduler
- `rib` - Routing Information Base (RIB)
- `service-mgr` - Service Manager
- `sysmgr` - System Manager
- `vlag` - Virtual Link Aggregation Group (VLAG)
- `vlog` - Virtual Terminal Logging Control Daemon
- `vrrp` - Virtual Router Redundancy Protocol (VRRP)
- `ztp` - Zero Touch Provisioning

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the severity level configured for libraries:

```
G8272> display logging library

Library     Client-Facility   Default Severity   Current Session Severity
-------     ---------------   ----------------   ------------------------
log              bgp                  6                       6
log              ecp                  6                       6
log              hostmib              6                       6
log              hostp                6                       6
log              hsl                  6                       6
log              imi                  6                       6
log              imish                6                       6
log              l2mrib               6                       6
log              lacp                 6                       6
log              mstp                 6                       6
log              ndd                  6                       6
log              nlog                 6                       6
log              nsm                  6                       6
log              nsxgw                6                       6
log              bfd                  6                       6
log              onm                  6                       6
log              ospf                 6                       6
log              ovsdb                6                       6
log              platform-mgr         6                       6
log              pubsub               6                       6
...
```

display logging logfile

Displays the messages stored in the log file.

Syntax

display logging logfile [last-index|start-seqn *<sequence number>* **[end-seqn** *<sequence number>***]|start-time** *<year> <month> <day> <hour>:<minute>:<seconds>* **[end-time** *<year> <month> <day> <hour>:<minute>:<seconds>***]]**

where:

Parameter	Function
`last-index`	Displays the sequence number of the most recent message stored in the log file.
`start-seqn`	Displays messages from log file from a given start-sequence-number.
sequence number	The sequence number associated to each syslog message stored in the log file. The *sequence number* is from 0 to 2,147,483,647.
`end-seqn`	Displays messages from log file up to a given end-sequence-number.
`start-time`	Displays messages from log file from a given start-time.
`end-time`	Displays messages from log file up to a given end-time.
year	Time-stamp year using 4-digit representation e.g. 2016.
month	The month of the start or end time-stamp in the range Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec.
day	Time-stamp day number in the range from 1 to 31.
hour	Time-stamp hour in the range from 00 to 23.
minute	Time-stamp minute in the range from 0 to 59.
seconds	Time-stamp second in the range from 0 to 59.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the messages stored in the log file:

```
G8272> display logging logfile

Logging logfile:                enabled
        Name - messages:Severity - informational Size - 10485760

2015-08-01T18:39:59+00:00 G8272 %PLATFORM_MGR-3-LLI_PROCESS_EVENT: Event
process
ed (event=5, unit=0, state=0->0)
2015-08-01T18:40:04+00:00 G8272 %PLATFORM_MGR-3-LLI_PROCESS_EVENT: Event
process
ed (event=5, unit=0, state=0->0)
2015-08-01T18:40:09+00:00 G8272 %PLATFORM_MGR-3-LLI_PROCESS_EVENT: Event
process
ed (event=5, unit=0, state=0->0)
2015-08-01T18:40:14+00:00 G8272 %PLATFORM_MGR-3-LLI_PROCESS_EVENT: Event
process
ed (event=5, unit=0, state=0->0)
2015-08-01T18:40:19+00:00 G8272 %PLATFORM_MGR-3-LLI_PROCESS_EVENT: Event
process
ed (event=5, unit=0, state=0->0)
2015-08-01T18:40:24+00:00 G8272 %PLATFORM_MGR-3-LLI_PROCESS_EVENT: Event
process
ed (event=5, unit=0, state=0->0)
2015-08-01T18:40:29+00:00 G8272 %PLATFORM_MGR-3-LLI_PROCESS_EVENT: Event
process
ed (event=5, unit=0, state=0->0)
...
```

The following command displays the sequence number of the most recent log message stored in the log file:

```
G8272> display logging logfile last-index

logfile last-index : 82678
```

The following command displays log messages whose sequence numbers are within the range 100 and 105:

```
G8272>display logging logfile start-seqn 100 end-seqn 105

Last Log cleared/wrapped time is : None
100 2016-01-29T22:02:23+00:00 MarsSQA %VRRP-5-STARTED: VRRP service
started
101 2016-01-29T22:02:27+00:00 MarsSQA %UM-5-ROOT_DISABLE: Root login
disabled
102 2016-01-29T22:02:28+00:00 MarsSQA %VLOG-6-STARTUP_CONFIG: Startup
configuration processed
103 2016-01-29T22:02:28+00:00 MarsSQA %LLILIB-5-DEVICE_ENABLE:
[PLATFORM_MGR] PasDAC 1.0m inserted at port Ethernet1/8 is Approved.
104 2016-01-29T22:02:32+00:00 MarsSQA %NSM-5-IFM_LINK_UP: Link up on
interface Ethernet1/8
```

The following command displays log messages whose time-stamps are within the range 2016 Jan 29 22:02:28 and 2016 Jan 31 10:25:30:

```
G8272>display logging logfile start-time 2016 Jan 29 22:02:28 end-time
2016 Jan 31 10:25:30

2016-01-29T22:02:28+00:00 MarsSQA %LLILIB-5-DEVICE_ENABLE: [PLATFORM_MGR]
PasDAC 1.0m inserted at port Ethernet1/7 is Approved.
2016-01-29T22:02:28+00:00 MarsSQA %VLOG-6-STARTUP_CONFIG: Startup
configuration processed
2016-01-29T22:02:32+00:00 MarsSQA %NSM-5-IFM_LINK_UP: Link up on
interface Ethernet1/7
2016-01-29T22:02:35+00:00 MarsSQA %NSM-5-IFM_LINK_UP: Link up on
interface mgmt0
2016-01-29T22:03:42+00:00 MarsSQA %IMISH-5-USER_LOGIN: User admin logged
in
```

display logging mnemonics

Displays a list of all mnemonic strings related to a given facility or all facilities.

Syntax

`display logging mnemonics [`<*facility*>**`]`**

where:

Parameter	Function
facility	Displays the list of all mnemonic strings related to the specified facility. A facility is a keyword used to identify the application, process, protocol, system library or module that logs a message. The list of supported facilities is shown below.

To display the severity level for a certain *facility* use one of the following:

- `bfd` - Bidirectional Forwarding Detection (BFD)
- `bgp` - Border Gateway Protocol (BGP)
- `ecp` - Edge Control Protocol (ECP)
- `hostmib` - Host Management Information Base (MIB)
- `hostp` - Host Protocols
- `hsl` - Hardware Services Layer (HSL)
- `hsl-nos-ipcclib` - HSL Inter-Process-Communication Client library.
- `hsl-nos-ipcslib` - HSL Inter-Process-Communication Server library.
- `imi` - Integrated Management Interface (IMI)
- `imish` - Integrated Management Interface Shell (IMISH)
- `khsl` - Kernel Hardware Services Layer (KHSL) module
- `l2mrib` - Layer 2 Multicast Routing Information Base (MRIB)
- `lacp` - Link Aggregation Control Protocol (LACP)
- `lldp` - Link Layer Discovery Protocol (LLDP)
- `log` -Logging Management Interface Library
- `mcast` - Multicast Services Library
- `mstp` - Multiple Spanning Tree Protocol (MSTP)
- `ndd` - Neighbor Discovery Daemon (NDD)
- `nlog` - Logging Control Daemon (NLOG)
- `nsm` - Network Service Module (NSM)
- `nsxgw` - NSX Gateway
- `ntp` - Network Time Protocol (NTP)

- `onm` - Network Management
- `ospf` - Open Shortest Path First (OSPF)
- `ovsdb` - Open vSwitch Database Management Protocol (OVSDB)
- `platform-mgr` - Platform Manager
- `pubsub` - Publisher/Subscriber Inter Process Communication Module
- `pyrun` - Python Runtime Environment
- `pysched` - Python Scheduler
- `rib` - Routing Information Base (RIB)
- `secureimg` - Secure Image Validation Library
- `sysinfolib` - System Information Client Library
- `service-mgr` - Service Manager
- `sysmgmt` - System Management Host Protocol
- `sysmgr` - System Manager
- `um` - User Management
- `vlag` - Virtual Link Aggregation Group (VLAG)
- `vlan` - Virtual Local Area Network (VLAN)
- `vlog` - Virtual Terminal Logging Control Daemon
- `vrrp` - Virtual Router Redundancy Protocol (VRRP)
- `ztp` - Zero Touch Provisioning

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays mnemonic strings related to the BGP facility:

```
G8272> display logging mnemonics bgp

[BGP Application Messages]
--------------------------------------------------------------------------------
BGP-3-ADV_INVALID_ROUTE: [chars]- Prefix: [chars] has null/bad info, ignoring ro
ute
BGP-3-BAD_HOLD_TIME: [chars]- Open: Bad Hold-time ([dec])
BGP-3-BAD_REMOTE_AS: neighbor [chars] - bad remote-as, expecting [dec] received
[dec]
BGP-3-BAD_VERSION: [chars]- Open: Bad protocol version [dec]
BGP-3-CONNECT_ERROR: Connect error
BGP-3-OPT_AUTH_NOT_SUP: [chars]- Open Opt: Auth not supported
BGP-3-OPT_STRICT_CAP_MISMATCH: [chars]- Open Opt: Strict, Cap mis-match
BGP-3-SMGR_CLIENT_INIT_ERROR: Service manager client initialization failed
BGP-3-SOCKET_ERROR: Socket error
BGP-3-STRICT_CAP_MISMATCH: [chars]- Open Opt: Strict, Cap mis-match
BGP-3-UNACCEPTABLE_HOLD_TIME: [chars]- Open: Unacceptable Hold-time ([dec])
BGP-3-VRF_ADD_NO_REPLY_SAVE_VRF: VRF Add unable to replay save cli for vrf
BGP-3-VRF_SAVE_CMD: Cannot save vrf command to imi
BGP-3-WRITE_ERROR: Write error
BGP-6-ADJ_CHANGE: Neighbor [chars] [chars] [chars]
BGP-6-BFD_SESSION_DWN_RCVD: Session down received FLAG = [dec]
BGP-6-BFD_SESSION_UP_RCVD: Session up set FLAG = [dec]
BGP-6-STARTING_BGPD: BGPd [chars] starting: vty@[dec], bgp@[dec]
BGP-6-SYSLOG_INIT: Syslog service initialized
BGP-5-MAX_PEER_INGRP_EXCEED: Peer-group [chars] has maximum peers [dec],ignoring
 peer [chars]
BGP-5-STATE_CHANGE: [chars]- [FSM] State Change: [chars]([dec])
BGP-5-UNCONFIGURED_PEER: No matching peer or peer-group configured,ignoring peer
 [chars]
BGP-4-MAXPFXEXCEED: No. of prefix received from [chars] (afi-safi [dec]-[dec]):
[dec] exceed maximum prefix limit [dec]
BGP-4-MAXPFX: No. of prefix received from [chars] (afi-safi [dec]-[dec]): reache
s [dec], max [dec]
BGP-4-SAME_ROUTER_ID: neighbor [chars] uses same routerid [chars] as us
BGP-4-UPD_AGGR_NO_ASVAL: [chars]- Attr Aggregator: AS value error([dec]), Ignori
ng error...
BGP-4-UPD_SAME_ORIGID: [chars]- Attr OrigID: OrigID([chars]) same as Self, Ignor
ing UPDATE...
```

display logging monitor

Displays the monitor (Telnet and Secure Shell (SSH) sessions) logging configuration including the administrative status (enabled/disabled) and the severity level.

Syntax

```
display logging monitor
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the monitor logging configuration:

```
G8272> display logging monitor

Logging monitor:                enabled (Severity: notifications)
```

display logging rate-limit

Displays the rate limit configuration (maximum number of messages that can be logged per time interval in seconds) for three supported contexts:

- for the entire system;
- for each severity level;
- for each facility;

Syntax

display logging rate-limit

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the limit of logged messages:

```
G8272> display logging rate-limit

Dimension               Default Burst/Interval   Current Burst/Interval
----------------------  -----------------------  ----------------------
system                   512/5                    512/5
emerg             S(0)  1024/10                  1024/10
alert             S(1)  1024/10                  1024/10
crit              S(2)  1024/10                  1024/10
err               S(3)  1024/10                  1024/10
warning           S(4)  1024/10                  1024/10
notice            S(5)  1024/10                  1024/10
info              S(6)  1024/10                  1024/10
debug             S(7)  1024/10                  1024/10
AAA              F( 9)   512/10                   512/10
AUTH             F(10)   512/10                   512/10
BGP              F(11)   512/10                   512/10
DNS              F(12)   512/10                   512/10
DVMRP            F(13)   512/10                   512/10
ECP              F(14)   512/10                   512/10
HOSTMIB          F(15)   512/10                   512/10
HOSTP            F(16)   512/10                   512/10
HSL              F(17)   512/10                   512/10
IMI              F(18)   512/10                   512/10
IMISH            F(19)   512/10                   512/10
...
```

display logging server

Displays the remote syslog server configuration including the server or address (IPv4 or IPv6), the severity level and the outgoing facility.

Syntax

```
display logging server
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the remove syslog server configuration:

```
G8272> display logging server

IPv4 Servers:
         *2.2.2.1
severity: (debugging)
facility: local7
* - Values assigned by DHCP Client.
```

display logging timestamp

Displays the logging time-stamp unit configured.

Syntax

```
display logging timestamp
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the logging time-stamp units configured:

```
G8272> display logging timestamp

Logging timestamp:              seconds
```

display mac access-lists

Displays Media Access Control (MAC) Access Control Lists (ACLs).

Syntax

display mac access-lists [<*access list name*>**] [expanded|summary]**

where:

Parameter	Function
access list name	The name of the MAC access list.
`expanded`	Displays the contents of each ACE (Access Control Entry).
`summary`	Displays a summary of each ACL, including the total number of configured ACEs and the interfaces on which the ACL is configured or active.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all MAC ACLs:

```
G8272> display mac access-lists
```

display mac address-table

Displays Media Access Control (MAC) addresses.

Syntax

`display mac address-table [dynamic|static] [address` *<MAC address>*`]` **`[interface {ethernet`** *<chassis number/port number>*`|port-aggregation`** *<LAG number>*`}]` **`[vlan`** *<VLAN number>*`]`

where:

Parameter	Function
`dynamic`	Displays dynamic MAC addresses.
`static`	Displays static MAC addresses.
`address` *MAC address*	Displays information for the specified MAC address. The *MAC address* can be written in any of the following formats: o X.X.X o XX-XX-XX-XX-XX-XX o XX:XX:XX:XX:XX:XX o XXXX.XXXX.XXXX
`interface ethernet` *chassis number/port number*	Displays MAC addresses for the specified ethernet interface. The *chassis number* is 1.
`interface port-aggregation` *LAG number*	Displays MAC addresses for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays MAC addresses for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 3999.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the MAC address table:

```
G8272> display mac address-table

VLAN     MAC Address     Type      Ports
  -----+---------------+---------+----------------------+
  1      0000.0001.0203   dynamic   po1000
  1      0000.0001.0204   dynamic   po1000
  1      0000.0001.0205   dynamic   po1000
  1      0000.0001.0206   dynamic   po1000
  1      0000.0001.0207   dynamic   po1000
  1      a897.dcf7.d501   static    po100
  1      0100.7fa3.b200   static    po100
```

display mac address-table aging-time

Displays the global aging time for dynamic Media Access Control (MAC) addresses. Aging time is the number of seconds until a dynamic MAC address is removed from the Forwarding Database (FDB). The aging time starts when the MAC address is learned.

Syntax

```
display mac address-table aging-time
```

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the aging time for dynamic MAC addresses:

```
G8272> display mac aging-time

Mac address Aging Time: 1800
```

display mac address-table count

Displays the number of Forwarding Database (FDB) entries.

Syntax

`display mac address-table count [dynamic|static] [address` *<MAC address>*`]` **`[interface {ethernet`** *<chassis number/port number>*`|` **`port-aggregation`** *<LAG number>*`}]` **`[vlan`** *<VLAN number>*`]`

where:

Parameter	Function
`dynamic`	Displays the number of FDB dynamic entries.
`static`	Displays the number of FDB static entries.
`address` *MAC address*	Displays the number of FDB entries for the specified address. The *MAC address* can be written in any of the following formats: o X.X.X o XX-XX-XX-XX-XX-XX o XX:XX:XX:XX:XX:XX o XXXX.XXXX.XXXX
`interface ethernet` *chassis number/port number*	Displays the number of FDB entries for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface port-aggregation` *LAG number*	Displays the number of FDB entries for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays the number of FDB entries for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the number of FDB entries:

```
G8272> display mac address-table count

MAC Entries for all vlans:
Dynamic Address Count: 5
Static Address Count: 1
Multicast MAC Address Count: 1
Total MAC Addresses in Use: 7
```

display mac address-table learning

Displays the status of Media Access Control (MAC) address learning for each ethernet interface.

Syntax

display mac address-table learning [interface ethernet *<chassis number/port number>***]**

where:

Parameter	Function
`interface ethernet` *chassis number/port number*	Displays the status of MAC address learning for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the status of MAC address learning:

```
G8272> display mac address-table learning

MAC Learning is globally enabled
--------------------------------
Ethernet/Aggregation        Learning
Interface               Status
--------------------------------
Ethernet1/1             Enabled
Ethernet1/2             Enabled
Ethernet1/3             Enabled
Ethernet1/4             Enabled
Ethernet1/5             Enabled
Ethernet1/6             Enabled
Ethernet1/7             Enabled
Ethernet1/8             Enabled
Ethernet1/9             Enabled
Ethernet1/10            Enabled
Ethernet1/11            Enabled
Ethernet1/12            Enabled
...
```

display mac address-table multicast

Displays multicast Media Access Control (MAC) addresses.

Syntax

`display mac address-table multicast [count] [vlan` *<VLAN number>*`] [user]`**

where:

Parameter	Function
`count`	Displays the number of multicast MAC addresses.
`vlan` *VLAN number*	Displays the number of multicast MAC addresses for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 3999.
`user`	Displays only the user configured multicast MAC addresses.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays multicast MAC addresses:

```
G8272> display mac address-table multicast

VLAN     MAC Address     Type      Ports
  -----+---------------+---------+----------------------+
  1      0100.7fa3.b200   static    po100
```

display monitor

Displays Ethernet Switch Port Analyzer (SPAN) information.

Syntax

display monitor [session {<*session number*>**|all|range** <*session range*>**} [brief]]**

where:

Parameter	Function
`session`	Displays information for the specified SPAN session.
session number	The number of the SPAN session. The *session number* is from 1 to 18.
`all`	Displays information for all SPAN sessions.
`range` *session range*	Displays information for a range of SPAN sessions. The *session range* is from 1 to 18.
`brief`	Displays a short SPAN session summary.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays ethernet SPAN information:

```
G8272> display monitor
Session  State        Reason                              Description
-------  -----  ------------------------------ -------------------------
1        down   No route exists for cfg dst ip
```

```
G8272> display monitor
Session  State        Reason                              Description
-------  -----  ------------------------------ -------------------------
1        down   Waiting for ARP response
```

```
G8272> display monitor
Session  State        Reason                              Description
-------  -----  ------------------------------ -------------------------
1        up     The session is up
```

display nsm client

Displays Network Service Module (NSM) client information.

Syntax

display nsm client

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays NSM client information:

```
G8272# display nsm client

NSM client ID: 4
 OSPF, socket 22
  Service: Interface Service, Router ID Service, VRF Service
  Messsage received 5, sent 191
  Connection time: Fri Jan  8 04:58:32 2016
  Last message read: Qos Copp parameter change
  Last message write: Address Add
NSM client ID: 7
 HOSTP, socket 30
  Service: Interface Service, Route Service, Router ID Service, VRF
           Service, VLAN service
  Messsage received 3, sent 360
  Connection time: Fri Jan  8 04:58:37 2016
  Last message read: Qos Copp parameter change
  Last message write: Address Add
NSM client ID: 14
 LACP, socket 26
  Service: Interface Service
  Messsage received 1, sent 158
  Connection time: Fri Jan  8 04:58:33 2016
  Last message read: Service Request
  Last message write: VR Sync MSG after config restore
...
```

display ntp authentication-keys

Displays Network Time Protocol (NTP) authentication keys.

Syntax

```
display ntp authentication-keys
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays NTP authentication keys:

```
G8272> display ntp authentication-keys

---------------------------------
Auth key         MD5 String
---------------------------------
1                IBMkalsdifjaldskf
```

display ntp authentication-status

Displays the status of Network Time Protocol (NTP) authentication.

Syntax

```
display ntp authentication-status
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays NTP authentication status:

```
G8272> display ntp authentication-status

Authentication enabled.
```

display ntp peer-status

Displays the status of Network Time Protocol (NTP) association.

Syntax

```
display ntp peer-status
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays NTP association status:

```
G8272> display ntp peer-status

Total peers : 1
* - selected for sync, + - peer mode(active),
- - peer mode(passive), = - polled in client mode
remote                  local               st   poll   reach   delay
-------------------------------------------------------------------------
=9.110.36.180           9.111.86.200        16   64     0       0.00000
```

display ntp peers

Displays configured Network Time Protocol (NTP) servers and peers.

Syntax

```
display ntp peers
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays NTP servers and peers:

```
G8272> display ntp peers

------------------------------------------------
Peer IP Address                  Serv/Peer
------------------------------------------------
9.110.36.180                     Server (configured)
```

display ntp statistics

Displays Network Time Protocol (NTP) statistics.

Syntax

display ntp statistics {io|local|memory|peer ipaddr *<peer address>***}**

where:

Parameter	Function
`io`	Displays input-output module statistics.
`local`	Displays local system statistics.
`memory`	Displays memory allocation statistics.
`peer ipaddr` *peer address*	Displays statistics associated with the specified peer. The *peer address* can be either an IPv4 or an IPv6 address.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays NTP local system statistics:

```
G8272> display ntp statistics local

system uptime:          85589
time since reset:       85589
old version packets:    0
new version packets:    0
unknown version number: 0
bad packet format:      0
packets processed:      0
bad authentication:     0
```

display ntp trusted-keys

Displays Network Time Protocol (NTP) trusted keys.

Syntax

```
display ntp trusted-keys
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays NTP trusted keys:

```
G8272> display ntp trusted-keys

Trusted Keys:
1
```

display pending

Displays the Multiple Spanning Tree (MST) configuration waiting to be applied.

Syntax

```
display pending
```

Modes

MST Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the pending MST configuration:

```
G8272(config-mst)# display pending
```

display policy-map

Displays policy map information.

Syntax

display policy-map [<*policy map name*>**]**

where:

Parameter	Function
policy map name	Displays information only for the specified policy map.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays policy map information:

```
G8272> display policy-map

Type control-plane policy-maps
==============================

policy-map type control-plane copp-system-policy
 class type control-plane copp-s-default
  police pps 100
 class type control-plane copp-s-ntp
  police pps 200
 class type control-plane copp-s-arprequest
  police pps 500
 class type control-plane copp-s-nd
  police pps 500
 class type control-plane copp-s-arpresponse
  police pps 500
 class type control-plane copp-s-bfd
  police pps 2300
 class type control-plane copp-s-lacp
  police pps 700
...
```

display policy-map interface

Displays policy map information for the specified interface.

Syntax

display policy-map interface {<*interface name*>**|brief|control-plane|**
ethernet <*chassis number*/*port number*>**|port-aggregation** <*LAG number*>**|**
vlan <*VLAN number*>**} [input|output] [type {qos|queuing}]**

where:

Parameter	Function
interface name	The name of the interface.
`brief`	Displays a short policy map summary for all interfaces.
`control-plane`	Displays Control Plane Protection (CoPP) packet level statistics.
`ethernet` *chassis number*/*port number*	Displays policy map information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`port-aggregation` *LAG number*	Displays policy map information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays policy map information for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`input`	Displays input policy map information.
`output`	Displays output policy map information.
`type qos`	Displays Quality of Service (QoS) policy map information.
`type queuing`	Displays queuing policy map information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays policy map information for ethernet interface `1/12`:

```
G8272> display policy-map interface ethernet 1/12

Global statistics status : disabled

Ethernet1/12

  Service-policy (queuing) output: default-out-policy

  Class-map (queuing):  1p7q1t-out-pq1 (match any)
 match cos 5-7
      priority level 1

  Class-map (queuing):  1p7q1t-out-q2 (match any)

  Class-map (queuing):  1p7q1t-out-q3 (match any)

  Class-map (queuing):  1p7q1t-out-q-default (match any)
 match cos 0-4
 match qos-group 0-7
      bandwidth remaining percent 25
```

Restrictions

For `brief` and `control-plane` parameters, the options below are unavailable:

- `input`
- `output`
- `type qos`
- `type queuing`

display policy-map type

Displays information only for the specified policy map type.

Syntax

`display policy-map type {control-plane|qos|queuing}`

where:

Parameter	Function
`control-plane`	Displays Control Plane Protection (CoPP) policy map information, including associated class map and rate limit.
`qos`	Displays Quality of Service (QoS) policy map information.
`queuing`	Displays queuing policy map information.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays queuing policy map information:

```
G8272> display policy-map type queuing

Type queuing policy-maps
========================

policy-map type queuing default-out-policy
 class type queuing 1p7q1t-out-pq1
  priority level 1
 class type queuing 1p7q1t-out-q2
 class type queuing 1p7q1t-out-q3
 class type queuing 1p7q1t-out-q-default
  bandwidth remaining percent 25
```

display port-aggregation load-balance

Displays Link Aggregation Group (LAG) hash configuration.

Syntax

display port-aggregation load-balance [forwarding-path interface port-aggregation *<LAG number>* **{[src-interface ethernet** *<chassis number/port number>***] [dst-mac** *<MAC address>***] [src-mac** *<MAC address>***] [dst-ip** *<IPv4 address>***] [src-ip** *<IPv4 address>***] [dst-ipv6** *<IPv6 address>***] [src-ipv6** *<IPv6 address>***] [l4-dst-port** *<layer 4 port>***] [l4-src-port** *<layer 4 port>***]}]**

where:

Parameter	Function
`forwarding-path interface port-aggregation` *LAG number*	Displays hash configuration for the selected LAG that forwards a specified packet. The *LAG number* is from 1 to 4096.
`src-interface ethernet` *chassis number/port number*	Displays hash configuration for the specified source ethernet interface. The *chassis number* is 1.
`dst-mac` *MAC address*	Displays hash configuration for the specified destination MAC address.
`src-mac` *MAC address*	Displays hash configuration for the specified source MAC address.
`dst-ip` *IPv4 address*	Displays hash configuration for the specified destination IPv4 address.
`src-ip` *IPv4 address*	Displays hash configuration for the specified source IPv4 address.
`dst-ipv6` *IPv6 address*	Displays hash configuration for the specified destination IPv6 address.
`src-ipv6` *IPv6 address*	Displays hash configuration for the specified source IPv6 address.
`l4-dst-port` *layer 4 port*	Displays hash configuration for the specified destination layer 4 port. The *layer 4 port* range is from 0 to 65535.
`l4-src-port` *layer 4 port*	Displays hash configuration for the specified source layer 4 port. The *layer 4 port* range is from 0 to 65535.

Modes

All command modes.

The following command is available only in Privileged EXEC mode:

display port-aggregation load-balance forwarding-path

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LAG hash configuration:

```
G8272> display port-aggregation load-balance

Port Aggregation Load-Balancing Configuration:
System: source-dest-ip

Port Aggregation Load-Balancing Addresses Used Per-Protocol:
Non-IP: source-dest-mac
IP: source-dest-ip
```

display port-aggregation summary

Displays a short summary of all Link Aggregation Groups (LAGs).

Syntax

```
display port-aggregation summary
```

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a short summary of all LAGs:

```
G8272> display port-aggregation summary

Flags:
D - Down        P - Up in port-aggregation (members)
S - Switched    R - Routed
I - Individual  s - Suspended
U - Up (port-aggregation)
------+------------+--------+-----------------------------------------------
Group  port-aggregation  Protocol Member Ports
------+------------+--------+-----------------------------------------------
100    po100   (SU)  NONE     Ethernet1/49(P) Ethernet1/50(P)
1000   po1000  (SU)  LACP     Ethernet1/1(P) Ethernet1/2(P)
2000   po2000  (SU)  LACP     Ethernet1/9(P) Ethernet1/10(P) Ethernet1/11(P)
                              Ethernet1/12(P)
```

display port-aggregation traffic

Displays Link Aggregation Group (LAG) traffic statistics.

Syntax

display port-aggregation traffic [interface port-aggregation *<LAG number>***]**

where:

Parameter	Function
`interface port-aggregation` *LAG number*	Displays traffic statistics for the specified LAG. The *LAG number* is from 1 to 4096.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LAG traffic statistics:

```
G8272> display port-aggregation traffic
AggId           Port Rx-Ucst Tx-Ucst Rx-Mcst Tx-Mcst Rx-Bcst Tx-Bcst
------ -------------- ------- ------- ------- ------- ------- -------
   100 Ethernet1/49/1   0.00%   0.00%   0.01%   0.01%   0.00%   0.00%
   100 Ethernet1/49/2   0.00%   0.00%  93.55%  93.81%   0.00%   0.00%
   100 Ethernet1/49/3   0.00%   0.00%   0.01%   0.01%   0.00%   0.00%
   100 Ethernet1/49/4   0.00%   0.00%   0.01%   0.01%   0.00%   0.00%
   100 Ethernet1/50/1   0.00%   0.00%   0.01%   0.01%   0.00%   0.00%
   100 Ethernet1/50/2   0.00%   0.00%   5.73%   0.02%   0.00%   0.00%
   100 Ethernet1/50/3   0.00%   0.00%   0.01%   5.70%   0.00%   0.00%
   100 Ethernet1/50/4   0.00%   0.00%   0.65%   0.42%   0.00%   0.00%
------ -------------- ------- ------- ------- ------- ------- -------
  1000 Ethernet1/1      0.00%   0.00%  89.43%  94.25%   0.00%   0.00%
  1000 Ethernet1/2      0.00%   0.00%  10.57%   5.75%   0.00%   0.00%
------ -------------- ------- ------- ------- ------- ------- -------
  2000 Ethernet1/9      0.00%   0.00%  24.62%  24.78%   0.00%   0.00%
  2000 Ethernet1/10     0.00%   0.00%  24.40%  25.55%   0.00%   0.00%
  2000 Ethernet1/11     0.00%   0.00%  26.69%  24.85%   0.00%   0.00%
  2000 Ethernet1/12     0.00%   0.00%  24.30%  24.82%   0.00%   0.00%
------ -------------- ------- ------- ------- ------- ------- -------
  4096 Ethernet1/25     0.00%   0.00% 100.00% 100.00%   0.00%   0.00%
```

display privilege

Displays the current user privilege level.

Syntax

```
display privilege
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the current user privilege level:

```
G8272> display privilege

Current privilege level is 1.

G8272> enable
G8272# display privilege

Current privilege level is 16.
```

display proc-names

Displays a list with the names of all running processes.

Syntax

```
display proc-names
```

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a list with the names of all running processes:

```
G8272# display proc-names

nsm
ospfd
hostpd
lacpd
mstpd
imi
onmd
HSL
oamd
vlogd
vrrpd
ndd
ribd
bgpd
hostmibd
l2mribd
hsl_ras_mgr
vlagd
```

display process

Displays a list with all running processes.

Syntax

`display process [cpu [history|sort]|memory]`

where:

Parameter	Function
`cpu`	Displays the CPU workload of running processes.
`history`	Displays the CPU utilization history.
`sort`	Displays process information sorted by CPU utilization, from highest to lowest.
`memory`	Displays memory statistics of running processes.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a list of all running processes:

```
G8272# display process

 PID NAME            TIME     FD
   1 nsm             1d06h06m 15
   4 ospfd           1d06h06m 20
   7 hostpd          1d06h06m 28
  14 lacpd           1d06h06m 23
  17 mstpd           1d06h06m 19
  24 onmd            1d06h06m 24
  26 HSL             1d06h06m 13
  28 oam             1d06h06m 16
  30 vlogd           1d06h06m 25
  39 vrrpd           1d06h06m 26
  40 ndd             1d06h06m 22
  42 ribd            1d06h06m 17
  44 bgpd            1d06h06m 21
  45 hostmibd        1d06h06m 27
  46 l2mribd         1d06h06m 18
  47 PLATFORM_RAS    1d06h06m 14
  60 sysmgr          1d06h06m 29
  63 vlagd           1d06h06m 30
```

The following command displays process information sorted by CPU utilization:

```
G8272# display process cpu sort

PID   Runtime(ms)  Invoked  uSecs 1Sec   Process
----- ------------ -------- ----- ------ --------
    1       396730  9895762    40   0.5% nsm
   39       467530 21514961    21   0.5% vrrpd
    4         2050    29333    69   0.0% ospfd
    7         9230   224420    41   0.0% hostpd
   14         9390   246503    38   0.0% lacpd
   17         2640    34341    76   0.0% mstpd
   24         2010    29326    68   0.0% onmd
   28         2500    29139    85   0.0% oam
   30         4070    22917   177   0.0% vlogd
   40          460     9769    47   0.0% ndd
   42         2220    29773    74   0.0% ribd
   44        10130   258182    39   0.0% bgpd
   45         1920    29392    65   0.0% hostmibd
   46          440     7763    56   0.0% l2mribd
   60         1890    28975    65   0.0% sysmgr
   63         3950     8859   445   0.0% vlagd

CPU util  :   5.1% user,   6.1% kernel,   88.8% idle
```

The following command displays memory statistics of running processes:

```
G8272# display process memory

PID   MemAlloc StkSize    RSSMem  LibMem  StackBase/Ptr       Process
----- -------- ---------- ------- ------- ------------------ ----------
    1     2784    8388608    5500    5336 bff57e80/bff57950   nsm
    4     1712    8388608    2412    5492 bf8b0760/bf8b0260   ospfd
    7    10716    8388608    2424    5560 bfce4dd0/bfce4860   hostpd
   14     1360    8388608    2272    5592 bf9c6080/bf9c5b70   lacpd
   17   315180    8388608  300156    5560 bff29430/bff28f00   mstpd
   24     1748    8388608    2116    5572 bffdb8f0/bffdb3f0   onmd
   28     1352    8388608    2004    5660 bfc05df0/bfc058c0   oam
   30    10304    8388608   11672    5728 bff850a0/bff84b60   vlogd
   39     1352    8388608    2064    5604 bfb969a0/bfb964a0   vrrpd
   40     1536    8388608    1832    5616 bfde6470/bfde5f70   ndd
   42     1680    8388608    2920    5596 bfad6580/bfad6040   ribd
   44     2280    8388608    2888    5512 bfee1b40/bfee1600   bgpd
   45     1220    8388608    2008    5596 bf80c010/bf80bb10   hostmibd
   46     1576    8388608    1876    5608 bfd31ab0/bfd315b0   l2mribd
   60     1172    8388608    1420    5444 bfc173c0/bfc16eb0   sysmgr
   63   360144    8388608  317916    5612 bfa33400/bfa32ec0   vlagd
```

display queuing interface ethernet

Displays ethernet interface queuing information.

Syntax

display queuing interface ethernet *<chassis number/port number>*

where:

Parameter	Function
chassis number/port number	The ethernet interface chassis and port numbers. The *chassis number* is 1 and the *port number* is from 1 to 128.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays queuing information for ethernet interface `1/1`:

```
G8272> display queuing interface ethernet 1/1

Egress Queuing for Ethernet Ethernet1/1 [System]
------------------------------------------------------------------------
Template: 4Q8E
------------------------------------------------------------------------
Que#        Group        Bandwidth   PrioLevel   Shape%      CoSMap
------------------------------------------------------------------------
0           0-7          -           -           -           0-4
1           -            -           High        -           5-7
2           -            -           -           -           -
3           -            -           -           -           -
4           -            -           -           -           -
5           -            -           -           -           -
6           -            -           -           -           -
7           -            -           -           -           -
```

display restApi server

Displays the status of the REpresentational State Transfer (REST) server and the listening port number

Syntax

```
display restApi server
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the status of the rest server and the listening port number:

```
G8272> display restApi server

rest server disabled port: 8090
```

display rib

Displays Routing Information Base (RIB) information.

Syntax

display rib {bgp forwarding-timer|client|ipc stats|ospf forwarding-timer|txlist}

where:

Parameter	Function
bgp forwarding-timer	Displays BGP forwarding-timer statistics.
client	Displays user statistics.
ipc stats	Displays inter-process communication (IPC) statistics.
ospf forwarding-timer	Displays OSPF forwarding-timer statistics.
txlist	Displays text list statistics.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays RIB IPC statistics:

```
G8272> display rib ipc stats

Total Async Messages sent : 2
Total Async Messages Rcvd : 2
Total Bulk Messages sent  : 2
Total Bulk Messages Rcvd  : 2
Total Buffers Allocated   : 2
Bulking is in progress    : Yes
Acknowledged Buffers      : 2
UnAcknowledged Buffers    : 0
Total Buffers not found   : 0
Total Timeout's sent      : 0
Current Buffer Usage      : 0%
Last Message sent         : Fri Jan  8 04:58:50 2016

Last Message Rcvd         : Fri Jan  8 04:58:50 2016
```

display role

Displays the user role configuration.

Syntax

display role [name *<role name>***]**

where:

Parameter	Function
name *role name*	Displays the user role configuration for the specified role. The *role name* can be either *network-admin* or *network-operator*.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays user role configuration:

```
G8272> display role

Role : network-admin
  Description: Predefined network admin role has access to all commands
  on the switch
-------------------------------------------------------------------------
Rule    Perm    Type         Scope               Entity
-------------------------------------------------------------------------
1       permit  read-write

Role : network-operator
  Description: Predefined network operator role has access to all read
  commands on the switch
-------------------------------------------------------------------------
Rule    Perm    Type         Scope               Entity
-------------------------------------------------------------------------
1       permit  read
```

display route-map

Displays user readable route-map information.

Syntax

display route-map [<*route map name*>**]**

where:

Parameter	Function
route map name	The name of the route map.

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays route map information:

```
G8272# display route-map
route-map A, permit, sequence 10
  Match clauses:
    ip address prefix-list: pf_1
    community: commlist_1
  Set clauses:
    as-path prepend 1234
route-map A, deny, sequence 20
  Match clauses:
    as-path: as_acl_1
  Set clauses:
route-map A, permit, sequence 30
  Match clauses:
  Set clauses:
    metric 20
route-map local_pref, permit, sequence 10
  Match clauses:
    ip next-hop prefix-list: pf_2
    origin: igp
  Set clauses:
    local-preference 150
    weight 400
```

display router-id

Displays the configured router ID.

Syntax

```
display router-id
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the configured router ID:

```
G8272> display router-id
Router ID: 20.211.2.2 (automatic)
```

display routing

Displays routing information.

Syntax

display routing [*<IPv4 address/prefix length>***|all|bgp|connected|next-hop|ospf|static|summary|vrf {all|default|management}]**

display routing database [all|bgp|connected|ospf|static]

display routing interface [*<interface name>***|ethernet** *<chassis number/port number>***|loopback** *<loopback interface>***|mgmt** *<management interface>***|port-aggregation** *<LAG number>***|vlan** *<VLAN number>***]**

display routing {ip|ipv4|ipv6} [*<IP network address>***|***<prefix length>***|all|bgp|connected|database|interface|next-hop|ospf|static|vrf {all|default|management}]**

where:

Parameter	Function
IPv4 address	Displays routing information for routes associated with a specific network from the IP routing table.
prefix length	Displays routing information for routes associated with a specific IP and a specific network mask.
`all`	Displays routing information for all routes.
`bgp`	Displays routing information for routes associated with Border Gateway Protocol (BGP).
`connected`	Displays routing information for connected routes only.
`next-hop`	Displays routing information for the specified next hop address in IPv4 address format.
`ospf`	Displays routing information for Open Shortest Path First (OSPF) routes.
`static`	Displays routing information for static routes only.
`summary`	Displays a summary of all routes.
`vrf all`	Displays routing information for routes associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays routing information for routes associated with the default VRF instance.

Parameter	Function
`vrf management`	Displays routing information for routes associated with the management VRF instance.
interface name	The name of the interface.
`ethernet` *chassis number/port number*	Displays routing information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays routing information for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays routing information for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays routing information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays routing information for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`ip`	Displays routing information for routes associated with Internet Protocol version 4 and 6.
`ipv4`	Displays routing information for routes associated with Internet Protocol version 4.
`ipv6`	Displays routing information for routes associated with Internet Protocol version 6.

Modes

- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays routing information:

```
G8272> display routing
Codes: C - connected, S - static, R - RIP, B - BGP
       O - OSPF, IA - OSPF inter area, D - DHCP
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       * - candidate default

IP Route Table for VRF "default"
B       1.1.1.0/24 [200/0] via 23.1.1.2, Vlan23, 00:00:59
C       23.1.1.0/24 is directly connected, Vlan23
C       24.1.1.0/24 is directly connected, Vlan24
S       45.0.0.0/8 [1/0] via 113.0.0.105, Vlan113
                   [1/0] via 24.1.1.2, Vlan24
O E1    57.61.0.0/24 [110/125] via 23.1.1.2, Vlan23, 00:27:44
B       100.0.0.0/24 [20/0] via 113.0.0.100, Vlan113, 00:15:07
B       100.0.1.0/24 [20/0] via 113.0.0.100, Vlan113, 00:31:18
C       113.0.0.0/24 is directly connected, Vlan113
O       116.0.0.0/24 [110/124] via 23.1.1.2, Vlan23, 00:34:45
O IA    117.1.1.1/32 [110/124] via 23.1.1.2, Vlan23, 00:34:35
B       145.45.0.0/16 [200/0] via 23.1.1.2, Vlan23, 00:01:02
O E2    190.20.20.20/32 [110/20] via 23.1.1.2, Vlan23, 00:05:07
C       192.168.1.2/32 is directly connected, loopback0

Gateway of last resort is not set
```

display routing hash

Displays the route that the unicast Routing Information Base (RIB) Forwarding Information Base (FIB) uses for a source and destination address pair.

Syntax

`display routing hash` *<source address> <destination address>* **`[ip-proto`** *<IP protocol>***`] [`***<source port> <destination port>***`] [vrf {all|default|management}]`**

where:

Parameter	Function
source address	The IPv4 address of the source.
destination address	The IPv4 address of the destination.
`ip-proto` *IP protocol*	Displays routing information for the specified IPv4 protocol. The *IP protocol* is from 1 to 255.
source port	The port number of the source. The *source port* is from 1 to 65535.
destination port	The port number of the destination. The *destination port* is from 1 to 65535.
`vrf all`	Displays routing information for routes associated with any Virtual Routing and Forwarding (VRF) instance.
`vrf default`	Displays routing information for routes associated with the default VRF instance.
`vrf management`	Displays routing information for routes associated with the management VRF instance.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays routing information:

```
G8272> display routing hash
```

display running-config

Displays the running configuration.

Syntax

display running-config [aaa [all]|access-list|aclmrg [all]|arp [all]|as-path access-list|bfd|bgp|community-list|dhcp|diff|ipqos [all]|key chain|lacp|lldp|logging|monitor [all]|ntp [all]| ospf|prefix-list|restApi server|route-map|router-id|security [all]|snmp|spanning-tree|ssh server|syslog|tacacs+|telnet server|vlag|vlan *<VLAN number>***|vrf** *<VRF instance>***|vrrp]**

where:

Parameter	Function
aaa	Displays only Authentication, Authorization and Accounting (AAA) running configuration.
all	Displays running configuration for the specified process, including the default values.
access-list	Displays only Access Control List (ACL) running configuration.
aclmrg	Displays only the Access Control List (ACL) manager running configuration.
arp	Displays only Address Resolution Protocol (ARP) running configuration.
as-path access-list	Displays only the autonomous system (AS) path filter running configuration.
bfd	Displays only Bidirectional Forwarding Detection (BFD) running configuration.
bgp	Displays only Border Gateway Protocol (BGP) running configuration.
community-list	Displays only the community list running configuration.
dhcp	Displays only Dynamic Host Configuration Protocol (DHCP) running configuration.
diff	Displays only the difference between startup and running configurations.
ipqos	Displays only IP Quality of Service (QoS) running configuration.
key chain	Displays the authentication key management running configuration.

Parameter	Function
`lacp`	Displays only Link Aggregation Control Protocol (LACP) running configuration.
`lldp`	Displays only Link Layer Discovery Protocol (LLDP) running configuration.
`logging`	Displays only logging running configuration.
`monitor`	Displays only Ethernet Switch Port Analyzer (SPAN) session running configuration.
`ntp`	Displays only Network Time Protocol (NTP) running configuration.
`ospf`	Displays only Open Shortest Path First (OSPF) running configuration.
`prefix-list`	Displays only prefix list running configuration.
`restApi server`	Displays only the REpresentational State Transfer (REST) server running configuration.
`route-map`	Displays only route map running configuration.
`router-id`	Displays only router ID running configuration.
`security`	Displays only security running configuration.
`snmp`	Displays only Simple Network Management Protocol (SNMP) running configuration.
`spanning-tree`	Displays only Multiple Spanning Tree Protocol (MSTP) running configuration.
`ssh server`	Displays only the Secure Shell (SSH) server running configuration.
`syslog`	Displays only syslog running configuration.
`tacacs+`	Displays only Terminal Access Controller Access-Control System Plus (TACACS+) running configuration.
`telnet server`	Displays only telnet running configuration.
`vlag`	Displays only Virtual Link Aggregation Group (VLAG) running configuration.
`vlan` *VLAN number*	Displays only the specified Virtual LAN (VLAN) running configuration. The *VLAN number* is from 1 to 4094.
`vrf` *VRF instance*	Displays only the specified Virtual Routing and Forwarding (VRF) instance running configuration.
`vrrp`	Displays only Virtual Router Redundancy Protocol (VRRP) running configuration.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the running configuration for :

```
G8272> display running-config

!
version "10.1.1.0"
!
logging console 6
logging level l2mrib 3
vrf context management
 ip route 0.0.0.0/0 10.241.41.1
!
microburst-detection interval 100
!
no ip icmp-broadcast
control-plane  service-policy input copp-system-policy
no feature telnet
feature ssh
no shell ssh-conn
feature tacacs+
snmp-server enable snmp
snmp-server view all .1 included
no ipv6 dhcp relay
username admin role network-admin password encrypted
$6$bJoW9I4/$JyaAhMzHRMdQNEO
xwW4R5FZKykmDMlm1tpQrnAA2NE54Y2tbjlIvCfBy//pZhvUFhEOsdipwc5Bra2GvcQYrU1
no feature restApi
vlag isl port-aggregation 4
spanning-tree mode mst
!
no ip igmp snooping
!
class-map match-any 1
!
class-map 3
!
class-map type qos 34
!
class-map type queuing match-any 1p7q1t-out-q4
!
class-map type queuing match-any 1p7q1t-out-q2
!
class-map type queuing match-any 1p7q1t-out-pq1
 match cos 5-7
!
class-map type queuing match-any 1p7q1t-out-q-default
 match cos 0-4
 match qos-group 0-7
!
class-map type queuing match-any 1p7q1t-out-q3
...
```

Restrictions

In User EXEC mode only the following command parameters are available:

- `aaa [all]`
- `aclmgr [all]`
- `arp [all]`
- `dhcp`
- `ipqos [all]`
- `logging`
- `monitor [all]`
- `ntp [all]`
- `restApi server`
- `security [all]`
- `snmp`
- `ssh server`
- `tacacs+`
- `telnet server`
- `vlag`

display running-config interface

Displays only interface running configuration.

Syntax

`display running-config interface [`<*interface name*>**`|ethernet`** <*chassis number/port number*>**`|loopback`** <*loopback interface*>**`|mgmt`** <*management interface*>**`|port-aggregation`** <*LAG number*>**`|vlan`** <*VLAN number*>**`] [lacp|mstp|ospf]`**

where:

Parameter	Function
interface name	The name of the interface.
`ethernet` *chassis number/port number*	Displays running configuration only for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`loopback` *loopback interface*	Displays running configuration only for the specified loopback interface. The *loopback interface* is from 0 to 7.
`mgmt` *management interface*	Displays running configuration only for the specified management interface. The *management interface* is 0.
`port-aggregation` *LAG number*	Displays running configuration only for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays running configuration only for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`lacp`	Displays interface running configuration only for Link Aggregation Control Protocol (LACP).
`mstp`	Displays interface running configuration only for Multiple Spanning Tree Protocol (MSTP).
`ospf`	Displays interface running configuration only for Open Shortest Path First (OSPF).

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the running configuration for management interface 0:

```
G8272# display running-config interface mgmt 0

!
interface mgmt0
 no bridge-port
 vrf member management
 no ip address dhcp
 ip address 10.241.41.21/25
```

display running-config ip

Displays IPv4 running configuration.

Syntax

`display running-config ip [igmp snooping|route]`

where:

Parameter	Function
`igmp snooping`	Displays Internet Group Management Protocol (IGMP) snooping running configuration.
`route`	Displays static IPv4 route running configuration.

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv4 running configuration:

```
G8272# display running-config ip
!
ip route 0.0.0.0/0 10.241.39.254
ip route 84.0.0.0/24 15.0.0.1
ip route 84.0.1.0/24 15.0.0.1
ip route 84.0.2.0/24 15.0.0.1
ip route 84.0.3.0/24 15.0.0.1
ip route 84.0.4.0/24 15.0.0.1
ip route 84.0.5.0/24 15.0.0.1
!
!
interface Ethernet1/13
 ip address 13.1.1.2/16
!
!
interface Ethernet1/14
 ip address 14.1.1.2/24
!
!
interface Ethernet1/20
 ip address 1.1.0.1/16
!
!
interface loopback0
 ip address 4.4.4.4/32
!
!
interface mgmt0
 no ip address dhcp
 ip address 10.241.39.135/25
!
!
interface Vlan10
 ip address 94.1.1.1/24
!
```

display running-config ipv6

Displays IPv6 running configuration.

Syntax

display running-config ipv6 [neighbor [all]|prefix-list|route]

where:

Parameter	Function
neighbor	Displays static IPv6 neighbor running configuration.
all	Displays static IPv6 neighbor running configuration, including default values.
prefix-list	Displays prefix list running configuration.
route	Displays static IPv6 route running configuration.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays IPv6 running configuration:

```
G8272> display running-config ipv6
!
ipv6 route 3333::/64 5011::2
ipv6 route 3334::/64 5011::2
ipv6 route 3335::/64 5011::2
!
!
interface Ethernet1/20
ipv6 address 5011::1/64
!
!
interface Vlan10
ipv6 address 2001::4/64
!
```

Restriction

In User EXEC mode, the only available command is:

- **display running-config ipv6 [neighbor [all]]**

display running-config router

Displays running configuration for routing network protocols.

Syntax

```
display running-config router {bgp|ospf}
```

where:

Parameter	Function
bgp	Displays Border Gateway Protocol (BGP) running configuration.
ospf	Displays Open Shortest Path First (OSPF) running configuration.

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays BGP running configuration:

```
G8272# display running-config router bgp
!
router bgp 64800
 cluster-id 11
 timers bgp 10 30
 address-family ipv4 unicast
  maximum-paths ibgp 32
  redistribute direct
 neighbor 9.3.11.1 remote-as 64800
  advertisement-interval 0
  bfd
  address-family ipv4 unicast
   route-reflector-client
 neighbor 20.111.1.1 remote-as 64800
  advertisement-interval 0
  bfd
  address-family ipv4 unicast
   route-map peer-address in
 neighbor 20.111.2.1 remote-as 64800
  advertisement-interval 0
  bfd
  address-family ipv4 unicast
   route-map peer-address in
 neighbor 20.211.1.1 remote-as 64800
  advertisement-interval 0
  bfd
  address-family ipv4 unicast
   route-map peer-address in
 neighbor 20.211.2.1 remote-as 64800
  advertisement-interval 0
  bfd
  address-family ipv4 unicast
   route-map peer-address in
!
```

display running-config switch

Displays running configuration for switch network processes.

Syntax

`display running-config switch {lacp|mstp|vlan}`

where:

Parameter	Function
`lacp`	Displays Link Aggregation Control Protocol (LACP) running configuration.
`mstp`	Displays Multiple Spanning Tree Protocol (MSTP) running configuration.
`vlan`	Displays Virtual LAN (VLAN) running configuration.

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays LACP running configuration:

```
G8272# display running-config switch lacp
```

display script

Displays a list of all installed python scripts.

Syntax

`display script [`<*script name*>**`|running]`**

where:

Parameter	Function
script name	Displays the contents of the specified user python script.
`running`	Displays detailed information about all currently running python scripts.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a list of all installed python scripts:

```
G8272# display script
```

display script-job

Displays user defined jobs.

Syntax

```
display script-job
```

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays user defined jobs:

```
G8272# display script-job
```

display script-log

Displays the log file of all user script executions.

Syntax

display script-log [<*script log file*>**]**

where:

Parameter	Function
log file	Displays the specified user script execution log file.

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the log file of all user script executions:

```
G8272# display script-log
```

display snmp

Displays Simple Network Management Protocol (SNMP) information.

Syntax

`display snmp [community|engine-id|group|host|trap|user|view]`

where:

Parameter	Function
`community`	Displays SNMP community information.
`engine-id`	Displays SNMP engine ID information.
`group`	Displays SNMP group information.
`host`	Displays SNMP host information.
`trap`	Displays SNMP trap information.
`user`	Displays SNMP user information.
`view`	Displays SNMP view information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays SNMP information:

```
G8272> display snmp

sys Contact:
sys Location:

0 SNMP packets input
      0 Bad SNMP versions
      0 Unknown community name
      0 Illegal operation for community name supplied
      0 Encoding errors
      0 Number of requested variables
      0 Number of altered variables
      0 Get-request PDUs
      0 Get-next PDUs
      0 Set-request PDUs
0 SNMP packets output
      0 Too big errors
      0 No such name errors
      0 Bad values errors
      0 General errors
      0 Response PDUs
      0 Trap PDUs

-----------------------------------------------------------------
Community                       Group/Access        Context
-----------------------------------------------------------------


_________________________________________________________________________________
                        SNMP USERS
_________________________________________________________________________________
User                              Auth      Priv(enforce)
Groups
_________________________________________________________________________________

SNMP Tcp-session :Disabled


SNMP Protocol:Enabled
```

display spanning-tree

Displays Spanning Tree Protocol (STP) information.

Syntax

```
display spanning-tree
[blockedports|inconsistentports|pathcost method|summary
[totals]]
```

where:

Parameter	Function
`blockedports`	Displays ports blocked by STP.
`inconsistentports`	Displays ports that are in an inconsistent STP state.
`pathcost method`	Displays STP path cost calculation method.
`summary`	Displays summary STP information.
`totals`	Displays only the STP totals information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays STP information:

```
G8272> display spanning-tree
MST0000
  spanning-tree enabled protocol mstp
  ROOT ID      priority    32768
               address     a897.dcf7.dd00
               Cost        500
               Port        100001 (po1)
               Hello Time  2   Max age 20  Forward Delay 15
  BRIDGE ID    priority    32768 (32768 sys-id-ext 0)
               address     a897.dcf7.f000
               Hello Time 10   Max age 40  Forward Delay 30

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000     128.410480   Edge point-to-point

MST0001
  spanning-tree enabled protocol mst
  ROOT ID      priority    32769
               address     a897.dcf7.dd00
               Cost        500
               Port        100001 (po1)
               Hello Time 10   Max age 40  Forward Delay 30

  BRIDGE ID    priority    32769 (32768 sys-id-ext 1)
               address     a897.dcf7.f000
               Hello Time 10   Max age 40  Forward Delay 30

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000     128.410480   Edge point-to-point

MST0002
  spanning-tree enabled protocol mst
  ROOT ID      priority    32770
               address     a897.dcf7.dd00
               Cost        500
               Port        100001 (po1)
               Hello Time 10   Max age 40  Forward Delay 30

  BRIDGE ID    priority    32770 (32768 sys-id-ext 2)
               address     a897.dcf7.f000
               Hello Time 10   Max age 40  Forward Delay 30

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000       128.410480   Edge point-to-point
```

display spanning-tree active

Displays information about Spanning Tree Protocol (STP) active interfaces.

Syntax

`display spanning-tree active [brief|detail]`

where:

Parameter	Function
`brief`	Displays a summary information about STP active interfaces.
`detail`	Displays a detailed information about STP active interfaces.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays information about STP active interfaces:

```
G8272> display spanning-tree active
MST0000
  spanning-tree enabled protocol mstp
  ROOT ID      priority    32768
               address     a897.dcf7.dd00
               Cost        500
               Port        100001 (po1)
               Hello Time  2   Max age 20  Forward Delay 15

  BRIDGE ID    priority    32768 (32768 sys-id-ext 0)
               address     a897.dcf7.f000
               Hello Time 10   Max age 40  Forward Delay 30

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000     128.410480   Edge point-to-point

MST0001
  spanning-tree enabled protocol mst
  ROOT ID      priority    32769
               address     a897.dcf7.dd00
               Cost        500
               Port        100001 (po1)
               Hello Time 10   Max age 40  Forward Delay 30

  BRIDGE ID    priority    32769 (32768 sys-id-ext 1)
               address     a897.dcf7.f000
               Hello Time 10   Max age 40  Forward Delay 30

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000     128.410480   Edge point-to-point

MST0002
  spanning-tree enabled protocol mst
  ROOT ID      priority    32770
               address     a897.dcf7.dd00
               Cost        500
               Port        100001 (po1)
               Hello Time 10   Max age 40  Forward Delay 30

  BRIDGE ID    priority    32770 (32768 sys-id-ext 2)
               address     a897.dcf7.f000
               Hello Time 10   Max age 40  Forward Delay 30

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000     128.410480   Edge point-to-point
```

display spanning-tree bridge

Displays the status and configuration of Spanning Tree Protocol (STP) local bridge.

Syntax

```
display spanning-tree bridge
[address|brief|detail|forward-time|
hello-time|id|max-age|priority [system-id]|protocol]
```

where:

Parameter	Function
address	Displays the MAC address of the STP local bridge.
brief	Displays a brief STP information summary of the local bridge.
detail	Displays a detailed STP information of the local bridge.
forward-time	Displays the Forward Delay interval which specifies the amount of time in seconds needed for a port to change its state from Listening to Learning of from Learning to Forwarding.
hello-time	Displays the time interval in seconds at which the STP bridge transmits configuration Bridge Protocol Data Units (BPDUs).
id	Displays the STP local bridge ID.
max-age	Displays the time a BPDU is stored before it is removed. If the max-age timer expires before receiving a new BPDU, the associated interface transitions to the listening state.
priority	Displays the bridge priority of the STP local bridge.
system-id	Displays the bridge priority and the system ID extension of the STP local bridge.
protocol	Displays which STP protocol is active.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays STP local bridge information:

```
G8272> display spanning-tree bridge

                                                    Hello  Max  Fwd
MST INSTANCE                Bridge ID                Time  Age  Dly  Protocol
--------------- --------------------------------- -----  ---  ---  --------
MST0000           32768 (32768,00) a897.dcde.2500     2   20   15  mst
```

display spanning-tree brief

Displays a brief Spanning Tree Protocol (STP) information summary.

Syntax

`display spanning-tree brief [active]`

where:

Parameter	Function
`active`	Displays information only for STP active interfaces.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a brief STP information summary:

```
G8272> display spanning-tree brief
MST0000
  spanning-tree enabled protocol mstp
  ROOT ID      priority    32768
               address     a897.dcf7.dd00
               Cost        500
               Port        100001 (po1)
               Hello Time  2   Max age 20  Forward Delay 15

  BRIDGE ID    priority    32768 (32768 sys-id-ext 0)
               address     a897.dcf7.f000
               Hello Time 10   Max age 40  Forward Delay 30
Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000     128.410480   Edge point-to-point

MST0001
  spanning-tree enabled protocol mst
  ROOT ID      priority    32769
               address     a897.dcf7.dd00
               Cost        500
               Port        100001 (po1)
               Hello Time 10   Max age 40  Forward Delay 30

  BRIDGE ID    priority    32769 (32768 sys-id-ext 1)
               address     a897.dcf7.f000
               Hello Time 10   Max age 40  Forward Delay 30

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000     128.410480   Edge point-to-point

MST0002
  spanning-tree enabled protocol mst
  ROOT ID      priority    32770
               address     a897.dcf7.dd00
               Cost        500
               Port        100001 (po1)
               Hello Time 10   Max age 40  Forward Delay 30

  BRIDGE ID    priority    32770 (32768 sys-id-ext 2)
               address     a897.dcf7.f000
               Hello Time 10   Max age 40  Forward Delay 30

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000       128.410480   Edge point-to-point
```

display spanning-tree detail

Displays a detailed Spanning Tree Protocol (STP) information.

Syntax

`display spanning-tree detail [active]`

where:

Parameter	Function
`active`	Displays information only for STP active interfaces.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a detailed STP information summary:

```
G8272> display spanning-tree detail
MSTOOOO is executing the mst compatible Spanning-tree protocol
  Bridge Identifier has priority 32768, sysid O, address a897.dcf7.fOOO
  Configured  hello time 1O max age 4O forward delay 3O
  Current root has priority 32768 address a897.dcf7.ddOO
  Topology change flag not set, - topology change detected
  Number of topology change(s) 26   - last change occured Thu Feb 18
15:31:O1 2O
16

Interface po1 of MSTOOOO is Root forwarding
  Port path cost 5OO  port priority 128 port identifier 1OOOO1
  Designated root has priority 32768, address a897.dcf7.ddOO
  Designated bridge has priority 6144O, address O817.f4c3.ddO1
  Timers: message age 5 forward delay O hold O
  Link type is point-to-point
  BPDU: sent 41   received 52O


Interface Ethernet1/48 of MSTOOOO is designated forwarding
  Port path cost 2OOOO  port priority 128 port identifier 41048O
  Designated root has priority 32768, address a897.dcf7.ddOO
  Designated bridge has priority 32768, address a897.dcf7.fOOO
  Timers: message age O forward delay O hold O
  Link type is Edge point-to-point
  Bpdu filter is enabled
  The port type is edge
  BPDU: sent O   received O
.........
```

display spanning-tree ecp

Displays Virtual Link Aggregation Group (VLAG) - Multiple Spanning Tree Protocol (MSTP) Edge Control Protocol (ECP) information.

Syntax

display spanning-tree ecp {channels|statistics| upper-layer-protocols}

where:

Parameter	Function
channels	Displays ECP channel information.
statistics	Displays ECP statistics.
upper-layer-protocols	Displays upper layer protocols active in ECP.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a list of ECP channels:

```
G8272> display spanning-tree ecp channels
---- ECP CHANNELS ----
Ifindex    Ena    State      NextSeq    LastAck   FreeWindow
--------+----------------+-----------+---------+------------
100003      1       0         65520       65519      999
```

display spanning-tree interface

Displays Spanning Tree Protocol (STP) interface information.

Syntax

display spanning-tree interface {ethernet *<chassis number/port number>*|
port-aggregation *<LAG number>*} **[brief|detail]**

where:

Parameter	Function
`ethernet` *chassis number/port number*	Displays STP information only for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`port-aggregation` *LAG number*	Displays STP information only for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`brief`	Displays a brief STP information summary.
`detail`	Displays a detailed STP interface information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays STP information for ethernet interface `1/48`:

```
G8272> display spanning-tree interface ethernet 1/48

Mst Instance     Role Sts cost      priority  Type
---------------- ---- --- --------- --------- -------------------------
MST0000          Desg FWD 20000     128       Edge point-to-point
MST0001          Desg FWD 20000     128       Edge point-to-point
MST0002          Desg FWD 20000     128       Edge point-to-point
MST0003          Desg FWD 20000     128       Edge point-to-point
```

display spanning-tree internal event-history.

Displays Spanning Tree Protocol (STP) event logs.

Syntax

display spanning-tree internal event-history {all|buffer-size| deleted|errors|msgs|tree *<spanning tree ID>* **[all-ports|interface {ethernet** *<chassis number/port number>***|port-aggregation** *<LAG number>***}]}**

where:

Parameter	Function
`all`	Displays all STP event logs.
`buffer-size`	Displays memory allocation statistics for STP event logs.
`deleted`	Displays deleted STP trees and ports event logs.
`errors`	Displays STP error event logs.
`msgs`	Displays STP messages.
`tree` *spanning tree ID*	Displays STP event logs for the specified spanning tree. The *spanning tree ID* is: • for CIST is 0 • for MSTP is the instance number from 0 to 64 • for Rapid PVST+ is the VLAN number from 1 to 4094
`all-ports`	Displays STP event logs for all ports.
`interface ethernet` *chassis number/port number*	Displays STP event logs only for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface port-aggregation` *LAG number*	Displays STP event logs only for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all STP event logs:

```
G8272> display spanning-tree internal event-history all

Event: msgs, length:19, at 440026 usecs after Fri Jan  8 04:58:33 2016
 interface mgmt0 add
Event: msgs, length:23, at 440344 usecs after Fri Jan  8 04:58:33 2016
 interface loopback0 add
Event: msgs, length:19, at 440432 usecs after Fri Jan  8 04:58:33 2016
 interface Vlan1 add
Event: msgs, length:25, at 440524 usecs after Fri Jan  8 04:58:33 2016
 interface Ethernet1/1 add
Event: msgs, length:25, at 440638 usecs after Fri Jan  8 04:58:33 2016
 interface Ethernet1/2 add
Event: msgs, length:25, at 440736 usecs after Fri Jan  8 04:58:33 2016
 interface Ethernet1/3 add
Event: msgs, length:25, at 440832 usecs after Fri Jan  8 04:58:33 2016
 interface Ethernet1/4 add
Event: msgs, length:25, at 440929 usecs after Fri Jan  8 04:58:33 2016
 interface Ethernet1/5 add
Event: msgs, length:25, at 441042 usecs after Fri Jan  8 04:58:33 2016
 interface Ethernet1/6 add
Event: msgs, length:25, at 441139 usecs after Fri Jan  8 04:58:33 2016
 interface Ethernet1/7 add
Event: msgs, length:25, at 441235 usecs after Fri Jan  8 04:58:33 2016
 interface Ethernet1/8 add
Event: msgs, length:25, at 441345 usecs after Fri Jan  8 04:58:33 2016
```

display spanning-tree internal info tree

Displays Spanning Tree Protocol (STP) internal information.

Syntax

display spanning-tree internal info tree *<spanning tree ID>* **[all-ports|interface {ethernet** *<chassis number/port number>***| port-aggregation** *<LAG number>***}**

where:

Parameter	Function
spanning tree ID	Displays STP internal information for the specified spanning tree. The *spanning tree ID* is: • for CIST is 0 • for MSTP is the instance number from 0 to 64 • for Rapid PVST+ is the VLAN number from 1 to 4094
`all-ports`	Displays STP internal information for all ports.
`interface ethernet` *chassis number/port number*	Displays STP internal information only for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface port-aggregation` *LAG number*	Displays STP internal information only for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays STP internal information:

```
G8272> display spanning-tree internal info tree 1
------- STP Tree Info (tree 1) ---------
port_list                           Ethernet1/54(410540)
Ethernet1/53(410530)
                                    Ethernet1/50(410500)
Ethernet1/49(410490)
                                    Ethernet1/48(410480)
Ethernet1/47(410470)
                                    Ethernet1/46(410460)
Ethernet1/45(410450)
                                    Ethernet1/44(410440)
Ethernet1/43(410430)
                                    Ethernet1/42(410420)
Ethernet1/41(410410)
                                    Ethernet1/40(410400)
Ethernet1/39(410390)
.......
vlan_list                           1
fid_list
instance_id                         1
low_port                            3
master                              false
learning_enabled                    true
msti_mastered                       false
reselect                            false
msti_bridge_id                      80:01:a8:97:dc:f7:f0:00
msti_bridge_priority                32768
recent_root                         100001
br_inst_all_rr_timer_cnt            0
msti_designated_root                80:01:a8:97:dc:f7:dd:00
msti_designated_bridge              f0:01:08:17:f4:c3:dd:01
internal_root_path_cost             500
designated_internal_root_path_cost  0
msti_root_port_id                   34465
root_inst_port                      po1(100001)
msti_root_port_ifindex              100001
port_index                          0
hop_count                           18
tc_flag                             true
topology_change_detected            true
time_last_topo_change               Thu Jan  1 03:11:52 1970
num_topo_changes                    5
total_num_topo_changes              5
tc_initiator                        34465
tc_last_rcvd_from                   08:17:f4:c3:dd:01
is_te_instance                      0
```

display spanning-tree mst

Displays Multiple Spanning Tree Protocol (MSTP) information.

Syntax

`display spanning-tree mst [`<*MST instance*>**`] [interface {ethernet`** <*chassis number*/*port number*>**`|port-aggregation`** <*LAG number*>**`}] [detail]`**

where:

Parameter	Function
MST instance	Displays MSTP information for the specified instance. The *MST instance* is from 0 to 64. A range of instances can also be added (e.g. 7-9).
`interface ethernet` *chassis number*/*port number*	Displays MSTP information only for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface port-aggregation` *LAG number*	Displays MSTP information only for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`detail`	Displays detailed MSTP information.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays MSTP information:

```
G8272> display spanning-tree mst
##### MST0    vlans mapped:   4-4094
Bridge        address a897.dcf7.f000  priority      32768 (32768 sysid 0)
Root          address a897.dcf7.dd00  priority      32768 (32768 sysid 0)
              port    po1             path cost     0
Regional Root address a897.dcf7.dd00  priority      32768 (32768 sysid 0)
                                      internal cost 500       rem hops 18
Operational   hello time 2 , forward delay 15, max age 20, txholdcount 6
Configured    hello time 10, forward delay 30, max age 40, max hops    64

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000     128.410480   Edge point-to-point

##### MST1    vlans mapped:   1
Bridge        address a897.dcf7.f000  priority      32769 (32768 sysid 1)
Root          address a897.dcf7.dd00  priority      32769 (32768 sysid 1)
              port    po1             cost          500       rem hops 18

Interface        Role Sts cost      Prio.Nbr      Type
---------------- ---- --- --------- ------------ ----------------------
po1              Root FWD 500       128.100001   point-to-point
Ethernet1/48     Desg FWD 20000     128.410480   Edge point-to-point
..........
```

display spanning-tree mst configuration

Displays Multiple Spanning Tree Protocol (MSTP) configuration information.

Syntax

`display spanning-tree mst configuration [digest]`

where:

Parameter	Function
`digest`	Displays the MSTP digest.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays MSTP configuration information:

```
G8272> display spanning-tree mst configuration
Name     [region]
Revision 65535 Instances configured 3
Instance  Vlans mapped
--------
---------------------------------------------------------------------
0        4-4094
1        1
2        2
3        3
---------------------------------------------------------------------
```

display ssh

Displays Secure Shell (SSH) information.

Syntax

display ssh {key|server}

where:

Parameter	Function
key	Displays the SSH key.
server	Displays SSH server configuration.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the SSH key:

```
G8272> display ssh key

*****************RSA KEY*********************
 ssh-rsa  AAAAB3NzaC1yc2EAAAADAQABAAABAQC99oI5p+qJN98rSnnZOKY/MK1A9LeF4LN9AZOlcW
ax6r/5ibBznX6Q4gFPY6/yrwcV1ULZNbisC8rxM8Dvq/m6CGnxqZZrwrTeYmlBX3XGjDcc4jK2L3rmXc
wgSqAviSe4i2NfabvK9zyaPfkBefEPaTOeCedkvE7+vpUhJT7x6qklUxdosam6qOPZ7QsAB+XeE8ngDw
IUioHmZgzOC1VYi3P1zCQlkUnyHXqknvDpTR9HWGU3TA9Jnr1TgBS5/aaZexUOHaOgyPNNZRBI5QrDkZ
BTOWg1qcaakc3HrbVRxoVpm6fgS3gAt8teCpZ1sCyYaMWK8CHQiGHlkjMIZ/Yb

 bitcount: 2048 fingerprint: 0a:79:bc:e7:f4:fb:28:09:19:5a:a4:ff:e4:de:98:3f

************************************
*****************DSA KEY*********************
 ssh-dsa  AAAAB3NzaC1kc3MAAACBAK6XyWuMFiWJcdABLeF3klmv9zK61KZ9yM5pZKYiiIZukYotrY
G1t6XLVzwjPgjpZWm/IaWGjGjUNTHykL9FrcDPi+18bmGWxJ/FtZ6BnduLQjLmTu1YppFOLUNHx2BXoR
p3vNbo7KXOyCnbOX6RNKsv6xcka6RrKPlZPPbA+cdNAAAAFQDPJCqVVhqv8mKNic1gdZLDKNSqiwAAAI
BqO32fymIiOzbWpRXJqv9OG/gKdKeSAVN4OIfL4RlD/CPSDMwKVugakiMi+K1nfCFTTOIWI88qtbfNRc
Nzsmamot7rnTXsL9ICdBxPs+MvQROoG+/UJ3iwGlTGjya1tbVsT4q2TwNtwrJMoroMCzMFMBf+1VnqyL
qUse/2Od5CrAAAAIEAmMAK5PSU+YblPf1kT8Ith4K2EciOmnoUBO6euXSZMuodtEW2v4wxWh78a5bN4R
Ee6nHgFAcftWEvjTmR7QqznTy2FJbUkhF++u6XoGOxpLf2hEEClVRR662veQpXI39oyBE1zV8OqABv5f
lo2g9DqQyOSZkUTVn/kYpCol9eOJA=

 bitcount: 1024 fingerprint: 77:c0:d3:71:7d:9c:26:28:9d:8b:fd:7d:55:63:e8:50

************************************
```

The following command displays SSH server configuration:

```
G8272> display ssh server

ssh server enabled port: 22
authentication-retries 3
```

display startup-config

Displays the startup configuration.

Syntax

display startup-config

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the startup configuration:

```
G8272# display startup-config

!
version "10.1.1.0"
!
logging console 6
logging level l2mrib 3
vrf context default
!
vrf context management
 ip route 0.0.0.0/0 10.241.41.1
!
microburst-detection interval 100
!
no ip icmp-broadcast
control-plane  service-policy input copp-system-policy
no feature telnet
feature ssh
no feature tacacs+
snmp-server enable snmp
snmp-server view all .1 included
username admin role network-admin password encrypted
$6$bJoW9I4/$JyaAhMzHRMdQNEO
xwW4R5FZKykmDMlm1tpQrnAA2NE54Y2tbjlIvCfBy//pZhvUFhEOsdipwc5Bra2GvcQYrU1
no feature restApi
spanning-tree mode mst
...
```

display statistics microburst

Displays microburst detection statistics.

Syntax

`display statistics microburst [interface ethernet` *<chassis number/port number>*`]`

where:

Parameter	Function
`interface ethernet` *chassis number/port number*	Displays microburst detection statistics only for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128. If no interface is specified, the command displays statistics for all ethernet interfaces where microburst detection is enabled.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays microburst detection statistics:

```
G8272> display statistics microburst
-------------------------------------------------------------------------
Interface        # of uburst  avg size  max size  avg duration  max
duration
-------------------------------------------------------------------------
-------
Ethernet1/8               0         0         0             0
0
```

display switchname

Displays the switch's name.

Syntax

```
display switchname
```

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the switch's name:

```
G8272# display switchname

G8272
```

display bridge-port interfaces brief

Displays a short summary of all layer 2 interfaces.

Syntax

display bridge-port interfaces brief

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a short summary of layer 2 interfaces:

```
G8272# display bridge-port interfaces brief
Flags:
S - Static port-aggregation    P - LACP port-aggregation
--------------------------------------------------------------------------------
Ethernet        VLAN  Type        Mode        Status  Reason          Speed  Port
Interface                                                                 Agg#
--------------------------------------------------------------------------------
Ethernet1/1     10    Ethernet    trunk       up      none            10000  1000
(P)
Ethernet1/2     10    Ethernet    trunk       up      none            10000  1000
(P)
Ethernet1/3     1     Ethernet    access      down    Protocol down   10000  --
Ethernet1/4     1     Ethernet    access      down    Protocol down   10000  --
Ethernet1/5     1     Ethernet    access      down    Protocol down   10000  --
Ethernet1/6     1     Ethernet    access      down    Protocol down   10000  --
Ethernet1/7     1     Ethernet    access      down    Protocol down   10000  --
Ethernet1/8     1     Ethernet    access      down    Protocol down   10000  --
Ethernet1/9     10    Ethernet    trunk       up      none            10000  2000
```

display sys-info

Displays the boot file and hardware environment status information.

Syntax

display sys-info

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the boot file and hardware environment status information:

```
G8272# display sys-info

*** display startup ***
Current FLASH software:
  active image: version 10.1.1.0, downloaded 16:58:01 UTC Mon Jan  4 2016
  standby image: version 10.1.1.0, downloaded 12:53:19 UTC Sat Dec  5 2015
  Uboot: version 10.1.1.0, downloaded 11:17:04 UTC Wed Nov  4 2015
Currently set to boot software active image
Currently scheduled reboot time: none
Current port mode: default mode


*** display env fan detail ***
Total Fan: 8
+--------+-----+-----------------+---------------+-------+--------+
| Module | Fan | Name            | Air-Flow      | Speed | Speed  |
| Number | ID  |                 | Direction     | (%)   | (RPM)  |
+--------+-----+-----------------+---------------+-------+--------+
  01       01    Fan 1             Front-to-Back   0       4225
  01       02    Fan 2             Front-to-Back   25      4404
  02       03    Fan 3             Front-to-Back   0       4115
  02       04    Fan 4             Front-to-Back   25      4444
  03       05    Fan 5             Front-to-Back   0       4390
  03       06    Fan 6             Front-to-Back   25      4549
  04       07    Fan 7             Front-to-Back   0       4344
  04       08    Fan 8             Front-to-Back   25      4507
...
```

display system

Displays system related information.

Syntax

display system {cores|internal ipfib errors|reset-reason|resources|uptime|vlan reserved}

where:

Parameter	Function
cores	Displays core transfer option information.
internal ipfib errors	Displays error logs for IPFIB.
reset-reason	Displays the reason of the most recent switch reload.
resources	Displays overall system resources.
uptime	Displays the time since the switch running time.
vlan reserved	Displays the range of reserved Virtual LANs (VLANs).

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays overall system resources:

```
G8272# display system resources

load average: 0.10, 0.19, 0.25
Tasks:  91 total,   1 running,  90 sleeping,   0 stopped,   0 zombie
Cpu(s):  5.9%us,  6.7%sy,  0.0%ni, 87.4%id,  0.0%wa,  0.0%hi,  0.0%si,  0.0%st
Mem:   4086612k total,  1137884k used,  2948728k free,    33624k buffers
```

The following command displays the reserved VLAN range:

```
G8272> display system vlan reserved

Reserved VLAN range: 4000-4094
```

Restriction

In User EXEC mode, the only available command is:

- **display system vlan reserved**

In Global Configuration mode, the only available commands are:

- **display system internal ipfib errors**
- **display system uptime**

display tacacs-server

Displays Terminal Access Controller Access-Control System Plus (TACACS+) server information.

Syntax

display tacacs-server [<*server address*>**|groups** <*group name*>**|sorted| statistics** <*server address*>**]**

where:

Parameter	Function
server address	Displays information about the specified TACACS+ server. The *server address* can be either an IPv4 address or an IPv6 address.
`groups`	Displays TACACS+ server group configuration information.
group name	Displays TACACS+ server configuration information for the specified group.
`sorted`	Displays TACACS+ server information sorted alphabetically by name.
`statistics`	Displays TACACS+ server statistics.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays TACACS+ server information:

```
G8272> display tacacs-server
```

display tech-support

Displays all system related information and process configurations by automatically running various commands.

Syntax

```
display tech-support [aaa|arp [brief]|bfd|bgp
[brief]|bootvar|
brief|commands|dhcp|forwarding|icmpv6|interfaces|
interfaces-vlan|ip [igmp snooping] [brief]|ipv6|lacp [all]|
lldp|logging|microburst|ntp|obs|ospf|platform|port-agent|
port-aggregation|port-manager|process|rib|snmp|ssh server|
stp|summary [page-optimized]|tacacs+|telnet server|um|vlag|
vlan|vrrp [brief]] [page]
```

where:

Parameter	Function
page	Displays the command output a page at a time. If not used, the output scrolls until all the pre-configured commands are ran. To stop the command execution press **Ctrl + C**.
aaa	Displays all Authentication, Authorization and Accounting (AAA) related information and configurations.
arp	Displays all Address Resolution Protocol (ARP) related information and configurations.
bfd	Displays all Bidirectional Forwarding Detection (BFD) related information and configurations.
bgp	Displays all Border Gateway Protocol (BGP) related information and configurations.
bootvar	Displays all boot related information and configurations.
brief	Displays a short information summary.
commands	Displays the list of commands automatically run by **display tech-support**.
dhcp	Displays all Dynamic Host Configuration Protocol (DHCP) related information and configurations.
forwarding	Displays all forwarding related information and configurations.
icmpv6	Displays all Internet Control Message Protocol version 6 (ICMPv6) related information and configurations.

Parameter	Function
`interfaces`	Displays all interface related information and configurations.
`interfaces-vlan`	Displays all VLAN interface related information and configurations.
`ip`	Displays all IPv4 related information and configurations.
`igmp snooping`	Displays all Internet Group Management Protocol (IGMP) snooping related information and configurations.
`ipv6`	Displays all IPv6 related information and configurations.
`lacp`	Displays Link Aggregation Control Protocol (LACP) related information and configurations.
`all`	Displays all Link Aggregation Control Protocol (LACP) related information and configurations.
`lldp`	Displays all Link Layer Discovery Protocol (LLDP) related information and configurations.
`logging`	Displays all logging related information and configurations.
`microburst`	Displays all microburst detection related information and configurations.
`ntp`	Displays all Network Time Protocol (NTP) related information and configurations.
`obs`	Displays all Python Scripting related information and configurations.
`ospf`	Displays all Open Shortest Path First (OSPF) related information and configurations.
`platform`	Displays all platform related information and configurations.
`port-agent`	Displays all port agent related information and configurations.
`port-aggregation`	Displays all Link Aggregation Group (LAG) related information and configurations.
`port-manager`	Displays all port manager related information and configurations.
`process`	Displays information and configurations relating to all running processes.
`rib`	Displays all Routing Information Base (RIB) related information and configurations.

Parameter	Function
`snmp`	Displays all Simple Network Management Protocol (SNMP) related information and configurations.
`ssh server`	Displays all Secure Shell (SSH) server related information and configurations.
`stp`	Displays all Spanning Tree Protocol (STP) related information and configurations.
`summary`	Displays a short information summary.
`page-optimized`	Uses less system memory and disk space while gathering information.
`tacacs+`	Displays all Terminal Access Controller Access-Control System Plus (TACACS+) related information and configurations.
`telnet server`	Displays all telnet server related information and configurations.
`um`	Displays all user management related information and configurations.
`vlag`	Displays all Virtual Link Aggregation Group (VLAG) related information and configurations.
`vlan`	Displays all Virtual LAN (VLAN) related information and configurations.
`vrrp`	Displays all Virtual Router Redundancy Protocol (VRRP) related information and configurations.

Modes

- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays all system related information and process configurations by automatically running various commands:

```
G8272# display tech-support

*** display running-config security ***
!Command: display running-config security
!Time:2016 Jan 10 14:11:44

NOSX version 10.1.1.0 LENOVO G8272, Thu Jan 14 10:34:20 PST 2016
username admin role network-admin password encrypted
$6$bJoW9I4/$JyaAhMzHRMdQNEO
xwW4R5FZKykmDMlm1tpQrnAA2NE54Y2tbjlIvCfBy//pZhvUFhEOsdipwc5Bra2GvcQYrU1
ssh key rsa 2048


*** display role ***
Role : network-admin
  Description: Predefined network admin role has access to all commands
  on the switch
-------------------------------------------------------------------------
Rule    Perm    Type         Scope               Entity
-------------------------------------------------------------------------
1       permit  read-write

Role : network-operator
  Description: Predefined network operator role has access to all read
  commands on the switch
-------------------------------------------------------------------------
Rule    Perm    Type         Scope               Entity
-------------------------------------------------------------------------
1       permit  read



*** display user-account ***
User:admin
        role: network-admin

...
```

display telnet server

Displays telnet server information.

Syntax

```
display telnet server
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays telnet server information:

```
G8272> display telnet server

telnet server disabled port: 23
```

display terminal

Displays terminal configuration for the current session.

Syntax

display terminal

Modes

Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays terminal configuration for the current session:

```
G8272# display terminal

TTY: /dev/ttyS0 Type: vt100-nam
Length: 24 lines, Width: 80 columns
Session Timeout: 600 seconds
```

display user-account

Displays the current user role configurations.

Syntax

`display user-account [`<*account name*>**`]`**

where:

Parameter	Function
account name	The name of the user's account.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the current user role configurations:

```
G8272> display user-account

User:admin
        role: network-admin
```

display users

Displays the currently logged in users.

Syntax

```
display users
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the currently logged in users:

```
G8272> display users

Line     User           Time                      Up Time   PID   Comment
console  admin          Fri Jan  8 05:13:39 2016  00:04:25  3696  --
```

display version

Displays information about the running Cloud Network OS.

Syntax

```
display version
```

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays information about the running CNOS:

```
G8272> display version

Lenovo Networking Operating System (NOS) Software
Technical Assistance Center: http://www.lenovo.com
Copyright (C) Lenovo, 2016.  All rights reserved.

Software:
  Bootloader version: 10.1.1.0
  System version: 10.1.1.0
  System compile time: Tue Jan 19 10:28:02 PST 2016

Hardware:
  G8272 ("48x10GE + 6x40GE")
  NXP P2020 CPU with 4096 MB of memory

  Device name: G8272
  Boot Flash: 16 MB

Kernel uptime is 0 day(s), 0 hour(s), 21 minute(s), 47 second(s)

Last Reset Reason: Reset by CLI reload command
```

display vlag configuration

Displays Virtual Link Aggregation Group (VLAG) global and Inter-Switch Link (ISL) related configuration.

Syntax

display vlag configuration

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAG configuration information:

```
G8272> display vlag configuration
!
vlag tier-id 1
vlag priority 100
vlag isl port-aggregation 3
vlag hlthchk keepalive-interval 2
vlag hlthchk retry-interval 3
vlag hlthchk peer-ip 10.241.38.183 vrf management
vlag auto-recover 240
vlag startup-delay 100
vlag enable
!
```

display vlag ecp

Displays Virtual Link Aggregation Group (VLAG) Edge Control Protocol (ECP) information.

Syntax

`display vlag ecp {channels|statistics|upper-layer-protocols}`

where:

Parameter	Function
`channels`	Displays VLAG ECP channel information.
`statistics`	Displays VLAG ECP statistics.
`upper-layer-protocols`	Displays VLAG ECP upper layer protocol information.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAG ECP channel information:

```
G8272> display vlag ecp channels
---- ECP CHANNELS ----
Ifindex    Ena    State      NextSeq    LastAck   FreeWindow
--------+----------------+-----------+---------+------------
100003      1       0         00513       00512      999
```

display vlag information

Displays Virtual Link Aggregation Group (VLAG) global and Inter-Switch Link (ISL) related state information.

Syntax

```
display vlag information
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAG information:

```
G8272> display vlag information
Global State    : enabled
  vLAG system MAC : 08:17:f4:c3:dd:01
  ISL Information:
    PAG     Ifindex     State       Previous State
    -------+-----------+-----------+--------------------------------
    100     100100      Active      Inactive

  Mis-Match Information:
                   Local                       Peer
    -------------+---------------------------+----------------------
    Match Result : Match                       Match
    Tier ID      : 1                           1
    System Type  : G8272                       G8272
    OS Version   : 10.1.x.x                    10.1.x.x

  Role Information:
                   Local                       Peer
    -------------+---------------------------+----------------------
    Admin Role   : Primary                     Secondary
    Oper Role    : Primary                     Secondary
    Priority     : 100                         200
    System MAC   : a8:97:dc:dd:ed:01           a8:97:dc:f7:d5:01

  FDB refresh Information:
  FDB is doing refresh with below setting:
    FDB refresh is configured
    Bridge FDB aging timer is 300 second(s)

  FDB synchronization Information:
  FDB is being synchronized.

 Auto Recovery Interval 250s (Finished)

 Startup Delay Interval 90s (Finished)

 Health Check Information:
  Health check Peer IP Address: 10.241.38.52
  Health check Local IP Address: 10.241.38.51
  Health check retry interval: 1 seconds
  Health check number of keepalive attempts: 2
  Health check keepalive interval: 2 seconds
  Health check status: UP
```

display vlag instance

Displays Virtual Link Aggregation Group (VLAG) instance configuration and state information.

Syntax

`display vlag instance {`*<VLAG instance>***`|all} {configuration|information}`**

where:

Parameter	Function
VLAG instance	The number of the VLAG instance. The *VLAG instance* is from 1 to 64.
`all`	Displays configuration or state information for all VLAG instances.
`configuration`	Displays VLAG instance configuration.
`information`	Displays VLAG instance state information.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays configuration for all VLAG instances:

```
G8272> display vlag instance all configuration
!
vlag instance 1 port-aggregation 1
vlag instance 1 enable
vlag instance 64 port-aggregation 4096
vlag instance 64 enable
!
```

display vlag internal event-history

Displays Virtual Link Aggregation Group (VLAG) event logs.

Syntax

`display vlag internal event-history {errors|msgs}`

where:

Parameter	Function
`errors`	Displays VLAG error logs.
`msgs`	Displays VLAG messages.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAG messages:

```
G8272> display vlag internal event-history msgs

Event: MESSAGES, length:59, at 36010 usecs after Fri Jan  8 04:58:42 2016
 vlag_sm_isl_init(1428):
 VLAG ISL init get system type:64

Event: MESSAGES, length:74, at 36320 usecs after Fri Jan  8 04:58:42 2016
 vlag_sm_isl_init(1435):
 VLAG ISL init get OS version: 10.1.1.0 [part2]

Event: MESSAGES, length:53, at 134843 usecs after Fri Jan  8 04:58:42
2016
 vlag_sm_main(1964):
 VLAG SM pthread is running now

Event: MESSAGES, length:46, at 135326 usecs after Fri Jan  8 04:58:42
2016
 vlag_fdb_main(1140):
 VFDB start event loop.

Event: MESSAGES, length:36, at 933887 usecs after Fri Jan  8 04:58:42
2016
 vlag_start(347):
 VLAG has started
```

display vlag internal global information

Displays Virtual Link Aggregation Group (VLAG) global internal information.

Syntax

```
display vlag internal global information
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAG global internal information:

```
G8272> display vlag internal global information
```

display vlag internal instance

Displays Virtual Link Aggregation Group (VLAG) internal instance information.

Syntax

`display vlag internal instance {`*<VLAG instance>***`|all} information`**

where:

Parameter	Function
VLAG instance	The number of the VLAG instance. The *VLAG instance* is from 1 to 64.
`all`	Displays internal information for all VLAG instances.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays internal information for VLAG instance 1:

```
G8272> display vlag internal instance 1 information

  Instance Runtime Entry 1 Dump:
    isl_id              : 1
    inst_pch_id         : 0
    pch_ifindex         : 0
    state               : 0(Down)
    old_state           : 0(Down)
    is_err_dis_set      : 0
    is_egr_mask_set     : 0
    egr_mask_result     : 0
    is_local_pch_up     : 0
    reserve             : 0
    waitting_query      : 0
    query_id            : 0
    reply_query_id      : 0
  Instance PCH Runtime Information Dump:
                   Local                       Peer
    -------------+--------------------------+----------------------
    LACP Channel : No                        No
    Partner Pri  : 0                         0
    Partner Key  : 0                         0
    Partner MAC  : 00:00:00:00:00:00         00:00:00:00:00:00
```

display vlag internal isl information

Displays Virtual Link Aggregation Group (VLAG) internal Inter-Switch Link (ISL) information.

Syntax

```
display vlag internal isl information
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAG internal ISL information:

```
G8272> display vlag internal isl information

  ISL Runtime Entry Dump:
    isl_pch_id          : 0
    pch_ifindex         : 0
    state               : 0(Down)
    old_state           : 0(Down)
    peer_state          : 0(Down)
    is_local_match      : 0(No)
    is_peer_match       : 0(No)
    mis_log_printed     : 0(No)
    err_dis_all_inst    : 0(No)
    reserved            : 0
    local_tier_id       : 0
    peer_tier_id        : 0
    local_sys_type      : 64(G8272)
    peer_sys_type       : 0(Unknown)
    local_version       : 1075721256
    peer_version        : 1075721204
    lacp_prio           : 0
    peer_lacp_prio      : 0
    ecp_ulp_id          : -1

  Role Runtime Entry Dump:
    admin_role          : 0(Unselected)
    oper_role           : 0(Unselected)
    peer_admin_role     : 0(Unselected)
    peer_oper_role      : 0(Unselected)
    state               : 0
    old_state           : 0
    local_priority      : 0
    peer_priority       : 0
    local_mac           : a8:97:dc:de:25:01
    peer_mac            : 00:00:00:00:00:00
```

display vlag internal syncdb

Displays Virtual Link Aggregation Group (VLAG) Forwarding Database (FDB) information.

Syntax

display vlag internal syncdb {count|local|remote} [address <*MAC address*> **[interface {ethernet** <*chassis number*/*port number*>**| port-aggregation** <*LAG number*>**} [vlan** <*VLAN number*>**]]]**

where:

Parameter	Function
`count`	Displays the number VLAG FDB entries.
`local`	Displays VLAG local FDB information.
`remote`	Displays VLAG remote FDB information.
`address` *MAC address*	Displays VLAG FDB information for the specified MAC address. The *MAC address* can be written in any of the following formats: o X.X.X o XX-XX-XX-XX-XX-XX o XX:XX:XX:XX:XX:XX o XXXX.XXXX.XXXX
`interface ethernet` *chassis number*/*port number*	Displays VLAG FDB information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface port-aggregation` *LAG number*	Displays VLAG FDB information for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays VLAG FDB information for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAG local FDB entries:

```
G8272> display vlag internal syncdb local
VLAG local db:
  H - s/w hit bit; for remote db.
  D - del pending bit; for local db.
  P - peer mac bit; for remote db.

   VLAN         MAC       Ifindex Hit Del Peer
--+------+---------------+-------+---+---+----
  (3999 - A897.DCF7.DD01)  100003
  (2000 - A897.DCF7.DD01)  100003
  (  10 - A897.DCF7.DD01)  100003
  (   9 - A897.DCF7.DD01)  100003
  (   8 - A897.DCF7.DD01)  100003
  (   7 - A897.DCF7.DD01)  100003
  (   6 - A897.DCF7.DD01)  100003
  (   5 - A897.DCF7.DD01)  100003
  (   4 - A897.DCF7.DD01)  100003
  (   3 - A897.DCF7.DD01)  100003
  (   2 - A897.DCF7.DD01)  100003
  (   1 - A897.DCF7.DD01)  100003
```

display vlag internal vlandb

Displays Virtual Link Aggregation Group (VLAG) internal Forwarding Database (FDB) Virtual LAN (VLAN) configuration.

Syntax

`display vlag internal vlandb {interface port-aggregation` *<LAG number>***`}|vlan`** *<VLAN number>***`}`**

where:

Parameter	Function
`interface port-aggregation` *LAG number*	Displays VLAG FDB VLAN configuration for the specified Link Aggregation Group (LAG). The *LAG number* is from 1 to 4096.
`vlan` *VLAN number*	Displays VLAG FDB configuration for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAG FDB configuration for VLAN `1`:

```
G8272> display vlag internal vlandb vlan 1

VLAN 1 contain:
  100012
```

display vlag statistics

Displays Virtual Link Aggregation Group (VLAG) statistics.

Syntax

```
display vlag statistics
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAG statistics:

```
G8272> display vlag statistics
TLV statistics :
                  TX Succ    TX Fail      RX Succ    RX Drop
  --------------+----------+------------+----------+----------------
  Hello         : 17153      0            17153      1
  Role Elect    : 10         1            10         1
  Mis-Match     : 9          5            7          0
  Global State  : 2          0            1          0
  Channel Status: 28         0            25         0
  Query         : 30         0            30         0

  FDB sync statistics :
    Local add          :       6054
    Local learn        :       6763
    Local del          :      12780
    Remote add         :       4018
    Remote del         :       8155
    Sync add           :       8044
    Sync del           :       6769
    ECP TX alloc ok    :        784
    ECP TX alloc fails :          0
    socket |    sent   |  handled |   fails
    HAL cb :      25597      25597          0
    br evt :        117        117          0
    ECP RX :        521        521          0

  FDB sync db statistics :
    Local db current : 13
    Local db highest : 4013
    Remote db current: 12
    Remote db highest: 2012
```

display vlan

Displays Virtual LAN (VLAN) information.

Syntax

`display vlan [access-map|brief|id` *<VLAN number>*`|name` *<VLAN name>*`|`
`summary]`

where:

Parameter	Function
`access-map`	Displays VLAN access map information.
`brief`	Displays all VLAN status information in brief.
`id` *VLAN number*	Displays information about the specified VLAN. The *VLAN number* is from 1 to 4094.
`name` *VLAN name*	Displays information about the specified VLAN by its configured name.
`summary`	Displays a short VLAN information summary.

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAN information:

```
G8272> display vlan

Flags:
u - untagged egress traffic for this VLAN
t - tagged egress traffic for this VLAN

VLAN    Name                             Status  IPMC FLOOD Ports

======= ================================ ======= ========== ===============
1       default                          ACTIVE  Disabled
                                                            Ethernet1/1(u)
                                                            Ethernet1/35(u)
                                                            Ethernet1/36(u)
                                                            Ethernet1/37(u)
                                                            Ethernet1/38(u)
                                                            Ethernet1/39(u)
                                                            Ethernet1/41(u)
                                                            Ethernet1/42(u)
                                                            Ethernet1/43(u)
                                                            Ethernet1/44(u)
                                                            Ethernet1/45(u)
                                                            Ethernet1/46(u)
                                                            Ethernet1/47(u)
                                                            Ethernet1/48(u)
                                                            Ethernet1/49(u)
                                                            Ethernet1/5O(u)
                                                            Ethernet1/51(u)
                                                            Ethernet1/52(u)
                                                            Ethernet1/53(u)
                                                            Ethernet1/54(u)
                                                            po12(u)
2       VLANOOO2                         ACTIVE  Disabled
                                                            Ethernet1/1(t)
                                                            Ethernet1/2(u)
3       VLANOOO3                         ACTIVE  Disabled
                                                            Ethernet1/1(t)
                                                            Ethernet1/3(u)
4       VLANOOO4                         ACTIVE  Disabled
                                                            Ethernet1/1(t)
                                                            Ethernet1/4(u)
5       VLANOOO5                         ACTIVE  Disabled
                                                            Ethernet1/1(t)
                                                            Ethernet1/5(u)
6       VLANOOO6                         ACTIVE  Disabled
                                                            Ethernet1/1(t)
                                                            Ethernet1/6(u)
7       VLANOOO7                         ACTIVE  Disabled
                                                            Ethernet1/1(t)
                                                            Ethernet1/7(u)
...
```

display vlan access-list

Displays Virtual LAN (VLAN) access list information.

Syntax

display vlan access-list [<*access list name*>**]**

where:

Parameter	Function
access list name	The name of the VLAN access list.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAN access list information:

```
G8272> display vlan access-list
```

display vlan dot1q tag native

Displays the status of tagging on the native Virtual LANs (VLANs).

Syntax

```
display vlan dot1q tag native
```

Modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays the status of tagging on the native VLANs:

```
G8272> display vlan dot1q tag native
Tag native vlan global setting: enabled
Port                Tag Native VLAN Status
------------------  ----------------------
Ethernet1/8         enabled
Ethernet1/4         enabled
po100               enabled
po1                 disabled
Ethernet1/3         enabled
Ethernet1/7         enabled
Ethernet1/10        enabled
Ethernet1/48        enabled (egress-only)
Ethernet1/40        enabled
Ethernet1/52/2      enabled
Ethernet1/51/2      enabled
Ethernet1/51/1      enabled
Ethernet1/51/4      enabled
Ethernet1/51/3      enabled
Ethernet1/52/1      enabled
Ethernet1/52/4      enabled
Ethernet1/52/3      enabled
```

display vlan filter

Displays information about all Virtual LAN (VLAN) filters.

Syntax

display vlan filter [access-map *<access map name>***|vlan** *<VLAN number>***]**

where:

Parameter	Function
`access-map` *access map name*	Displays filter information about the specified VLAN access map.
`vlan` *VLAN number*	Displays filter information about the specified VLAN. The *VLAN number* is from 1 to 4094.

Modes

All command modes

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VLAN filter information:

```
G8272> display vlan filter
```

display vrrp

Displays Virtual Router Redundancy Protocol (VRRP) information.

Syntax

`display vrrp [ipv6] [detail] [interface {`*<interface name>***`|ethernet`** *<chassis number/port number>***`|vlan`** *<VLAN number>***`}] [backup|init| master]`**

where:

Parameter	Function
`ipv6`	Displays VRRP information only for IPv6 sessions.
`detail`	Displays detailed VRRP information.
`interface` *interface name*	Displays VRRP information for the specified interface by name.
`interface ethernet` *chassis number/port number*	Displays VRRP information for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface vlan` *VLAN number*	Displays VRRP information for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`backup`	Displays information about VRRP groups in backup state.
`init`	Displays information about VRRP groups in init state.
`master`	Displays information about VRRP groups in master state.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VRRP information:

```
G8272> display vrrp
  Interface      VR  IpVer Pri Time    Pre  State   VR IP addr
------------------------------------------------------------------
  Ethernet1/51/4 1   IPV4  100 100  cs  Y   Master  15.1.1.10
  Vlan2          1   IPV4  102 100  cs  Y   Backup  200.0.2.10
  Vlan12         2   IPV4  100 100  cs  Y   Init    11.1.2.100
```

display vrrp vr

Displays Virtual Router Redundancy Protocol (VRRP) group information.

Syntax

`display vrrp [ipv6] [detail] vr` *<VRRP group>*
`[backup|init|master]`

where:

Parameter	Function
`ipv6`	Displays VRRP information only for IPv6 sessions.
`detail`	Displays detailed VRRP information.
VRRP group	Displays information about the specified VRRP group. The *VRRP group* is from 1 to 255.
`backup`	Displays information about VRRP groups in backup state.
`init`	Displays information about VRRP groups in init state.
`master`	Displays information about VRRP groups in master state.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays information about VRRP group `1`:

```
G8272> display vrrp vr 1
Interface      VR  IpVer Pri Time    Pre  State   VR IP addr
------------------------------------------------------------------
  Ethernet1/51/4 1   IPV4  100 100  cs  Y   Master  15.1.1.10
  Vlan2          1   IPV4  102 100  cs  Y   Backup  200.0.2.10
```

display vrrp statistics

Displays Virtual Router Redundancy Protocol (VRRP) statistics.

Syntax

display vrrp [ipv6] statistics [interface {<*interface name*>**|ethernet** <*chassis number*/*port number*>**|vlan** <*VLAN number*>**}|vr** <*VRRP group*>**] [backup|init|master]**

where:

Parameter	Function
`ipv6`	Displays VRRP statistics only for IPv6 sessions.
`interface` *interface name*	Displays VRRP statistics for the specified interface by name.
`interface ethernet` *chassis number/port number*	Displays VRRP statistics for the specified ethernet interface. The *chassis number* is 1 and the *port number* is from 1 to 128.
`interface vlan` *VLAN number*	Displays VRRP statistics for the specified Virtual LAN (VLAN). The *VLAN number* is from 1 to 4094.
`backup`	Displays statistics about VRRP groups in backup state.
`init`	Displays statistics about VRRP groups in init state.
`master`	Displays statistics about VRRP groups in master state.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays VRRP statistics:

```
G8272> display vrrp statistics
Checksum Errors: 0
 Version Errors: 0
 VRid Errors: 0
Address family IPv4
VRRP Id: 1 on interface: Ethernet1/51/4
 Master Transitions: 1
 Advertisements Rcvd: 71
 Pkts Rcvd with IP TTL Errors: 0
 Pkts Rcvd with Zero Priority: 0
 Pkts Sent with Zero Priority: 0
 Pkts Rcvd with Invalid TYPE: 0
 Pkts Rcvd with VR IP Address Errors: 0
 Pkts Rcvd with Packet Length Errors: 0
 Pkts Rcvd with IP Count Mismatch: 0
 Discontuinity Time: (0) 0:00:00.00
 Refresh Rate: 1000 ms

Address family IPv4
VRRP Id: 1 on interface: Vlan2
 Master Transitions: 0
 Advertisements Rcvd: 2138
 Pkts Rcvd with IP TTL Errors: 0
 Pkts Rcvd with Zero Priority: 0
 Pkts Sent with Zero Priority: 0
 Pkts Rcvd with Invalid TYPE: 0
 Pkts Rcvd with VR IP Address Errors: 0
 Pkts Rcvd with Packet Length Errors: 0
 Pkts Rcvd with IP Count Mismatch: 0
 Discontuinity Time: (0) 0:00:00.00
 Refresh Rate: 1000 ms

Address family IPv4
VRRP Id: 2 on interface: Vlan12
 Master Transitions: 0
 Advertisements Rcvd: 0
 Pkts Rcvd with IP TTL Errors: 0
 Pkts Rcvd with Zero Priority: 0
 Pkts Sent with Zero Priority: 0
 Pkts Rcvd with Invalid TYPE: 0
 Pkts Rcvd with VR IP Address Errors: 0
 Pkts Rcvd with Packet Length Errors: 0
 Pkts Rcvd with IP Count Mismatch: 0
 Discontuinity Time: (0) 0:00:00.00
 Refresh Rate: 1000 ms
```

display vrrp summary

Displays a short Virtual Router Redundancy Protocol (VRRP) information summary.

Syntax

`display vrrp [ipv6] summary`

where:

Parameter	Function
`ipv6`	Displays VRRP information only for IPv6 sessions.

Modes

- User EXEC mode
- Privileged EXEC mode

History

Release	Modification
10.1	The command was introduced.

Example

The following command displays a short VRRP information summary:

```
G8272> display vrrp summary
Total Number of Groups Configured: 3
        Init : 0         Backup : 1       Master : 2
Number of VRRP enabled interfaces : 3

FSM State History

Ethernet1/51/4 - Group 1 (IPV4)
-------------------------------------------------------------------
Time       Prev State             State             Event
-------------------------------------------------------------------
65         BACKUP                 MASTER             preempted


Vlan2 - Group 1 (IPV4)
-------------------------------------------------------------------
Time       Prev State             State             Event
-------------------------------------------------------------------
298        INIT                   BACKUP             Not Master


Vlan12 - Group 2 (IPV4)
-------------------------------------------------------------------
Time       Prev State             State             Event
-------------------------------------------------------------------
78         BACKUP                 MASTER             no response
```

Appendix A. Getting help and technical assistance

If you need help, service, or technical assistance or just want more information about Lenovo products, you will find a wide variety of sources available from Lenovo to assist you.

Use this information to obtain additional information about Lenovo and Lenovo products, and determine what to do if you experience a problem with your Lenovo system or optional device.

Note: This section includes references to IBM web sites and information about obtaining service. IBM is Lenovo's preferred service provider for the System x, Flex System, and NeXtScale System products.

Before you call, make sure that you have taken these steps to try to solve the problem yourself.

If you believe that you require warranty service for your Lenovo product, the service technicians will be able to assist you more efficiently if you prepare before you call.

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system and any optional devices are turned on.
- Check for updated software, firmware, and operating-system device drivers for your Lenovo product. The Lenovo Warranty terms and conditions state that you, the owner of the Lenovo product, are responsible for maintaining and updating all software and firmware for the product (unless it is covered by an additional maintenance contract). Your service technician will request that you upgrade your software and firmware if the problem has a documented solution within a software upgrade.
- If you have installed new hardware or software in your environment, check the IBM ServerProven website to make sure that the hardware and software is supported by your product.
- Go to the IBM Support portal to check for information to help you solve the problem.
- Gather the following information to provide to the service technician. This data will help the service technician quickly provide a solution to your problem and ensure that you receive the level of service for which you might have contracted.
  - Hardware and Software Maintenance agreement contract numbers, if applicable
  - Machine type number (if applicable–Lenovo 4-digit machine identifier)
  - Model number
  - Serial number
  - Current system UEFI and firmware levels
  - Other pertinent information such as error messages and logs

- Start the process of determining a solution to your problem by making the pertinent information available to the service technicians. The IBM service technicians can start working on your solution as soon as you have completed and submitted an Electronic Service Request.

You can solve many problems without outside assistance by following the troubleshooting procedures that Lenovo provides in the online help or in the Lenovo product documentation. The Lenovo product documentation also describes the diagnostic tests that you can perform. The documentation for most systems, operating systems, and programs contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the documentation for the operating system or program.

Appendix B. Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area.

Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service.

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1009 Think Place - Building One
Morrisville, NC 27560
U.S.A.

Attention: Lenovo Director of Licensing

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Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

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Other company, product, or service names may be trademarks or service marks of others.

Important Notes

Processor speed indicates the internal clock speed of the microprocessor; other factors also affect application performance.

CD or DVD drive speed is the variable read rate. Actual speeds vary and are often less than the possible maximum.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for 1,024 bytes, MB stands for 1,048,576 bytes and GB stands for 1,073,741,824 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1,000,000 bytes and GB stands for 1,000,000,000 bytes. Total user-accessible capacity can vary depending on operating environments.

Maximum internal hard disk drive capacities assume the replacement of any standard hard disk drives and population of all hard-disk-drive bays with the largest currently supported drives that are available from Lenovo.

Maximum memory might require replacement of the standard memory with an optional memory module.

Each solid-state memory cell has an intrinsic, finite number of write cycles that the cell can incur. Therefore, a solid-state device has a maximum number of write cycles that it can be subjected to, expressed as total bytes written (TBW). A device that has exceeded this limit might fail to respond to system-generated commands or might be incapable of being written to. Lenovo is not responsible for replacement of a device that has exceeded its maximum guaranteed number of program/erase cycles, as documented in the Official Published Specifications for the device.

Lenovo makes no representations or warranties with respect to non-Lenovo products. Support (if any) for the non-Lenovo products is provided by the third party, not Lenovo.

Some software might differ from its retail version (if available) and might not include user manuals or all program functionality.

Recycling Information

Lenovo encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. Lenovo offers a variety of programs and services to assist equipment owners in recycling their IT products. For information on recycling Lenovo products, go to:

http://www.lenovo.com/recycling

Particulate Contamination

Attention: Airborne particulates (including metal flakes or particles) and reactive gases acting alone or in combination with other environmental factors such as humidity or temperature might pose a risk to the device that is described in this document.

Risks that are posed by the presence of excessive particulate levels or concentrations of harmful gases include damage that might cause the device to malfunction or cease functioning altogether. This specification sets forth limits for particulates and gases that are intended to avoid such damage. The limits must not be viewed or used as definitive limits, because numerous other factors, such as temperature or moisture content of the air, can influence the impact of particulates or environmental corrosives and gaseous contaminant transfer. In the absence of specific limits that are set forth in this document, you must implement practices that maintain particulate and gas levels that are consistent with the protection of human health and safety. If Lenovo determines that the levels of particulates or gases in your environment have caused damage to the device, Lenovo may condition provision of repair or replacement of devices or parts on implementation of appropriate remedial measures to mitigate such environmental contamination. Implementation of such remedial measures is a customer responsibility..

Contaminant	Limits
Particulate	• The room air must be continuously filtered with 40% atmospheric dust spot efficiency (MERV 9) according to ASHRAE Standard 52.2[1]. • Air that enters a data center must be filtered to 99.97% efficiency or greater, using high-efficiency particulate air (HEPA) filters that meet MIL-STD-282. • The deliquescent relative humidity of the particulate contamination must be more than 60%[2]. • The room must be free of conductive contamination such as zinc whiskers.
Gaseous	• Copper: Class G1 as per ANSI/ISA 71.04-1985[3] • Silver: Corrosion rate of less than 300 Å in 30 days

[1] ASHRAE 52.2-2008 - *Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size*. Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

[2] The deliquescent relative humidity of particulate contamination is the relative humidity at which the dust absorbs enough water to become wet and promote ionic conduction.

[3] ANSI/ISA-71.04-1985. *Environmental conditions for process measurement and control systems: Airborne contaminants*. Instrument Society of America, Research Triangle Park, North Carolina, U.S.A.

Telecommunication Regulatory Statement

This product may not be certified in your country for connection by any means whatsoever to interfaces of public telecommunications networks. Further certification may be required by law prior to making any such connection. Contact a Lenovo representative or reseller for any questions.

Electronic Emission Notices

When you attach a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices that are supplied with the monitor.

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used to meet FCC emission limits. Lenovo is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that might cause undesired operation.

Industry Canada Class A Emission Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de Conformité à la Réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Australia and New Zealand Class A Statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

European Union - Compliance to the Electromagnetic Compatibility Directive

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC (until April 19, 2016) and EU Council Directive 2014/30/EU (from April 20, 2016) on the approximation of the laws of the Member States relating to electromagnetic compatibility. Lenovo cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the installation of option cards from other manufacturers.

This product has been tested and found to comply with the limits for Class A equipment according to European Standards harmonized in the Directives in compliance. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

Lenovo, Einsteinova 21, 851 01 Bratislava, Slovakia

CE

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Germany Class A Statement

Deutschsprachiger EU Hinweis:

Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2014/30/EU (früher 2004/108/EC) zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der Klasse A der Norm gemäß Richtlinie.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der Lenovo empfohlene Kabel angeschlossen werden. Lenovo übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der Lenovo verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der Lenovo gesteckt/eingebaut werden.

Deutschland:

Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Betriebsmittein

Dieses Produkt entspricht dem „Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln“ EMVG (früher „Gesetz über die elektromagnetische Verträglichkeit von Geräten“). Dies ist die Umsetzung der EU-Richtlinie 2014/30/EU (früher 2004/108/EC) in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln, EMVG vom 20. Juli 2007 (früher Gesetz über die elektromagnetische Verträglichkeit von Geräten), bzw. der EMV EU Richtlinie 2014/30/EU (früher 2004/108/EC), für Geräte der Klasse A.

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen. Verantwortlich für die Konformitätserklärung nach Paragraf 5 des EMVG ist die Lenovo (Deutschland) GmbH, Meitnerstr. 9, D-70563 Stuttgart.

Informationen in Hinsicht EMVG Paragraf 4 Abs. (1) 4:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

Nach der EN 55022: „Dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen."

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Anmerkung: Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den Handbüchern angegeben, zu installieren und zu betreiben.

Japan VCCI Class A Statement

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This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case the user may be required to take corrective actions.

Japan Electronics and Information Technology Industries Association (JEITA) Statement

高調波ガイドライン適合品

Japan Electronics and Information Technology Industries Association (JEITA) Confirmed Harmonics Guidelines (products less than or equal to 20 A per phase)

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서 판매자 또는 사용자는 이 점을 주의하시기
바라며, 가정외의 지역에서 사용하는 것을 목
적으로 합니다.

This is electromagnetic wave compatibility equipment for business (Type A). Sellers and users need to pay attention to it. This is for any areas other than home.

Russia Electromagnetic Interference (EMI) Class A statement

ВНИМАНИЕ! Настоящее изделие относится к классу А.
В жилых помещениях оно может создавать радиопомехи, для
снижения которых необходимы дополнительные меры

People's Republic of China Class A electronic emission statement

中华人民共和国“A类”警告声明

声 明

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，
可能需要用户对其干扰采取切实可行的措施。

Taiwan Class A compliance statement

警告使用者:
這是甲類的資訊產品，在
居住的環境中使用時，可
能會造成射頻干擾，在這
種情況下，使用者會被要
求採取某些適當的對策。