

LCOS SX 4.30

CLI Reference

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LANCOM
SYSTEMS

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1 Introduction

LCOS SX is the operating system for the LANCOM switches and is part of the LANCOM operating systems family.

The LANCOM operating systems are the trusted basis for the entire LANCOM product portfolio. Each operating system embodies the LANCOM values of **security**, **reliability**, and **future viability**.

➤ **Maximum security for your networks**

as each LANCOM operating system is carefully maintained and developed in-house and with the accustomed quality. They are all guaranteed backdoor-free.

➤ **Reliability of the highest order**

as they receive regular Release Updates, Security Updates, and Major Releases over their entire product lifetime.

➤ **Future viability for your networks**

according to the LANCOM Lifecycle Policy, i. e. they are free of charge for all LANCOM products and come with major new features.

2 Operation of CLI Management

Initial Configuration

This chapter instructs you how to configure and manage the switch through the CLI interface. With this facility, you can easily access and monitor via the switch's console port its status, including MIBs status, each port activity, spanning tree status, port aggregation status, multicast traffic, VLAN and priority status, even illegal access record and so on.

The serial port's configuration requirements are as follows:

- > Default Baud rate: 115,200 bps
- > Character Size: 8 Characters
- > Parity: None
- > Stop bit: One
- > Data bits: 8
- > Flow control: none

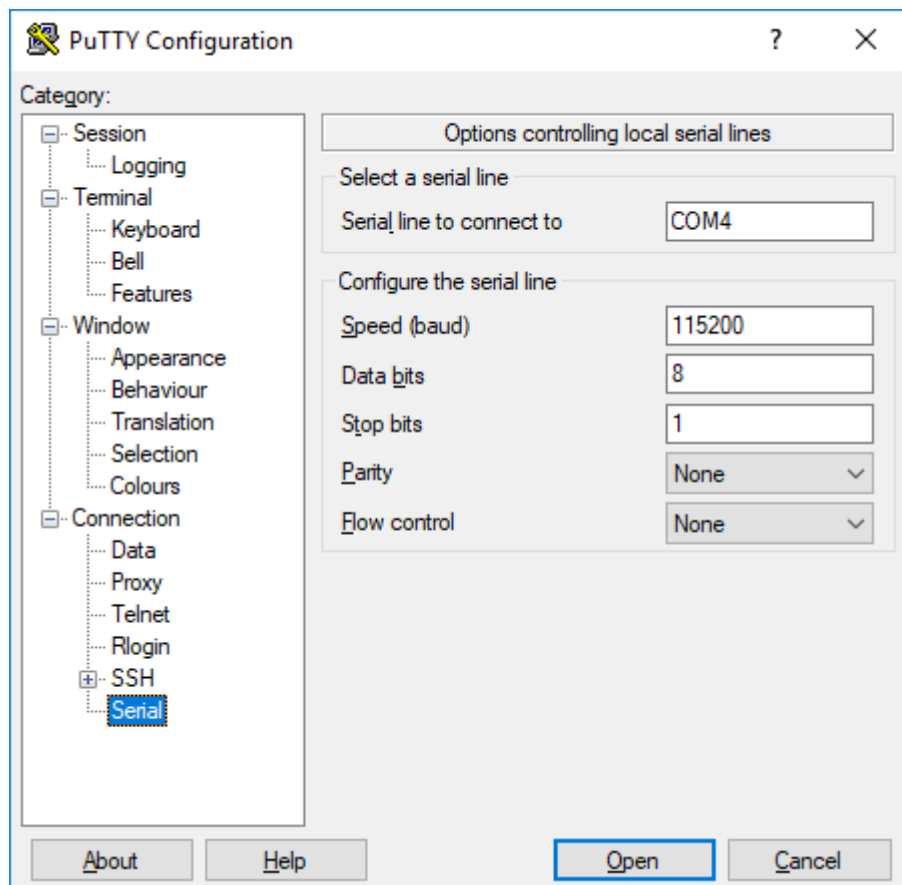


Figure 1: Console configuration

Connecting to the console port

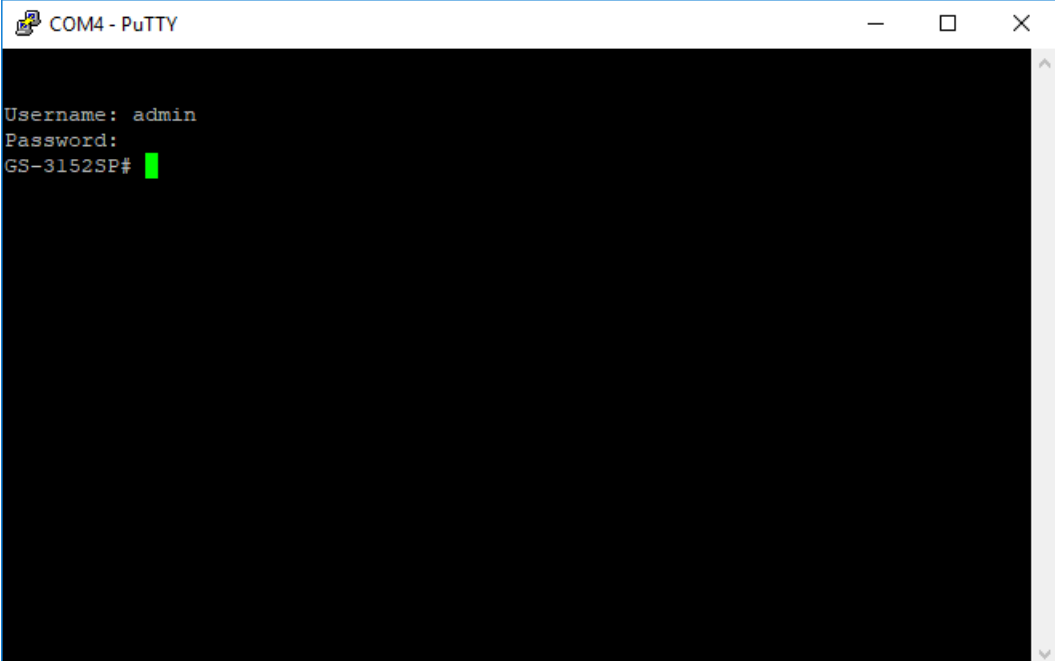
The serial port (RJ45/Console) on the switch's front panel is used to connect to the switch for out-of-band console configuration. You can use the cable (RJ45 to serial) delivered with the switch to connect to a serial port in your PC. Alternatively use a serial to USB adapter.

The command-line-driven configuration program can be accessed from a terminal or a PC running a terminal emulation program.

After the switch has been connected to the PC, you can access it via the console port. For instance, it will show the following screen and ask you to input username and password in order to log.

The default username is `admin`. The default password is empty. For the first time to use, please enter the default username and for the password just press the Enter button. The login process is now completed.

! Assign your administrator account a password! You can do this with the command `username` in configuration mode.



```
COM4 - PuTTY
Username: admin
Password:
GS-3152SP#
```

Figure 2: Console configuration

- i Typing `help` will give you a description of the interactive help system. It uses the `?` to give you help. Typing `?` will give you an overview of the possible commands. Typing a command followed by the `?` will give you all possible arguments of the command.

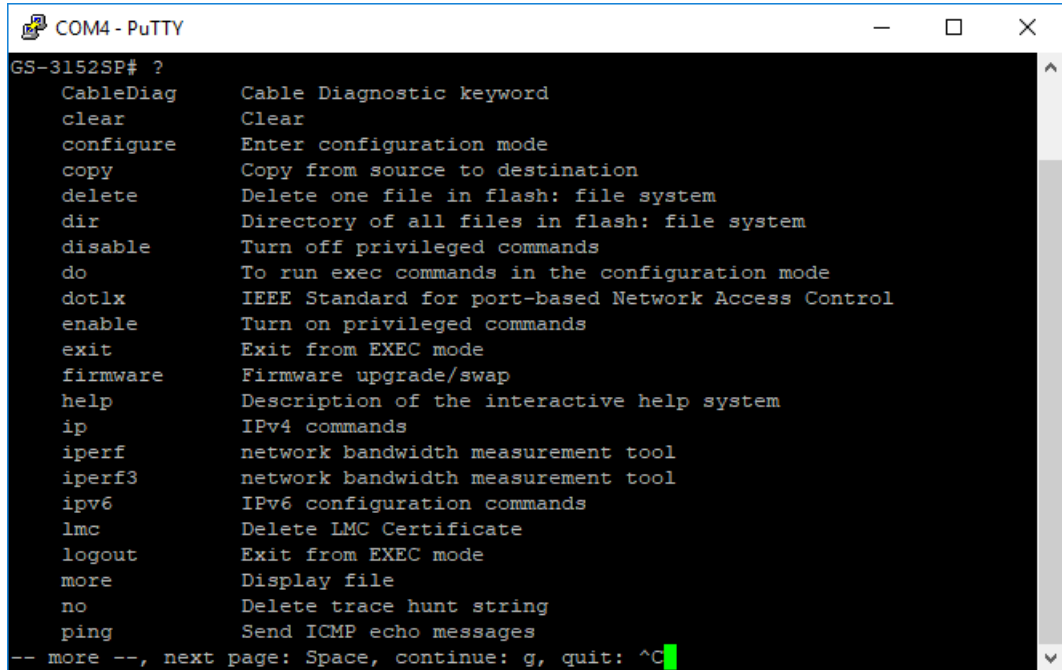


Figure 3: Console configuration

Connecting via SSH using PuTTY

The connection to the switch can also be established via SSH connection using tools like PuTTY:

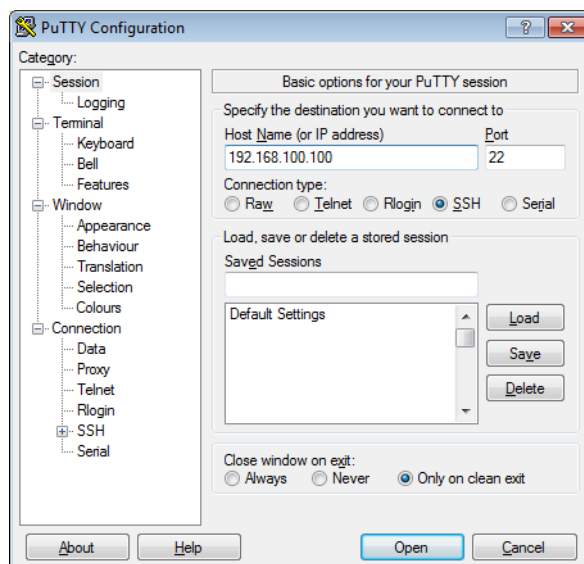


Figure 4: PuTTY configuration

If your switch already has an IP address you would see it in LANconfig and could open the context menu. Click on **Console Session > Open SSH Session**.

3 CLI Command Modes

The switch's commands work in several command modes. Each command mode supports specific CLI commands. For example, the `interface` command only works when entered in global configuration mode.

At the prompt you can see the current command mode and level of access. The command modes are organized as a tree, and users are initially in privileged exec mode. Some of the modes have submodes. To leave the current mode and go back to the previous mode you can always use the `exit` command.

Table 1: Command Modes Summary

| Mode | Access mode | Prompt |
|--|---|--------------------------------|
| Exec (User) | To enter user exec mode, enter the <code>disable</code> command from privileged exec mode. | <Switch>> |
| Exec (Privileged) | To enter privileged exec mode, enter the <code>enable</code> command from user exec mode or <code>exit</code> from configuration mode. | <Switch># |
| Configuration | From privileged exec mode, enter the <code>configure</code> command. | <Switch>(config)# |
| Interface configuration | From global configuration mode, specify an interface by entering the <code>interface</code> command followed by a port identification. | <Switch>(config-if)# |
| Local link aggregation interface configuration | From global configuration mode, specify an interface by entering the <code>interface llag</code> command followed by a LLAG ID. | <Switch>(config-llag)# |
| Static VLAN configuration | From global configuration mode, specify a VLAN by entering the <code>interface vlan</code> command followed by a VLAN interface number. | <Switch>(config-if-vlan)# |
| Terminal line configuration | From global configuration mode, specify a terminal line by entering the <code>line</code> command followed by appropriate parameters. | <Switch>(config-line)# |
| IPMC profile configuration | From global configuration mode. | <Switch>(config-ipmc-profile)# |
| SNMP Server Host configuration | From global configuration mode, specify a SNMP server by entering the <code>snmp-server host</code> command followed by the name of a host configuration. | <Switch>(config-snmps-host)# |
| Spanning tree aggregation mode | From global configuration mode, enter the <code>spanning-tree aggregation</code> command. | <Switch>(config-stp-aggr)# |

Exec (User) commands

The commands available at the user level are a subset of those available at the privileged level. In general, use the user exec commands to temporarily change terminal settings, perform basic tests, and list system information.

The user exec mode prompt is the device name followed by the greater sign (>).

Exec (Privileged) commands

Because many of the privileged commands configure operating parameters, privileged access should be password-protected to prevent unauthorized use. The privileged command set includes those commands contained in user exec mode, as well as the `configure` command through which you access the remaining command modes.

If your system administrator has set a password, you are prompted to enter it before being granted access to privileged EXEC mode. The password does not appear on the screen and is case sensitive.

The privileged exec mode prompt is the device name followed by the pound sign (#).

Configuration mode commands

Configuration commands apply to features that affect the device as a whole. Use the **configure** command in privileged exec mode to enter configuration mode.



The supported commands can vary depending on the version of software in use. To display a comprehensive list of commands, enter a question mark (?) at the prompt.

```
<Switch>(config)# ?
```

Interface configuration mode commands

Interface configuration commands modify the operation of the interface. Interface configuration commands always follow a global configuration command, which defines the interface type.

Static VLAN configuration mode commands

Use this mode to configure normal-range VLANs (VLAN IDs 1 to 1005) or, when VTP mode is transparent, to configure extended-range VLANs (VLAN IDs 1006 to 4094). When VTP mode is transparent, the VLAN and VTP configuration is saved in the running configuration file, and you can save it to the switch startup configuration file by using the privileged exec command `copy running-config startup-config`. The configurations of VLAN IDs 1 to 1005 are saved in the VLAN database if VTP is in transparent or server mode. The extended-range VLAN configurations are not saved in the VLAN database.

For extended-range VLANs, all characteristics except the MTU size must remain at the default setting.

Terminal line configuration mode commands

Terminal line configuration commands modify the operation of a terminal line. They always follow a line command, which defines a terminal line number. Use these commands to change terminal parameter settings line-by-line or for a range of lines.

4 Global commands

Global commands in privileged execution mode. The prompt of the command line is shown as `<sys_name>#`

| Command | Function |
|-------------------|---|
| <i>CableDiag</i> | Perform cable diagnostics. |
| <i>clear</i> | Reset functions, see Clear commands on page 16. |
| <i>configure</i> | Enter configuration mode, see Configuration mode commands on page 101. |
| <i>copy</i> | Copy from source to destination. |
| <i>delete</i> | Delete one file in flash: file system. |
| <i>dir</i> | Directory of all files in flash: file system. |
| <i>disable</i> | Turn off privileged commands. |
| <i>do</i> | To run exec commands in the configuration mode. |
| <i>dot1x</i> | IEEE Standard for port-based Network Access Control. |
| <i>enable</i> | Turn on privileged commands. |
| <i>exit</i> | Exit from EXEC mode |
| <i>firmware</i> | Firmware upgrade/swap. |
| <i>help</i> | Description of the interactive help system. |
| <i>ip</i> | IPv4 commands. |
| <i>ipv6</i> | IPv6 commands. |
| <i>lmc</i> | Delete the certificate used for the connection to the LANCOM Management Cloud (LMC). |
| <i>logout</i> | Exit from EXEC mode |
| <i>more</i> | Display file. |
| <i>no</i> | Delete trace hunt string. |
| <i>ping</i> | Send ICMP echo messages. |
| <i>reload</i> | Reload system. |
| <i>send</i> | Send a message to other tty lines. |
| <i>show</i> | Show command, see Show commands on page 39. |
| <i>startlmc</i> | Connect to LANCOM Management Cloud (LMC). |
| <i>terminal</i> | Set terminal line parameters. |
| <i>trace</i> | Toggle LMC tracing. |
| <i>traceroute</i> | The traceroute command is used to discover the routes that packets actually take when traveling to their destination. |

4.1 CableDiag

Perform cable diagnostics.

4 Global commands

Syntax:

```
CableDiag interface GigabitEthernet <port_type_id>
```

Parameter:

interface

Interface keyword

GigabitEthernet

1 Gigabit Ethernet Port

<port_type_id>

Port ID in 1/<Port ID>

Example:

```
<sys_name># CableDiag interface GigabitEthernet 1/2
Starting Cable Diagnostic - Please wait
Interface          Link Status      Test Result      Length
-----
GigabitEthernet 1/2  Link Down       detect error or check cable length is between 7-120
meters
<sys_name>#
```

4.2 Clear commands

Clear commands in privileged execution mode. The prompt of the command line is shown as <sys_name>#

| Command | Function |
|----------------------|---|
| <i>access</i> | Clear statistics of access management. |
| <i>access-list</i> | Clear traffic statistics of an access list entry. |
| <i>dot1x</i> | Clear the statistics counters of the IEEE Standard for port-based Network Access Control. |
| <i>ip</i> | Clear Interface Internet Protocol configuration commands. |
| <i>ipv6</i> | Clear IPv6 configuration commands. |
| <i>lacp</i> | Clear LACP statistics. |
| <i>link-oam</i> | Clear Link OAM statistics. |
| <i>lldp</i> | Clear LLDP statistics. |
| <i>logging</i> | Clear system logging messages. |
| <i>mac</i> | Clear MAC address table. |
| <i>mvr</i> | Clear Multicast VLAN Registration statistics. |
| <i>port-security</i> | Clear port security. |
| <i>sflow</i> | Clear statistics flow. |
| <i>spanning-tree</i> | Clear STP bridge detected protocols or interface statistics. |
| <i>statistics</i> | Clear statistics for one or more given interfaces. |
| <i>system</i> | Clear system LED status. |

4.2.1 access

Clear statistics of access management.

Syntax:

```
clear access management statistics
```

Parameter:**management**

Access management configuration

statistics

Statistics data.

Example:

```
<sys_name># clear access management statistics
<sys_name>#
```

4.2.2 access-list

Clear traffic statistics of an access list entry.

Syntax:

```
clear access-list ace statistics
```

Parameter:**ace**

Access list entry

statistics

Traffic statistics

Example:

```
<sys_name># clear access-list ace statistics
<sys_name>#
```

4.2.3 dot1x

Clear the statistics counters of the IEEE Standard for port-based Network Access Control.

Syntax:

```
clear dot1x statistics
```

```
clear dot1x statistics interface { [ * ] | GigabitEthernet | 10GigabitEthernet } <port_type_list>
```

Parameter:**statistics**

Clears the statistics counters

interface

Interface

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

10GigabitEthernet

10 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># clear dot1x statistics interface GigabitEthernet 1/1-48
<sys_name>#
```

4.2.4 ip

Clear Interface Internet Protocol configuration commands.

Syntax:

```
clear ip acd [ | ( begin | exclude | include ) <line> ]
clear ip arp
clear ip dhcp detailed statistics { server | client | snooping | relay | helper | all }
[ interface { [ * ] | GigabitEthernet | 10GigabitEthernet } <port_type_list>]
clear ip dhcp relay statistics
clear ip dhcp server binding <ipv4_ucast>
clear ip dhcp server binding type [ automatic | manual | expired ]
clear ip dhcp server statistics
clear ip dhcp snooping statistics [ interface { [ * ] | GigabitEthernet |
10GigabitEthernet } <port_type_list> ]
clear ip igmp snooping statistics
clear ip igmp snooping vlan <vlan_list> statistics
clear ip ospf process
clear ip statistics
```

Parameter:**acd**

Address Conflict Detection

arp

Clear ARP cache

dhcp

Dynamic Host Configuration Protocol

igmp

Internet Group Management Protocol

ospf

Open Shortest Path First (OSPF)

statistics

Traffic statistics

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

detailed

Detailed statistics

relay

DHCP relay agent configuration

server

Miscellaneous DHCP server information

snooping

DHCP snooping

all

Clear all DHCP related statistics

client

DHCP client

helper

DHCP normal L2 or L3 forward

relay

DHCP relay

server

DHCP server

interface

Select an interface to configure

<port_type_list>

Port list for all port types or <Port list or ID>

binding

Clear DHCP binding

statistics

DHCP server statistics

<ipv4_ucast>

IP address of the binding

type

Type of bindings to clear

automatic

Clear (expire) automatic bindings

expired

Clear (remove) expired bindings

manual

Clear (expire) manual bindings

snooping

Snooping IGMP

statistics

Running IGMP snooping counters

vlan

Search by VLAN

<vlan_list>

VLAN identifier (VID)

process

OSPF routing process

Example:

```
<sys_name># clear ip arp
<sys_name>#
```

4.2.5 ipv6

Clear IPv6 configuration commands.

Syntax:

```
clear ipv6 mld snooping [ vlan <v_vlan_list> ] statistics
```

```
clear ipv6 neighbors
```

```
clear ipv6 statistics
```

Parameter:**mld**

Multicast Listener Discovery

neighbors

IPv6 neighbors

statistics

Traffic statistics

snooping

Snooping MLD

vlan

IPv6 interface traffic

<vlan_list>

VLAN identifier (VID)

statistics

Running MLD snooping counters

Example:

```
<sys_name># clear ipv6 mld snooping vlan 3 statistics
<sys_name># clear ipv6 neighbors
<sys_name># clear ipv6 statistics
```

4.2.6 lacp

Clear LACP statistics.

Syntax:

```
clear lacp statistics
```

Parameter:**statistics**

Clear all LACP statistics

Example:

```
<sys_name># clear lacp statistics
<sys_name>#
```

4.2.7 lldp

Clear LLDP statistics.

Syntax:

```
clear lldp statistics
clear lldp statistics | [begin | exclude | include] <line>
clear lldp statistics global
clear lldp statistics global | [begin | exclude | include] <line>
clear lldp interface *
clear lldp interface * | [begin | exclude | include] <line>
clear lldp interface * <port_type_list>
clear lldp interface ( GigabitEthernet ) <port_type_list>
```

Parameter:**statistics**

Clear LLDP statistics

|

Output modifiers

global

Clear global counters

interface

Interface keyword

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet Port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># clear lldp statistics interface *  
<sys_name>#
```

4.2.8 logging

Clear system logging messages.

Syntax:

```
clear logging
```

```
clear logging [ error ] [ informational ] [ notice ] [ warning ]
```

Parameter:**error**

Severity 3: Error conditions

informational

Severity 6: Informational messages

notice

Severity 5: Normal but significant condition

warning

Severity 4: Warning conditions

Example:

```
<sys_name># clear logging informational error warning
<sys_name>#
```

4.2.9 mac

Clear MAC address table.

Syntax:

```
clear mac address-table
```

Parameter:**address-table**

Clear MAC address table

Example:

```
<sys_name># clear mac address-table
<sys_name>#
```

4.2.10 mvr

Clear Multicast VLAN Registration statistics.

Syntax:

```
clear mvr name <word16> statistics
```

```
clear mvr statistics
```

```
clear mvr vlan <vlan_list> statistics
```

Parameter:**name**

MVR multicast name

statistics

Running MVR protocol counters

vlan

MVR multicast vlan

<word16>

MVR multicast VLAN name

<vlan_list>

MVR multicast VLAN list

Example:

```
<sys_name># clear mvr vlan 25 statistics
<sys_name>#
```

4.2.11 *port-security*

Clear port security.

Syntax:

```
clear port-security dynamic
clear port-security dynamic address <mac_addr>
clear port-security dynamic address <mac_addr> vlan <vlan_id>
clear port-security dynamic interface *
clear port-security dynamic interface * [ <port_type_list> | vlan <vlan_id>]
clear port-security dynamic interface ( GigabitEthernet ) <port_type_list>
clear port-security dynamic vlan <vlan_id>
```

Parameter:

dynamic

Dynamic entries

address

Clear a specific (VLAN, MAC) tuple

interface

Port interface

vlan

Delete all MAC addresses on a given VLAN

<mac_addr>

vlan

VLAN keyword

<vlan_id>

VLAN on which to clear all MAC addresses

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

<vlan_id>

VLANs on interface to clear all MAC addresses for

Example:

```
<sys_name># clear port-security dynamic vlan 1
<sys_name>#
```

4.2.12 *sflow*

Clear statistics flow.

Syntax:

```
clear sflow statistics receiver
clear sflow statistics samplers
clear sflow statistics samplers interface *
clear sflow statistics samplers interface * <port_type_list>
clear sflow statistics statistics samplers interface ( GigabitEthernet ) <port_type_list>
```

Parameter:**statistics**

sflow statistics

receiver

Clear statistics for receiver

samplers

Clear statistics for samplers

interface

Clear statistics for a specific interface or interfaces

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># clear sflow statistics interface GigabitEthernet 1/1-48
<sys_name>#
```

4.2.13 *spanning-tree*

Clear STP bridge detected protocols or statistics.

Syntax:

```
clear spanning-tree detected-protocols
clear spanning-tree detected-protocols interface *
clear spanning-tree detected-protocols interface * <port_type_list>
clear spanning-tree detected-protocols ( GigabitEthernet ) <port_type_list>
clear spanning-tree statistics
clear spanning-tree statistics interface *
clear spanning-tree statistics interface * <port_type_list>
clear spanning-tree statistics interface ( GigabitEthernet ) <port_type_list>
```

Parameter:**detected-protocols**

Set the STP migration check

statistics

STP statistic

interface

Choose port

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># clear spanning-tree detected-protocols interface *
<sys_name>#
```

4.2.14 *statistics*

Clear statistics for one or more given interfaces.

Syntax:

```
clear statistics *
clear statistics * <port_type_list>
clear statistics ( GigabitEthernet ) <port_type_list>
clear statistics interface *
clear statistics interface * <port_type_list>
clear statistics interface ( GigabitEthernet ) <port_type_list>
```

Parameter:**interface**

Interface

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># clear statistics GigabitEthernet 1/1-48
<sys_name>#
```

4.2.15 *system*

Clear system LED status.

Syntax:

```
clear system led status ( all | fatal | software )
clear system led status ( all | fatal | software ) ( ( begin | exclude | include ) <line> )
```

Parameter:**led**

LED

status

Status

all

Clear all error status of the system LED and back to normal indication

fatal

Clear fatal error status of the system LED

software

Clear generic software error status of the system LED

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># clear system led status software
<sys_name>#
```

4.3 configure

Using this command you can enter the configuration mode.

Syntax:

```
configure terminal
```

Parameter:**terminal**

Configure from the terminal

Example:

```
<sys_name># configure terminal
<sys_name>(config)#
```

4.4 copy

Copy from source to destination.

Syntax:

```
copy running-config [ startup-config | <url_file> ]
copy startup-config [ running-config | <url_file> ]
copy <url_file> [ startup-config | running-config ]
copy running-config [ startup-config | <url_file> ] syntax-check
copy startup-config [ running-config | <url_file> ] syntax-check
copy <url_file> [ startup-config | running-config ] syntax-check
copy running-config [ startup-config | <url_file> ] syntax-check | { [ begin | exclude | include ] <line> }
copy startup-config [ running-config | <url_file> ] syntax-check | { [ begin | exclude | include ] <line> }
copy <url_file> [ startup-config | running-config ] syntax-check | { [ begin | exclude | include ] <line> }
copy running-config [ startup-config | <url_file> ] | { [ begin | exclude | include ] <line> }
copy startup-config [ running-config | <url_file> ] | { [ begin | exclude | include ] <line> }
copy <url_file> [ startup-config | running-config ] | { [ begin | exclude | include ] <line> }
```

Parameter:

running-config

Current running configuration

startup-config

Startup configuration

<url_file>

File in FLASH or on TFTP server. Syntax: <flash:filename | tftp://server/path-and-filename>. A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 63 and hyphen must not be first character. The file name content that only contains '.' is not allowed.

|

Output modifiers

syntax-check

Perform syntax check on source configuration

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># copy startup-config running-config
<sys_name>#
```

4.5 delete

Delete one file in flash: file system.

Syntax:

```
delete <url_file>
```

Parameter:**<url_file>**

File in FLASH or on TFTP server. Syntax: <flash:filename | tftp://server/path-and-filename>. A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 63 and hyphen must not be first character. The file name content that only contains '.' is not allowed.

Example:

```
<sys_name># delete text
<sys_name>#
```

4.6 dir

Directory of all files in flash: file system.

Syntax:

```
dir [ [ begin | exclude | include ] <line>
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># dir
Directory of flash:
r- 2018-07-13 09:27:54      650 default-config
rw 1970-01-01 00:30:38   10466 startup-config
2 files, 11116 bytes total.

Flash size: 3284992 bytes (3.1 MiB)
Flash free: 3239936 bytes (3.1 MiB)
<sys_name>#
```

4.7 *disable*

Turn off privileged commands.

Syntax:

```
disable
```

```
disable <0-15>
```

Parameter:

<0-15>

Privilege level

Example:

```
<sys_name># disable 1
<sys_name>#
```

4.8 *do*

To run other exec commands.

Syntax:

```
do <LINE>{ [[LINE]] }
```

Parameter:

LINE

Exec Command

Example:

```
<sys_name># do show clock
System Time      : 2011-01-01T00:03:44+00:00
<sys_name>#
```

4.9 dot1x

IEEE Standard for port-based Network Access Control.

Syntax:

```
dot1x initialize
dot1x initialize interface *
dot1x initialize interface * <port_type_list>
dot1x initialize interface GigabitEthernet <port_type_list>
```

Parameter:

initialize

Force re-authentication immediately

interface

Interface

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet Port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># dot1x initialize interface GigabitEthernet 1/1-4
<sys_name>#
```

4.10 enable

Turn on privileged commands.

Syntax:

```
enable
enable <1-15>
```

Parameter:

<1-15>

Choose privileged level

Example:

```
<sys_name># enable 10
<sys_name>#
```

4.11 *exit*

Exit from current mode. If you are in configuration mode, the command will get you back to exec mode. If you are in exec mode, it will log you out.

Syntax:

```
exit
```

Example:

```
<sys_name># exit
Press ENTER to get started
```

4.12 *firmware*

Firmware upgrade/swap.

Syntax:

```
firmware swap
```

```
firmware upgrade <url_file>
```

Parameter:

swap

Swap between active and alternate firmware image

upgrade

Upgrade

<url_file>

Uniform Resource Locator. It is a specific character string that constitutes a reference to a resource. Syntax:

```
<protocol>://[<username>[:<password>]@]<host>[:<port>][/<path>]/<file_name>
```

If the following special characters: space ! " # \$ % & ' () * + , / : ; < = > ? @ [\] ^ ` { | } ~ need to be contained in the input URL string, they should be percent-encoded. A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 63 and hyphen must not be first character. The file name content that only contains '.' is not allowed.

Example:

```
<sys_name># firmware upgrade tftp://192.168.1.1/running-config
Programming image...
<sys_name>#
```

4.13 *help*

Description of the interactive help system.

Syntax:

```
help
```

Example:

```
<sys_name># help
Help may be requested at any point in a command by entering
a question mark '?'. If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
command argument (e.g. 'show ?') and describes each possible
argument.
2. Partial help is provided when an abbreviated argument is entered
and you want to know what arguments match the input
(e.g. 'show pr?'.)
<sys_name>#
```

4.14 ip

IPv4 commands.

Syntax:

```
ip dhcp retry interface vlan <vlan_id>
```

Parameter:**dhcp**

DHCP commands

retry

Restart the DHCP query process

interface

Interface

vlan

VLAN interface

<vlan_id>

VLAN ID

Example:

```
<sys_name># ip dhcp retry interface vlan 1
<sys_name>#
```

4.15 ipv6

IPv6 commands.

4 Global commands

Syntax:

```
ipv6 dhcp-client restart
```

```
ipv6 dhcp-client restart interface vlan <vlan_list>
```

Parameter:**dhcp-client restart**

Restart DHCPv6 client service globally

dhcp-client restart interface vlan <vlan_list>

Restart DHCPv6 client service for a specific IPv6 VLAN interface

Example:

```
<sys_name># ipv6 dhcp-client restart interface vlan 3  
<sys_name>#
```

4.16 lmc

Using this command you can delete the certificate used for the connection to the LMC.

Syntax:

```
lmc delete-certificate
```

Example:

```
<sys_name># lmc delete-certificate  
done  
<sys_name>#
```

4.17 logout

Exit from EXEC mode.

Syntax:

```
logout
```

Example:

```
<sys_name># logout  
Press ENTER to get started  
  
Username: admin  
Password:  
<sys_name>#
```

4.18 *more*

Display file.

Syntax:

```
more <url_file>
more <url_file> | [ begin | exclude | include ] <line>
```

Parameter:

<url_file>

File in FLASH or on TFTP server. Syntax:

```
<flash:filename | tftp://server/path-and-filename
```

A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 63 and hyphen must not be first character. The file name content that only contains '.' is not allowed

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># more tftp://192.168.1.1/ddd | begin a
% Loading /ddd from TFTP server 192.168.1.1
```

4.19 *no*

Delete trace hunt string.

Syntax:

```
no terminal [ editing | exec-timeout | history size | length | width ]
```

Parameter:

terminal

Set terminal line parameters

editing

Enable command line editing

exec-timeout

Set the EXEC timeout

history

Control the command history function

length

Set number of lines on a screen

width

Set width of the display terminal

size

Set history buffer size

Example:

```
<sys_name># no terminal editing
<sys_name>#
```

4.20 ping

Send ICMP echo messages.

Syntax:

```
ping ip [ <ipv4_addr> | <domain_name> ]
```

```
ping ip [ <ipv4_addr> | <domain_name> ] [ data <0-255> | quiet | repeat <1-60> |
saddr <ipv4_addr> | size <2-1452> | ttl <1-255> | verbose ]
```

```
ping ip [ <ipv4_addr> | <domain_name> ] sif GigabitEthernet <port_type_list>
```

```
ping ip [ <ipv4_addr> | <domain_name> ] sif vlan <vlan_id>
```

```
ping ipv6 [ <ipv6_addr> | <domain_name> ]
```

```
ping ipv6 [ <ipv6_addr> | <domain_name> ] [ data <0-255> | quiet | repeat <1-60> |
saddr <ipv6_addr> | size <2-1452> | ttl <1-255> | verbose ]
```

```
ping ipv6 [ <ipv6_addr> | <domain_name> ] sif GigabitEthernet <port_type_list>
```

```
ping ip [ <ipv46_addr> | <domain_name> ] sif vlan <vlan_id>
```

Parameter:**ip**

ICMPv4 Echo Request

ipv6

ICMPv6 Echo Request

<ipv4_addr>

Destination IPv4 address

<domain_name>

Destination hostname or FQDN

data <0-255>

Specify payload data byte value 0-255; Default is 0

quiet

Set quiet output

repeat <1-60>

Specify repeat count for packets: 1-60; Default is 5

saddr <ipv4_addr>

Send from interface with source address of interface

size <2-1452>

Specify datagram size in bytes: 2-1452; Default is 56 (excluding MAC, IP and ICMP headers)

ttl <1-255>

Set IPv4 Time-To-Live (TTL) 1-255; Default is 64

verbose

Set verbose output

sif

Send from specified interface

vlan <vlan_id>

Send from VLAN interface with source VLAN interface address

GigabitEthernet

1 Gigabit Ethernet Port

<port_type_list>

Port list for all port types or <Port list or ID>

<ipv6_addr>

Destination IPv6 address

Example:

```
<sys_name># ping ip 192.168.1.1 repeat 3 size 3
PING 192.168.1.1 (192.168.1.1): 3 data bytes
11 bytes from 192.168.1.1: seq=0 ttl=64
11 bytes from 192.168.1.1: seq=1 ttl=64
11 bytes from 192.168.1.1: seq=2 ttl=64

--- 192.168.1.1 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
<sys_name>#
```

4.21 reload

Reload system.

Syntax:

```
reload cold
```

```
reload warm
```

```
reload defaults [ keep-ip ] [ force ]
```

Parameter:**cold**

Reload cold.

warm

Reload warm (CPU restart only)

defaults

Reload defaults without rebooting

keep-ip

Attempt to keep VLAN1 IP setup

force

Force reload of defaults on remote session.

Example:

```
<sys_name># reload defaults keep-ip
<sys_name>#
```

4.22 send

Send a message to other tty lines.

Syntax:

```
send { * | <0-16> | console 0 | vty <0~15> } <line128>
```

Parameter:

*

All tty lines

<0-16>

Send a message to multiple lines

console 0

Send a message to the primary terminal line

vty <0~15>

Send a message to multiple virtual terminal lines

<line128>

Message to be sent to lines, in 128 char's

Example:

```
<sys_name># send * aaa
-----
*** Message from line 0:
aaa
-----
<sys_name>#
```

4.23 ssh

Starts the ssh server.

Syntax:

```
ssh crypto apply [force]
```

```
ssh keygen [ecdsa <256,384,521> | ed25519 | rsa <2048 - 4096>]
```

Parameter:

crypto apply [force]

Apply the staging config and restart the ssh server. If a connection already exists via ssh, `force` must also be added.

keygen [ecdsa <256,384,521> | ed25519 | rsa <2048 - 4096>]

Creates a new key. If a connection already exists via ssh, this is restarted.

4.24 Show commands

Show commands in privileged execution mode. The prompt of the command line is shown as `<sys_name>#`

| Command | Function |
|---------------------------|---|
| <i>3rd-party-licenses</i> | Displays the license text of used 3rd-party licenses. |
| <i>aaa</i> | Authentication, Authorization and Accounting methods |
| <i>access</i> | Access management. |
| <i>access-list</i> | Access list. |
| <i>aggregation</i> | Aggregation port configuration. |
| <i>board-data</i> | Model name. |
| <i>clock</i> | Show time-of-day clock. |
| <i>dot1x</i> | IEEE Standard for port-based Network Access Control. |
| <i>event</i> | Show trap event configuration. |
| <i>green-ethernet</i> | Green ethernet (Power reduction). |
| <i>history</i> | Display the session command history. |
| <i>interface</i> | Interface. |
| <i>ip</i> | Interface Internet Protocol configuration commands. |
| <i>ipmc</i> | IPv4/IPv6 multicast configuration. |
| <i>lACP</i> | LACP configuration/status. |
| <i>licenses</i> | Display license information |
| <i>line</i> | TTY line information. |
| <i>link-oam</i> | Link OAM configuration. |
| <i>lldp</i> | Link Layer Discover Protocol. |

4 Global commands

| Command | Function |
|-----------------------|---|
| <i>lmc</i> | Display information about LANCOM Management Cloud (LMC) configuration and status. |
| <i>logging</i> | System logging message. |
| <i>loop-protect</i> | Loop protection configuration. |
| <i>mac</i> | MAC Address Table information. |
| <i>monitor</i> | Monitoring different system events. |
| <i>mrp</i> | MRP status. |
| <i>mvr</i> | Multicast VLAN Registration configuration. |
| <i>ntp</i> | Show NTP status. |
| <i>platform</i> | Show platform configuration. |
| <i>poe</i> | Power over Ethernet. |
| <i>power</i> | Show power management. |
| <i>port-security</i> | Show Port Security overview status. |
| <i>privilege</i> | Display command privilege |
| <i>process</i> | Show process information. |
| <i>pvlan</i> | PVLAN configuration. |
| <i>qos</i> | Quality of Service. |
| <i>radius-server</i> | RADIUS configuration. |
| <i>rmon</i> | RMON statistics. |
| <i>running-config</i> | Show running system information. |
| <i>sflow</i> | Statistics flow. |
| <i>smtp</i> | Show email information. |
| <i>snmp</i> | Show SNMP server's configurations. |
| <i>spanning-tree</i> | STP Bridge. |
| <i>svl</i> | Shared VLAN Learning configuration. |
| <i>switchport</i> | Display switching mode characteristics. |
| <i>system</i> | System. |
| <i>tacacs-server</i> | Show TACACS+ configuration. |
| <i>terminal</i> | Display terminal configuration parameters. |
| <i>udld</i> | Unidirectional Link Detection (UDLD) configurations, statistics and status. |
| <i>upnp</i> | Display UPnP configuration. |
| <i>user-privilege</i> | Users privilege configuration. |
| <i>users</i> | Display information about terminal lines. |
| <i>version</i> | System hardware and software status. |
| <i>vlan</i> | VLAN status. |
| <i>voice</i> | Voice appliance attributes. |
| <i>web</i> | Web. |

4.24.1 3rd-party-licenses

Displays the license text of used 3rd-party licenses.

Syntax:

```
show 3rd-party-licenses
```

Example:

```
<sys_name># show 3rd-party-licenses
...
<sys_name>#
```

4.24.2 aaa

Authentication, Authorization and Accounting methods

Syntax:

```
show aaa
```

```
show aaa | [ begin | exclude | include] <line>
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># show aaa
Authentication :
  console : local
  telnet  : local
  ssh     : local
  http    : local
Authorization :
  console : no, commands disabled
  telnet  : no, commands disabled
  ssh     : no, commands disabled
Accounting :
  console : no, commands disabled, exec disabled
  telnet  : no, commands disabled, exec disabled
  ssh     : no, commands disabled, exec disabled
<sys_name>#
```

4.24.3 access

Access management.

4 Global commands

Syntax:

```
show access management
show access management <1~16>
show access management <1~16> | [ begin | exclude | include] <line>
show access management | [ begin | exclude | include] <line>
show access management statistics
show access management statistics | [ begin | exclude | include] <line>
```

Parameter:

management

Access management configuration

<1~16>

ID of access management entry list (1-16)

statistics

Statistics data

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># show access management 3
Switch access management mode is disabled

W: WEB/HTTPS
S: SNMP
T: TELNET/SSH

Idx VID Start IP Address End IP Address W S T
---
<sys_name>#
```

4.24.4 access-list

Access list.

Syntax:

```

show access-list [ [ begin | exclude | include] <line>
show access-list ace statistics
show access-list ace statistics <1~512>
show access-list ace-status
show access-list ace-status [ arp-inspection | conflicts | dhcp | ip | ip-source-guard | ipmc | link-oam |
loop-protect | static | upnp ]
show access-list interface *
show access-list interface * <port_type_list>
show access-list interface GigabitEthernet <port_type_list>
show access-list rate-limiter
show access-list rate-limiter <1~16>

```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

ace

Access list entry

ace-status

The local ACEs status

interface

Select an interface to configure

rate-limiter

Rate limiter

statistics

Traffic statistics

<1~512>

ACE ID

arp-inspection

The ACEs that are configured by ARP Inspection module

conflicts

The ACEs that did not get applied to the hardware due to hardware limitations

dhcp

The ACEs that are configured by DHCP module

ip

The ACEs that are configured by IP module

ip-source-guard

The ACEs that are configured by IP Source Guard module

ipmc

The ACEs that are configured by IPMC module

link-oam

The ACEs that are configured by Link OAM module

loop-protect

The ACEs that are configured by Loop Protect module

static

The ACEs that are configured by users manually

upnp

The ACEs that are configured by UPnP module

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

<1~16>

Rate limiter ID

Example:

```
<sys_name># show access-list statistics ace 3
Switch access-list ace number: 0
<sys_name>#
```

4.24.5 aggregation

Aggregation port configuration.

Syntax:

```
show aggregation
show aggregation | [ begin | exclude | include ] <line>
show aggregation mode
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

mode

Traffic distribution mode

Example:

```
<sys_name># show aggregation mode
Aggregation Mode:

SMAC : Enabled
DMAC : Disabled
IP   : Enabled
Port : Enabled
<sys_name>#
```

4.24.6 *board-data*

Model name.

Syntax:

```
show board-data
```

Example:

```
<sys_name># show board-data
Model Name      : SMB500-48MP-740W

Part Number     : 17108108PF2

Hardware Version : A

<sys_name>#
```

4.24.7 *clock*

Show time-of-day clock.

Syntax:

```
show clock
```

```
show clock detail
```

Parameter:**detail**

Display detailed information

Example:

```
<sys_name># show clock
System Time : 2017-01-01 01:30:50

<sys_name>#
```

4.24.8 dot1x

IEEE Standard for port-based Network Access Control.

Syntax:

```
show dot1x status
show dot1x status [ begin | exclude | include ] <line>
show dot1x status brief
show dot1x status interface * <port_type_list>
show dot1x status interface GigabitEthernet <port_type_list>
show dot1x statistics [ eapol | radius | all ]
show dot1x statistics [ eapol | radius | all ] [ begin | exclude | include ] <line>
show dot1x statistics [ eapol | radius | all ] interface * <port_type_list>
show dot1x statistics [ eapol | radius | all ] interface GigabitEthernet <port_type_list>
```

Parameter:

status

Shows dot1x status, such as admin state, port state and last source

statistics

Shows statistics for either EAPoL or RADIUS

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

brief

Show status in a brief format (deprecated)

interface

Interface

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

eapol

Show EAPoL statistics

radius

Show Backend Server statistics

all

Show all dot1x statistics

Example:

```
<sys_name># show dot1x statistics radius
```

| Interface | | Rx Access Challenges | Rx Other Requests | Rx Auth. Successes | Rx Auth. Failures | Tx Responses | MAC Address |
|-----------|-----|----------------------|-------------------|--------------------|-------------------|--------------|-------------|
| Gi | 1/1 | 0 | 0 | 0 | 0 | 0 | - |
| Gi | 1/2 | 0 | 0 | 0 | 0 | 0 | - |
| Gi | 1/3 | 0 | 0 | 0 | 0 | 0 | - |
| Gi | 1/4 | 0 | 0 | 0 | 0 | 0 | - |
| Gi | 1/5 | 0 | 0 | 0 | 0 | 0 | - |
| . | | | | | | | |
| . | | | | | | | |
| . | | | | | | | |
| Gi | 1/N | 0 | 0 | 0 | 0 | 0 | - |

```
<sys_name>#
```

4.24.9 event

Show trap event configuration.

Syntax:

```
show event
```

Example:

```
<sys_name># show event
```

| Group Name | Severity Level | Syslog Mode | Trap Mode | SMTP Mode |
|------------------|----------------|-------------|-----------|-----------|
| Digital Out | | | | |
| AC-Power | Information | enable | disable | disable |
| N/A | | | | |
| ACL | Information | enable | disable | disable |
| N/A | | | | |
| ACL-Log | Information | enable | disable | disable |
| N/A | | | | |
| Access-Mgmt | Information | enable | disable | disable |
| N/A | | | | |
| Auth-Failed | Warning | enable | disable | disable |
| N/A | | | | |
| Battery-Power | Information | enable | disable | disable |
| N/A | | | | |
| Cold-Start | Warning | enable | disable | disable |
| N/A | | | | |
| Config-Info | Information | enable | disable | disable |
| N/A | | | | |
| DI-1-Abnormal | Information | enable | disable | disable |
| disable | | | | |
| DI-1-Normal | Information | enable | disable | disable |
| disable | | | | |
| DMS | Information | enable | disable | disable |
| N/A | | | | |
| Digital-Out | Information | enable | disable | disable |
| N/A | | | | |
| FAN | Information | enable | disable | disable |
| N/A | | | | |
| Firmware-Upgrade | Information | enable | disable | disable |
| N/A | | | | |
| Import-Export | Information | enable | disable | disable |
| N/A | | | | |
| LACP | Information | enable | disable | disable |
| N/A | | | | |
| Link-Status | Warning | enable | disable | disable |
| disable | | | | |

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| | | | | |
|----------------------|-------------|--------|---------|---------|
| Login | Information | enable | disable | disable |
| N/A | | | | |
| Logout | Information | enable | disable | disable |
| N/A | | | | |
| Loop-Protect | Information | enable | disable | disable |
| disable | | | | |
| Mgmt-IP-Change | Information | enable | disable | disable |
| N/A | | | | |
| Module-Change | Warning | enable | disable | disable |
| N/A | | | | |
| NAS | Information | enable | disable | disable |
| N/A | | | | |
| NTP-Sync | Warning | enable | disable | disable |
| N/A | | | | |
| Password-Change | Information | enable | disable | disable |
| N/A | | | | |
| Poe_Auto_Power_Reset | Warning | enable | disable | disable |
| N/A | | | | |
| Port-Security | Information | enable | disable | disable |
| N/A | | | | |
| Spanning-Tree | Information | enable | disable | disable |
| N/A | | | | |
| Temperature | Information | enable | disable | disable |
| disable | | | | |
| Voltage | Information | enable | disable | disable |
| disable | | | | |
| <sys_name># | | | | |

4.24.10 green-ethernet

Green ethernet (Power reduction).

Syntax:

```
show green-ethernet
show green-ethernet [ [ begin | exclude | include] <line>
show green-ethernet [ eee | energy-detect | short-reach ]
show green-ethernet [ eee | energy-detect | short-reach ] interface *
show green-ethernet [ eee | energy-detect | short-reach ] interface * <port_type_list>
show green-ethernet [ eee | energy-detect | short-reach ] interface GigabitEthernet <port_type_list>
show green-ethernet interface *
show green-ethernet interface * <port_type_list>
show green-ethernet interface GigabitEthernet <port_type_list>
```

Parameter:

- | Output modifiers
- begin**
 - Begin with the line that matches
- exclude**
 - Exclude lines that match
- include**
 - Include lines that match
- <line>**
 - String to match output lines
- eee**
 - Shows green ethernet EEE status for a specific port or ports

energy-detect

Shows green ethernet energy-detect status for a specific port or ports

short-reach

Shows green ethernet short-reach status for a specific

interface

Shows green ethernet status for a specific port or ports

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># show green-ethernet eee
Interface          Lnk  EEE Capable  EEE Enabled  LP EEE Capable  EEE In Power Save
-----
GigabitEthernet 1/1  No  Yes          No           No             No
GigabitEthernet 1/2  No  Yes          No           No             No
GigabitEthernet 1/3  No  Yes          No           No             No
GigabitEthernet 1/4  No  Yes          No           No             No
.....
<sys_name>#
```

4.24.11 history

Display the session command history.

Syntax:

```
show history
show history | [ begin | exclude | include] <line>
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># show history
show green-ethernet eee
```

```
show history
<sys_name>#
```

4.24.12 interface

Interface.

Syntax:

```
show interface [ * | GigabitEthernet <port_type_list> ] [ capabilities | description |
status | transceiver | verify ]
show interface [ * | GigabitEthernet <port_type_list> ] statistics [ [ begin | exclude |
include] <line>
show interface [ * | GigabitEthernet <port_type_list> ] statistics
show interface [ * | GigabitEthernet <port_type_list> ] statistics [ bytes | discards |
errors | packets ] [ up | down ]
show interface [ * | GigabitEthernet <port_type_list> ] statistics [ up | down ] [ bytes |
discards | errors | packets ]
show interface [ * | GigabitEthernet <port_type_list> ] switchport
show interface [ * | GigabitEthernet <port_type_list> ] switchport [ [ begin | exclude |
include] <line>
show interface [ * | GigabitEthernet <port_type_list> ] switchport [ access | hybrid |
trunk ]
show interface vlan
show interface vlan <vlan_list>
```

Parameter:

vlan

VLAN status

<vlan_list>

VLAN list

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

capabilities

Display capabilities

description

Description of interface

status

Display status

transceiver

Show interface transceiver

verify

Display the latest cable diagnostic results

statistics

Display statistics counters

- |
- Output modifiers
- begin**
 - Begin with the line that matches
- exclude**
 - Exclude lines that match
- include**
 - Include lines that match
- <line>**
 - String to match output lines
- switchport**
 - Show interface switchport information
- bytes**
 - Show byte statistics
- discards**
 - Show discard statistics
- down**
 - Show ports which are down
- errors**
 - Show error statistics
- filtered**
 - Show filtered statistics
- packets**
 - Show packet statistics
- priority**
 - Show priority statistics
- up**
 - Show ports which are up
- access**
 - Show access ports status
- hybrid**
 - Show hybrid ports status
- trunk**
 - Show trunk ports status

Example:

```
<sys_name># show interface GigabitEthernet 1/1-4 capabilities
GigabitEthernet 1/1 Capabilities:
  Speed cap:          10,100,1000,auto
  Duplex cap:         half,full,auto
  Trunk encap. type:  802.1Q
  Trunk mode:         access,hybrid,trunk
  Channel:            yes
  Broadcast suppression: no
```

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```
Flowcontrol:      yes
Fast Start:      no
QoS scheduling:   tx-(8q)
CoS rewrite:     yes
ToS rewrite:     yes
UDLD:           no
Inline power:    yes
RMirror:        yes
PortSecure:     yes
Dot1x:          yes
GigabitEthernet 1/2 Capabilities:
Speed cap:       10,100,1000,auto
Duplex cap:      half,full,auto
Trunk encap. type: 802.1Q
Trunk mode:      access,hybrid,trunk
Channel:         yes
Broadcast suppression: no
Flowcontrol:     yes
Fast Start:     no
QoS scheduling:  tx-(8q)
CoS rewrite:    yes
ToS rewrite:    yes
UDLD:          no
Inline power:   yes
RMirror:       yes
PortSecure:    yes
Dot1x:         yes
<sys_name>#
```

4.24.13 ip

Interface Internet Protocol configuration commands.

Syntax:

```

show ip [ acd | arp | domain | http | interface | name-server | ospf | route | ssh |
statistics ]

show ip [ acd | arp | domain | http | interface | name-server | ospf | route | ssh |
statistics ] | [ begin | exclude | include] <line>

show ip arp inspection

show ip arp inspection entry

show ip arp inspection entry { [ dhcp-snooping interface ] | [ interface ] |
[ static interface ] } { * | [ GigabitEthernet <port_type_list> ] }

show ip arp inspection interface * | [ GigabitEthernet <port_type_list> ]

show ip arp inspection vlan <vlan_list>

show ip dhcp detailed statistics [ client | combined | normal-forward | relay | server |
snooping ]

show ip dhcp detailed statistics [ client | combined | normal-forward | relay | server |
snooping ] | [ begin | exclude | include] <line>

show ip dhcp detailed statistics [ client | combined | normal-forward | relay | server |
snooping ] interface * | [ GigabitEthernet <port_type_list> ]

show ip dhcp [ excluded-address | pool | relay | server | snooping ]

show ip dhcp [ excluded-address | pool | relay | server | snooping ] | [ begin | exclude |
include] <line>

show ip dhcp pool <word32>

show ip dhcp relay statistics

show ip dhcp server [ binding | declined-ip | statistics ]

show ip dhcp server [ binding | declined-ip ] <ipv4_ucast>

show ip dhcp server binding state [ allocated | expired | manual ]

show ip dhcp server binding state [ allocated | expired | manual ] type [ automatic |
expired | manual ]

show ip dhcp server binding type [ automatic | expired | manual ]

show ip dhcp server binding type [ automatic | expired | manual ] state [ allocated |
expired | manual ]

show ip dhcp snooping interface * | [ GigabitEthernet <port_type_list> ]

show ip dhcp snooping table

show ip igmp snooping

show ip igmp snooping [ detail | group-database | mrouter | vlan <vlan_list> ]

show ip igmp snooping group-database sfm-information

show ip interface brief

show ip ospf interface

show ip ospf interface vlan <vlan_list>

show ip source binding

show ip source binding dhcp-snooping

show ip source binding dhcp-snooping interface { * | [ GigabitEthernet <port_type_list> ] }

show ip source binding interface { * | [ GigabitEthernet <port_type_list> ] }

show ip source binding static

show ip source binding static interface { * | [ GigabitEthernet <port_type_list> ] }

show ip statistics system

show ip verify source

show ip verify source interface { * | [ GigabitEthernet <port_type_list> ] }

```

Parameter:**acd**

Address Conflict Detection

arp

Address Resolution Protocol

4 Global commands

dhcp

Dynamic Host Configuration Protocol

domain

Default domain name

http

Hypertext Transfer Protocol

igmp

Internet Group Management Protocol

interface

IP interface status and configuration

name-server

Domain Name System

ospf

Open Shortest Path First (OSPF)

route

Display the current ip routing table

source

source command

ssh

Secure Shell

statistics

Traffic statistics

verify

verify command

inspection

ARP inspection

entry

arp inspection entries

interface

ARP inspection entry interface configuration

vlan

VLAN configuration

dhcp-snooping

learn from dhcp snooping

static

setting from static entries

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

<vlan_list>

Select a VLAN id to show

detailed

DHCP server

excluded-address

Excluded IP database

pool

DHCP pools information

relay

DHCP relay agent configuration

server

DHCP server information

snooping

DHCP snooping

statistics

Traffic statistics

client

DHCP client

combined

Show all DHCP related statistics

normal-forward

DHCP normal L2 or L3 forward

relay

DHCP relay

server

DHCP server

snooping

DHCP snooping

interface

Select an interface to show

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

<word32>

Pool name in 32 characters

statistics

Traffic statistics

binding

DHCP address bindings

declined-ip

Declined IP address

statistics

DHCP server statistics

<ipv4_ucast>

IP address in dotted-decimal notation

state

State of binding

type

Type of binding

allocated

Allocated state

committed

Committed state

expired

Expired state

type

Type of binding

automatic

Automatic binding

expired

Expired binding that is aged out

manual

Manual binding for a specific host

detail

Detail running information/statistics of IGMP snooping

group-database

Multicast group database from IGMP

mrouter

Multicast router port status in IGMP

vlan

Search by VLAN

sfm-information

Including source filter multicast information from IGMP

<vlan_list>

VLAN identifier (VID)

vlan

VLAN interface

brief

Brief IP interface status

neighbor

Neighbor list

<vlan_list>

List of VLAN IDs, e.g. 1,3-5,7

source

verify source

system**Example:**

```
<sys_name># show ip interface brief
Interface      Address          Method          Status
-----
VLAN1         192.168.1.1/24  Manual         UP
<sys_name>#
```

4.24.14 ipmc

IPv4/IPv6 multicast configuration.

Syntax:

```
show ipmc [ profile | range ]
show ipmc [ profile | range ] | [ begin | exclude | include ] <line>
show ipmc [ profile | range ] [ <word16> ] [ detail ]
```

Parameter:**profile**

IPMC profile configuration

range

A range of IPv4/IPv6 multicast addresses for the profile

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

<word16>

Profile or range entry name in 16 characters

detail

Detail information of a profile

Example:

```
<sys_name># show ipmc range
<sys_name>#
```

4.24.15 *ipv6*

IPv4/IPv6 multicast configuration.

Syntax:

```
show ipv6 [ dhcp-client | interface | neighbor | route | statistics ]
show ipv6 [ dhcp-client | interface | neighbor | route | statistics ] | [ begin |
exclude | include] <line>
show ipv6 dhcp-client interface vlan <vlan_list>
show ipv6 interface brief
show ipv6 mld snooping
show ipv6 mld snooping [ vlan <vlan_list> | group-database | detail | mrouter ]
show ipv6 mld snooping group-database sfm-information
show ipv6 statistics interface vlan <vlan_list>
```

Parameter:**dhcp-client**

Manage DHCPv6 client service

interface

IPv6 configuration commands

mld

Multicast Listener Discovery

statistics

Traffic statistics

neighbor

IPv6 neighbors

route

IPv6 routes

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

interface

Select an interface to show

vlan

VLAN of IPv6 interface

<vlan_list>

IPv6 interface VLAN list

brief

Brief summary of IPv6 status and configuration

snooping

Snooping MLD

detail

Detail running information/statistics of MLD snooping

group-database

Multicast group database from MLD

mrouter

Multicast router port status in MLD

vlan

Search by VLAN

sfm-information

Including source filter multicast information from MLD

system

IPv6 system traffic

Example:

```
<sys_name># show ipv6 mld snooping detail
MLD Snooping is enabled to start snooping MLD control plane.
Multicast streams destined to unregistered MLD groups will be flooding.
<sys_name>#
```

4.24.16 *lACP*

LACP configuration/status.

Syntax:

```
show lACP [ internal | statistics | system-id | neighbour ] [ [ { begin | exclude |
include } <line> ]
```

```
show lACP [ internal | statistics | system-id | neighbour ] detail
```

Parameter:

internal

Internal LACP configuration

statistics

Internal LACP statistics

system-id

LACP system ID

neighbour

Neighbour LACP status

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

details

LACP state

Example:

```
<sys_name># show lacp internal
Port  Mode      Key  Role  Timeout  Priority
----  -
1     Disabled  Auto Active Fast      32768
2     Disabled  Auto Active Fast      32768
3     Disabled  Auto Active Fast      32768
4     Disabled  Auto Active Fast      32768
5     Disabled  Auto Active Fast      32768
6     Disabled  Auto Active Fast      32768
7     Disabled  Auto Active Fast      32768
<sys_name>#
```

4.24.17 licenses

Display license information.

Syntax:

```
show licenses
```

```
show licenses { {begin | exclude | include } <line>
```

```
show licenses { [ component <uint> ] | description | [ mtd <word> ] [ section <uint> ] }
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

component <uint>

component key word - Select a specific component ID to show

description

description keyword - Shows the licenses description, else only an overview is shown

mtd <word>

MTD keyword - Select a specific MTD (file) to show

section <uint>

Select a specific section ID to show

Example:

```
<sys_name># show licenses
Image Name  SectionID  ComponentID  Component Name  Version
Type       -----
-----
RedBoot     No licenses found
linux       0           0             libstdc++       6.3.0
GPLv3 (with exception) http://ftpmirror.gnu.org/gcc/gcc-6.3.0/gcc-6.3.0.tar.bz2
linux       0           1             uclibc          1.0.22
L G P L v 2 . 1 +
http://downloads.uclibc-ng.org/releases/1.0.22/uClibc-ng-1.0.22.tar.xz
linux       0           2             linux-headers   4.9.13
GPLv2       https://cdn.kernel.org/pub/linux/kernel/v4.x/linux-4.9.13.tar.xz
linux       0           3             mscclinux       835a2802137cfe955a2fa48a9e67cb111058021a GPLv2
linux       0           4             mbedtls         2.4.0
Apache-2.0 https://tls.mbed.org/code/releases/mbedtls-2.4.0-apache.tgz
<sys_name>#
```

4.24.18 line

TTY line information.

Syntax:

show line

show line {begin | exclude | include } <line>

show line [alive]

Parameter:

|

Output modifiers

begin

Begin with the line that matches

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exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

alive

Display information about alive lines

Example:

```

<sys_name># show line alive
Line is con 0.
-----
    * You are at this line now.
    Alive from Console.
    Default privileged level is 2.
    Command line editing is enabled
    Display EXEC banner is enabled.
    Display Day banner is enabled.
    Terminal width is 80.
        length is 24.
        history size is 32.
        exec-timeout is 10 min 0 second.

    Current session privilege is 15.
    Elapsed time is 0 day 2 hour 19 min 54 sec.
    Idle time is 0 day 0 hour 0 min 0 sec.

<sys_name>#

```

4.24.19 lldp

Link Layer Discover Protocol.

Syntax:

```

show lldp med [ media-vlan-policy | remote-device ]
show lldp med [ media-vlan-policy | remote-device ] | {begin | exclude | include } <line>
show lldp med media-vlan-policy <0~31>
show lldp med remote-device interface [ * | GigabitEthernet <port_type_list> ]
show lldp [ eee | neighbors | preempt | statistics ]
show lldp [ eee | neighbors | preempt | statistics ] | {begin | exclude | include } <line>
show lldp [ eee | neighbors | preempt | statistics ] interface [ * | GigabitEthernet <port_type_list> ]
show lldp

```

Parameter:**eee**

Display LLDP local and neighbor EEE information

med

Display LLDP-MED neighbors information

neighbors

Display LLDP neighbors information

preempt

Display LLDP local and neighbor Preempt information

statistics

Display LLDP statistics information

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

interface

Interface to display

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

media-vlan-policy <0~31>

Display media vlan policies

remote-device

Display remote device LLDP-MED neighbors information

Example:

```
<sys_name># show lldp eee interface GigabitEthernet 1/1-4
No LLDP entries found
<sys_name>#
```

4.24.20 *lmc*

Display information about LANCOM Management Cloud (LMC) configuration and status.

Syntax:

```
show lmc
```

```
show lmc | {begin | exclude | include } <line>
```

```
show lmc transport | {begin | exclude | include } <line>
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

transport

LMC transport status

Example:

```

<sys_name> show lmc
LMC Configuration:
Operating           : no
Configuration-Via-DHCP : yes
DHCP-Client-Auto-Renew : yes
LMC-Domain          : "cloud.lancom.de"
LMC-Rollout-Project-ID : ""
LMC-Rollout-Location-ID : ""
LMC-Rollout-Role     : ""

LMC Status:
Management-Status      : Unpaired
Monitor-Status         : Disabled
Control-Status         : Disabled
Config-Modified        : no
Pairing-Token-Present  : no
Zero-Touch-Support     : no
Customer-Device-ID     : ""
Round-Trip-Time        : 0 ms
Active-LMC-Domain      : ""
Active-LMC-Rollout-Project-ID : ""
Active-LMC-Rollout-Location-ID : ""
Active-LMC-Rollout-Role : ""
<sys_name>#
    
```

4.24.21 logging

System logging message.

Syntax:

```

show logging
show logging [ <1-4294967295> | error | informational | notice | warning ]
show logging <1-4294967295> [ exclude | include ] <line>
show logging <1-4294967295> switch <switch_list>
show logging | {begin | exclude | include } <line>
    
```

Parameter:

<1-4294967295>

Logging ID

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

error

Severity 3: Error conditions

informational

Severity 6: Informational messages

notice

Severity 5: Normal but significant condition

warning

Severity 4: Warning conditions

switch <switch_list>

Switch ID list in 1

Example:

```
<sys_name># show logging informational
Switch logging host mode is disabled
Switch logging host address is null
Switch logging level is informational

Number of entries on Switch 1:
Error      : 0
Warning    : 0
Notice     : 55
Informational: 1
All        : 56

ID          Level           Time & Message
-----
          1 Informational  1970-01-01T00:00:45+00:00
                               SYS-BOOTING: Switch just made a cold boot.

<sys_name>#
```

4.24.22 loop-protect

Loop protection configuration.

Syntax:

```
show loop-protect
```

```
show loop-protect interface [ * | GigabitEthernet <port_type_list> ]
```

Parameter:**interface**

Interface status and configuration

4 Global commands

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```

<sys_name># show loop-protect interface GigabitEthernet 1/3

Loop Protection Configuration
=====
Loop Protection      : Disable
Transmission Time   : 5 sec
Shutdown Time       : 180 sec

GigabitEthernet 1/3
-----
    Loop protect mode is enabled.
    Action is shutdown.
    Transmit mode is enabled.
    No loop.
    The number of loops is 0.
    Status is down.
<sys_name>#
    
```

4.24.23 mac

MAC Address Table information.

Syntax:

```

show mac address-table
show mac address-table [ [ begin | exclude | include] <line>
show mac address-table address <mac_ucast>
show mac address-table address <mac_ucast> vlan <vlan_id>
show mac address-table [ aging-time | conf | count | learning | static ]
show mac address-table count interface [ * | GigabitEthernet <port_type_list> ]
show mac address-table count vlan <vlan_id>
show mac address-table interface [ * | GigabitEthernet <port_type_list> ]
show mac address-table learning interface [ * | GigabitEthernet <port_type_list> ]
show mac address-table learning vlan <vlan_id>
show mac address-table vlan <vlan_id>
    
```

Parameter:

address-table

MAC Address Table

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

address <mac_ucast>

MAC address lookup with 48 bit MAC address: xx:xx:xx:xx:xx:xx

aging-time

Aging time

conf

User added static MAC addresses

count

Total number of MAC addresses

learning

Learn/disable/secure state

static

All static MAC addresses

interface

Select an interface

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

vlan <vlan_id>

VLAN IDs 1-4095

Example:

```
<sys_name># show mac address-table count interface GigabitEthernet 1/4
Port Dynamic addresses
GigabitEthernet 1/4          0

Total learned dynamic addresses for the switch: 0
Total static addresses in table: 1
<sys_name>#
```

4.24.24 monitor

Monitoring different system events.

Syntax:

```
show monitor
```

```
show monitor session [ <1-5> | all | remote ]
```

Parameter:**session**

MIRROR session

<1-5>

MIRROR session number

all

Show all MIRROR sessions

remote

Show only remote MIRROR sessions

Example:

```

<sys_name># show monitor session remote

Session 1
-----
Mode                : Disabled
Type                : Mirror
Source VLAN(s)      :
CPU Port            :

Session 2
-----
Mode                : Disabled
Type                : Mirror
Source VLAN(s)      :
CPU Port            :

Session 3
-----
Mode                : Disabled
Type                : Mirror
Source VLAN(s)      :
CPU Port            :

Session 4
-----
Mode                : Disabled
Type                : Mirror
Source VLAN(s)      :
CPU Port            :

Session 5
-----
Mode                : Disabled
Type                : Mirror
Source VLAN(s)      :
CPU Port            :
<sys_name>#

```

4.24.25 mrp

MRP status.

Syntax:

```
show mrp status
```

```
show mrp status [ all | mvrp ]
```

```
show mrp status [ all | mvrp ] interface [ * | GigabitEthernet <port_type_list> ]
```

```
show mrp status interface [ * | GigabitEthernet <port_type_list> ]
```

Parameter:**status**

Show a collection of MRP statistics for each interface

all

Show MRP statistics for all MRP Applications

mvrp

Show MRP statistics for the MVRP Application

interface

Show a collection of MRP statistics for a specific interface(s)

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># show mvrp status interface GigabitEthernet 1/1-4
GigabitEthernet 1/1 :
-----
MRP Appl  FailedRegistrations  LastPduOrigin
-----
MVRP      0                      00-00-00-00-00-00

GigabitEthernet 1/2 :
-----
MRP Appl  FailedRegistrations  LastPduOrigin
-----
MVRP      0                      00-00-00-00-00-00

<sys_name>#
```

4.24.26 mvr

Multicast VLAN Registration configuration.

Syntax:

```
show mvr
show mvr | [ begin | exclude | include] <line>
show mvr detail
show mvr group-database
show mvr sfm-information
show mvr group-database interface [ * | GigabitEthernet <port_type_list> ]
show mvr <word16>
show mvr vlan <vlan_list>
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

detail

Detail information/statistics of MVR group database

group-database

Multicast group database from MVR

sfm-information

Including source filter multicast information from MVR

interface

Search by port

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

<word16>

MVR multicast VLAN name

vlan <vlan_list>

Search by MVR multicast VLAN list

Example:

```
<sys_name># show mvr vlan 11
MVR is currently disabled, please enable MVR to start group registration.
% Invalid MVR IGMP VLAN 11.
% Invalid MVR MLD VLAN 11.
<sys_name>#
```

4.24.27 ntp

Show NTP status.

Syntax:

```
show ntp status
```

Parameter:**status**

Status

Example:

```

<sys_name># show ntp status
NTP Mode : disabled
Idx  Server IP host address (a.b.c.d) or a host name string
---  -----
1
2
3
4
5
<sys_name>#

```

4.24.28 platform

Show platform configuration.

Syntax:

```
show platform phy | [ begin | exclude | include ] <line>
```

```
show platform phy [ failover | id | instance ]
```

```
show platform phy id interface [ * | GigabitEthernet <port_type_list> ]
```

```
show platform phy interface [ * | GigabitEthernet <port_type_list> ]
```

Parameter:**phy**

PHYS' information

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

failover

Failover status

id**instance**

PHY instance information

interface

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```

<sys_name># show platform phy interface GigabitEthernet 1/1
Port   API Inst   WAN/LAN/1G Mode   Duplex   Speed   Link
-----
1      Default  1G         ANEG          FDX      1G      No
<sys_name>#

```

4.24.29 poe

Power over Ethernet.

Syntax:

```

show poe
show poe [ begin | exclude | include ] <line>
show poe [ auto-check | config | power-delay ]
show poe [ auto-check | config | power-delay ] interface [ * | GigabitEthernet <port_type_list> ]
show poe interface [ * | GigabitEthernet <port_type_list> ]
show poe profile
show poe profile id <1-16>

```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

auto-check

Show PoE Auto Check configuration

config

Display PoE (Power Over Ethernet) config for the switch

power-delay

Display PoE (Power Over Ethernet) Power Delay config for the switch

interface

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

profile

PoE scheduling profile

id <1-16>

PoE scheduling profile ID from 1 to 16

Example:

```

<sys_name># show poe auto-check interface GigabitEthernet 1/1-4

Ping Check : Disabled

Port  Ping IP Address  Start up  Interval  Retry  Failure Log      Failure Action  Reboot
-----  -----  Time      Time      Time  -----  -----  -----
1      0.0.0.0      60        30        3     error=0,total=0  Nothing         15
2      0.0.0.0      60        30        3     error=0,total=0  Nothing         15
<sys_name>#

```

4.24.30 port-security

Show Port Security overview status.

Syntax:`show port-security``show port-security | [begin | exclude | include] <line>``show port-security address``show port-security address interface [* | GigabitEthernet <port_type_list>]``show port-security switch interface [* | GigabitEthernet <port_type_list>]`**Parameter:**

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

address

Show MAC Addresses learned by Port Security

4 Global commands

switch

interface

Port interface

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># show port-security interface GigabitEthernet 1/4
Users:
 P = Port Security (Admin)
 8 = 802.1X
 V = Voice VLAN

Interface  Users Limit Current Violating Violation Mode State
-----
Gi 1/4    ---  N/A    0      N/A Disabled      No users

Aging disabled
Hold time: 300 seconds
<sys_name>#
```

4.24.31 power

Display information about LANCOM Management Cloud (LMC) configuration and status.

Syntax:

show power management

Parameter:

management

Power management

Example:

```
<sys_name> show power management
Power Management
=====
Power           : A      B
Detected PSU    : SPSU-920 None
Power Good      : Good   Fail
FAN Speed (RPM) : 8879   0
Temperature (Degree C) : 34    0
Operating Mode  : Redundant
<sys_name>#
```

4.24.32 privilege

Display command privilege

Syntax:

```
show privilege
show privilege | [ begin | exclude | include] <line>
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># show privilege
<sys_name>#
```

4.24.33 process

Show process information.

Syntax:

```
show process list
show process list | [ begin | exclude | include] <line>
show process list detail
show process load
```

Parameter:**list**

list

load

load

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

detail

Optionally show thread call stack

Example:

```
<sys_name># show process load
1.65 1.62 1.63 1/169 183
<sys_name>#
```

4.24.34 pvlan

PVLAN configuration.

Syntax:

```
show pvlan
show pvlan <range_list>
show pvlan isolation
show pvlan isolation interface [ * | GigabitEthernet <port_type_list> ]
```

Parameter:**<range_list>**

PVLAN ID to show configuration for

isolation

Show isolation configuration

interface

List of port type and port ID, ex. Fast 1/1 Gigabit 2/3-5 Gigabit 3/2-4 10 Gigabit 4/6

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># show pvlan isolation
Port                               Isolation
-----
GigabitEthernet 1/1                Disabled
GigabitEthernet 1/2                Disabled
GigabitEthernet 1/3                Disabled
GigabitEthernet 1/4                Disabled
GigabitEthernet 1/5                Disabled
.
.
.
GigabitEthernet 1/N                Disabled
<sys_name>#
```

4.24.35 qos

Quality of Service.

Syntax:

```

show qos
show qos | [ begin | exclude | include] <line>
show qos interface
show qos interface [ * | GigabitEthernet <port_type_list> ]
show qos maps
show qos maps [ cos-dscp | dscp-classify | dscp-cos | dscp-egress-translation | dscp-ingress-translation |
egress | ingress ]
show qos qce <1-256>
show qos [ storm | wred ]

```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

interface

Interface

maps

QoS Maps/Tables

qce <1-256>

QoS Control Entry ID

storm

Storm policer

wred

Weighted Random Early Discard

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

cos-dscp

Map for COS to DSCP

dscp-classify

Map for DSCP classify enable

dscp-cos

Map for DSCP to COS

dscp-egress-translation

Map for DSCP egress translation

dscp-ingress-translation

Map for DSCP ingress translation

egress

Map for egress configuration

ingress

Map for ingress configuration

Example:

```
<sys_name># show qos maps cos-dscp
qos map cos-dscp:
=====
Cos   DSCP DP0   DSCP DP1   DSCP DP2   DSCP DP3
-----
0     0 (BE)    0 (BE)    0 (BE)    0 (BE)
1     0 (BE)    0 (BE)    0 (BE)    0 (BE)
2     0 (BE)    0 (BE)    0 (BE)    0 (BE)
3     0 (BE)    0 (BE)    0 (BE)    0 (BE)
4     0 (BE)    0 (BE)    0 (BE)    0 (BE)
5     0 (BE)    0 (BE)    0 (BE)    0 (BE)
6     0 (BE)    0 (BE)    0 (BE)    0 (BE)
7     0 (BE)    0 (BE)    0 (BE)    0 (BE)
<sys_name>#
```

4.24.36 radius-server

RADIUS configuration.

Syntax:

```
show radius-server
show radius-server [ begin | exclude | include ] <line>
show radius-server statistics
```

Parameter:

|
Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

statistics

RADIUS statistics

Example:

```

<sys_name># radius-server statistics
Global RADIUS Server Timeout      : 5 seconds
Global RADIUS Server Retransmit   : 3 times
Global RADIUS Server Deadtime     : 0 minutes
Global RADIUS Server Key          :
Global RADIUS Server Attribute 4  :
Global RADIUS Server Attribute 95 :
Global RADIUS Server Attribute 32 :
No servers configured!
<sys_name>#

```

4.24.37 rmon

RMON statistics.

Syntax:

```

show rmon alarm
show rmon alarm <1-65535>
show rmon event
show rmon event <1-65535>
show rmon history
show rmon history <1-65535>
show rmon statistics
show rmon statistics <1-65535>

```

Parameter:**alarm**

Display the RMON alarm table

event

Display the RMON event table

history

Display the RMON history table

statistics

Display the RMON statistics table

<1-65535>

Alarm entry list

<1-65535>

Event entry list

<1-65535>

History entry list

<1-65535>

Statistics entry list

Example:

```

<sys_name># show rmon statistics 5
<sys_name>#

```

4.24.38 *running-config*

Show running system information.

Syntax:

```
show running-config
show running-config [ [ begin | exclude | include ] <line>
show running-config all-defaults
show running-config <word> all-defaults
show running-config interface [ * | GigabitEthernet <port_type_list> ]
show running-config line [ console | vty ] <range_list>
show running-config line [ console | vty ] <range_list> all-defaults
show running-config vlan
show running-config vlan <vlan_list>
show running-config vlan <vlan_list> all-defaults
```

Parameter:

|
Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

all-defaults

Include most/all default values

<word>

Valid words are 'GVRP' 'MRP' 'MVRP' 'access' 'access-list' 'aggregation' 'alarm' 'arp-inspection' 'auth' 'clock' 'ddmi' 'dhcp' 'dhcp-snooping' 'dhcp6_client_interface' 'dhcp_server' 'dns' 'dot1x' 'green-ethernet' 'http' 'icli' 'ip-igmp-snooping' 'ip-igmp-snooping-port' 'ip-igmp-snooping-vlan' 'ipmc-profile' 'ipmc-profile-range' 'ipv4' 'ipv6' 'ipv6-mld-snooping' 'ipv6-mld-snooping-port' 'ipv6-mld-snooping-vlan' 'json_rpc_notification' 'lACP' 'link-oam' 'lldp' 'logging' 'loop-protect' 'mac' 'mstp' 'mvr' 'mvr-port' 'ntp' 'ospf_global_conf' 'ospf_router_conf' 'ospf_vlan_intf_conf' 'poe' 'port' 'port-security' 'pvlan' 'qos' 'rmon' 'snmp' 'source-guard' 'ssh' 'udld' 'upnp' 'user' 'vlan' 'voice-vlan' 'vtss-rmirror' 'web-privilege-group-level'

interface

Show specific interface or interfaces

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

line

Show line settings

vlan

VLAN

console

Console

vtty

VTY

<range_list>

List of console/VTYs

<vlan_list>

List of VLAN numbers

Example:

```

<sys_name># show running-config vlan
Building configuration...
vlan 1
!
!
end
<sys_name>#

```

4.24.39 *sflow*

Statistics flow.

Syntax:`show sflow``show sflow [[begin | exclude | include] <line>``show sflow statistics receiver``show sflow statistics samplers``show sflow statistics samplers [* | GigabitEthernet <port_type_list>]`**Parameter:**

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

statistics

sFlow statistics

4 Global commands

receiver

Show statistics for receiver

samplers

Show statistics for samplers

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># show sflow statistics samplers interface GigabitEthernet 1/1
Per-Port Statistics:
=====
Interface                Flow Samples    Counter Samples
-----
GigabitEthernet 1/1          0                0
<sys_name>#
```

4.24.40 snmp

Show SNMP server's configurations.

Syntax:

```
show snmp
show snmp [ [ begin | exclude | include] <line>
show snmp access
show snmp access <word32> [ v1 | v2c | v3 | any ]
show snmp access <word32> [ v1 | v2c | v3 | any ] [ auth | noauth | priv ]
show snmp community
show snmp community <word32>
show snmp host
show snmp host <word32>
show snmp mib context
show snmp mib ifmib ifIndex
show snmp mib ifmib ifIndex [ aggregation | port | vlan ]
show snmp mib ifmib ifIndex
show snmp security-to-group
show snmp security-to-group [ v1 | v2c | v3 ] <word32>
show snmp trap
show snmp trap <word>
show snmp user
show snmp user <word32>
show snmp user <word32> <word10-64>
show snmp view
show snmp view <word32> <word255>
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

access

Access configuration

community

Community

host

Set SNMP host's configurations

mib

MIB (Management Information Base)

security-to-group

security-to-group configuration

trap

Set SNMP host's configurations

user

User

view

MIB view configuration

<word32>

Group name

v1

v1 security model

v2c

v2c security model

v3

v3 security model

any

any security model

auth

authNoPriv Security Level

noauth

noAuthNoPriv Security Level

priv

authPriv Security Level

<word32>

Specify community name

<word32>

Name of the host configuration

context

MIB context

ifmib

IF-MIB

ifIndex

The IfIndex that is defined in IF-MIB

aggregation

Show aggregation information

port

Show port information

vlan

Show VLAN information

<word32>

Security user name

<word>

Valid words are 'authenticationFailure' 'coldStart' 'entConfigChange' 'fallingAlarm' 'linkDown' 'linkUp' 'lldpRemTablesChange' 'newRoot' 'risingAlarm' 'topologyChange' 'warmStart'

<word10-64>

Security Engine ID

<word32>

MIB view name

<word255>

MIB view OID

Example:

```
<sys_name># show snmp view
View Name   : default_view
OID Subtree : .1
View Type   : included
<sys_name>#
```

4.24.41 *spanning-tree*

STP Bridge.

Syntax:

```
show spanning-tree
show spanning-tree | [ begin | exclude | include] <line>
show spanning-tree [ active | detailed | summary ]
show spanning-tree detailed interface [ * | GigabitEthernet <port_type_list> ]
show spanning-tree interface [ * | GigabitEthernet <port_type_list> ]
show spanning-tree mst [ <0-7> | configuration ]
show spanning-tree mst <0-7> interface [ * | GigabitEthernet <port_type_list> ]
```

Parameter:

|
Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

active

STP active interfaces

detailed

STP statistics

summary

STP summary

interface

Choose port

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

mst

Multiple STP

<0-7>

STP bridge instance (CIST=0, MST1=1...)

configuration

Show MSTI to VLAN mapping

Example:

```
<sys_name># show spanning-tree summary
Protocol Version: MSTP
```

4 Global commands

```

Hello Time      : 2
Max Age        : 20
Forward Delay   : 15
Tx Hold Count   : 6
Max Hop Count   : 20
BPDU Filtering  : Disabled
BPDU Guard      : Disabled
Error Recovery  : Disabled
CIST Bridge is active
<sys_name>#

```

4.24.42 ssh

Show ssh server's configurations.

Syntax:

```
show ssh fingerprint [ecdsa | ed25519 | rsa]
```

```
show ssh status [active | staging]
```

Parameter:**fingerprint [ecdsa | ed25519 | rsa]**

Show the fingerprint of the current keys.

status [active | staging]

Status of the currently active ssh configuration or of the staging configuration. If you make changes in configuration mode they will be applied only to the staging config until made active.

4.24.43 svl

Shared VLAN Learning configuration.

Syntax:

```
show svl | [ begin | exclude | include] <line>
```

```
show svl fid
```

```
show svl fid <1~4095>
```

```
show svl vlan
```

```
show svl vlan <vlan_list>
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

fid

Show a given FID

vlan

Show a given VLAN ID

<1~4095>

List of FIDs to show

<vlan_list>

List of VLANs to show

Example:

```
<sys_name># show svl fid 1
FID   VLANs
-----
  1   1 (default)
<sys_name>#
```

4.24.44 *switchport*

Display switching mode characteristics.

Syntax:

```
show switchport forbidden [ [ begin | exclude | include ] <line>
```

```
show switchport forbidden [ name <vword> | vlan <vlan_list> ]
```

Parameter:**forbidden**

Lookup VLAN Forbidden port entry

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

name <vword>

Forbidden VLANs by VLAN name

vlan <vlan_list>

Forbidden VLAN by VLAN ID

Example:

```
<sys_name># show switchport forbidden vlan 1
VLAN  Name                               Interfaces
```

4 Global commands

```
-----
1      defaulty
<sys_name>#
```

4.24.45 system

System.

Syntax:

```
show system [ cpu | led ] status
```

Parameter:**cpu**

CPU

led

LED

status

Status

Example:

```
<sys_name># show system led status
System LED: green, solid, normal indication.
<sys_name>#
```

4.24.46 tacacs-server

Show TACACS+ configuration.

Syntax:

```
show tacacs-server
```

Example:

```
<sys_name># show tacacs-server
Global TACACS+ Server Timeout      : 5 seconds
Global TACACS+ Server Deadtime     : 0 minutes
Global TACACS+ Server Key          :
No servers configured!
<sys_name>#
```

4.24.47 terminal

Display terminal configuration parameters.

Syntax:

```
show terminal | [ begin | exclude | include] <line>
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># show terminal
Line is con 0.
-----
 * You are at this line now.
 Alive from Console.
 Default privileged level is 2.
 Command line editing is enabled
 Display EXEC banner is enabled.
 Display Day banner is enabled.
 Terminal width is 80.
     length is 24.
     history size is 32.
     exec-timeout is 10 min 0 second.

 Current session privilege is 15.
 Elapsed time is 0 day 1 hour 33 min 36 sec.
 Idle time is 0 day 0 hour 0 min 0 sec.
<sys_name>#
```

4.24.48 *udld*

Unidirectional Link Detection (UDLD) configurations, statistics and status.

Syntax:

```
show udld
show udld [ [ begin | exclude | include ] <line>
show udld interface [ * | GigabitEthernet <port_type_list> ]
```

Parameter:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

interface

Choose port

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name># show uddl interface GigabitEthernet 1/3
GigabitEthernet 1/3
-----
UDLD Mode           : Disable
Admin State         : Disable
Message Time Interval(Sec): 7
Device ID(local)    : 02-00-C1-A8-D2-E2
Device Name(local)  :
Bidirectional state : Indeterminant

No neighbor cache information stored
-----
<sys_name>#
```

4.24.49 upnp

Display UPnP configuration.

Syntax:

```
show upnp
show upnp [ [ begin | exclude | include] <line>
```

Parameter:

|
Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># show upnp
UPnP Mode           : disabled
UPnP TTL            : 4
UPnP Advertising Duration : 100
UPnP IP Addressing Mode : dynamic
UPnP Static IP Interface ID : 1
<sys_name>#
```

4.24.50 *user-privilege*

Users privilege configuration.

Syntax:

```
show user-privilege
```

Example:

```
<sys_name># show user-privilege
username admin privilege 15 password encrypted 323304...a04a9ec8ab2b9401cf64606388516
<sys_name>#
```

4.24.51 *users*

Display information about terminal lines.

Syntax:

```
show users
```

```
show users | [ begin | exclude | include] <line>
```

```
show users myself
```

Parameter:

myself

Display information about mine

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># show users myself
Line is con 0.
  * You are at this line now.
  Connection is from Console.
  User name is admin.
  Privilege is 15.
  Elapsed time is 0 day 1 hour 51 min 34 sec.
  Idle time is 0 day 0 hour 0 min 0 sec.
<sys_name>#
```

4.24.52 *version*

System hardware and software status.

4 Global commands

Syntax:

```
show version
show version [ begin | exclude | include ] <line>
show version brief
```

Parameter:**brief**

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># show version
MAC Address      : 02-00-c1-a8-d2-e2
Previous Restart : Cold

System Contact  :
System Name     :
System Location :
System Time     : 1970-01-01T05:45:54+00:00
System Uptime   : 05:45:54

Bootloader
-----
Version          : version 1_5-38e0421
Date            : 18:42:33, May 24 2018

Active Image
-----
Version          :
Date            : 2018-07-13T17:27:19+08:00
Upload filename : istax_sparxIV_90_48.mfi

Backup Image
-----
Version          :
Date            : 2018-06-20T18:14:46+08:00
Upload filename : istax_sparxIV_90_48.mfi

-----
SID : 1
-----
Chipset ID      : VSC7449
Board Type     : SparX-IV_90_48
Port Count     : 53
Product        : Microsemi SMB500-48MP-740W Switch
Software Version : SMB500-48MP-740Wdev-build by sherry@akira-virtual-machine
2018-07-13T17:27:19+08:00 Config:istax_sparxIV_90_48 Profile:istax_sparxIV_90_48
SDK:2017.02-081-smb
Build Date     : 2018-07-13T17:27:19+08:00
Code Revision  : Enviroment variable 'CODE_REVISION' not set during compile
<sys_name>#
```

4.24.53 *vlan*

VLAN status.

Syntax:

```
show vlan
show vlan all
show vlan all [ brief | id <vlan_list> | name <vword32> ]
show vlan brief
show vlan brief all
show vlan id <vlan_list>
show vlan id <vlan_list> all
show vlan ip-subnet
show vlan ip-subnet <ipv4_addr>
show vlan mac
show vlan mac address <mac_ucast>
show vlan name <vword32>
show vlan name <vword32> all
show vlan protocol
show vlan protocol eth2 [ <0x600-0xffff> | arp | at | ip | ipx ]
show vlan protocol llc <0x0-0xff> <0x0-0xff>
show vlan protocol snap [ <0x0-0xffffffff> | rfc-1042 | snap-8021h ] <0x0-0xffff>
show vlan status
show vlan status [ admin | all | combined | conflicts | gvrp | mstp | mvr |
nas | rmirror | vcl | voice-vlan ]
show vlan status [ admin | all | combined | conflicts | gvrp | mstp | mvr |
nas | rmirror | vcl | voice-vlan ] interface [ * | GigabitEthernet <port_type_list> ]
show vlan status interface [ * | GigabitEthernet <port_type_list> ] [ admin | all |
combined | conflicts | gvrp | mstp | mvr | nas | rmirror | vcl | voice-vlan ]
```

Parameter:

all

Show all VLANs (if left out only access VLANs are shown)

brief

VLAN summary information

id <vlan_list>

VLAN status by VLAN ID

ip-subnet

Show VCL IP Subnet entries

mac

Show VLAN MAC entries

name <vword32>

VLAN status by VLAN name

protocol

Protocol-based VLAN status

status

Show the VLANs configured for each interface

<ipv4_addr>

Destination IPv4 address

mac address <mac_ucast>

Show a specific MAC entry

eth2

Ethernet protocol based VLAN status

llc

LLC-based VLAN group

snap

SNAP-based VLAN group

<0x600-0xffff>

Ether Type (Range: 0x600 - 0xFFFF)

arp

Ether Type is ARP

at

Ether Type is AppleTalk

ip

Ether Type is IP

ipx

Ether Type is IPX

<0x0-0xff>

DSAP (Range: 0x00 - 0xFF)

<0x0-0xff>

SSAP (Range: 0x00 - 0xFF)

<0x0-0xfffff>

SNAP OUI (Range 0x000000 - 0FFFFFFF)

rfc-1042

SNAP OUI is rfc-1042

snap-8021h

SNAP OUI is 8021h

<0x0-0xffff>

PID (Range: 0x0 - 0xFFFF)

admin

Show the VLANs configured by administrator

all

Show VLANs configured VLANs for all VLAN users

combined

Show the combined set of configured VLANs

conflicts

Show VLAN configurations that have conflicts

gvrp

Show the VLANs configured by GVRP

interface

Show the VLANs configured for a specific interface or interfaces

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

mstp

Show the VLANs configured by MSTP

mvr

Show the VLANs configured by MVR

nas

Show the VLANs configured by NAS

rmirror

Show the VLANs configured by remote mirroring

vcl

Show the VLANs configured by VCL

voice-vlan

Show the VLANs configured by Voice VLAN

Example:

```

<sys_name># show vlan status all interface GigabitEthernet 1/4
GigabitEthernet 1/4 :
-----
VLAN User   PortType   PVID   Frame Type   Ing Filter   Tx Tag       UVID   Conflicts
-----
Combined   C-Port     1       All           Enabled      None          1      No
Admin      C-Port     1       All           Enabled      None          1      No
NAS
GVRP
MVR
Voice VLAN
MSTP
VCL
RMirror
<sys_name>#
    
```

4.24.54 voice

Voice appliance attributes.

Syntax:

```

show voice vlan
show voice vlan [ begin | exclude | include ] <line>
show voice vlan interface [ * | GigabitEthernet <port_type_list> ]
show voice vlan oui
show voice vlan oui <oui>
    
```

Parameter:**vlan**

VLAN for voice traffic

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

interface

Select an interface to configure

*

All switches or all ports

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

oui

OUI configuration

<oui>

OUI value

Example:

```

<sys_name># show voice vlan interface GigabitEthernet 1/1
GigabitEthernet 1/1 :
-----
GigabitEthernet 1/1 switchport voice vlan mode is disabled
GigabitEthernet 1/1 switchport voice security is disabled
GigabitEthernet 1/1 switchport voice discovery protocol is oui
<sys_name>#

```

4.24.55 web

Web.

Syntax:

```
show web privilege group [ <word> ] level
```

```
show web privilege group [ <word> ] level | [ begin | exclude | include ] <line>
```

```
show web privilege group level
```

```
show web privilege group level | [ begin | exclude | include ] <line>
```


Parameter:**privilege**

Web privilege

group

Web privilege group

<cword>

Valid words are 'Aggregation' 'Alarm' 'DDMI' 'DHCP' 'DHCPv6_Client' 'Diagnostics' 'FRR' 'Firmware' 'Green_Ethernet' 'IP' 'IPMC_Snooping' 'LACP' 'LLDP' 'LMC' 'Loop_Protect' 'MAC_Table' 'MRP' 'MVR' 'Miscellaneous' 'NTP' 'POE' 'Ports' 'Private_VLANs' 'QoS' 'RMirror' 'Security(access)' 'Security(network)' 'Spanning_Tree' 'System' 'TFTP' 'Trap_Event' 'UDLD' 'UPnP' 'VCL' 'VLAN_Translation' 'VLANs' 'Voice_VLAN' 'Watchdog' 'XXRP' 'sFlow' 'uFDMA_AIL' 'uFDMA_CIL'

level

Web privilege group level

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name># show web privilege group level
Group Name                Privilege Level
                        CRO CRW SRO SRW
-----
Aggregation                5  10  5  10
Alarm                      5  10  5  10
DDMI                      5  10  5  10
DHCP                      5  10  5  10
DHCPv6_Client             5  10  5  10
Diagnostics                5  10  5  10
.
.
.
VLANs                      5  10  5  10
Voice_VLAN                 5  10  5  10
XXRP                       5  10  5  10
<sys_name>#
```

4.25 startlmc

Connect this switch with the LANCOM Management Cloud (LMC). The LMC shows a pairing token that you have to use with this command.

Syntax:

```
startlmc <Pairing Token>
```

Parameter:**<Pairing Token>**

The pairing token is the activation code as shown by the LMC.

Example:

```
Switch# startlmc <token>
Switch#
```

4.26 terminal

Set terminal line parameters.

Syntax:

```
terminal [ editing | help ]
terminal exec-timeout <0-1440>
terminal exec-timeout <0-1440> <0-3600>
terminal history size <0-32>
terminal length <0,3-512>
terminal width <0,40-512>
```

Parameter:**editing**

Enable command line editing

help

Description of the interactive help system

exec-timeout <0-1440>

Set the EXEC timeout in minutes

<0-3600>

Timeout in seconds

history size <0-32>

Control the command history function by setting the number of commands in the history buffer, 0 means disable

length <0,3-512>

Set number of lines on a screen, 0 for no pausing

width <0,40-512>

Set width of the display terminal by setting the number of characters on a screen line, 0 for unlimited width

Example:

```
<sys_name># terminal exec-timeout 3
<sys_name>#
```

4.27 trace

Toggle LMC tracing.

Syntax:

```
trace on | off
```

Parameter:

on

Enable LMC traces

off

Disable LMC traces

Example:

```
<sys_name># trace on
Enable LMC traces
I0101 00:41:42.385625    88 TraceImpl.h:52] All traces enabled
<sys_name>#
```

4.28 traceroute

The traceroute command is used to discover the routes that packets actually take when traveling to their destination.

Syntax:

```
traceroute ip [ <domain_name> | <ipv4_addr> ]
```

```
traceroute ip [ <domain_name> | <ipv4_addr> ] { [ dscp <0-63> ] | [ firstttl <1-30> ] |
[ icmp ] | [ maxttl <1-255> ] | numeric | [ probes <1-60> ] | [ saddr <ipv4_addr> ] |
[ timeout <1-86400> ] }
```

```
traceroute ip [ <domain_name> | <ipv4_addr> ] sif GigabitEthernet <port_type_list>
```

```
traceroute ip [ <domain_name> | <ipv4_addr> ] sif vlan <vlan_id>
```

```
traceroute ipv6 [ <domain_name> | <ipv6_addr> ]
```

```
traceroute ipv6 [ <domain_name> | <ipv6_addr> ] { [ dscp <0-63> ] | [ firstttl <1-30> ] |
[ icmp ] | [ maxttl <1-255> ] | numeric | [ probes <1-60> ] | [ saddr <ipv6_addr> ] |
[ timeout <1-86400> ] }
```

```
traceroute ipv6 [ <domain_name> | <ipv6_addr> ] sif GigabitEthernet <port_type_list>
```

```
traceroute ipv6 [ <domain_name> | <ipv6_addr> ] sif vlan <vlan_id>
```

Parameter:

ip

Traceroute (IPv4)

ipv6

Traceroute (IPv6)

<domain_name>

Destination hostname or FQDN

<ipv4_addr>

Destination IPv4 address

<ipv6_addr>

Destination IPv6 address

dscp <0-63>

Specify DSCP value (default 0)

firstttl <1-30>

Specify first number of hops (starting TTL) (default 1)

icmp

Use ICMP instead of UDP

maxttl <1-255>

Specify max number of hops (max TTL) (default 30)

numeric

Print numeric addresses

probes <1-60>

Specify number of probes per hop (default 3)

saddr <ipv4_addr>

Send from interface with source IPv4 address

timeout <1-86400>

Specify time to wait for a response in seconds (default 3)

sif

Send from specified interface

GigabitEthernet

1 Gigabit Ethernet port

<port_type_list>

Port list for all port types or <Port list or ID>

vlan <vlan_id>

Send from VLAN interface with source address

saddr <ipv6_addr>

Send from interface with source IPv6 address

Example:

```
<sys_name># traceroute ip 192.168.1.1 probes 3
traceroute to 192.168.1.1 (192.168.1.1), 30 hops max, 38 byte packets
 1 192.168.1.1 (192.168.1.1) 0.146 ms 0.149 ms 0.100 ms
<sys_name>#
```

5 Configuration mode commands

General configuration features. The prompt of the command line is shown as `<sys_name> (config) #`

| Command | Function |
|---------------------------------|---|
| <i>configure</i> | Enter the configuration mode to configure the switch from the terminal. |
| <i>aaa</i> | Authentication, Authorization and Accounting. |
| <i>access</i> | Access management. |
| <i>access-list ace</i> | Access list entry. |
| <i>access-list rate-limiter</i> | Access list rate limiter. |
| <i>aggregation</i> | Aggregation mode. |
| <i>banner</i> | Define a banner. |
| <i>clock</i> | Configure time-of-day clock. |
| <i>default</i> | Set a command to its defaults. |
| <i>dms</i> | Enable DMS mode. |
| <i>do</i> | To run exec mode commands in the configuration mode. |
| <i>dot1x</i> | IEEE Standard for port-based Network Access Control. |
| <i>enable</i> | Modify enable password parameters. |
| <i>end</i> | Go back to EXEC mode. |
| <i>enforce-password-rules</i> | Pasword rules configuration. |
| <i>event</i> | Trap event severity level. |
| <i>exit</i> | Exit from current mode. |
| <i>green-ethernet</i> | Green ethernet (Power reduction). |
| <i>gvrp</i> | Enable GVRP feature. |
| <i>help</i> | Description of the interactive help system. |
| <i>hostname</i> | Set system's network name. |
| <i>interface</i> | Select an interface to configure. |
| <i>interface llag</i> | Changes to the configuration mode "Local link aggregation interface configuration" (config-llag). |
| <i>interface</i> | Select an interface to configure. |
| <i>ip</i> | Interface Internet Protocol configuration commands. |
| <i>ipmc</i> | IPv4/IPv6 multicast configuration. |
| <i>ipv6</i> | IPv6 configuration commands. |
| <i>json</i> | JavaScript Object Notation RPC |
| <i>lacp</i> | LACP settings. |
| <i>line</i> | Configure a terminal line. |
| <i>lldp</i> | Link Layer Discover Protocol |
| <i>lmc</i> | Configure LANCOM Management Cloud (LMC) parameters. |
| <i>logging</i> | System logging message. |

5 Configuration mode commands

| Command | Function |
|----------------------|--|
| <i>loop-protect</i> | Loop protection configuration. |
| <i>mac</i> | MAC table entries/configuration. |
| <i>monitor</i> | Monitoring different system events. |
| <i>mvr</i> | Multicast VLAN Registration configuration. |
| <i>mvrp</i> | Enable MVRP feature globally |
| <i>no</i> | no commands |
| <i>ntp</i> | Configure NTP. |
| <i>poe</i> | Power Over Ethernet. |
| <i>port-security</i> | Configure port security. |
| <i>power</i> | Set power management. |
| <i>privilege</i> | Command privilege parameters. |
| <i>prompt</i> | Set prompt. |
| <i>qos</i> | Quality of Service. |
| <i>radius-server</i> | Configure RADIUS. |
| <i>rmon</i> | Remote Monitoring. |
| <i>router</i> | Routing process. |
| <i>sflow</i> | Statistics flow. |
| <i>snmp-server</i> | Set SNMP server's configurations, see snmp-server commands on page 194. |
| <i>spanning-tree</i> | Spanning Tree protocol, see spanning-tree commands on page 200. |
| <i>svl</i> | Shared VLAN Learning. |
| <i>switchport</i> | Set VLAN switching mode characteristics. |
| <i>system</i> | Set the SNMP server's configurations. |
| <i>tacacs-server</i> | Configure TACACS+. |
| <i>udld</i> | Enable UDLD in the aggressive or normal mode and to set the configurable message timer on all fiber-optic ports. |
| <i>upnp</i> | Set UPnP's configurations. |
| <i>username</i> | Establish User Name Authentication. |
| <i>vlan</i> | VLAN commands. |
| <i>voice</i> | Voice appliance attributes. |
| <i>web</i> | Web. |

5.1 aaa

Authentication, Authorization and Accounting.

Syntax:

```
aaa authentication login [ ssh | telnet | http | console ] [ local | radius | tacacs ]
aaa authorization ( console | ssh | telnet ) tacacs commands <0-15>
aaa authorization ( console | ssh | telnet ) tacacs commands <0-15> config-commands
aaa accounting ( Console | ssh | telnet ) tacacs exec
aaa accounting ( Console | ssh | telnet ) tacacs commands <0-15>
aaa lock login-failures <0-99>
aaa lock minutes <1-99>
```

Parameter:**authentication**

Authentication

authorization

Authorization

accounting

Accounting

login

Login

http

Configure HTTP authentication

ssh

Configure SSH authentication / command authorization / command accounting

telnet

Configure telnet authentication / command authorization / command accounting

console

Configure console authentication / command authorization / command accounting

local

Use local database for authentication

radius

Use RADIUS for authentication

tacacs

Use TACACS+ for authentication / authorization / accounting

commands

Enable command authorization / accounting

<0-15>

Command privilege level. Commands equal and above this level are authorized / accounted

config-commands

Include configuration commands

exec

Enable EXEC accounting

lock login-failures <0-99>

Lock configuration after given number of login failures

lock minutes <1-99>

Lock configuration for given number of minutes

Example:

```
<sys_name>(config)# aaa authentication login http radius
<sys_name>(config)#
```

5.2 access

Access management.

Syntax:

```
access management <1..16>
access <1..16> <1..4095> [ <ipv4_ucast> | <ipv6_ucast> ] { [ web ] [ snmp ] [ telnet ] |
all }
access <1..16> <1..4095> [ <ipv4_ucast> | <ipv6_ucast> ] { [ web ] | [ snmp ] |
[ telnet ] | [all] }
access <1..16> <1..4095> [ <ipv4_ucast> | <ipv6_ucast> ] to <ipv4_ucast>
```

Parameter:**management**

Access management configuration

< 1-16>

ID of access management entry

<1..4095>

The VLAN ID for the access management entry

<ipv4_ucast>

Start IPv4 unicast address

<ipv6_ucast>

Start IPv6 unicast address

all

All services

snmp

SNMP service

telnet

TELNET/SSH service

to <ipv4_ucast>

End address of the IPv4 unicast address range

web

Web service

Example:

```
<sys_name>(config)# access management 10 3 192.168.1.1 all
<sys_name>(config)#
```

5.3 access-list ace

Access list entry.

Syntax:

```
access-list ace <1-512> action [ deny | permit ]

access-list ace <1-384> action { ( deny | permit ) [ dmac-type | frame-type | ingress |
logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag |
tag-priority | vid ] }

access-list ace <1-512> action filter interface ( * | GigabitEthernet |
10GigabitEthernet ) [ <port_type_list> | dmac-type | frame-type | ingress |
logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag |
tag-priority | vid ]

access-list ace <1-512> action ( deny | permit ) dmac-type ( any | broadcast |
multicast | unicast ) [ frame-type | ingress | logging | mirror | next | policy |
rate-limiter | redirect | shutdown | tag | tag-priority | vid ]

access-list ace <1-512> action ( deny | permit ) frame-type { ( any [ dmac-type |
ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown |
tag | tag-priority | vid ] ) }

access-list ace <1-512> action ( deny | permit ) frame-type { ( arp [ arp-flag |
arp-opcode | dip | dmac-type | ingress | logging | mirror | next | policy |
rate-limiter | redirect | shutdown | sip | smac | tag | tag-priority | vid ] ) }

access-list ace <1-512> action ( deny | permit ) frame-type { ( etype [ dmac |
dmac-type | etype-value | ingress | logging | mirror | next | policy | rate-limiter |
redirect | shutdown | smac | tag | tag-priority | vid ] ) }

access-list ace <1-512> action ( deny | permit ) frame-type { ( ipv4 [ dip | dmac-type |
ingress | ip-flag | ip-protocol | logging | mirror | next | policy | rate-limiter |
redirect | shutdown | sip | tag | tag-priority | vid ] ) }

access-list ace <1-512> action ( deny | permit ) frame-type { ( ipv4-icmp
[ dip | dmac-type | icmp-code | icmp-type | ingress | ip-flag | ip-protocol | logging |
mirror | next | policy | rate-limiter | redirect | shutdown | sip | tag | tag-priority | vid ] ) }

access-list ace <1-512> action ( deny | permit ) frame-type { ( ipv4-tcp | ipv4-udp )
[ dip | dmac-type | dport | ingress | ip-flag | logging | mirror | next | policy |
rate-limiter | redirect | shutdown | sip | sport | tag | tag-priority | vid ] ) }

access-list ace <1-512> action ( deny | permit ) frame-type { ( ipv6 | ipv6-udp )
[ dmac-type | hop-limit | ingress | logging | mirror | next | policy | rate-limiter |
redirect | shutdown | sip | tag | tag-priority | vid ] ) }

access-list ace <1-512> action ( deny | permit ) frame-type { ( ipv6-icmp [ dip |
dmac-type | icmp-code | icmp-type | ingress | logging | mirror | next | policy |
rate-limiter | redirect | shutdown | sip | tag | tag-priority | vid ] ) }

access-list ace <1-512> action ( deny | permit ) frame-type { ( ipv6-tcp [ dmac-type |
dport | hop-limit | ingress | logging | mirror | next | policy | rate-limiter |
redirect | shutdown | sip | sport | tag | tag-priority | tcp-flag | vid ] ) }

access-list ace <1-512> action ( deny | permit ) ingress { ( any [ dmac-type |
frame-type | logging | mirror | next | policy | rate-limiter | redirect | shutdown |
tag | tag-priority | vid ] ) | { interface ( * | GigabitEthernet | 10GigabitEthernet )
```

5 Configuration mode commands

```
[ <port_type_list> | dmac-type | frame-type | ingress | logging | mirror | next |
policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid ] }

access-list ace <1-512> action ( deny | permit ) logging [ disable | dmac-type |
frame-type | ingress | mirror | next | policy | rate-limiter | redirect | shutdown |
tag | tag-priority | vid ]

access-list ace <1-512> action ( deny | permit ) mirror [ disable | dmac-type |
frame-type | ingress | logging | next | policy | rate-limiter | redirect | shutdown |
tag | tag-priority | vid ]

access-list ace <1-512> action ( deny | permit ) next ( <1-512> | last ) [ dmac-type |
frame-type | ingress | logging | mirror | policy | rate-limiter | redirect | shutdown |
tag | tag-priority | vid ]

access-list ace <1-512> action ( deny | permit ) policy <0-127> [ dmac-type |
frame-type | ingress | logging | mirror | next | policy-bitmask | rate-limiter |
redirect | shutdown | tag | tag-priority | vid ]

access-list ace <1-512> action ( deny | permit ) rate-limiter ( <1-16> | disable )
[ dmac-type | frame-type | ingress | logging | mirror | next | policy | redirect |
shutdown | tag | tag-priority | vid ]

access-list ace <1-512> action ( deny | permit ) redirect { ( disable [ dmac-type |
frame-type | ingress | logging | mirror | next | policy | rate-limiter | shutdown | tag |
tag-priority | vid ] ) | { interface ( * | GigabitEthernet | 10GigabitEthernet )
[ <port_type_list> | dmac-type | frame-type | ingress | logging | mirror | next |
policy | rate-limiter | shutdown | tag | tag-priority | vid ] } }

access-list ace <1-512> action ( deny | permit ) shutdown [ disable | dmac-type |
frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | tag |
tag-priority | vid ]

access-list ace <1-512> action ( deny | permit ) tag ( any | tagged | untagged )
[ dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter |
redirect | shutdown | tag-priority | vid ]

access-list ace <1-512> action ( deny | permit ) tag-priority ( 0-1 | 0-3 | 2-3 | 4-5 |
4-7 | 6-7 | <0-7> | any ) [ dmac-type | frame-type | ingress | logging | mirror | next |
policy | rate-limiter | redirect | shutdown | tag | vid ]

access-list ace <1-512> action ( deny | permit ) vid ( <1-4095> | any ) [ dmac-type |
frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect |
shutdown | tag | tag-priority ]

access-list ace update <1-512> [ action | dmac-type | frame-type | ingress | logging |
mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid ]
```

Parameter:

<1-512>

ACE ID

update

Update an existing ACE

action

Access list action

dmac-type

The type of destination MAC address

frame-type

Frame type

ingress

Ingress

logging

Logging frame information.



The logging feature only works when the packet length is less than 1518 (without VLAN tags) and the system log memory size and logging rate is limited.

mirror

Mirror frame to destination mirror port

next

Insert the current ACE before the next ACE ID

policy

Policy

rate-limiter

Rate limiter

redirect

Redirect frame to specific port

shutdown

Shutdown incoming port.



The shutdown feature only works when the packet length is less than 1518 (without VLAN tags).

tag

Tag

tag-priority

Tag priority

vid

VID field

deny

Deny

filter

Filter

permit

Permit

interface

Select an interface to configure

*

All switches or all ports

GigabitEthernet

Gigabit Ethernet ports

10GigabitEthernet

10 Gigabit Ethernet ports

<port_type_list>

Port list for all port types or <Port list or ID>

any

Don't care about the type of destination MAC address

broadcast

Broadcast destination MAC address

multicast

Multicast destination MAC address

unicast

Unicast destination MAC address

any

Don't care about the frame type

arp

Frame type of ARP

etype

Frame type of EtherType

ipv4

Frame type of IPv4

ipv4-icmp

Frame type of IPv4 ICMP

ipv4-tcp

Frame type of IPv4 TCP

ipv4-udp

Frame type of IPv4 UDP

arp-flag

ARP flag

arp-opcode

ARP/RARP opcode field

dip

Destination IP address field

sip

Source IP address field

smac

Source MAC address field

dmac

Destination MAC address field

etype-value

Ether type value

ip-flag

IP flag

ip-protocol

IPv4 protocol field

icmp-code

ICMP code field

icmp-type

ICMP type field

dport

TCP/UDP destination port field

sport

TCP/UDP source port field

tcp-flag

TCP flag

hop-limit

IPv6 hop limiter field

disable

Disable logging or rate-limiter

last

Place the current ACE to the end of access list

<0-127>

Policy ID

policy-bitmask

The bitmask for policy ID

<1-16>

Rate limiter ID

any

Don't care about tagged or untagged

tagged

Tagged

untagged

Untagged

0-1

The range of tag priority

0-3

The range of tag priority

2-3

The range of tag priority

4-5

The range of tag priority

4-7

The range of tag priority

6-7

The range of tag priority

<0-7>

The value of tag priority

any

Don't care about the value of the tag priority field

<1-4095>

The value of VID field

any

Don't care about the value of the VID field

Example:

```
<sys_name>(config)# access-list ace 10 action deny
<sys_name>(config)#
```

5.4 *access-list rate-limiter*

Access list rate limiter.

Syntax:

```
access-list rate-limiter ( 10pps <0-500000> ) | ( 25kbps <0-400000> ) |
<1~16> (10pps <0-500000> | 25kbps <0-400000>)
```

Parameter:**10pps**

10 packets per second

25kbps

25k bits per second

<1~16>

Rate limiter ID

<0-500000>

Rate value

<0-400000>

Rate value

Example:

```
<sys_name>(config)# access-list rate-limiter 25kbps 0
<sys_name>(config)#
```

5.5 aggregation

Aggregation mode.

Syntax:

```
aggregation mode [ dmac | ip | port | smac ]
```

Parameter:

mode

Traffic distribution mode

dmac

Destination MAC affects the distribution

ip

IP address affects the distribution

port

IP port affects the distribution

smac

Source MAC affects the distribution

Example:

```
<sys_name>(config)# aggregation mode dmac  
<sys_name>(config)#
```

5.6 banner

Define a banner.

Syntax:

```
banner [ <LINE> ]
```

```
banner ( exec | login | motd ) <LINE>
```

Parameter:

<LINE>

c banner-text c, where 'c' is a delimiting character

exec

Set EXEC process creation banner

login

Set login banner

motd

Set Message of the Day banner

Example:

```
<sys_name>(config)# banner exec LINE
Enter TEXT message. End with the character 'L'.
L
<sys_name>(config)#
```

5.7 clock

Configure time-of-day clock.

Syntax:

```
clock summer-time <word16> date ( [ <1-12> ] ) | ( <1-12> <1-31> <2000-2097> <hhmm>
<1-12> <1-31> <2000-2097> <hhmm> [ <1-1439> ] )
```

```
clock summer-time <word16> recurring ( [ <1-5> ] ) | (<1-5> <1-7> <1-12> <hhmm> <1-5>
<1-7> <1-12> <hhmm> [ <1-1439> ] )
```

```
clock timezone <word16> <-23-23> [ <0-59> <0-9> ]
```

Parameter:**summer-time**

Configure summer (daylight savings) time

timezone

Configure time zone

<word16>

Name of the time zone (the string "" is a special syntax that is reserved for null input)

date

Configure absolute summer time

recurring

Configure recurring summer time

<1-12>

Month to start resp. end

<1-31>

Day of month te to start resp. end

<2000-2097>

Year to start resp. emd

<hhmm>

Time to start resp. end (hh:mm)

<1-1439>

Offset to add in minutes

<1-5>

Number of week to start

<1-7>

Day of week to start

<-23-23>

Hours offset from UTC

<0-59>

Minutes offset from UTC

<0-9>

Sub type of time zone

Example:

```
<sys_name>(config)# clock timezone taipei 8  
<sys_name>(config)#
```

5.8 default

Set a command to its defaults.

Syntax:

```
default access-list rate-limiter [ <1-16> ]
```

Parameter:

access-list

Access list

rate-limiter

Rate limiter

<1-16>

Rate limiter ID

Example:

```
<sys_name>(config)# default access-list rate-limiter 3  
<sys_name>(config)#
```

5.9 dms

Enable DMS mode.

5 Configuration mode commands

Syntax:

```
dms
```

```
dms mode [ disabled | enabled | high-priority ]
```

Parameter:**mode**

DMS mode

disabled

DMS mode is disabled

enabled

DMS mode is enabled

high-priority

DMS mode is high priority

Example:

```
<sys_name>(config)# dms mode high-priority
<sys_name>(config)#
```

5.10 do

To run exec mode commands in the configuration mode.

Syntax:

```
do <LINE> [ <LINE> ]
```

Parameter:**<LINE>**

Exec mode command

Example:

```
<sys_name>(config)# do clear statistics interface GigabitEthernet 1/1-1
<sys_name>(config)#
```

5.11 dot1x

IEEE Standard for port-based Network Access Control.

Syntax:

```

dot1x authentication timer re-authenticate <1-3600>
dot1x authentication timer inactivity <10-1000000>
dot1x feature { [ guest-vlan ] [ radius-qos ] [ radius-vlan ] }
dot1x guest-vlan [ <1-4095> | supplicant ]
dot1x max-reauth-req <1-255>
dot1x re-authentication
dot1x system-auth-control
dot1x timeout ( tx-period <1-65535> ) | ( quiet-period <10-1000000> )
dot1x macbased-credentials { [ identity <identity> ] [ password <password> ] }

```

Parameter:**authentication**

Authentication

feature

Globally enables/disables a dot1x feature functionality

guest-vlan

Globally enables/disables state of guest-vlan

radius-qos

Globally enables/disables state of RADIUS-assigned QoS.

radius-vlan

Globally enables/disables state of RADIUS-assigned VLAN.

guest-vlan

Guest VLAN

max-reauth-req <1-255>

The number of times a request identity EAPOL frame is sent without response before considering entering the guest VLAN

re-authentication

Set re-authentication state

system-auth-control

Set the global NAS state

timeout

Time-out

timer

Timer

inactivity <10-1000000>

Time in seconds between check for activity on successfully authenticated MAC addresses.

re-authenticate <1-3600>

The period between re-authentication attempts in seconds.

<1-4095>

Guest VLAN ID used when entering the Guest VLAN

supplicant

The switch remembers if an EAPOL frame has been received on the port for the life-time of the port. Once the switch considers whether to enter the Guest VLAN, it will first check if this option is enabled or disabled. If disabled (unchecked, default), the switch will only enter the Guest VLAN if an EAPOL frame has not been received on the port for the life-time of the port. If enabled (checked), the switch will consider entering the Guest VLAN even if an EAPOL frame has been received on the port for the life-time of the port.

quiet-period <10-1000000>

Time in seconds before a MAC-address that failed authentication gets a new authentication chance.

tx-period <1-65535>

The time in seconds between EAPOL retransmissions.

macbased-credentials [[identity <identity>] [password <password>]]

Sets a static macbased auth and password identity. By defining a global MAB password for each switch, it is possible to better allocate MAC addresses to internal clients and distinguish whether this MAC moves from one client to another.

Example:

```
<sys_name>(config)# dot1x authentication timer re-authenticate 1000
<sys_name>(config)#
```

5.12 enable

Modify enable password parameters.

Syntax:

```
enable password ( level <1-15> <word32> ) | ( <word32> )
enable secret ( 0 | 5 ) ( level <1-15> <word32> ) | ( <word32> )
```

Parameter:**password**

Assign the privileged level clear password

secret

Assign the privileged level secret

level <1-15>

Set exec level password

<word32>

The UNENCRYPTED (clear-text) password

0

Specifies an UNENCRYPTED password will follow

5

Specifies an ENCRYPTED secret will follow

Example:

```
<sys_name>(config)# enable password level 10 999
<sys_name>(config)#
```

5.13 end

Go back to EXEC mode.

Syntax:

```
end
```

Example:

```
<sys_name>(config)# end
<sys_name>#
```

5.14 enforce-password-rules

Password rules configuration. This switch forces the following policy for the device and the administrator passwords:

- The length of the password must be at least 8 and the maximum allowed length is 32 characters.
- The password has to contain at least 3 of the following 4 character classes: lowercase and uppercase letters, numeric and special characters.



Please take into account that after enabling this switch, the policy is not checked immediately on existing passwords. Conformance will be checked only on future password changes.

Syntax:

```
enforce-password-rules
```

Example:

```
<sys_name>(config)# enforce-password-rules
<sys_name>(config)#
```

5.15 event

Trap event severity level.

Syntax:

```
event group [ acl | acl-log | access-mgmt | auth-failed | cold-start | config-info |
fan | firmware-upgrade | import-export | lacp | link-status | login | logout |
loop-protect | mgmt-ip-change | module-change | nas | NTP-Sync |
Over-Max-PoE-Power-Limitation | Password-Change | PoE-Auto-Check | PoE-PD-Off |
PoE-PD-On | PoE-PD-Over-Current | Poe-Auto-Power-Reset | port-security |
```

5 Configuration mode commands

```
spanning-tree | Temperature | Voltage ] { [ level < 0-7 > ] | { syslog [ enable |
disable ] } | { trap [ enable | disable ] } | { smtp [ enable | disable ] } }

event group [ acl | acl-log | access-mgmt | auth-failed | cold-start | config-info |
fan | firmware-upgrade | import-export | lacp | link-status | login | logout |
loop-protect | mgmt-ip-change | module-change | nas | NTP-Sync |
Over-Max-PoE-Power-Limitation | Password-Change | PoE-Auto-Check | PoE-PD-Off |
PoE-PD-On | PoE-PD-Over-Current | Poe-Auto-Power-Reset | port-security | spanning-tree |
Temperature | Voltage ] [ level | syslog | trap | smtp ]

event group [ acl | acl-log | access-mgmt | auth-failed | cold-start | config-info |
fan | firmware-upgrade | import-export | lacp | link-status | login | logout |
loop-protect | mgmt-ip-change | module-change | nas | NTP-Sync |
Over-Max-PoE-Power-Limitation | Password-Change | PoE-Auto-Check | PoE-PD-Off |
PoE-PD-On | PoE-PD-Over-Current | Poe-Auto-Power-Reset | port-security | spanning-tree |
Temperature | Voltage ] [ level | syslog | trap ] < 0-7 > { syslog
[ enable | disable ] [ trap ] } | { trap [ enable | disable ] [ syslog ] }
```

Parameter:**group**

Trap Event group name

acl

Group ID ACL

acl-log

Group ID ACL-Log

access-mgmt

Group ID ACCESS-MGMT

auth-failed

Group ID AUTH-FAILED

cold-start

Group ID COLD-START

config-info

Group ID CONFIG-INFO

fan

Group ID FAN

firmware-upgrade

Group ID FIRMWARE-UPGRADE

import-export

Group ID IMPORT-EXPORT

lacp

Group ID LACP

link-status

Group ID LINK-STATUS

login

Group ID LOGIN

logout

Group ID LOGOUT

loop-protect

Group ID LOOP-PROTECT

mgmt-ip-change

Group ID MGMT-IP-CHANGE

module-change

Group ID MODULE-CHANGE

nas

Group ID NAS

NTP-Sync

Group ID NTP-SYNC

Over-Max-PoE-Power-Limitation

Group ID OVER-MAX-POE-POWER-LIMITATION

Password-Change

Group ID PASSWORD-CHANGE

PoE-Auto-Check

Group ID POE-AUTO-CHECK

PoE-PD-Off

Group ID POE-PD-OFF

PoE-PD-On

Group ID POE-PD-ON

PoE-PD-Over-Current

Group ID POE-PD-OVER-CURRENT

Poe-Auto-Power-Reset

Group ID POE-AUTO-POWER-RESET

port-security

Group ID PORT-SECURITY

spanning-tree

Group ID SPANNING-TREE

Temperature

Group ID TEMPERATURE

Voltage

Group ID VOLTAGE

level

Event group level

smtp

SMTP mode

syslog

Syslog mode

5 Configuration mode commands

trap

Trap mode

<0-7>

<0> Emergency ,<1> Alert ,<2> Critical ,<3> Error ,<4> Warning ,<5> Notice ,<6> Informational

enable

Enable Syslog | Trap | SMTP mode

disable

Disable Syslog | Trap | SMTP mode

Example:

```
<sys_name>(config)# event group lacp trap enable
<sys_name>(config)#
```

5.16 *exit*

Exit from current mode.

Syntax:

```
exit
```

Parameter:**Example:**

```
<sys_name>(config)# exit
<sys_name>#
```

5.17 *green-ethernet*

Green ethernet (Power reduction).

Syntax:

```
green-ethernet eee optimize-for-power
```

Parameter:**eee**

Powering down of PHYs when there is no traffic.

optimize-for-power

Set if EEE shall be optimized for least power consumption (else optimized for least traffic latency).

Example:

```
<sys_name>(config)# green-ethernet eee optimize-for-power
<sys_name>(config)#
```

5.18 *gvrp*

Enable GVRP feature.

Syntax:

```
gvrp
gvrp max-vlans <1-4094>
gvrp time [ join-time <1-20> ] [ leave-time <60-300> ] [ leave-all-time <1000-5000> ]
```

Parameter:**max-vlans <1-4094>**

Number of simultaneously VLANs that GVRP can control

time

Configure GARP protocol timer parameters. IEEE 802.1D-2004, clause 12.11.

join-time <1-20>

Set GARP protocol parameter JoinTime in units of centiseconds. Range is 1-20. Default is 20.

leave-time <60-300>

Set GARP protocol parameter LeaveTime in units of centiseconds. Range is 60-300. Default is 60.

leave-all-time <1000-5000>

Set GARP protocol parameter LeaveAllTime in units of centiseconds Range is 1000-5000. Default is 1000.

Example:

```
<sys_name>(config)# gvrp max-vlans 333
<sys_name>(config)# gvrp time join-time 13 leave-all-time 3000 leave-time 200
<sys_name>(config)#
```

5.19 *help*

Description of the interactive help system.

Syntax:

```
help
```

Example:

```
<sys_name>(config)# help
Help may be requested at any point in a command by entering
a question mark '?'. If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
```

5 Configuration mode commands

```

available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
   command argument (e.g. 'show ?') and describes each possible
   argument.
2. Partial help is provided when an abbreviated argument is entered
   and you want to know what arguments match the input
   (e.g. 'show pr?'.)

<sys_name>(config)#

```

5.20 *hostname*

Set system's network name.

Syntax:

```
hostname <line128>
```

Parameter:

<line128>

This system's network name.

Example:

```

<sys_name>(config)# hostname abc
<sys_name>(config)#

```

5.21 *interface*

Select an interface to configure.

Syntax:

```

interface { * [ <port_type_list> ] } | { ( GigabitEthernet | 10GigabitEthernet )
<port_type_list> [ [ * | GigabitEthernet | 10GigabitEthernet ] ] [ <port_type_list> ] }

```

Parameter:

All switches or all ports

GigabitEthernet

Gigabit Ethernet Ports

10GigabitEthernet

10 Gigabit Ethernet Ports

<port_type_list>

Port list for all port types or <Port list or ID>

Possible commands in this mode

| Command | Function |
|-----------------------------|---|
| <i>access-list</i> | Configure access list. |
| <i>aggregation</i> | Create an aggregation. |
| <i>description</i> | Configures port description. |
| <i>duplex</i> | Interface duplex. |
| <i>end</i> | Go back to EXEC mode. |
| <i>excessive-restart</i> | Restart backoff algorithm after 16 collisions (No excessive-restart means discard frame after 16 collisions). |
| <i>flowcontrol</i> | Traffic flow control. |
| <i>frame-length-check</i> | Drop frames with mismatch between EtherType/Length field and actually payload size. |
| <i>green-ethernet</i> | Green Ethernet (Power reduction). |
| <i>gvrp</i> | Enable GVRP on interface or interfaces. |
| <i>ip</i> | Interface Internet Protocol configuration commands. |
| <i>ipv6</i> | IPv6 configuration commands. |
| <i>lacp</i> | LACP port configuration. |
| <i>lldp</i> | Link Layer Discover Protocol. |
| <i>loop-protect</i> | Loop protection configuration on port. |
| <i>mac</i> | MAC keyword. |
| <i>media-type</i> | Media type. |
| <i>mrp</i> | MRP. |
| <i>mtu</i> | Maximum transmission unit. |
| <i>mvr</i> | Multicast VLAN Registration configuration. |
| <i>mvrp</i> | Enable MVRP on the interface. |
| <i>poE</i> | Power Over Ethernet. |
| <i>port-security</i> | Enable/disable port security per interface. |
| <i>priority-flowcontrol</i> | Priority Flow Control (802.1Qbb). |
| <i>pvlan</i> | Private VLAN. |
| <i>qos</i> | Quality of Service. |
| <i>rmon</i> | Configure Remote Monitoring on an interface. |
| <i>sflow</i> | Statistics flow. |
| <i>shutdown</i> | Shutdown of the interface. |
| <i>spanning-tree</i> | Spanning Tree protocol. |
| <i>speed</i> | Configures interface speed. |
| <i>switchport</i> | Set VLAN switching mode characteristics. |
| <i>udld</i> | UDLD configurations. |

Example:

```
<sys_name>(config)# interface GigabitEthernet 1/1-48
<sys_name>(config-if)# exit
```

5.21.1 access-list

Configure access list.

Syntax:

```
access-list action { deny | permit }
access-list logging
access-list mirror
access-list policy <0-127>
access-list port-state
access-list rate-limiter <1-16>
access-list redirect interface ( * | GigabitEthernet | 10GigabitEthernet )
[ <port_type_list> ]
access-list shutdown
```

Parameter:**action { deny | permit }**

Deny or permit access list action

logging

Logging frame information.



The logging feature only works when the packet length is less than 1518 (without VLAN tags) and the System Log memory size and logging rate is limited.

mirror

Mirror frame to destination mirror port

policy <0-127>

Policy ID

port-state

Re-enable shutdown port that was shutdown by access-list module

rate-limiter <1-16>

Rate limiter ID

redirect interface (* | GigabitEthernet | 10GigabitEthernet) [<port_type_list>]

Redirect frame to specific port

interface

Select an interface to configure

*

All switches or all ports

GigabitEthernet

Gigabit Ethernet ports

10GigabitEthernet

10 Gigabit Ethernet ports

<port_type_list>

Port list for all port types or <Port list or ID>

shutdown

Shutdown incoming port.



The shutdown feature only works when the packet length is less than 1518 (without VLAN tags).

Example:

```
<sys_name>(config-if)# shutdown
<sys_name>(config-if)#
```

5.21.2 aggregation

Create an aggregation

Syntax:

```
aggregation group <1-26> mode ( active | on | passive)
```

Parameter:

group <1-26> mode (active | on | passive)

Create an aggregation group with group ID 1 to 26 and one of the following modes:

active

Active LACP

on

Static aggregation

passive

Passive LACP

Example:

```
<sys_name>(config-if)# aggregation group 1 mode passive
<sys_name>(config-if)#
```

5.21.3 description

Configures port description.

Syntax:

```
description <line16> [<line16>] [<line16>] [<line16>]
```

Parameter:

<line16>

Up to 16 characters describing this interface.

Example:

```
<sys_name>(config-if)# description Uplink
<sys_name>(config-if)#
```

5.21.4 duplex

Interface duplex

Syntax:

```
duplex auto [ full | half ]
duplex full
duplex half
```

Parameter:**auto [full | half]**

Auto negotiation of duplex mode while advertising either full or half duplex.

full

Forced full duplex

half

Forced half duplex

Example:

```
<sys_name>(config-if)# duplex auto
<sys_name>(config-if)#
```

5.21.5 end

Go back to EXEC mode.

Syntax:

```
end
```

Example:

```
<sys_name>(config-if)# end
<sys_name>#
```

5.21.6 excessive-restart

Restart backoff algorithm after 16 collisions (No excessive-restart means discard frame after 16 collisions).

Syntax:

```
excessive-restart
```

Example:

```
<sys_name>(config-if)# excessive-restart
10GigabitEthernet 1/1 does not support this mode/speed
10GigabitEthernet 1/2 does not support this mode/speed
10GigabitEthernet 1/3 does not support this mode/speed
```

```
10GigabitEthernet 1/4 does not support this mode/speed
<sys_name>(config-if)#
```

5.21.7 *flowcontrol*

Traffic flow control.

Syntax:

```
flowcontrol ( on | off )
```

Parameter:

on

Enable flow control

off

Disable flow control

Example:

```
><sys_name>(config-if)# flowcontrol on
<sys_name>(config-if)#
```

5.21.8 *frame-length-check*

Drop frames with mismatch between EtherType/Length field and actually payload size.

Syntax:

```
frame-length-check
```

Example:

```
><sys_name>(config-if)# frame-length-check
<sys_name>(config-if)#
```

5.21.9 *green-ethernet*

Green Ethernet (Power reduction).

Syntax:

```
green-ethernet eee [urgent-queues [ <range_list> ] ]
```

```
green-ethernet energy-detect
```

```
green-ethernet short-reach
```

Parameter:

eee [urgent-queues [<range_list>]]

Powering down of physical interfaces when there is no traffic.

Optionally enable EEE urgent queue for all or a specific EEE interface. An urgent queue means that latency is kept to a minimum for traffic going to that queue.



EEE power savings will be reduced.

5 Configuration mode commands

energy-detect

Enable power saving for ports with no link partner

short-reach

Enable power saving for all ports which are connected to a link partner with a short cable

Example:

```
><sys_name>(config-if)# green-ethernet short-reach
10GigabitEthernet 1/1 is not short reach capable. Skipping
10GigabitEthernet 1/2 is not short reach capable. Skipping
10GigabitEthernet 1/3 is not short reach capable. Skipping
10GigabitEthernet 1/4 is not short reach capable. Skipping
<sys_name>(config-if)#
```

5.21.10 gvrp

Enable GVRP (GARP VLAN Registration Protocol) on interface or interfaces.

Syntax:

```
gvrp
```

Example:

```
><sys_name>(config-if)# gvrp
<sys_name>(config-if)#
```

5.21.11 ip

Interface Internet Protocol configuration commands.

Syntax:

```
ip arp inspection check-vlan
ip arp inspection logging ( all | deny | permit )
ip arp inspection trust
ip dhcp snooping trust
ip igmp snooping filter <word16>
ip igmp snooping immediate-leave
ip igmp snooping max-groups <1-10>
ip igmp snooping mrouter
ip verify source [ limit <0-2> ]
```

Parameter:**arp inspection check-vlan**

ARP (Address Resolution Protocol) inspection VLAN mode configuration

arp inspection logging (all | deny | permit)

ARP inspection logging mode configuration. Log all, only denied or only permitted entries.

arp inspection trust

ARP inspection trust configuration

dhcp snooping trust

DHCP Snooping trust configuration

igmp snooping filter <word16>

Access control on IGMP multicast group registration with a profile name in 16 characters

igmp snooping immediate-leave

IGMP immediate leave configuration

igmp snooping max-groups <1-10>

Maximum number of IGMP group registration

igmp snooping mrouter

IGMP multicast router port configuration

verify source [limit <0-2>]

Verify the source with an optional limit number

Example:

```
<sys_name>(config-if)# ip dhcp snooping trust
<sys_name>(config-if)#
```

5.21.12 ipv6

IPv6 configuration commands.

Syntax:

```
ipv6 mld snooping filter <word16>
```

```
ipv6 mld snooping immediate-leave
```

```
ipv6 mld snooping max-groups <1-10>
```

```
ipv6 mld snooping mrouter
```

Parameter:**mld snooping filter <word16>**

Access control on MLD (Multicast Listener Discovery) multicast group registration with a profile name in 16 characters

mld snooping immediate-leave

MLD immediate leave configuration

mld snooping max-groups <1-10>

MLD group throttling configuration gives the maximum number of MLD group registration in the range from 1 to 10

mld snooping mrouter

MLD multicast router port configuration

Example:

```
<sys_name>(config-if)# ipv6 mld snooping mrouter
<sys_name>(config-if)#
```

5.21.13 lacp

LACP port configuration.

5 Configuration mode commands

Syntax:

```
lACP port-priority <1-65535>
```

```
lACP timeout ( fast | slow )
```

Parameter:**port-priority <1-65535>**

LACP priority of the port, lower means higher priority

timeout (fast | slow)

The period between BPDU transmissions. Either transmit BPDU each second (fast) or each 30th second (slow)

Example:

```
<sys_name>(config-if)# lACP timeout slow
<sys_name>(config-if)#
```

5.21.14 lldp

Link Layer Discover Protocol.

Syntax:

```
lldp cdp-aware
```

```
lldp med media-vlan policy-list <range_list>
```

```
lldp med transmit-tlv [capabilities] [location] [network-policy] [poe]
```

```
lldp med type ( connectivity | end-point )
```

```
lldp receive
```

```
lldp tlv-select management-address
```

```
lldp tlv-select port-description
```

```
lldp tlv-select system-capabilities
```

```
lldp tlv-select system-description
```

```
lldp tlv-select system-name
```

```
lldp transmit
```

```
lldp trap
```

Parameter:**cdp-aware**

Configures if the interface shall be CDP aware (CDP discovery information is added to the LLDP neighbor table)

med media-vlan policy-list <range_list>

MED (Media Endpoint Discovery) VLAN assignment of policies to the interface

med transmit-tlv [capabilities] [location] [network-policy] [poe]

LLDP-MED Location Type Length Value parameter. Additionally enable transmission of the optional capabilities TLV, location TLV, network-policy TLV and PoE TLV.

med type (connectivity | end-point)

Select if the interface is working as 'Network Connectivity Device' or an 'Endpoint Device'. The difference between working as 'Network Connectivity Device' and an 'Endpoint Device' is a question of who is initializing the LLDP-MED TLVs transmission. A 'Network Connectivity Device' is not starting LLDP-MED TLVs transmission until it has detected an 'Endpoint Device' as link partner. An 'Endpoint Device' will start LLDP-MED TLVs transmission at once.

receive

Enable/Disable decoding of received LLDP frames

tlv-select management-address

Enable/Disable transmission of management address

tlv-select port-description

Enable/Disable transmission of port description

tlv-select system-capabilities

Enable/Disable transmission of system capabilities.

tlv-select system-description

Enable/Disable transmission of system description

tlv-select system-name

Enable/Disable transmission of system name

transmit

Enable/Disabled transmission of LLDP frames

trap

Configures if an SNMP trap shall be emitted when the LLDP neighbor table changes for the interface

Example:

```
<sys_name>(config-if)# lldp tlv-select system-name
<sys_name>(config-if)#
```

5.21.15 *loop-protect*

Loop protection configuration on port.

Syntax:

```
loop-protect
```

```
loop-protect action [log] [shutdown]
```

```
loop-protect tx-mode
```

Parameter:

<cr>

Enable loop protection configuration on port

action [log] [shutdown]

Define the action if a loop is detected. Generate a log entry and/or shutdown the port.

tx-mode

Actively generate PDUs

Example:

```
<sys_name>(config-if)# loop-protect action log shutdown
<sys_name>(config-if)#
```

5.21.16 *mac*

MAC keyword.

5 Configuration mode commands

Syntax:

```
mac address-table learning [secure]
```

Parameter:**address-table learning [secure]**

Enable MAC address table learning. Optionally set the port secure mode.

Example:

```
<sys_name>(config-if)# mac address-table learning secure
<sys_name>(config-if)#
```

5.21.17 *media-type*

Media type.

Syntax:

```
media-type dual
```

```
media-type rj45
```

```
media-type sfp
```

Parameter:**dual**

Dual media interface (cu & fiber interface)

rj45

RJ45 interface (copper interface)

sfp

SFP interface (fiber interface)

5.21.18 *mrp*

MRP.

Syntax:

```
mrp periodic
```

```
mrp timers default
```

```
mrp timers join-time <1-20>
```

```
mrp timers leave-all-time <1000-5000>
```

```
mrp timers leave-time <60-300>
```

Parameter:**periodic**

Enable MRP periodic transmission on the interface

timers default

timers lets you configure the MRP protocol timer parameters. See IEEE 802.1Q-2014, clause 10.7.

This command sets all MRP timers to their default values

timers join-time <1-20>

Set MRP protocol parameter JoinTime in units of centiseconds. Range is 1-20. Default is 20.

timers leave-all-time <1000-5000>

Set MRP protocol parameter LeaveAllTime in units of centiseconds Range is 1000-5000. Default is 1000.

timers leave-time <60-300>

Set MRP protocol parameter LeaveTime in units of centiseconds. Range is 60-300. Default is 60.

Example:

```
<sys_name>(config-if)# mrp timers default
<sys_name>(config-if)#
```

5.21.19 mtu

Maximum transmission unit.

Syntax:

```
mtu <1518-10240>
```

Parameter:**<1518-10240>**

Maximum frame size in bytes

Example:

```
<sys_name>(config-if)# mtu 10240
<sys_name>(config-if)#
```

5.21.20 mvr

Multicast VLAN Registration configuration.

Syntax:

```
mvr immediate-leave
```

```
mvr name <word16> type ( receiver | source )
```

```
mvr vlan <vlan_list> type ( receiver | source )
```

Parameter:**immediate-leave**

Immediate leave configuration

name <word16> type (receiver | source)

Configure a MVR multicast name with a type of either a MVR receiver or source port

vlan <vlan_list> type (receiver | source)

Configure a MVR multicast VLAN with a type of either a MVR receiver or source port

Example:

```
<sys_name>(config-if)# mvr immediate-leave
<sys_name>(config-if)#
```

5.21.21 *mvrp*

Enable MVRP on the interface.

Syntax:

```
mvrp
```

Example:

```
<sys_name> (config-if) # mvrp
<sys_name> (config-if) #
```

5.21.22 *poe*

Power Over Ethernet.

Syntax:

```
poe delay-mode
poe delay-time <0-300>
poe failure-action ( failure-action | reboot-Remote-PD )
poe hour <0-23>
poe interval-time <10-120>
poe mode ( disable | enable )
poe ping-ip-addr <ipv4_addr>
poe ping-retry-time <1-5>
poe port-profile name <line32> [ <line32> ] ...
poe power limit <fword2.1>
poe priority ( critical | high | low )
poe reboot-time <3-120>
poe schedule-all
poe schedule-mode
poe startup-time <30-600>
poe weekday ( Mon|Tue|Wed|Thr|Fri|Sat|Sun ) hour <0-23>
```

Parameter:

delay-mode

Configure PoE power delay mode

delay-time <0-300>

Setting power delay time from 0 to 300(sec)

failure-action (failure-action | reboot-Remote-PD)

Configure PoE auto check failure action to do nothing (failure-action) or to reboot the remote PD

hour <0-23>

Configure PoE power scheduling per hour

interval-time <10-120>

Configure PoE auto check interval time from 10 to 120 seconds

mode (disable | enable)

Enable or disable PoE

ping-ip-addr <ipv4_addr>

Configure PoE ping IP address

ping-retry-time <1-5>

Configure PoE auto check retries

port-profile name <line32> [<line32>] ...

PoE scheduling profile with up to 8 profile names, each name with a maximum of 32 characters

power limit <fword2.1>

Setting maximum power for port in allocation mode (Class 4 PDs limited to 30W)

priority (critical | high | low)

Interface priority critical, high or low

reboot-time <3-120>

Configure PoE auto check reboot time in seconds

schedule-all

Configure PoE schedule all of hours

schedule-mode

Configure PoE Schedule mode

startup-time <30-600>

Configure PoE auto check start up time in seconds

weekday (Mon|Tue|Wed|Thr|Fri|Sat|Sun) hour <0-23>

Configure PoE power scheduling for a specific day of a week. Enter Hour i.e. as 0,1,5-8

Example:

```
<sys_name>(config-if)# poe weekday Mon hour 8-18
<sys_name>(config-if)#
```

5.21.23 port-security

Enable/disable port security per interface.

Syntax:

```
port-security
```

```
port-security maximum <0-1024>
```

```
port-security maximum-violation <0-1024>
```

```
port-security violation ( protect | restrict | shutdown )
```

Parameter:**<cr>**

Enable/disable port security per interface

maximum <0-1024>

Maximum number of MAC addresses that can be learned on this set of interfaces

maximum-violation <0-1024>

Maximum number of violating MAC addresses (used when violation is set to restrict)

violation (protect | restrict | shutdown)

The action taken if limit is exceeded

5 Configuration mode commands

protect

Do nothing

restrict

Keep recording violating MAC addresses

shutdown

Shutdown the port

Example:

```
<sys_name>(config-if)# port-security
<sys_name>(config-if)#
```

5.21.24 *priority-flowcontrol*

Priority Flow Control (802.1Qbb).

Syntax:

```
priority-flowcontrol prio <0~7>
```

Parameter:**prio <0~7>**

Set priority Flow Control (802.1Qbb) to a value of 0 to 7

Example:

```
<sys_name>(config-if)# priority-flowcontrol prio 0
<sys_name>(config-if)#
```

5.21.25 *pvlan*

Private VLAN.

Syntax:

```
pvlan <range_list>
```

```
pvlan isolation
```

Parameter:**<range_list>**

List of PVLANs. Range is from 1 to number of ports.

isolation

Port isolation

Example:

```
<sys_name>(config-if)# pvlan 1-48
<sys_name>(config-if)#
```


5.21.26 qos

Quality of Service.

Syntax:

```

qos class <0-7>
qos cos <0-7>
qos dei <0-1>
qos dpl <0-3>
qos dscp-classify ( any | selected | zero)
qos dscp-remark ( remap | rewrite )
qos dscp-translate
qos egress-map <0-511>
qos ingress-map <0-255>
qos map cos-tag cos <0-7> dpl <0~1> pcp <0-7> dei <0~1>
qos map tag-cos pcp <0-7> dei <0~1> cos <0-7> dpl <0~3>
qos pcp <0-7>
qos policer <1-13128147> [ flowcontrol | fps | kbps | kfps | mbps ]
qos queue-policer queue <0-7> <1-13128147> [ kbps | mbps ]
qos queue-shaper queue <0-7> <1-13107100> [ kbps | mbps ] [ rate-type ( data | line ) ]
qos shaper <1-13107100> [ kbps ] [ rate-type ( data | line ) ]
qos storm ( broadcast | unicast | unknown ) <1-13128147> [ fps | kbps | kfps | mbps ]
qos tag-remark ( mapped | pcp <0-7> dei <0~1> )
qos trust ( dscp | tag )
qos wred-group <1-3>
qos wrp <1-100> <1-100> [ <1-100> <1-100> <1-100> <1-100> <1-100> <1-100> ]

```

Parameter:

class <0-7>

Class of service ID (0-7) configuration

cos <0-7>

Class of service (0-7) configuration

dei <0-1>

Drop Eligible Indicator (0-1) configuration

dpl <0-3>

Drop precedence level (0-3) configuration

dscp-classify (any | selected | zero)

DSCP ingress classification

any

Classify to new DSCP always

selected

Classify to new DSCP if classify is enabled for specific DSCP value in global DSCP classify map

zero

Classify to new DSCP if DSCP is 0

dscp-remark (remap | rewrite)

DSCP egress remarking

remap

Rewrite DSCP field using classified DSCP remapped through global dscp-egress-translation map

rewrite

Rewrite DSCP field with classified DSCP value (no translation)

dscp-translate

DSCP ingress translation

egress-map <0-511>

Egress map association with map ID 0-511

ingress-map <0-255>

Ingress map association with map ID 0-255

map cos-tag cos <0~7> dpl <0~1> pcp <0-7> dei <0~1>

QoS Map/Table configuration for cos to tag configuration

cos <0~7>

Specify class of service or range

dpl <0~1>

Specify drop precedence level or range

pcp <0-7>

Specify PCP (Priority Code Point)

dei <0~1>

Specify DEI (Drop Eligible Indicator)

map tag-cos pcp <0-7> dei <0~1> cos <0~7> dpl <0~3>

QoS Map/Table configuration for tag to cos configuration

pcp <0-7>

Specific PCP or range

dei <0~1>

Specify DEI (Drop Eligible Indicator)

cos <0~7>

Specify class of service

dpl <0~3>

Specify drop precedence level

pcp <0-7>

Priority Code Point (0-7) configuration

policer <1-13128147> [flowcontrol | fps | kbps | kfps | mbps]

Policer configuration by setting the policer rate (default kbps). Internally rounded up to the nearest value supported by the port policer. Optionally enable flow control and set the policer rate in another unit:

fps

Unit is frames per second

kbps

Unit is kilobits per second (default)

kfps

Unit is kiloframes per second

mbps

Unit is Megabits per second

queue-policer queue <0-7> <1-13128147> [kbps | mbps]

Queue policer configuration

queue <0-7>

Specific queue or range

<1-13128147> [kbps | mbps]

Policer rate (default kbps—kilobits per second). Internally rounded up to the nearest value supported by the queue policer. Optionally set unit to Megabits per second.

queue-shaper queue <0-7> <1-13107100> [kbps | mbps] [rate-type (data | line)]

Queue shaper configuration

queue <0-7>

Specific queue or range

<1-13107100> [kbps | mbps]

Shaper rate (default kbps—kilobits per second). Internally rounded up to the nearest value supported by the queue shaper. Optionally set unit to Megabits per second.

rate-type (data | line)

Setup shaping rate type as data or line rate shaping

shaper <1-13107100> [kbps] [rate-type (data | line)]

Shaper configuration

<1-13107100> [kbps]

Shaper rate (default kbps—kilobits per second). Internally rounded up to the nearest value supported by the queue shaper.

rate-type (data | line)

Setup shaping rate type as data or line rate shaping

storm (broadcast | unicast | unknown) <1-13128147> [fps | kbps | kfps | mbps]

Storm policer

(broadcast | unicast | unknown)

Police broadcast, unicast or unknown (flooded) frames

policer <1-13128147> [fps | kbps | kfps | mbps]

Policer configuration by setting the policer rate (default kbps). Internally rounded up to the nearest value supported by the port policer. Optionally set the policer rate in another unit:

fps

Unit is frames per second

kbps

Unit is kilobits per second (default)

kfps

Unit is kiloframes per second

mbps

Unit is Megabits per second

trust (dscp | tag)

Trust configuration with DSCP value or VLAN tag

tag-remark (mapped | pcp <0-7> dei <0~1>)

Tag remarking configuration

mapped

Use mapped values (COS, DPL -> PCP, DEI)

pcp <0-7> dei <0~1>

Specify default PCP and DEI

wred-group <1-3>

WRED group (1-3) configuration

wrr <1-100> <1-100> [<1-100> <1-100> <1-100> <1-100> <1-100> <1-100>]

Weighted round robin configuration for queues 0 and 1. Optionally give weights for queue 2 to 7.

Example:

```
<sys_name>(config-if)# qos class 5
<sys_name>(config-if)#
```

5.21.27 rmon

Configure Remote Monitoring on an interface.

Syntax:

```
rmon collection history <1-65535> [ buckets <1-3600> ] [ interval <1-3600> ]
rmon collection stats <1-65535>
```

Parameter:**collection history <1-65535> [buckets <1-3600>] [interval <1-3600>]**

Configure history (Entry ID 1-65535) for remote monitoring collection on an interface

buckets <1-3600>

Requested buckets of intervals. Default is 50 buckets

interval <1-3600>

Interval to sample data for each bucket. Default is 1800 seconds

collection stats <1-65535>

Configure statistics (Entry ID 1-65535) for remote monitoring collection on an interface

Example:

```
<sys_name>(config-if)# rmon collection stats 1
<sys_name>(config-if)#
```

5.21.28 sflow

Statistics flow.

Syntax:

```
sflow
sflow counter-poll-interval <1-3600>
sflow max-sampling-size <14-200>
sflow sampler-type ( all | rx | tx )
sflow sampling-rate <1-4294967295>
```

Parameter:**<cr>**

Configure statistics flow

counter-poll-interval <1-3600>

The interval—in seconds—between counter poller samples.

max-sampling-size <14-200>

Specifies the maximum number of bytes to transmit per flow sample. To have room for any frame, the maximum datagram size should be roughly 100 bytes larger than the maximum header size.

sampler-type (all | rx | tx)

Specifies the types of flow sample.

sampling-rate <1-4294967295>

Specifies the statistical sampling rate. The sample rate is specified as N to sample 1/Nth of the packets n the monitored flows. There are no restrictions on the value, but the switch will adjust it to the closest possible sampling rate.

Example:

```
<sys_name>(config-if)# sflow
<sys_name>(config-if)#
```

5.21.29 shutdown

Shutdown of the interface.

Syntax:

```
shutdown
```

Example:

```
<sys_name>(config-if)# shutdown
<sys_name>(config-if)#
```

5.21.30 *spanning-tree*

Spanning Tree protocol.

Syntax:

```
spanning-tree
spanning-tree auto-edge
spanning-tree bpdu-guard
spanning-tree edge
spanning-tree link-type ( auto | point-to-point | shared )
spanning-tree mst <0-7> ( cost ( <1-200000000> | auto ) | port-priority <0-240> )
spanning-tree restricted-role
spanning-tree restricted-tcn
```

Parameter:

<cr>

Configure Spanning Tree protocol

auto-edge

Auto detect edge status

bpdu-guard

Enable/disable BPDU guard

edge

Edge port

link-type (auto | point-to-point | shared)

Port link-type

auto

Auto detect

point-to-point

Forced to point-to-point

shared

Forced to shared

mst <0-7> (cost (<1-200000000> | auto) | port-priority <0-240>)

STP bridge instance

<0-7>

Instance (CIST=0, MSTI1=1...)

cost (<1-200000000> | auto)

STP Cost of this port with a cost range between 1-200000000 or use auto cost

port-priority <0-240>

STP priority of this port. Port priority must be divisible by 16, supported values are 0/16/32/48/64/80/96/112/128/144/160/176/192/208/224/240. Default value is 128

restricted-role

Port role is restricted (never root port)

restricted-tcn

Restrict topology change notifications

Example:

```
<sys_name>(config-if)# spanning-tree auto-edge  
<sys_name>(config-if)#
```

5.21.31 *speed*

Configures interface speed.

Syntax:

```
speed 10 | 100 | 1000 | 10g | auto
```

Parameter:**10**

10Mbps

100

100Mbps

1000

1Gbps

10g

10Gbps

auto

Auto negotiation. If you use 10, 100, or 1000 keywords with the auto keyword the port will only advertise the specified speeds.

Example:

```
<sys_name>(config-if)# speed auto  
<sys_name>(config-if)#
```

5.21.32 *switchport*

Set VLAN switching mode characteristics.

5 Configuration mode commands

Syntax:

```

switchport access vlan <vlan_id>
switchport forbidden vlan ( add | remove ) <vlan_list>
switchport hybrid acceptable-frame-type ( all | tagged | untagged )
switchport hybrid allowed vlan ( <vlan_list> | add <vlan_list> | all |
except <vlan_list> | none | remove <vlan_list> )
switchport hybrid egress-tag ( all [ except-native ] | none )
switchport hybrid ingress-filtering
switchport hybrid native vlan <vlan_id>
switchport hybrid port-type ( c-port | s-custom-port | s-port | unaware )
switchport mode ( access | hybrid | trunk )
switchport trunk allowed vlan ( <vlan_list> | add <vlan_list> | all |
except <vlan_list> | none | remove <vlan_list> )
switchport trunk native vlan <vlan_id>
switchport trunk vlan tag native
switchport vlan ip-subnet <ipv4_subnet> vlan <vlan_id>
switchport vlan mac <mac_ucast> vlan <vlan_id>
switchport vlan mapping <1-52>
switchport vlan protocol group <word16> vlan <vlan_id>
switchport voice vlan discovery-protocol ( both | lldp | oui )
switchport voice vlan mode ( auto | disable | force )
switchport voice vlan security

```

Parameter:**access vlan <vlan_id>**

Set access mode characteristics of the interface to VLAN ID of the VLAN when this port is in access mode

forbidden vlan (add | remove) <vlan_list>

Adds or removes forbidden VLANs from the current list of forbidden VLANs

hybrid acceptable-frame-type (all | tagged | untagged)

Change PVID for hybrid port. Set acceptable frame type on a port when interface is in hybrid mode. Either allow all, only tagged or only untagged frames.

hybrid allowed vlan (<vlan_list> | add <vlan_list> | all | except <vlan_list> | none | remove <vlan_list>)

Change PVID for hybrid port. Set allowed VLAN characteristics when interface is in hybrid mode:

<vlan_list>

VLAN IDs of the allowed VLANs when this port is in hybrid mode

add <vlan_list>

Add VLANs to the current list

all

All VLANs

except <vlan_list>

All VLANs except the following

none

No VLANs

remove <vlan_list>

Remove VLANs from the current list

hybrid egress-tag (all [except-native] | none)

Change PVID for hybrid port. Set the Egress VLAN tagging configuration to either tag all frames or do no egress tagging. When you tag all frames you can optionally except frames classified to native VLAN of the hybrid port

hybrid ingress-filtering

VLAN Ingress filter configuration

hybrid native vlan <vlan_id>

Set native VLAN for the VLAN ID when interface is in hybrid mode

hybrid port-type (c-port | s-custom-port | s-port | unaware)

Set port type to

c-port

Customer port

s-custom-port

Custom Provider port

s-port

Provider port

unaware

Port is not aware of VLAN tags

mode (access | hybrid | trunk)

Set mode of the interface to ACCESS unconditionally, HYBRID unconditionally or TRUNK unconditionally

trunk allowed vlan (<vlan_list> | add <vlan_list> | all | except <vlan_list> | none | remove <vlan_list>)

Set allowed VLAN characteristics when interface is in trunk mode:

<vlan_list>

VLAN IDs of the allowed VLANs when this port is in trunk mode

add <vlan_list>

Add VLANs to the current list

all

All VLANs

except <vlan_list>

All VLANs except the following

none

No VLANs

remove <vlan_list>

Remove VLANs from the current list

trunk native vlan <vlan_id>

Set native VLAN

trunk vlan tag native

Change PVID for trunk port to tag native VLAN parameters

vlan ip-subnet <ipv4_subnet> vlan <vlan_id>

VCL IP Subnet-based VLAN configuration.

ip-subnet <ipv4_subnet>

Source IP address and mask (Format: xx.xx.xx.xx/mm.mm.mm.mm)

vlan <vlan_id>

VLAN ID required for the group to VLAN mapping (Range: 1-4094)

vlan mac <mac_ucast> vlan <vlan_id>

MAC-based VLAN commands

<mac_ucast>

48 bit unicast MAC address. (Format: xx:xx:xx:xx:xx:xx)

vlan <vlan_id>

VLAN ID required for the group to VLAN mapping (Range: 1-4094)

vlan mapping <1-52>

Maps an interface to a VLAN translation group.

vlan protocol group <word16> vlan <vlan_id>

Protocol-based VLAN group commands:

<word16>

Group Name (Range: 1 - 16 characters)

vlan <vlan_id>

VLAN ID required for the group to VLAN mapping (Range: 1-4094)

voice vlan discovery-protocol (both | lldp | oui)

Set Voice VLAN port discovery protocol:

both

Detect telephony device by OUI address and LLDP

lldp

Detect telephony device by LLDP

oui

Detect telephony device by OUI address

voice vlan mode (auto | disable | force)

Set Voice VLAN port mode:

auto

Enable auto detect mode

disable

Disjoin Voice VLAN

force

Force to join Voice VLAN

voice vlan security

Enable Voice VLAN port security mode

Example:

```
<sys_name>(config-if)# switchport voice vlan security
<sys_name>(config-if)#
```

5.21.33 udlld

UDLD configuration on this interface port.

Syntax:

```
udld port [ aggressive ] [ message time-interval <7-90> ]
```

Parameter:**aggressive**

Enable UDLD in the aggressive mode on an interface

message time-interval <7-90>

Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is from 7 to 90 seconds (Currently default message time interval 7 sec is supported).

Example:

```
<sys_name>(config-if)# udlld port aggressive message time-interval 7
<sys_name>(config-if)#
```

5.22 interface llag

Changes to the configuration mode "Local link aggregation interface configuration" (config-llag)

```
interface llag 1-26
```

Parameter:**1-26**

Local link aggregation interface (LLAG) configuration for the given ID 1-26. Changes to the configuration mode "Local link aggregation interface configuration" (config-llag)

Possible commands in this mode

| Command | Function |
|-------------|---|
| <i>lacp</i> | Link Aggregation Control Protocol (LACP). |

Example:

```
<sys_name>(config)# interface llag 1
<sys_name>(config-llag)#
```

5.22.1 *lACP*

Link Aggregation Control Protocol (LACP) is a control protocol to set up Link Aggregation Groups (LAG) automatically. You can set up a dynamic LAG by using LACP. Simply put, LACP is not a link aggregation instance but a protocol for defining it. The information is delivered as packet in Link Aggregation Control Protocol Data Units (LACPDU). And each port on both switches can be configured to be active or passive via the control protocol to be either preferential to transfer LACPDUs or not.

Syntax:

```
lACP failover [[ non-revertive | revertive ] | [ begin | exclude | include] &lt;line> ]
```

```
lACP max-bundle <1-16> [ | [ begin | exclude | include] &lt;line> ]
```

Parameter:

failover [[**non-revertive** | **revertive**] | [**begin** | **exclude** | **include**] <line>]

The failover mode sends and receives traffic only through the master port in either revertive or non-revertive mode. Output can be modified.

non-revertive

Configures the lower priority port to continue as the active port even after the higher priority port is capable of being operational.

revertive

By default, LACP link protection is revertive.

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

max-bundle <1-16> [| [**begin** | **exclude** | **include**] <line>]

Maximum number of bundled ports allowed in the port channel. Output can be modified:

|

Output modifiers

begin

Begin with the line that matches

exclude

Exclude lines that match

include

Include lines that match

<line>

String to match output lines

Example:

```
<sys_name>(config-llag)# lacp max-bundle 3
<sys_name>(config-llag)#
```

5.23 interface vlan

Changes to the configuration mode "Static VLAN configuration" (config-if-vlan)

Syntax:

```
interface vlan <vlan_list>
```

Parameter:

vlan <vlan_list>

VLAN interface configurations for the given list of VLAN interface numbers. Changes to the configuration mode "Static VLAN configuration" (config-if-vlan).

Possible commands in this mode

| Command | Function |
|-------------|---|
| <i>ip</i> | Configure the IP v4 address or Internet Group Management Protocol (IGMP) of a VLAN interface. |
| <i>ipv6</i> | Configure the IPv6 address or the Multicast Listener Discovery (MLD) of a VLAN interface. |

Example:

```
<sys_name>(config)# interface vlan 3
<sys_name>(config-if-vlan)#
```

5.23.1 ip

Configure the IP v4 address or Internet Group Management Protocol (IGMP) of a VLAN interface.

5 Configuration mode commands

Syntax:

```

ip address <ipv4_addr> <ipv4_netmask>
ip address dhcp
ip address dhcp client-id GigabitEthernet <port_type_id> [ fallback ... | hostname ... ]
ip address dhcp client-id 10GigabitEthernet <port_type_id> [ fallback ... | hostname ... ]
ip address dhcp client-id ascii <word31> [ fallback ... | hostname ... ]
ip address dhcp client-id hex <word64> [ fallback ... | hostname ... ]
ip address dhcp fallback <ipv4_addr> <ipv4_netmask> [ client-id ... | hostname ... | timeout <uint> ]
ip address dhcp hostname <domain_name63>
ip dhcp server
ip igmp snooping
ip igmp snooping compatibility { auto | v1 | v2 | v3 }
ip igmp snooping last-member-query-interval <0-31744>
ip igmp snooping priority <0-7>
ip igmp snooping querier { address <ipv4_ucast> | election }
ip igmp snooping query-interval <1-31744>
ip igmp snooping query-max-response-time <0-31744>
ip igmp snooping robustness-variable <1-255>
ip igmp snooping unsolicited-report-interval <0-31744>

```

Parameter:**address <ipv4_addr> <ipv4_netmask>**

Configure an IPv4 address and netmask

address dhcp

Enable DHCP

address dhcp client-id GigabitEthernet <port_type_id> [fallback ... | hostname ...]

Configure the DHCP client identifier for a specific port ID. In the same command you could also define a fallback and hostname.

address dhcp client-id 10GigabitEthernet <port_type_id> [fallback ... | hostname ...]

Configure the DHCP client identifier for a specific port ID. In the same command you could also define a fallback and hostname.

address dhcp client-id ascii <word31> [fallback ... | hostname ...]

Configure the DHCP client identifier as an unique ASCII string. In the same command you could also define a fallback and hostname.

address dhcp client-id hex <word64> [fallback ... | hostname ...]

Configure the DHCP client identifier as an unique hexadecimal value. In the same command you could also define a fallback and hostname.

address dhcp fallback <ipv4_addr> <ipv4_netmask> [timeout <uint>]

Configure the DHCP fallback address and netmask with an optional time-out in seconds (Default: 60 seconds). Legal values are 0 to 4294967295 seconds. In the same command you could also define a client ID and hostname.

address dhcp hostname <domain_name63>

Configure the DHCP host name. This has to be a valid name consisting of a sequence of domain labels separated by '.', each domain label starting and ending with an alphanumeric character and possibly also containing '-' characters. The length of a domain label must be 63 characters or less.

dhcp server

Enable DHCP server per VLAN

igmp snooping

Configure Snooping Internet Group Management Protocol (IGMP)

compatibility { auto | v1 | v2 | v3 }

Either force IGMPv1, v2, v3 or set the compatibility to all three versions (auto).

last-member-query-interval <0-31744>

Last Member Query Interval in tenths of seconds

priority <0-7>

Interface CoS priority ranges from 0 to 7

querier address <ipv4_ucast>

IGMP Querier address configuration with a valid IPv4 unicast address

querier election

Act as an IGMP Querier to join Querier-Election

query-interval <1-31744>

Query Interval in seconds

query-max-response-time <0-31744>

Query Response Interval in tenths of seconds

robustness-variable <1-255>

Packet loss tolerance count from 1 to 255

unsolicited-report-interval <0-31744>

Unsolicited Report Interval in seconds

Example:

```
<sys_name>(config-if-vlan)# ip address dhcp
<sys_name>(config-if-vlan)# ip address dhcp client-id GigabitEthernet 1/1
<sys_name>(config-if-vlan)#
```

5.23.2 ipv6

Configure the IPv6 address or the Multicast Listener Discovery (MLD) of a VLAN interface.

Syntax:

```
ipv6 address <ipv6_subnet>
ipv6 address dhcp [rapid-commit]
ipv6 mld snooping
ipv6 mld snooping compatibility { auto | v1 | v2 }
ipv6 mld snooping last-member-query-interval <0-31744>
ipv6 mld snooping priority <0-7>
ipv6 mld snooping querier election
ipv6 mld snooping query-interval <1-31744>
ipv6 mld snooping query-max-response-time <0-31744>
ipv6 mld snooping robustness-variable <1-255>
ipv6 mld snooping unsolicited-report-interval <0-31744>
```

Parameter:**address <ipv6_subnet>**

Configure the IPv6 address of a VLAN interface as an IPv6 prefix x::x:/z

address dhcp [rapid-commit]

Enable the DHCPv6 client function with optional Rapid-Commit

mld snooping

Enable snooping MLD

compatibility { auto | v1 | v2 }

Either force MLDv1 or v2 or set the compatibility to both versions (auto).

last-member-query-interval <0-31744>

Last Member Query Interval in tenths of seconds

priority <0-7>

Interface CoS priority ranges from 0 to 7

querier election

Act as a MLD Querier to join Querier-Election

query-interval <1-31744>

Query Interval in seconds

query-max-response-time <0-31744>

Query Response Interval in tenths of seconds

robustness-variable <1-255>

Packet loss tolerance count from 1 to 255

unsolicited-report-interval <0-31744>

Unsolicited Report Interval in seconds

Example:

```
<sys_name>(config-if-vlan)# ipv6 address dhcp
<sys_name>(config-if-vlan)#
```

5.24 ip

Interface Internet Protocol configuration commands.

Syntax:

```

ip arp inspection
ip arp inspection entry interface ( GigabitEthernet | 10GigabitEthernet ) <port_type_id>
<vlan_id> <mac_ucast> <ipv4_ucast>
ip arp inspection translate [ interface ( GigabitEthernet | 10GigabitEthernet )
<port_type_id> <vlan_id> <mac_ucast> <ipv4_ucast> ]
ip arp inspection vlan <vlan_list> [ logging ( all | deny | permit ) ]
ip dhcp excluded-address <low_ip> [ <high_ip> ]
ip dhcp pool {pool_name}
ip dhcp relay information [ option ]
ip dhcp relay information policy ( drop | keep | replace )
ip dhcp server
ip dhcp snooping
ip dns proxy
ip domain name <domain_name> | dhcp [ ipv4 | ipv6 ] [ interface vlan <vlan_id> ]
ip helper-address <ipv4_ucast>
ip http ( secure-certificate [ delete | generate | generate keysize 4096 |
upload <url_file> ] ) | [ secure-redirect | secure-server ]
ip igmp host-proxy [ leave-proxy ]
ip igmp snooping [ vlan <vlan_list> ]
ip igmp ssm-range <ipv4_mcast>
ip igmp unknown-flooding
ip name-server <1-4> [ <ipv4_ucast> | <ipv6_ucast> | dhcp ( interface | ipv4 | ipv6 )
vlan <vlan_id> [ ipv4 | ipv6 ] ]
ip route <ipv4_addr> <ipv4_netmask> <ipv4_ucast> [ distance <1-255> ]
ip source binding interface ( GigabitEthernet | 10GigabitEthernet ) <port_type_id>
<vlan_id> <ipv4_ucast> <mac_ucast>
ip routing
ip ssh keyregen
ip verify source [ translate ]

```

Parameter:**arp**

Address Resolution Protocol

dhcp

Configure DHCP server parameters

dns

Domain Name System

domain

IP DNS Resolver

helper-address

DHCP helper server address

http

Hypertext Transfer Protocol

igmp

Internet Group Management Protocol

name-server

Domain Name System

route

Add IP route

routing

Enable routing for IPv4 and IPv6

source

source command

routing

Enable routing for IPv4 and IPv6

ssh keyregen

Regenerate ssh key

verify

verify command

inspection

ARP inspection

entry

ARP inspection entry

translate

ARP inspection translate all entries

vlan

ARP inspection vlan setting

interface

Select an interface to configure

GigabitEthernet

Gigabit Ethernet Ports

10GigabitEthernet

10 Gigabit Ethernet Ports

<port_type_list>

Port list for all port types or <Port list or ID>

<vlan_id>

Select a VLAN id to configure

<mac_ucast>

Select a MAC address to configure

<ipv4_ucast>

Select an IP Address to configure

<vlan_list>

ARP inspection vlan list

logging

ARP inspection vlan logging mode configuration

all

log all entries

deny

log denied entries

permit

log permitted entries

excluded-address

Prevent DHCP from assigning certain addresses

pool

Configure DHCP address pools

<pool_name>

Pool name in 32 characters

relay

DHCP relay agent configuration

server

Enable DHCP server

snooping

DHCP snooping

<low_ip>

Low IP address

<high_ip>

High IP address

<word32>

Pool name in 32 characters

Information

DHCP information option (Option 82)

option

DHCP option

policy

Policy for handling the receiving DHCP packet already include the information option

drop

Drop the package when receive a DHCP message that already contains relay information

keep

Keep the original relay information when receive a DHCP message that already contains it

replace

Replace the original relay information when receive a DHCP

proxy

DNS proxy service

name

Define the default domain name

<domain_name>

Default domain name

dhcp

Dynamic Host Configuration Protocol

Interface

Select an interface to configure

ipv4

DNS setting is derived from DHCPv4

ipv6

DNS setting is derived from DHCPv6; Default selection

<ipv4_ucast>

IP address of the DHCP relay server

secure-certificate

HTTPS certificate

secure-redirect

Secure HTTP web redirection

secure-server

Secure HTTP web server

delete

Delete the current certificate

generate

Generate a new self-signed RSA certificate

generate keysize 4096

Generate a new self-signed RSA certificate with 4096 bits (only GS-31/35)

upload

Upload a certificate PEM file

<url_file>

Uniform Resource Locator. It is a specific character string that constitutes a reference to a resource. Syntax <protocol> ://[<username>[:<password>]@] <host>[:<port>][/<path>]/<file_name> If the following special characters: space !"#%&'()*+,-/;=>?@[\\^`{|}~ need to be contained in the input URL string, they should be percent-encoded. A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 63 and hyphen must not be first character. The file name content that only contains '.' is not allowed.

host-proxy

IGMP proxy configuration

snooping

Snooping IGMP

ssm-range

IPv4 address range of Source Specific Multicast

unknown-flooding

Flooding unregistered IPv4 multicast traffic

leave-proxy

IGMP proxy for leave configuration

vlan

IGMP VLAN

<vlan_list>

VLAN identifier (VID)

<ipv4_mcast>

Valid IPv4 multicast address

<1-4>

Preference of DNS server. Default selection is 1

<ipv4_ucast>

A valid IPv4 unicast address

<ipv6_ucast>

A valid IPv6 unicast address

dhcp

Dynamic Host Configuration Protocol

<ipv4_addr>

Network

<ipv4_netmask>

Netmask

<ipv4_ucast>

Gateway

distance <1-255>

Distance value for this route (Default: 1)

<mac_ucast>

Select a MAC address to configure

source

verify source

translate

IP verify source translate all entries

Example:

```
<sys_name>(config)# ip arp inspection
<sys_name>(config)#
```

Example:

```
## Enable DHCP
<sys_name># configure
<sys_name>(config)# ip dhcp pool dhcppool
<sys_name>(config)# network 192.168.10.0 255.255.255.0
<sys_name>(config)# lease 1 0 0          ## IP lease time is 1 day
<sys_name>(config)# ip dhcp excluded-address 192.168.10.10 192.168.10.20

<sys_name>(config)# interface vlan 1
<sys_name>(config-if-vlan)# ip dhcp server ## enable dhcp server in vlan 1
<sys_name>(config-if-vlan)# exit

<sys_name>(config)# ip dhcp server          ## enable dhcp server in system

<sys_name>(config)# exit
<sys_name>#
```

Example:

```
## Disable DHCP
<sys_name># configure
<sys_name>(config)# interface vlan 1
<sys_name>(config-if-vlan)# no ip dhcp server ## disable dhcp server in vlan 1
<sys_name>(config-if-vlan)# exit

<sys_name>(config)# no ip dhcp server          ## disable dhcp server in system
<sys_name>(config)# no ip dhcp excluded-address 192.168.10.10 192.168.10.20
<sys_name>(config)# no ip dhcp pool dhcppool
<sys_name>(config)# exit
<sys_name>#
```

5.25 ipmc

IPv4/IPv6 multicast configuration.

Syntax:

```
ipmc profile <word16>
ipmc range <word16> [ <ipv4_mcast> | <ipv6_mcast> ]
```

Parameter:**profile**

IPMC profile configuration

range

A range of IPv4/IPv6 multicast addresses for the profile

<word16>

Profile name in 16 characters

<word16>

Range entry name in 16 characters

<ipv4_mcast>

Valid IPv4 multicast address

<ipv6_mcast>

Valid IPv6 multicast address

Example:

```
<sys_name>(config)# ipmc profile test
<sys_name>(config-ipmc-profile)#
```

5.26 ipv6

IPv6 configuration commands.

Syntax:

```
ipv6 mld host-proxy [ leave-proxy ]
```

```
ipv6 mld snooping [ vlan <vlan_list> ]
```

```
ipv6 mld ssm-range <ipv6_mcast>
```

```
ipv6 mld unknown-flooding
```

Parameter:**mld**

Multicasat Listener Discovery

host-proxy

MLD proxy configuration

snooping

Snooping MLD

ssm-range

IPv6 address range of Source Specific Multicast

unknown-flooding

Flooding unregistered IPv6 multicast traffic

leave-proxy

MLD proxy for leave configuration

vlan

MLD VLAN

<vlan_list>

VLAN identifier (VID)

<ipv6_mcast>

Valid IPv6 multicast address

Example:

```
<sys_name>(config)# ipv6 mld host-proxy
<sys_name>(config)# ipv6 mld snooping
<sys_name>(config)#
```

5.27 json

JavaScript Object Notation RPC

Syntax:

```
json notification host <word32>
```

```
json notification listen <word>
```

Parameter:

notification

Notification request object

host

Notification host

listen

JSON-RPC notification event subscription

<word32>

Name of Notification host

<word>

Valid words are

- > acl.status.ace.crossedThreshold.update
- > aggregation.status.notification.update
- > alarm.status.update
- > arplnspection.status.crossedThreshold.update
- > ddmi.status.interface.crossedThreshold.update
- > ethernetLinkOam.statistics.interface.criticalLinkEvent.update
- > ip.status.acd.ipv4.update
- > ip.status.interface.dhcpClient.update
- > ip.status.interface.ipv4.update
- > ip.status.interface.ipv6.update
- > ip.status.interface.link.update
- > ip.status.route.ipv4.update
- > ip.status.route.ipv6.update
- > port.status.update
- > portSecurity.status.global.notification.update
- > portSecurity.status.interface.notification.update
- > qos.status.global.update

Example:

```
<sys_name>(config)# json notification host test  
<sys_name>(config-json-noti-host)#
```


5.28 *lACP*

LACP settings.

Syntax:

```
lACP system-priority <1-65535>
```

Parameter:

system-priority

System priority

<1-65535>

Priority value, lower means higher priority

Example:

```
<sys_name>(config)# lACP system-priority 333  
<sys_name>(config)#
```

5.29 *lease*

Set lease time for DHCP pool.

Syntax:

```
lease { <day> [ <hour> [ <min> ] ] | infinite }
```

Parameter:

<day>

Days

<hour>

Hours

<min>

Minutes

infinite

Infinite lease

Example:

```
<sys_name>(config)# lease 1 0 0  
<sys_name>(config)#
```

5.30 *line*

Configure a terminal line.

Syntax:

```
line { <0~16> | console 0 | vty <0~15> }
```

Parameter:

<0~16>

List of line numbers

console

Console terminal line

vtv

Virtual terminal

0

Console Line number

<0~15>

List of vty numbers

Example:

```
<sys_name>(config)# line console 0
<sys_name>(config-line)#
```

5.31 *lldp*

Link Layer Discover Protocol

Syntax:

```
lldp holdtime <2-10>
```

```
lldp med datum [ wgs84 | nad83_navd88 | nad83_mllw ]
```

```
lldp med fast <1-10>
```

```
lldp med location-tlv altitude [ meters | floors ] <word11>
```

```
lldp med location-tlv civic-addr ( additional-code | additional-info | apartment |
block | building | city | country | county | district | floor | house-no |
house-no-suffix | landmark | leading-street-direction | name | p-o-box | plase-type |
```

```

postal-community-name | room-number | state | street | street-suffix |
trailing-street-suffix | zip-code ) <line250> [ <line250> ]

lldp med location-tlv elin-addr <dword25>

lldp med location-tlv latitude ( north | south ) <word8>

lldp med location-tlv longitude ( west | east ) <word9>

lldp med media-vlan-policy <0-31> ( guest-voice | guest-voice-signaling |
softphone-voice | streaming-video | video-conferencing | video-signaling | voice |
voice-signaling ) tagged <vlan_id> [ dscp <0-63> ] | [ l2-priority <0-7> ] dscp <0-63>

lldp med media-vlan-policy <0-31> ( guest-voice | guest-voice-signaling |
softphone-voice | streaming-video | video-conferencing | video-signaling | voice |
voice-signaling ) ubtagged [ dscp <0-63> ]

lldp reinit <1-10>

lldp timer <5-32768>

lldp transmission-delay <1-8192>

```

Parameter:**holdtime**

Sets LLDP hold time (The neighbor switch will discarded the LLDP information after 'hold time' multiplied with 'timer' seconds).

med

Media Endpoint Discovery.

reinit

LLDP tx reinitialization delay in seconds.

timer

Sets LLDP TX interval (The time between each LLDP frame transmitted in seconds).

transmission-delay

Sets LLDP transmission-delay. LLDP transmission delay (the amount of time that the transmission of LLDP frames will delayed after LLDP configuration has changed) in seconds.)

<2-10>

2-10 seconds.

datum

Datum (geodetic system) type.

fast <1-10>

Number of times to repeat LLDP frame transmission at fast start.

location-tlv

LLDP-MED Location Type Length Value parameter

media-vlan-policy

Create a policy, which can be assigned to an interface.

nad83_mllw

Mean lower low water datum 1983

nad83_navd88

North American vertical datum 1983

wgs84

World Geodetic System 1984

altitude

Altitude parameter.

civic-addr

Civic address information and postal information. The total number of characters for the combined civic address information must not exceed 250 characters.



A non empty civic address location will use 2 extra characters in addition to the civic address location text.



The 2 letter country code is not part of the 250 characters limitation.

elin-addr

Emergency Call Service ELIN identifier data format is defined to carry the ELIN identifier as used during emergency call setup to a traditional CAMA or ISDN trunk-based PSAP. This format consists of a numerical digit string, corresponding to the ELIN to be used for emergency calling. Emergency Location Identification Number, (e.g. E911 and others), such as defined by TIA or NENA.

latitude

Latitude parameter.

longitude

Longitude parameter.

floors

Specify the altitude in floor

meter

Specify the altitude in meters

<word11>

Altitude value. Valid range -2097151.9 to 2097151.9

additional-code

Additional code - Example: 1320300003.

additional-info

Additional location info - Example: South Wing.

apartment

Unit (Apartment, suite) - Example: Apt 42.

block

Neighborhood, block.

building

Building (structure) - Example: Low Library.

city

City, township, shi (Japan) - Example: Copenhagen.

country

The two-letter ISO 3166 country code in capital ASCII letters - Example: DK, DE or US.

county

County, parish, gun (Japan), district.

district

City division, borough, city district, ward, chou (Japan).

floor

Floor - Example: 4.

house-no

House number - Example: 21.

house-no-suffix

House number suffix - Example: A, 1/2.

landmark

Landmark or vanity address - Example: Columbia University.

leading-street-direction

Leading street direction - Example: N.

name

Name (residence and office occupant) - Example: John Doe.

p-o-box

Post office box (P.O. BOX) - Example: 12345.

place-type

Place type - Example: Office.

postal-community-name

Postal community name - Example: Leonia.

room-number

Room number - Example: 450F.

state

National subdivisions (state, canton, region, province, prefecture).

street

Street - Example: Oxford Street.

street-suffix

Street suffix - Example: Ave, Platz.

trailing-street-suffix

Trailing street suffix - Example: SW.

zip-code

Postal/zip code - Example: 2791.

<line250>

Value for the corresponding selected civic address.

<dword25>

ELIN value

north

Setting latitude direction to north.

south

Setting latitude direction to south.

<word8>

Latitude degrees (0.0000-90.0000).

east

Setting longitude direction to east.

west

Setting longitude direction to west.

<word9>

Longitude degrees (0.0000-180.0000).

<0-31>

Policy id for the policy which is created.

guest-voice

Create a guest voice policy.

guest-voice-signaling

Create a guest voice signaling policy.

softphone-voice

Create a softphone voice policy.

streaming-video

Create a streaming video policy.

video-conferencing

Create a video conferencing policy.

video-signaling

Create a video signaling policy.

voice

Create a voice policy.

voice-signaling

Create a voice signaling policy.

tagged

The policy uses tagged frames.

untagged

The policy uses untagged frames.

<vlan_id>

The VLAN the policy uses tagged frames.

dscp

Differentiated Services Code Point. If not given then DSCP value is set to 0.

l2-priority

Layer 2 priority. If not given then L2 priority value is set to 0.

<0-63>

DSCP value 0-63.

<0-7>

Priority 0-7.

<1-10>

1-10 seconds.

<5-32768>

5-32768 seconds.

<1-8192>

1-8192 seconds.

Example:

```
<sys_name>(config)# lldp holdtime 5
<sys_name>(config)# lldp med fast 5
<sys_name>(config)# lldp reinit 3
<sys_name>(config)# lldp timer 555
<sys_name>(config)# lldp transmission-delay 333
Note: According to IEEE 802.1AB-clause 10.5.4.2 the transmission-delay must not be larger
than LLDP timer * 0.25. LLDP timer changed to 13332
<sys_name>(config)#
```

5.32 lmc

Configure LANCOM Management Cloud (LMC) parameters.

Syntax:

```
lmc Configuration-via-DHCP no | yes
```

```
lmc DHCP-Client-Auto-Renew no | yes
```

```
lmc domain <hostname>
```

```
lmc operating no|try|yes
```

```
lmc proxy-url <url>
```

```
lmc proxy-username <username>
```

```
lmc proxy-password <password>
```

```
lmc rollout-location <word36>
```

```
lmc rollout-project <word36>
```

```
lmc rollout-role <word36>
```

Parameter:**Configuration-via-DHCP no | yes**

Using this parameter you can allow the configuration of LMC-Servers via DHCP option 43.

no

Always use the static LMC configuration.

yes

Use configuration via DHCP option 43 if present.

DHCP-Client-Auto-Renew no | yes

Using this parameter you can automatically renew the DHCP lease if the connection to the LMC fails.

no

No renewal of the DHCP lease on connection failure to the LMC.

yes

Automatic renewal of the DHCP lease on connection failure to the LMC.

domain <hostname>

Using this parameter you can set the hostname of the LMC.

operating no|try|yes

Using this command you can enable the LMC client.

no

Disable the LMC client.

try

Disable the LMC client after 24 hours, if the device is not claimed by a project of the LMC. A reset or reboot of the switch starts the timer again.

yes

Enable the LMC client.

proxy-url <url>

Set the URL of a proxy needed to reach the LANCOM Management Cloud.

proxy-username <username>

Set the username of the account to access the proxy.

proxy-password <password>

Set the password of the account to access the proxy.

rollout-location <word36>

Set the location ID (max. 36 characters) of this switch in the LMC.

rollout-project <word36>

set the project ID (max. 36 characters) of this switch in the LMC.

rollout-role <word36>

set the role (max. 36 characters) of this switch in the LMC.

Example:

```
<sys_name>(config)# lmc operating try
<sys_name>(config)#
```


5.33 logging

System logging message.

Syntax:

```
logging host [ <hostname> | <ipv4_ucast> | <ipv6_ucast> | <domain_name> ]  
logging hostname  
logging notification listen <keyword127> level ( error | informational | notice |  
warning ) <line255>  
logging on  
logging port <1-65535>
```

Parameter:

host

Host

hostname

Include hostname in syslog messages

notification

Notification

on

Enable Switch logging host mode

port <1-65535>

Service port number

<hostname>

A valid name consist of a sequence of domain labels separated by '.', each domain label starting and ending with an alphanumeric character and possibly also containing '-' characters. The length of a domain label must be 63 characters or less.

<ipv4_ucast>

The IPv4 address of the log server

<ipv6_ucast>

The IPv6 address of the log server

<domain_name>

The domain name of the log server

error

Severity 3: Error conditions

informational

Severity 6: Informational messages

notice

Severity 5: Normal but significant condition

warning

Severity 4: Warning conditions

5 Configuration mode commands

listen

Listen

<keyword127>

A name identifying the listen command

level

Severity level

<line255>

Identification of the notification source

Example:

```
<sys_name>(config)# logging host 3 192.155.3.2
<sys_name>(config)# logging on
<sys_name>(config)#
```

5.34 *loop-protect*

Loop protection configuration.

Syntax:

```
loop-protect
```

```
loop-protect shutdown-time <0-604800>
```

```
loop-protect transmit-time <1-10>
```

Parameter:**<cr>**

Enable loop protection

shutdown-time <0-604800>

Loop protection shutdown time interval in seconds

transmit-time <1-10>

Loop protection transmit time interval in seconds

Example:

```
<sys_name>(config)# loop-protect
<sys_name>(config)# loop-protect shutdown-time 333
<sys_name>(config)# loop-protect transmit-time 3
<sys_name>(config)#
```

5.35 *mac*

MAC table entries/configuration.

Syntax:

```
mac address-table aging-time <0,10-1000000>
mac address-table learning vlan <vlan_list>
mac address-table static <mac_addr> vlan <vlan_id> [ interface { *
[ <port_type_list> ] } | { ( GigabitEthernet | 10GigabitEthernet ) <port_type_list>
{ [ * | GigabitEthernet | 10GigabitEthernet ] } [ <port_type_list> ] }
```

Parameter:**address-table**

MAC table entries/configuration

aging-time <0,10-1000000>

MAC address aging time in seconds, 0 disables aging

learning

MAC learning

static

Static MAC address

vlan <vlan_list>

VLAN

<mac_addr>

48 bit MAC address: xx:xx:xx:xx:xx:xx

vlan <vlan_id>

VLAN IDs 1-4095

interface

Select an interface to configure

*

All switches or all ports

GigabitEthernet

Gigabit Ethernet ports

10GigabitEthernet

10 Gigabit Ethernet ports

<port_type_list>

Port list for all port types or <Port list or ID>

Example:

```
<sys_name>(config)# mac address-table aging-time 3333
<sys_name>(config)#
```

5.36 monitor

Monitoring different system events.

5 Configuration mode commands

Syntax:

```

monitor session <1-5>
monitor session <1-5> destination [ interface { * [ <port_type_list> ] } |
{ ( GigabitEthernet | 10GigabitEthernet ) <port_type_list> { [ * | GigabitEthernet |
10GigabitEthernet ] } [ <port_type_list> ] }
monitor session <1-5> destination remote vlan <vlan_id> reflector-port
( GigabitEthernet | 10GigabitEthernet ) <port_type_list>
monitor session <1-5> source cpu [ both | rx | tx ]
monitor session <1-5> source interface * ( [ <port_type_list> ] | [ both ] |
[ rx ] | [ tx ] )
monitor session <1-5> source interface [ ( GigabitEthernet | 10GigabitEthernet )
<port_type_list> ]
monitor session <1-5> source remote vlan <vlan_id>
monitor session <1-5> source vlan <vlan_id>

```

Parameter:**session**

Configure a MIRROR session

<1-5>

MIRROR session number

destination

MIRROR destination interface or VLAN

source

MIRROR source interface, VLAN

interface

MIRROR destination interface

*

All switches or all ports

GigabitEthernet

Gigabit Ethernet Ports

10GigabitEthernet

10 Gigabit Ethernet Ports

<port_type_list>

Port list for all port types or <Port list or ID>

vlan

MIRROR destination remote number

<vlan_id>

Remote MIRROR destination RMIRROR VLAN number

reflector-port

Remote MIRROR reflector interface

cpu

MIRROR source CPU

interface

MIRROR source interface

remote

MIRROR source remote

vlan

MIRROR source VLAN

both

MIRROR source CPU receive both

rx

MIRROR source CPU receive Rx

tx

MIRROR source CPU receive Tx

Example:

```
<sys_name>(config)# monitor session 1 source vlan 1
<sys_name>(config)#
```

5.37 mvr

Multicast VLAN registration configuration.

Syntax:*mvr**mvr* (name | vlan <vlan_list>) <word16> channel <word16>*mvr* (name | vlan <vlan_list>) <word16> election*mvr* (name | vlan <vlan_list>) <word16> frame [priority <0-7>] | [tagged]*mvr* (name | vlan <vlan_list>) <word16> igmp-address <ipv4_ucast>*mvr* (name | vlan <vlan_list>) <word16> last-member-query-interval <0-31744>*mvr* (name | vlan <vlan_list>) <word16> mode [compatible | dynamic]**Parameter:****<cr>**

Enable Multicast VLAN registration

name

MVR multicast name

vlan

MVR multicast VLAN

<word16>

MVR multicast VLAN name

channel <word16>

MVR channel configuration with profile name in 16 characters

election

Act as an IGMP Querier to join Querier-Election

frame

MVR control frame in TX

igmp-address <ipv4_ucast>

MVR address configuration used in IGMP with a valid IPv4 unicast address

last-member-query-interval <0-31744>

Last Member Query Interval in tenths of seconds

mode

MVR mode of operation

priority <0-7>

Interface CoS priority ranges from 0 to 7

tagged

Tagged IGMP/MLD frames will be sent

compatible

Compatible MVR operation mode

dynamic

Dynamic MVR operation mode

Example:

```
<sys_name>(config)# mvr vlan 10 mode dynamic
<sys_name>(config)#
```

5.38 *mvrp*

Enable MVRP feature globally

Syntax:

```
mvrp
mvrp managed vlan <vlan_list>
mvrp managed vlan ( add | except | remove ) <vlan_list>
mvrp managed vlan ( all | none )
```

Parameter:**<cr>**

Enable MVRP feature

managed

Set list of MVRP-managed VLANs

vlan

Set managed VLANs of MVRP

<vlan_list>

VLAN IDs of the managed VLANs of MVRP

add

Add VLANs to the current list

all

All VLANs

except

All VLANs except the following

none

No VLANs

remove

Remove VLANs from the current list

Example:

```
<sys_name>(config)# mvrp managed vlan all
<sys_name>(config)#
```

5.39 network

Set network number and mask for DHCP pool.

Syntax:

```
network <ip> <subnet_mask>
```

Parameter:**<ip>**

Network number

<subnet_mask>

Network mask in dotted-decimal notation, excluding 255.255.255.255

Example:

```
<sys_name>(config)# lease 1 0 0
<sys_name>(config)#
```

5.40 no commands

With the no form of a command you can reset that command to its default or disable that functionality.

Syntax:

```
no <configuration command>
```

Example:

```
<sys_name>(config)# no access management
<sys_name>(config)#
```

5.41 ntp

Configure NTP.

Syntax:

```
ntp
ntp interval <6-10>
ntp server <1-5> ip-address [ <domain_name> | <ipv4_ucast> | <ipv6_ucast> ]
```

Parameter:

<cr>

Enable NTP

interval <6-10>

The minimum number of seconds between successive NTP polls of the server in seconds as a power of two.

server

Configure NTP server

<1-5>

index number

ip-address

IP address

<domain_name>

Domain name

<ipv4_ucast>

IPv4 address

<ipv6_ucast>

IPv6 address

Example:

```
<sys_name>(config)# ntp server 3 ip-address 192.168.1.1
<sys_name>(config)#
```


5.42 poe

Power over Ethernet.

Syntax:

```
poe legacy-pd-detection

poe management mode [ allocation-consumption | allocation-reserved-power |
class-consumption | class-reserved-power | lldp-consumption | lldp-reserved-power ]

poe ping-check ( disable | enable )

poe profile id <1-16> ( Fri | Mon | Sat | Sun | Thr | Tue | Wed ) <0-23> <0-55> <0-23>
<0-55>

poe profile id <1-16> name <line32>

poe reboot-chip mode ( disable | enable )

poe reboot-chip ( Fri | Mon | Sat | Sun | Thr | Tue | Wed ) <0-23> <0-55>
```

Parameter:

legacy-pd-detection

PoE legacy mode on

management

Use management mode to configure PoE power management method.

ping-check

Enable/Disable PoE Ping Check.

profile

PoE scheduling profile

reboot-chip mode [disable | enable]

Enable or disable the PoE reboot

reboot-chip (Fri | Mon | Sat | Sun | Thr | Tue | Wed) <0-23> <0-55>

Configure PoE reboot scheduling on Friday, Monday, Saturday, Sunday, Thursday, Tuesday or Wednesday. <0-23> is the hour, <0-55> the minute, value must be a multiple of 5.

allocation-consumption

Max. port power determined by allocated, and power is managed according to power consumption.

allocation-reserved-power

Max. port power determined by allocated, and power is managed according to reserved power.

class-consumption

Max. port power determined by class, and power is managed according to power consumption.

class-reserved-power

Max. port power determined by class, and power is managed according to reserved power.

lldp-consumption

Max. port power determined by LLDP Media protocol, and power is managed according to power consumption.

lldp-reserved-power

Max. port power determined by LLDP Media protocol, and power is managed according to reserved power.

5 Configuration mode commands

disable

Disable PoE Ping Check

enable

Enable PoE Ping Check

id <1-16>

PoE scheduling profile id, from 1 to 16

Fri

Configure PoE Power scheduling on Friday

Mon

Configure PoE Power scheduling on Monday

Sat

Configure PoE Power scheduling on Saturday

Sun

Configure PoE Power scheduling on Sunday

Thr

Configure PoE Power scheduling on Thursday

Tue

Configure PoE Power scheduling on Tuesday

Wed

Configure PoE Power scheduling on Wednesday

name <line32>

PoE scheduling profile name, the name length is 32

<0-23>

Start/End hour

<0-55>

Start/End minute, value must be multiples of 5

Example:

```
<sys_name>(config)# poe profile id 4 Mon 0 0 0 0  
<sys_name>(config)#
```

5.43 port-security

This command is obsolete.

Syntax:

```
port-security aging time <10-10000000>
```

```
port-security hold time <10-10000000>
```

Parameter:**aging time <10-10000000>**

Enable or disable port security aging by giving the time in seconds between check for activity on learned MAC addresses

hold time <10-10000000>

Configure time in seconds, that violating MAC addresses are held non-forwarding

Example:

```
<sys_name>(config)# port-security hold time 10
<sys_name>(config)#
```

5.44 power

Configure power management.

Syntax:

```
power Boost | Redundant
```

Parameter:**Boost**

Both power supplies together deliver the overall performance of the switch.

Redundant

The focus is on reliability. The overall performance corresponds to that of the weaker power supply. The other power supply takes over in case of failure.

Example:

```
<sys_name>(config)# power Redundant
<sys_name>(config)#
```

5.45 privilege

Command privilege parameters.

Syntax:

```
privilege <word> level <0-15> <line128>
```

Parameter:**<word>**

Valid words are 'config-vlan' 'configure' 'dhcp-pool' 'exec' 'if-vlan' 'interface' 'ipmc-profile' 'json-noti-host' 'line' 'llag' 'qos-map-egress' 'qos-map-ingress' 'router-if' 'snmps-host' 'stp-aggr'

level <0-15>

Set privilege level of command

<line128>

Initial valid words and literals of the command to modify, in 128 characters.

Example:

```
<sys_name>(config)# privilege configure level 1 test
<sys_name>(config)#
```

5.46 prompt

Set prompt.

Syntax:

```
prompt <word32>
```

Parameter:**<word32>**

Up to 32 chars of prompt. Precede prompt variables with a percent sign (%). Prompt variables: %h = hostname, %% = percent sign, %s = space, %t = tab, %D = date, %T = time, %Z = date and time (like '%DT%T' but ensures atomicity in case of %T rollover)

Example:

```
<sys_name>(config)# prompt %h
<sys_name>(config)#
```

5.47 qos

Quality of Service.

Syntax:

```
qos map cos-dscp <0-7> dpl <0-3> dscp [ <0-63> | af11 | af12 | af13 | af21 | af22 |
af23 | af31 | af32 | af33 | af41 | af42 | af43 | be | cs1 | cs2 | cs3 | cs4 | cs5 |
cs6 | cs7 | ef | va ]
```

```
qos map ( dscp-classify | dscp-cos | dscp-egress-translation |
dscp-ingress-translation ) [ <0-63> | af11 | af12 | af13 | af21 | af22 | af23 | af31 |
```

```

af32 | af33 | af41 | af42 | af43 | be | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 |
ef | va ]
qos map egress <0-511>
qos map ingress <0-255>
qos qce <1-256> [ action ] cos ( <0-7> | default ) [ dmac | dpl | dscp | frame-type |
inner-tag | interface | last | next | pcp-dei | policy | smac | tag ]
qos qce <1-256> [ action ] dpl ( <0-3> | default ) [ cos | dmac | dscp | frame-type |
inner-tag | interface | last | next | pcp-dei | policy | smac | tag ]
qos qce <1-256> [ action ] dscp [ <0-63> | af11 | af12 | af13 | af21 | af22 | af23 |
af31 | af32 | af33 | af41 | af42 | af43 | be | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 |
cs7 | ef | va ]
qos qce <1-256> [ action ] ingress-map ( <0-255> | default ) [ cos | dmac | dpl | dscp |
frame-type | inner-tag | interface | last | next | pcp-dei | policy | smac | tag ]
qos qce <1-256> [ action ] pcp-dei ( ( <0-7> <0-1> ) | default ) [ cos | dmac | dscp |
frame-type | inner-tag | interface | last | next | policy | smac | tag ]
qos qce <1-256> [ action ] policy ( <0-127> | default ) [ cos | dmac | dpl | dscp |
frame-type | inner-tag | interface | last | next | pcp-dei | smac | tag ]
qos qce <1-256> dmac ( <mac_addr> | any | broadcast | multicast | unicast ) [ action |
frame-type | inner-tag | interface | last | next | smac | tag ]
qos qce <1-256> frame-type ( any | etype | ipv4 | ipv6 | llc | snap ) [ action | dmac |
frame-type | inner-tag | interface | last | next | smac | tag | vid ]
qos qce <1-256> inner-tag ( dei ( <0-1> | any ) | pcp ( <pcp> | any ) | type ( any |
c-tagged | s-tagged | tagged | untagged ) | vid ( <vcap_vr> | any ) ) [ action | dmac |
frame-type | inner-tag | interface | last | next | pcp | smac | tag | vid ]
qos qce <1-256> interface { * [ <port_type_list> | action | dmac | frame-type |
inner-tag | last | next | smac | tag ] } | { ( GigabitEthernet | 10GigabitEthernet )
<port_type_list> [ * | GigabitEthernet | 10GigabitEthernet action | dmac |
frame-type | inner-tag | last | next | smac | tag ]
qos qce <1-256> next <1-256> [ action | dmac | frame-type | inner-tag | interface |
smac | tag | vid ]
qos qce <1-256> smac ( <mac_addr> | any ) [ action | dmac | frame-type | inner-tag |
interface | last | next | tag ]
qos qce <1-256> tag ( dei ( <0-1> | any ) | pcp ( <pcp> | any ) | type ( any |
c-tagged | s-tagged | tagged | untagged ) | vid ( <vcap_vr> | any ) ) [ action | dmac |
frame-type | inner-tag | interface | last | next | pcp | smac | tag | vid ]
qos qce refresh
qos qce update <1-256> [ action | dmac | frame-type | inner-tag | interface | last |
next | smac | tag ]
qos storm ( broadcast | multicast | unicast ) <-13128147> [ fps | kbps | kfps | mbps ]
qos wred group <1-3> queue <0-7> dpl <1-3> min-fl <0-100> [ fill-level]

```

Parameter:**map**

Global QoS Map/Table

qce

QoS Control Entry

storm

Storm policer

wred

Weighted Random Early Discard

cos-dscp

Map for COS to DSCP

dscp-classify

Map for DSCP classify enable

dscp-cos

Map for DSCP to COS

dscp-egress-translation

Map for DSCP egress translation

dscp-ingress-translation

Map for DSCP ingress translation

egress

Map for egress configuration

ingress

Map for ingress configuration

<0~7>

Specific class of service or range

dpl

Specify drop precedence level

<0~3>

Specific drop precedence level or range

dscp

Specify DSCP

<0-63>

Specific DSCP

af11

Assured Forwarding PHB AF11(DSCP 10)

af12

Assured Forwarding PHB AF12(DSCP 12)

af13

Assured Forwarding PHB AF13(DSCP 14)

af21

Assured Forwarding PHB AF21(DSCP 18)

af22

Assured Forwarding PHB AF22(DSCP 20)

af23

Assured Forwarding PHB AF23(DSCP 22)

af31

Assured Forwarding PHB AF31(DSCP 26)

af32

Assured Forwarding PHB AF32(DSCP 28)

af33

Assured Forwarding PHB AF33(DSCP 30)

af41

Assured Forwarding PHB AF41(DSCP 34)

af42

Assured Forwarding PHB AF42(DSCP 36)

af43

Assured Forwarding PHB AF43(DSCP 38)

be

Default PHB(DSCP 0) for best effort traffic

cs1

Class Selector PHB CS1 precedence 1(DSCP 8)

cs2

Class Selector PHB CS2 precedence 2(DSCP 16)

cs3

Class Selector PHB CS3 precedence 3(DSCP 24)

cs4

Class Selector PHB CS4 precedence 4(DSCP 32)

cs5

Class Selector PHB CS5 precedence 5(DSCP 40)

cs6

Class Selector PHB CS6 precedence 6(DSCP 48)

cs7

Class Selector PHB CS7 precedence 7(DSCP 56)

ef

Expedited Forwarding PHB(DSCP 46)

va

Voice Admit PHB(DSCP 44)

<0-511>

Map ID

<0-255>

Map ID

<1-256>

QCE ID

refresh

Refresh QCE tables in hardware

update

Update an existing QCE

action

Setup action

dmac

Setup matched DMAC

frame-type

Setup matched frame type

inner-tag

Setup inner tag options

interface

Interfaces

last

Place QCE at the end

next

Place QCE before the next QCE ID

smac

Setup matched SMAC

tag

Setup tag options

cos

Setup class of service action

dpl

Setup drop precedence level action

dscp

Setup DSCP action

ingress-map

Setup ingress map action

pcp-dei

Setup PCP and DEI action

policy

Setup ACL policy action

<mac_addr>

Matched DMAC (XX-XX-XX-XX-XX-XX)

any

Match any DMAC

broadcast

Match broadcast DMAC

multicast

Match multicast DMAC

unicast

Match unicast DMAC

<0-7>

Assign class of service

default

Keep existing class of service

<0-3>

Assign drop precedence level

default

Keep existing drop precedence level

<0-255>

Assign ingress map id

default

Keep existing ingress map

<0-7>

Assign PCP

default

Keep existing PCP and DEI

<0-1>

Assign DEI

<0-127>

Assign ACL policy

default

Keep existing ACL policy

<mac_addr>

Matched DMAC (XX-XX-XX-XX-XX-XX)

any

Match any DMAC

broadcast

Match broadcast DMAC

multicast

Match multicast DMAC

unicast

Match unicast DMAC

any

Match any frame type

etype

Match EtherType frames

ipv4

Match IPv4 frames

5 Configuration mode commands

ipv6

Match IPv6 frames

llc

Match LLC frames

snap

Match SNAP frames

dei

Setup matched DEI

pcp

Setup matched PCP

type

Setup matched tag type

vid

Setup matched VLAN ID

<0-1>

Matched DEI

any

Match any DEI

<pcp>

Matched PCP value/range

any

Match any PCP

any

Match tagged and untagged frames

c-tagged

Match C-tagged frames

s-tagged

Match S-tagged frames

untagged

Match untagged frames

<vcap_vr>

Matched VLAN ID value/range

any

Match any VLAN ID

*

All switches or all ports

GigabitEthernet

Gigabit Ethernet Ports

10GigabitEthernet

10 Gigabit Ethernet Ports

<port_type_list>

Port list for all port types or <Port list or ID>

broadcast

Police broadcast frames

multicast

Police multicast frames

unicast

Police unicast frames

<1-13128147>

Policer rate (default fps). Internally rounded up to the nearest value supported by the storm policer. Supported rates are divisible by 10 fps or 25 kbps.

fps

Unit is frames per second (default)

kbps

Unit is kilobits per second

kfps

Unit is kiloframes per second

mbps

Unit is Megabits per second

group

Specify group

<1~3>

Specific group or range

queue

Specify queue

<0~7>

Specific queue or range

dpl

Specify DPL

<1~3>

Specific DPL or range

min-fl

Specify minimum fill level

<0-100>

Specific minimum fill level in percent

5 Configuration mode commands

max

Specify maximum drop probability or fill level

<1-100>

Specific maximum drop probability or fill level in percent (default is drop probability)

fill-level

Specify fill level

Example:

```
<sys_name>(config)# qos wred group 1 queue 0 dpl 1 min-fl 0 max 1 fill-level
<sys_name>(config)#
```

5.48 radius-server

Configure RADIUS.

Syntax:

```
radius-server attribute 32 <line1-253>
radius-server attribute 4 <ipv4_ucast>
radius-server attribute 95 <ipv6_ucast>
radius-server deadtime <1-1440>
radius-server dynamic-authorization { mode | port <port> | duplicate-window <dupwindow> | message-authenticator
enforce | event-timestamp enforce }
radius-server host <word1-255> [ auth-port <0-65535> ] [ acct-port <0-65535> ]
[ timeout <1-1000> ] [ retransmit <Retries :1-1000> ]
radius-server host <word1-255> key [ <line1-63> | ( encrypted <word96-224> ) |
unencrypted ]
radius-server key [ <line1-63> | ( encrypted <word96-224> ) | unencrypted ]
radius-server mac-format { called-station | calling-station | macbased-identity } groupsize <groupsize> separator
{ hyphen | dot | colon } { uppercase | lowercase }
radius-server retransmit <1-1000>
radius-server timeout <1-1000>
```

Parameter:**attribute**

NAS attributes

deadtime

Time to stop using a RADIUS server that doesn't respond

mode

Enable RADIUS Dynamic Authorization Server mode.

port <port>

Configure the listen port for the Dynamic Authorization Server.

duplicate-window <dupwindow>

Configure the duplicate detection window.

message-authenticator enforce

Message-Authenticator Attribute handling.

event-timestamp enforce

Event-Timestamp Attribute handling.

host

Specify a RADIUS server

key

Set RADIUS encryption key

called-station

Mac format in RADIUS called-station attribute

calling-station

Mac format in RADIUS calling-station attribute

macbased-identity

Mac format for identity for macbased-auth

groupsize <groupsize> separator { hyphen | dot | colon } { uppercase | lowercase }

Definition of the MAC format

retransmit

Specify the number of retries to active server

timeout

Time to wait for a RADIUS server to reply

32

attribute number 32 = NAS-Identifier

4

attribute number 4 = NAS-IPv4-Address

95

attribute number 95 = NAS-IPv6-Address

<line1-253>

NAS-Identifier

<ipv4_ucast>

NAS-IPv4-Address

<ipv6_ucast>

<NAS-IPv6-Address>

<1-1440>

Time in minutes

<word1-255>

Hostname or IPv4/IPv6 address

acct-port

UDP port for RADIUS accounting server

auth-port

UDP port for RADIUS authentication server

key

Server specific key (overrides default)

retransmit

Specify the number of retries to active server (overrides default)

timeout

Time to wait for this RADIUS server to reply (overrides default)

<0-65535>

UDP port number or 0 to disable authentication

<1-1000>

Number of retries for a transaction

<1-1000>

Wait time in seconds

<line1-63>

The UNENCRYPTED (Plain Text) secret key. Notice that you have no chance to get the Plain Text secret key after this command. The system will always display the ENCRYPTED password.

encrypted

Specifies an ENCRYPTED secret key will follow

unencrypted

Specifies an UNENCRYPTED secret key will follow

<word96-224>

The ENCRYPTED (hidden) secret key. Notice the ENCRYPTED secret key will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally

Example:

```
<sys_name>(config)# radius-server host device key 12
<sys_name>(config)#
```

5.49 rmon

Remote Monitoring.

Syntax:

```
rmon alarm <1-65535> [ ifInOctets | ifInUcastPkts | ifInNUcastPkts | ifInDiscards |
ifInErrors | ifInUnknownProtos | ifOutOctets | ifOutUcastPkts | ifOutNUcastPkts |
ifOutDiscards | ifOutErrors ] <uint> <1-2147483647> [ absolute | delta ]
rising-threshold <-2147483648-2147483647> [ <0-65535> | falling-threshold ]
<-2147483648-2147483647> [ <0-65535> ] { [ rising | falling | both ] }
rmon event <1-65535> [ log ] | [ trap <word127> ] | [ description <line127> ]
```

Parameter:**alarm**

Configure an RMON alarm

event

Configure an RMON event

<1-65535>

Alarm entry ID

ifInDiscards

The number of inbound packets that are discarded even the packets are normal

ifInErrors

The number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol

ifInNUcastPkts

The number of broadcast and multicast packets delivered to a higher-layer protocol

ifInOctets

The total number of octets received on the interface, including framing characters

ifInUcastPkts

The number of unicast packets delivered to a higher-layer protocol

ifInUnknownProtos

The number of the inbound packets that were discarded because of the unknown or unsupported protocol

ifOutDiscards

The number of outbound packets that are discarded event the packets is normal

ifOutErrors

The The number of outbound packets that could not be transmitted because of errors

ifOutNUcastPkts

The number of broadcast and multicast packets that request to transmit

ifOutOctets

The number of octets transmitted out of the interface, including framing characters

ifOutUcastPkts

The number of unicast packets that request to transmit

<uint>

Interface index

<1-2147483647>

Sample interval

absolute

Test each sample directly

delta

Test delta between samples

rising-threshold

Configure the rising threshold

<-2147483648-2147483647>

rising threshold value

<0-65535>

Event to fire on rising threshold crossing

falling-threshold

Configure the falling threshold

<-2147483648-2147483647>

falling threshold value

<0-65535>

Event to fire on falling threshold crossing

both

Trigger alarm when the first value is larger than the rising threshold or less than the falling threshold (default)

falling

Trigger alarm when the first value is less than the falling threshold

rising

Trigger alarm when the first value is larger than the rising threshold

<1-65535>

Event entry ID

description

Specify a description of the event

log

Generate RMON log when the event fires

trap

Generate SNMP trap when the event fires

<line127>

Event description

<word127>

OBSOLETE: SNMP community string

Example:

```
<sys_name>(config)# rmon alarm 10000 ifInErrors 6 9999 absolute rising-threshold 0
falling-threshold 0 both
<sys_name>(config)#
```


5.50 *router*

Routing process.

Syntax:

```
router ospf
```

Parameter:

ospf

Open Shortest Path First (OSPF)

Example:

```
<sys_name>(config)# router ospf
<sys_name>(config-router)#
```

5.51 *sflow*

Statistics flow.

Syntax:

```
sflow agent-ip { ipv4 <ipv4_addr> | ipv6 <ipv6_addr> }
sflow collector-address
sflow collector-address { <domain_name> | <ipv4_addr> | <ipv6_addr> }
sflow collector-port <1-65535>
sflow max-datagram-size <200-1468>
sflow timeout <0-2147483647>
```

Parameter:

agent-ip

The agent IP address used as agent-address in UDP datagrams. Defaults to IPv4 loopback address

collector-address

Collector address

collector-port <1-65535>

Collector UDP port number

max-datagram-size <200-1468>

Maximum datagram size in bytes

timeout <0-2147483647>

Receiver timeout measured in seconds. The switch decrements the timeout once per second, and as long as it is non-zero, the receiver receives samples. Once the timeout reaches 0, the receiver and all its configuration is reset to defaults

5 Configuration mode commands

ipv4 <ipv4_addr>

IPv4 address

ipv6 <ipv6_addr>

IPv6 address

<domain_name>

Domain name identifying the collector receiver

<ipv4_addr>

IPv4 address identifying the collector receiver

<ipv6_addr>

IPv6 address identifying the collector receiver

Example:

```
<sys_name>(config)# sflow agent-ip ipv4 192.168.1.2
<sys_name>(config)# sflow collector-port 3
<sys_name>(config)# sflow max-datagram-size 333
<sys_name>(config)# sflow timeout 3333
<sys_name>(config)#
```

5.52 snmp-server commands

Set SNMP server's configurations.

| Command | Function |
|--------------------------|---------------------------------------|
| | Enable SNMP server. |
| <i>access</i> | Access configuration. |
| <i>community</i> | Set the SNMP community. |
| <i>contact</i> | Set the SNMP server's contact string. |
| <i>engine-id</i> | Set SNMP engine ID. |
| <i>host</i> | Set SNMP host's configurations. |
| <i>security-to-group</i> | Security-to-group configuration. |
| <i>user</i> | Set the SNMPv3 user's configurations. |
| <i>view</i> | MIB view configuration. |

5.52.1 access

Access configuration.

Syntax:

```
snmp-server access <word32> model [ v1 | v2c | v3 | any ] level [ auth | noauth | priv ]
snmp-server access <word32> model [ v1 | v2c | v3 | any ] level [ auth | noauth | priv ]
[ read | write ] <word32>
```

Parameter:**<word32>**

Group name

model

Security model

v1>

v1 security model

v2c>

v2c security model

v3>

v3 security model

any

any security model

level

Security level

auth

authNoPriv Security Level

noauth

noAuthNoPriv Security Level

priv

authPriv Security Level

read <word32>

Specify a read view for the group

write <word32>

Specify a write view for the group

Example:

```
<sys_name>(config)# snmp-server access text model v2c level noauth write text
<sys_name>(config)#
```

5.52.2 *community*

Set the SNMP community.

Syntax:

```
snmp-server community <word32> <word32>
```

```
snmp-server community <word32> encrypted <word96-160>
```

```
snmp-server community <word32> ip-range <ipv4_addr> <ipv4_netmask>
```

```
snmp-server community <word32> ipv6-range <ipv6_subnet>
```

Parameter:**<word32>**

Security name

encrypted

Use encrypted community secret

ip-range

Use IPv4 range

ipv6-range

Use IPv6 range

<word96-160>

Encrypted community secret

<ipv4_addr>

IPv4 address

<ipv4_netmask>

IPv4 netmask

<ipv6_subnet>

IPv6 subnet

Example:

```
<sys_name>(config)# snmp-server community a a
<sys_name>(config)#
```

5.52.3 contact

Set the SNMP server's contact string.

Syntax:

```
snmp-server contact <line255>
```

Parameter:**<line255>**

Contact string

Example:

```
<sys_name>(config)# snmp-server contact aa
<sys_name>(config)#
```

5.52.4 engine-id

Set SNMP engine ID.

Syntax:

```
snmp-server engine-id local <word10-64>
```

Parameter:**local**

Set SNMP local engine ID

<word10-64>

Local engine ID

Example:

```
<sys_name>(config)# snmp-server engine-id local 1234567890
<sys_name>(config)#
```

5.52.5 *host*

Set SNMP host's configurations.

Syntax:

```
snmp-server host <word32>
```

```
snmp-server host <encrypted <word96-224>>
```

Parameter:**<word32>**

Name of the host configuration

encrypted <word96-224>

Specifies an ENCRYPTED secret key will follow. Notice the ENCRYPTED secret key will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally

Example:

```
<sys_name>(config)# snmp-server engine-id host aa
<sys_name>(config-snmps-host)#
```

5.52.6 *location*

Set the SNMP server's location string.

Syntax:

```
snmp-server location <line255>
```

Parameter:**<line255>**

Location string

Example:

```
<sys_name>(config)# snmp-server location aa
<sys_name>(config)#
```

5.52.7 *security-to-group*

Security-to-group configuration.

Syntax:

```
snmp-server security-to-group model [ v1 | v2c | v3 ] name <word32> group <word32>
```

Parameter:

model

Security model

v1

v1 security model

v2c

v2c security model

v3

v3 security model

name <word32>

security user name

group <word32>

security group name

Example:

```
<sys_name>(config)# snmp-server model v2c name text group text
<sys_name>(config)#
```

5.52.8 *user*

Set the SNMPv3 user's configurations.

Syntax:

```
snmp-server user <word32> engine-id <word10-64>
snmp-server user <word32> engine-id <word10-64> md5 <word8-32>
snmp-server user <word32> engine-id <word10-64> md5 <word8-32> priv [ aes | des ]
snmp-server user <word32> engine-id <word10-64> md5 encrypted <word16-64>
snmp-server user <word32> engine-id <word10-64> md5 encrypted <word16-64> priv
[ aes | des ]
```

Parameter:

<word32>

Security user name

engine-id

engine ID

<word10-64>

Engine ID octet string

md5

Set MD5 protocol

<word8-32>

MD5 unencrypted password

encrypted

Specifies an encrypted password will follow

aes

Set AES protocol

des

Set DES protocol

<word16-64>

MD5 encrypted password

Example:

```
<sys_name>(config)# snmp-server user A engine-id 123456789876 md5 encrypted
12222222222213123213123 priv aes
<sys_name>(config)#
```

5.52.9 view

MIB view configuration.

Syntax:

```
snmp-server view <word32> <word255> [ include | exclude ]
```

Parameter:**<word32>**

MIB view name

<word255>

MIB view OID

include

Included type from the view

exclude

Excluded type from the view

Example:

```
<sys_name>(config)# snmp-server view text .1 include
<sys_name>(config)#
```

5.53 spanning-tree commands

Spanning Tree protocol.

| Command | Function |
|--------------------|-----------------------------|
| <i>aggregation</i> | Aggregation mode. |
| <i>edge</i> | Edge ports. |
| <i>mode</i> | STP protocol mode. |
| <i>mst</i> | STP bridge instance. |
| <i>recovery</i> | The error recovery timeout. |
| <i>transmit</i> | BPDU transmit. |

5.53.1 aggregation

Aggregation mode.

Syntax:

```
spanning-tree aggregation
```

Example:

```
<sys_name>(config)# spanning-tree aggregation
<sys_name>(config-stp-aggr)#
```

5.53.2 edge

Edge ports.

Syntax:

```
spanning-tree edge [ bpdu-filter | bpdu-guard ]
```

Parameter:

bpdu-filter

Enable BPDU filter (stop BPDU tx/rx)

bpdu-guard

Enable BPDU guard

Example:

```
<sys_name>(config)# spanning-tree edge bpdu-guard
<sys_name>(config-stp-aggr)#
```

5.53.3 mode

STP protocol mode.

Syntax:

```
spanning-tree mode [ stp | rstp | mstp ]
```


Parameter:**stp**

Multiple Spanning Tree (802.1s)

rstp

Rapid Spanning Tree (802.1w)

mstp

802.1D Spanning Tree

Example:

```
<sys_name>(config)# spanning-tree mode stp
<sys_name>(config-stp-aggr)#
```

5.53.4 mst

STP bridge instance.

Syntax:

```
spanning-tree mst <0-7> priority <0-61440>
spanning-tree mst <0-7> vlan <vlan_list>
spanning-tree mst forward-time <4-30>
spanning-tree mst hello-time <1-10>
spanning-tree mst max-age <6-40>
spanning-tree mst max-age <6-40> forward-time
spanning-tree mst max-hops <6-40>
spanning-tree mst name <word32> revision <0-65535>
```

Parameter:**<0-7>**

instance (CIST=0, MSTI1=1, ...)

forward-time <4-30>

Delay in seconds between port states

hello-time <1-10>

MSTP bridge hello time

max-age <6-40>

Max bridge age in seconds before timeout

max-hops <6-40>

MSTP bridge max hop count

name <word32>

Name keyword with the name of the bridge

priority

Priority of the instance

<0-61440>

Represents the STP bridge priority. Supported values are 0 / 4096 / 8192 / 12288 / 16384 / 20480 / 24576 / 28672 / 32768 / 36864 / 40960 / 45056 / 49152 / 53248 / 57344 / 61440 i.e divisible by 4096. Default value is 32768.

vlan

VLAN keyword

<vlan_list>

Range of VLANs

forward-time**revision <0-65535>**

Revision keyword with revision number

Example:

```
<sys_name>(config)# spanning-tree mst name a revision 4
<sys_name>(config-stp-aggr)#
```

5.53.5 recovery

The error recovery timeout.

Syntax:

```
spanning-tree recovery interval <30-86400>
```

Parameter:**interval <30-86400>**

The interval range in seconds.

Example:

```
<sys_name>(config)# spanning-tree recovery interval 33
<sys_name>(config-stp-aggr)#
```

5.53.6 transmit

BPDUs to transmit.

Syntax:

```
spanning-tree transmit hold-count <1-10>
```

Parameter:**hold-count <1-10>**

Maximum number of transmit BPDUs per seconds. Default is 6.

Example:

```
<sys_name>(config)# spanning-tree transmit hold-count 3
<sys_name>(config-stp-aggr)#
```

5.54 *ssh*

Change ssh server configuration.

Syntax:

```
ssh [no] crypto [cipher <name> | hash <name> | key-exchange <name> | key-signature <name>]  
ssh [no] keepalive <int>
```

Parameter:

[no] crypto [cipher <name> | hash <name> | key-exchange <name> | key-signature <name>]

`no` sets the default value. This is different depending on given function.

[no] keepalive <int>

`no` sets the default value of 0 as keepalive interval thus disabling it. Otherwise set the keepalive interval to the given value.

5.55 *svl*

Shared VLAN Learning.

Syntax:

```
svl fid <1-4095> vlan <vlan_list>
```

Parameter:

fid

Filter ID keyword

<1-4095>

Filter ID

vlan

VLAN keyword

<vlan_list>

VLAN list

Example:

```
<sys_name>(config)# svl fid 1 vlan 3  
<sys_name>(config)#
```

5.56 *switchport*

Set VLAN switching mode characteristics.

Syntax:

```
switchport vlan mapping <1-53> <vlan_list> <vlan_id>
```

```
switchport vlan mapping <1-53> [ both | egress | ingress ] <vlan_id> <vlan_id>
```

Parameter:

vlan

VLAN

mapping

VLAN translation entry configuration

<1-53>

Group id

<vlan_list>

VLAN ID List (deprecated)

both

Bi-directional Translation

egress

Egress-only Translation

ingress

Ingress-only Translation

<vlan_id>

Translated VLAN ID

<vlan_id>

VLAN ID

Example:

```
<sys_name>(config)# switchport vlan mapping 3 3 3
%% Failed to add VLAN Translation mapping.
% (VLAN Translation Error - The provided Translation VLAN ID is the same as the VLAN ID -
makes no sense to translate a VLAN to itself)
<sys_name>(config)#
```

5.57 *system*

Set the SNMP server's configurations.

Syntax:

```
system [ contact | description | location | name ] <line128>
system reboot [ Fri | Mon | Sat | Sun | Thr | Tue | Wed ] <0-23> <0-55>
system reboot mode [ disable | enable ]
```

Parameter:**contact <line128>**

Set the SNMP server's contact string

description <line128>

Set the SNMP server's system description string

location <line128>

Set the SNMP server's location string

name <line128>

Set the SNMP server's system model name string

reboot mode [disable | enable]

Enable or disable the switch reboot mode

reboot [Fri | Mon | Sat | Sun | Thr | Tue | Wed] <0-23> <0-55>

Configure switch reboot scheduling on Friday, Monday, Saturday, Sunday, Thursday, Tuesday or Wednesday. <0-23> is the hour, <0-55> the minute, value must be a multiple of 5.

Example:

```
<sys_name>(config)# system contact 222
<sys_name>(config)# system location 333
<sys_name>(config)# system name GE
<sys_name>(config)#
```

5.58 tacacs-server

Configure TACACS+.

Syntax:

```
tacacs-server deadtime <1-1440>
tacacs-server host <word1-255>
tacacs-server host <word1-255> key <line1-63>
tacacs-server host <word1-255> key encrypted <word96-224>
tacacs-server host <word1-255> key unencrypted <line1-63>
tacacs-server host <word1-255> port <0-65535>
tacacs-server host <word1-255> timeout <1-1000>
tacacs-server key <line1-63>
tacacs-server key encrypted <word96-224>
tacacs-server key unencrypted <line1-63>
tacacs-server timeout <1-1000>
```

5 Configuration mode commands

Parameter:**deadtime <1-1440>**

Time in minutes to stop using a TACACS+ server that doesn't respond

host <word1-255>

Specify a TACACS+ server as hostname or IPv4/IPv6 address

key

Set TACACS+ encryption key

encrypted <word96-224>

Specifies an ENCRYPTED secret key will follow. Notice the ENCRYPTED secret key will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally

unencrypted <line1-63>

Specifies an UNENCRYPTED secret key will follow. Notice that you have no chance to get the Plain Text secret key after this command. The system will always display the ENCRYPTED password.

port <0-65535>

TCP port for TACACS+ server

timeout <1-1000>

Time in seconds to wait for this TACACS+ server to reply (overrides default)

Example:

```
<sys_name>(config)# tacacs-server deadtime 300
<sys_name>(config)# tacacs-server key 33
<sys_name>(config)# tacacs-server timeout 300
<sys_name>(config)#
```

5.59 *udld*

Enable UDLD in the aggressive or normal mode and to set the configurable message timer on all fiber-optic ports.

Syntax:

```
udld [ aggressive | enable ]
```

```
udld message time-interval <7-90>
```

Parameter:**aggressive**

Enables UDLD in aggressive mode on all fiber-optic ports.

enable

Enables UDLD in normal mode on all fiber-optic ports.

message time-interval <7-90>

Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is from 7 to 90 seconds (Currently default message time interval 7 sec is supported)

Example:

```

<sys_name>(config)# uddl aggressive
% Only fiber ports are allowed, port_no: 1
% Only fiber ports are allowed, port_no: 2
% Only fiber ports are allowed, port_no: 3
% Only fiber ports are allowed, port_no: 4
.
.
.
.
% Only fiber ports are allowed, port_no: 45
% Only fiber ports are allowed, port_no: 46
% Only fiber ports are allowed, port_no: 47
% Only fiber ports are allowed, port_no: 48
<sys_name>(config)#

```

5.60 *upnp*

Set UPnP's configurations.

Syntax:

```

upnp
upnp advertising-duration <66-86400>
upnp ip-addressing-mode [ dynamic | static ]
upnp static interface vlan <vlan_id>

```

Parameter:**advertising-duration <66-86400>**

Set advertising duration

ip-addressing-mode

Set IP addressing mode

static

Set static VLAN interface ID

dynamic

Dynamic IP addressing mode

static

Static IP addressing mode

interface

Select an interface to configure

vlan

VLAN Interface

<vlan_id>

VLAN identifier (VID)

Example:

```
<sys_name>(config)# upnp advertising-duration 188
<sys_name>(config)# upnp static interface vlan 33
<sys_name>(config)#
```

5.61 *username*

Establish User Name Authentication.

Syntax:

```
username <word31> privilege <0-15> password [ encrypted <word128> | none |
unencrypted <line31> ]
```

Parameter:**<word31>**

User name allows letters, numbers and underscores

privilege <0-15>

Set user privilege level

password

Specify the password for the user

encrypted <word128>

The ENCRYPTED (hidden) user password. Notice the ENCRYPTED password will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally.

none

NULL password

unencrypted <line31>

The UNENCRYPTED (Plain Text) user password. Any printable characters including space is accepted. Notice that you have no chance to get the Plain Text password after this command. The system will always display the ENCRYPTED password.

Example:

```
<sys_name>(config)# username alan privilege 15 password none
<sys_name>(config)#
```

5.62 *vlan*

VLAN commands.

Syntax:

```
vlan <vlan_list>
vlan ether-type s-custom-port <0x0600-0xffff>
vlan protocol eth2 [ <0x600-0xffff> | arp | at | ip | ipx ] group <word16>
vlan protocol llc <0x0-0xff> <0x0-0xff> group <word16>
vlan protocol snap [ <0x0-0xfffff> | rfc-1042 | snap-8021h ] <0x0-0xffff> group <word16>
```

Parameter:**<vlan_list>**

ISL VLAN IDs

ether-type s-custom-port

Ethertype for Custom S-ports

protocol

Protocol-based VLAN commands

eth2

Ethernet-based VLAN commands

llc

LLC-based VLAN group

snap

SNAP-based VLAN group

<0x0600-0xffff>

Ether Type (Range: 0x0600-0xffff)

arp

Ether Type is ARP

at

Ether Type is AppleTalk

ip

Ether Type is IP

ipx

Ether Type is IPX

group

Protocol-based VLAN group commands

<word16>

Group Name (Range: 1 - 16 characters)

<0x0-0xff>

DSAP (Range: 0x00 - 0xFF)

<0x0-0xff>

SSAP (Range: 0x00 - 0xFF)

<0x0-0xfffff>

SNAP OUI (Range 0x000000 - 0FFFFFFF)

rfc-1042

SNAP OUI is RFC-1042

snap-8021h

SNAP OUI is 8021h

<0x0-0xffff>

PID (Range: 0x0 - 0xFFFF)

Example:

```
<sys_name>(config)# vlan ethertype s-custom-port 0x1111
<sys_name>(config)# vlan protocol eth2 0x6000 group aa
<sys_name>(config)#
```

5.63 voice

Voice appliance attributes.

Syntax:

```
voice vlan
voice vlan aging-time <10-10000000>
voice vlan class <0-7>
voice vlan oui <oui>
voice vlan oui <oui> description <line32>
voice vlan vid <vlan_id>
```

Parameter:**vlan**

VLAN for voice traffic

aging-time <10-10000000>

Set secure learning aging time in seconds

class <0-7>

Set traffic class

oui <oui>

OUI configuration

description <line32>

Set description for the OUI

vid <vlan_id>

VLAN ID, 1-4095

Example:

```
<sys_name>(config)# voice vlan aging-time 3333
<sys_name>(config)# voice vlan class 7
```

```
<sys_name>(config)# voice vlan vid 3333
<sys_name>(config)#
```

5.64 web

Web.

Syntax:

```
web privilege group <cword> level [ configRoPriv | configRwPriv | statusRoPriv |
statusRwPriv ] <0-15>
```

Parameter:

privilege

Web privilege

group <cword>

Web privilege group. Valid words are 'Aggregation' 'Alarm' 'DDMI' 'DHCP' 'DHCPv6_Client' 'Diagnostics' 'FRR' 'Firmware' 'Green_Ethernet' 'IP' 'IPMC_Snooping' 'LACP' 'LLDP' 'Loop_Protect' 'MAC_Table' 'MRP' 'MVR' 'Miscellaneous' 'NTP' 'POE' 'Ports' 'Private_VLANs' 'QoS' 'RMirror' 'Security(access)' 'Security(network)' 'Spanning_Tree' 'System' 'UDLD' 'UPnP' 'VCL' 'VLAN_Translation' 'VLANs' 'Voice_VLAN' 'XXRP' 'sFlow' 'uFDMA_AIL' 'uFDMA_CIL'

level ... <0-15>

Web privilege group level

configRoPriv

Configuration Read-only level

configRwPriv

Configuration Read-write level

statusRoPriv

Status/Statistics Read-only level

statusRwPriv

Status/Statistics Read-write level

Example:

```
<sys_name>(config)# web privilege group DDMI level configRoPriv 3
<sys_name>(config)#
```

6 CLI Command / Privilege Reference

This chapter introduces the CLI privilege level and shows the needed privilege for each command. The privilege level determines whether or not the user could run the particular commands. If the user could run the particular command, then the user has to run the command in the correct mode (see also *CLI Command Modes* on page 13).

Privilege level

Every command has a privilege level (0-15). Users can run a command if the session's privilege level is greater than or equal to the command's privilege level. The session's privilege level initially comes from the login account's privilege level, though it is possible to change the session's privilege level after logging in.

Table 2:

| Privilege level | Types of commands at this privilege level |
|-----------------|--|
| 0 | Display basic system information |
| 13 | Configure features except for login accounts, the authentication method sequence, multiple logins, and administrator and enable passwords. |
| 15 | Configure login accounts, the authentication method sequence, multiple logins, and administrator and enable passwords. |

Command summary

| Command | Description | P | Mode |
|---|--|---------------|---------------------|
| aaa authentication login { telnet ssh http } { [local radius tacacs] ... } | Use the aaa authentication login command to configure the authentication methods. | 15 | GLOBAL_CONFIG |
| access-list { redirect port-copy } interface { <port_type_id> <port_type_list> } | Use the no access-list redirect interface configuration command to configure the access-list redirect interface. | 15 | INTERFACE_PORT_LIST |
| access-list ace [update] <1-256> [next {<1-256> last}] [ingress {switch <switch_id> switchport {<1-53> <1~53>}}]interface {<port_type_id> <port_type_list>}[any]] [policy <0-255> [policy-bitmask <0x0-0xFF>]] [tag {tagged untagged}[any]] [vid {<1-4095>}[any]] [tag-priority {<0-7> 0-1 2-3 4-5 6-7 0-3 4-7}[any]] [dmac-type {unicast multicast broadcast}[any]] [frametype { any} etype [etype-value {<0x600-0x7ff,0x801-0x805,0x807-0x86dc, 0x86de-0xffff>}[any]] [smac {<mac_addr>}[any]] [dmac {<mac_addr>}[any]] arp [sip {<ipv4_subnet>}[any]] [dip {<ipv4_subnet>}[any]] [smac {<mac_addr>}[any]] [arp-opcode {arp rarp other}[any]] [arp-flag [arp-request {<0-1>}[any]] [arp-smac {<0-1>}[any]] [arp-tmac {<0-1>}[any]] [arp-len {<0-1>}[any]] [arp-ip | 15 | GLOBAL_CONFIG | |

| Command | Description | P | Mode |
|--|--|----|---------------------|
| <pre> {<0-1>}any] [arp-ether {<0-1>}any]] ipv4 [sip {<ipv4_subnet>}any] [dip {<ipv4_subnet>}any] [ip-protocol {<0,2-5,7-16,18-255>}any] [ip-flag [ip-ttl {<0-1>}any] [ip-options {<0-1>}any] [ip-fragment {<0-1>}any]] ipv4-icmp [sip {<ipv4_subnet>}any] [dip {<ipv4_subnet>}any] [icmp-type {<0-255>}any] [icmp-code {<0-255>}any] [ip-flag [ip-ttl {<0-1>}any] [ip-options {<0-1>}any] [ip-fragment {<0-1>}any]] ipv4-udp [sip {<ipv4_subnet>}any] [dip {<ipv4_subnet>}any] [sport {<0-65535> [to <0-65535>]}any] [dport {<0-65535> [to <0-65535>]}any] [ip-flag [ip-ttl {<0-1>}any] [ip-options {<0-1>}any] [ip-fragment {<0-1>}any]] ipv4-tcp [sip {<ipv4_subnet>}any] [dip {<ipv4_subnet>}any] [sport {<0-65535> [to <0-65535>]}any] [dport {<0-65535> [to <0-65535>]}any] [ip-flag [ip-ttl {<0-1>}any] [ip-options {<0-1>}any] [ip-fragment {<0-1>}any] [tcp-flag [tcp-fin {<0-1>}any] [tcp-syn {<0-1>}any] [tcp-rst {<0-1>}any] [tcp-psh {<0-1>}any] [tcp-ack {<0-1>}any] [tcp-urg {<0-1>}any]] ipv6 [next-header {<0-5,7-16,18-57,59-255>}any] [sip {<ipv6_addr> [sip-bitmask <uint>]}any] [hop-limit {<0-1>}any]] ipv6-icmp [sip {<ipv6_addr> [sip-bitmask <uint>]}any] [icmp-type {<0-255>}any] [icmp-code {<0-255>}any] [hop-limit {<0-1>}any]] ipv6-udp [sip {<ipv6_addr> [sip-bitmask <uint>]}any] [sport {<0-65535> [to <0-65535>]}any] [dport {<0-65535> [to <0-65535>]}any] [hop-limit {<0-1>}any]] ipv6-tcp [sip {<ipv6_addr> [sip-bitmask <uint>]}any] [sport {<0-65535> [to <0-65535>]}any] [dport {<0-65535> [to <0-65535>]}any] [hop-limit {<0-1>}any] [tcp-flag [tcp-fin {<0-1>}any] [tcp-syn {<0-1>}any] [tcp-rst {<0-1>}any] [tcp-psh {<0-1>}any] [tcp-ack {<0-1>}any] [tcp-urg {<0-1>}any]]] [action {permit deny filter {switchport <1~53>}interface <port_type_list>}}] [rate-limiter {<1-16>}disable] [evc-policer {<1-256>}disable] [{redirect port-copy} {switchport <1-53> <1~53>}interface {<port_type_id> <port_type_list>}disable] [mirror [disable]] [logging [disable]] [shutdown [disable]] [lookup [disable]] </pre> | | | |
| access-list action { permit deny } | Use the access-list action interface configuration command to configure access-list action. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|---|--|----|---------------------|
| access-list evc-policer <1-256> | Use the access-list evc-policer interface configuration command to configure the access-list evc-policer ID. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| access-list logging | Use the access-list logging interface configuration command to enable access-list logging. Use the no form of this command to disable access-list logging. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| access-list mirror | Use the access-list mirror interface configuration command to enable access-list mirror. Use the no form of this command to disable access-list mirror. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| access-list policy <0-255> | Use the access-list policy interface configuration command to configure the access-list policy value. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| access-list port-state | Use the access-list port-state interface configuration command to enable access-list port state. Use the no form of this command to disable access-list port state. | 15 | INTERFACE_PORT_LIST |
| access-list rate-limiter [<1~16>] { pps <1,2,4,8,16,32,64,128,256,512> 100pps <1-32767> kpps <1,2,4,8,16,32,64,128,256,512,1024> 100kbps <0-10000> } | Use the access-list rate-limiter global configuration command to configure the access-list rate-limiter. | 15 | INTERFACE_PORT_LIST |
| access-list rate-limiter <1-16> | Use the access-list rate-limiter interface configuration command to configure the access-list rate-limiter ID . The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| access-list shutdown | Use the access-list shutdown interface configuration command to enable access-list shutdown. Use the no form of this command to disable access-list shutdown. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| access management | Use the access management global configuration command to enable the access management. Use the no form of this command to disable the access management. | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|---|----|---------------------|
| access management <1-16> <1-4094> <ipv4_addr> [to <ipv4_addr>] { [web] [snmp] [telnet] all } | Use the access management <AccessId> global configuration command to set the access management entry for IPv4 address. | 15 | GLOBAL_CONFIG |
| access management <1-16> <1-4094> <ipv6_addr> [to <ipv6_addr>] { [web] [snmp] [telnet] all } | Use the access management <AccessId> global configuration command to set the access management entry for IPv6 address. | 15 | GLOBAL_CONFIG |
| aggregation group <uint> | | 15 | INTERFACE_PORT_LIST |
| aggregation mode { [smac] [dmac] [ip] [port] } | | 15 | GLOBAL_CONFIG |
| arp_inspection_port_check_vlan | Use the ip arp inspection check-vlan interface configuration command to configure a port as VLAN mode for ARP inspection purposes. Use the no form of this command to configure a port as default. | 13 | INTERFACE_PORT_LIST |
| arp_inspection_port_mode | Use the ip arp inspection trust interface configuration command to configure a port as trusted for ARP inspection purposes. Use the no form of this command to configure a port as untrusted. | 13 | INTERFACE_PORT_LIST |
| arp_inspection_translate | | 13 | GLOBAL_CONFIG |
| broadcast <ipv4_addr> | | 13 | DHCP_POOL |
| clear access-list ace statistics | Use the clear access-list ace statistics privileged EXEC command to clear the statistics maintained by access-list, including access-list interface statistics and ACE's statistics. | 15 | EXEC |
| clear access management statistics | Use the clear access management statistics privileged EXEC command to clear the statistics maintained by access management. | 15 | EXEC |
| clear dot1x statistics [interface <port_type_list>] | Clears the statistics counters | 15 | EXEC |
| clear ip arp | Clear ARP cache | 0 | EXEC |
| clear ip dhcp detailed statistics { server client snooping relay helper all } [interface <port_type_list>] | Use the clear ip dhcp detailed statistics privileged EXEC command to clear the statistics, or particularly the IP DHCP statistics for the interface. Notice that except for clear statistics on all interfaces, clear the statistics on specific port may not take effect on global statistics since it gathers the different layer overview. | 15 | EXEC |
| clear ip dhcp relay statistics | Use the clear ip dhcp relay statistics privileged EXEC command to clear the statistics maintained by IP DHCP relay. | 15 | EXEC |
| clear ip dhcp server binding { automatic manual expired } | | 13 | EXEC |
| clear ip dhcp server binding <ipv4_ucast> | | 13 | EXEC |

| Command | Description | P | Mode |
|---|--|----|---------------|
| clear ip dhcp server statistics | | 13 | EXEC |
| clear ip dhcp snooping statistics [interface <port_type_list>] | Use the clear ip dhcp snooping statistics privileged EXEC command to clear the statistics maintained by IP DHCP snooping, or particularly the IP DHCP snooping statistics for the interface. | 15 | EXEC |
| clear ip igmp snooping [vlan <vlan_list>] statistics | | 15 | EXEC |
| clear ip statistics [system] [interface vlan <vlan_list>] [icmp] [icmp-msg <0~255>] | | 0 | EXEC |
| clear ipv6 mld snooping [vlan <vlan_list>] statistics | | 15 | EXEC |
| clear lacp statistics | Clear all LACP statistics | 15 | EXEC |
| clear lldp statistics | Clears the LLDP statistics. | 0 | EXEC |
| clear logging [info] [warning] [error] [switch <switch_list>] | Use the clear logging privileged EXEC command to clear the logging message. | 15 | EXEC |
| clear mac address-table | | 15 | EXEC |
| clear mvr [vlan <vlan_list> name <word16>] statistics | | 15 | EXEC |
| clear network-clock clk-source <range_list> | Clear active WTR timer. | 15 | EXEC |
| clear sflow statistics { receiver [<range_list>] samplers [interface [<range_list>] <port_type_list>] } | Clearing statistics. | 15 | EXEC |
| clear spanning-tree { { statistics [interface <port_type_list>] } { detected-protocols [interface <port_type_list>] } } | | 15 | EXEC |
| clear statistics [interface] <port_type_list> | Clears the statistics for the interface. | 0 | EXEC |
| client-identifier { fqdn <line128> mac-address <mac_addr> } | | 13 | DHCP_POOL |
| client-name <word32> | | 13 | DHCP_POOL |
| clock summer-time <word16> date [<1-12> <1-31> <2000-2097> <hhmm> <1-12> <1-31> <2000-2097> <hhmm> [<1-1440>]] | | 13 | GLOBAL_CONFIG |
| clock summer-time <word16> date [<1-12> <1-31> <2000-2097> <hhmm> <1-12> <1-31> <2000-2097> <hhmm> [<1-1440>]] | | 13 | GLOBAL_CONFIG |
| clock summer-time <word16> recurring [<1-5> <1-7> <1-12> <hhmm> <1-5> <1-7> <1-12> <hhmm> [<1-1440>]] | | 13 | GLOBAL_CONFIG |
| clock summer-time <word16> recurring [<1-5> <1-7> <1-12> <hhmm> <1-5> <1-7> <1-12> <hhmm> [<1-1440>]] | | 13 | GLOBAL_CONFIG |
| clock timezone <word16> <-23-23> [<0-59>] | | 13 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|---|---|----|---------------------|
| clock timezone <word16> <-23-23> [<0-59>] | | 13 | GLOBAL_CONFIG |
| copy { startup-config running-config <word> } { startup-config running-config <word> } [syntax-check] | | 15 | EXEC |
| default access-list rate-limiter [<1~16>] | Use the default access-list rate-limiter global configuration command to restore the default setting of access-list rate-limiter. | 15 | GLOBAL_CONFIG |
| default-router <ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast>]]] | | 13 | DHCP_POOL |
| dhcp_snooping_port_mode | Use the ip dhcp snooping trust interface configuration command to configure a port as trusted for DHCP snooping purposes. Use the no form of this command to configure a port as untrusted. | 15 | INTERFACE_PORT_LIST |
| dir | | 15 | EXEC |
| dns-server <ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast>]]] | | 13 | DHCP_POOL |
| domain-name <word128> | | 13 | DHCP_POOL |
| dot1x authentication timer inactivity <10-1000000> | Time in seconds between check for activity on successfully authenticated MAC addresses. | 15 | GLOBAL_CONFIG |
| dot1x authentication timer re-authenticate <1-3600> | The period between re-authentication attempts in seconds | 15 | GLOBAL_CONFIG |
| dot1x feature { [guest-vlan] [radius-qos] [radius-vlan] } *1 | Globally enables/disables a dot1x feature functionality | 15 | GLOBAL_CONFIG |
| dot1x guest-vlan | Enables/disables guest VLAN | 15 | INTERFACE_PORT_LIST |
| dot1x guest-vlan <1-4095> | Guest VLAN ID used when entering the Guest VLAN. | 15 | GLOBAL_CONFIG |
| dot1x guest-vlan supplicant | The switch remembers if an EAPOL frame has been received on the port for the life-time of the port. Once the switch considers whether to enter the Guest VLAN, it will first check if this option is enabled or disabled. If disabled (unchecked; default), the switch will only enter the Guest VLAN if an EAPOL frame has not been received on the port for the life-time of the port. If enabled (checked), the switch will consider entering the Guest VLAN even if an EAPOL frame has been received on the port for the life-time of the port. | 15 | GLOBAL_CONFIG |
| dot1x initialize [interface <port_type_list>] | Force re-authentication immediately | 15 | EXEC |
| dot1x max-reauth-req <1-255> | The number of times a Request Identity EAPOL frame is sent without response before considering entering the Guest VLAN | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|---|----|---------------------|
| dot1x port-control { force-authorized force-unauthorized auto single multi mac-based } | Sets the port security state. | 15 | INTERFACE_PORT_LIST |
| dot1x radius-qos | Enables/disables per-port state of RADIUS-assigned QoS. | 15 | INTERFACE_PORT_LIST |
| dot1x radius-vlan | Enables/disables per-port state of RADIUS-assigned VLAN. | 15 | INTERFACE_PORT_LIST |
| dot1x re-authenticate | Refresh (restart) 802.1X authentication process. | 15 | INTERFACE_PORT_LIST |
| dot1x re-authentication | Set Re-authentication state | 15 | GLOBAL_CONFIG |
| dot1x system-auth-control | Set the global NAS state | 15 | GLOBAL_CONFIG |
| dot1x timeout quiet-period <10-1000000> | Time in seconds before a MAC-address that failed authentication gets a new authentication chance. | 15 | GLOBAL_CONFIG |
| dot1x timeout tx-period <1-65535> | the time between EAPOL retransmissions. | 15 | GLOBAL_CONFIG |
| duplex { half full auto [half full] } | Use duplex to configure interface duplex mode. | 15 | INTERFACE_PORT_LIST |
| excessive-restart | Use excessive-restart to configure backoff algorithm in half duplex mode. | 15 | INTERFACE_PORT_LIST |
| firmware swap | Use firmware swap to swap the active and alternative firmware images. | 15 | EXEC |
| firmware upgrade <word> | Use firmware upgrade to load new firmware image to the switch. | 15 | EXEC |
| flowcontrol { on off } | Use flowcontrol to configure flow control for the interface. | 15 | INTERFACE_PORT_LIST |
| green-ethernet eee | Sets EEE mode. | 15 | INTERFACE_PORT_LIST |
| green-ethernet eee optimize-for-power | Sets if EEE should be optimized for least traffic latency or least power consumption | 15 | GLOBAL_CONFIG |
| green-ethernet eee urgent-queues [<range_list>] | Sets EEE urgeent queues. | 15 | INTERFACE_PORT_LIST |
| green-ethernet energy-detect | Enables energy-detect power savings. | 15 | INTERFACE_PORT_LIST |
| green-ethernet fan temp-max <-127-127> | Sets temperature where the fan must be running at full speed. | 15 | GLOBAL_CONFIG |
| green-ethernet fan temp-on <-127-127> | Sets temperature at which to turn fan on to the lowest speed. | 15 | GLOBAL_CONFIG |
| green-ethernet led interval <0~24> intensity <0-100> | Use green-ethernet led interval to configure the LED intensity at specific interval of the day. | 15 | GLOBAL_CONFIG |
| green-ethernet led on-event { [link-change <0-65535>] [error] }*1 | Use green-ethernet led on-event to configure when to turn LEDs intensity to 100%%. | 15 | GLOBAL_CONFIG |
| green-ethernet short-reach | Enables short-reach power savings. | 15 | INTERFACE_PORT_LIST |
| gvrp | | 15 | GLOBAL_CONFIG |
| gvrp | | 15 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|---|--|----|---------------------|
| gvrp join-request vlan <vlan_list> | | 15 | INTERFACE_PORT_LIST |
| gvrp leave-request vlan <vlan_list> | | 15 | INTERFACE_PORT_LIST |
| gvrp max-vlans <1-4095> | | 15 | GLOBAL_CONFIG |
| gvrp time { [join-time <1-20>] [leave-time <60-300>] [leave-all-time <1000-5000>] }*1 | | 15 | GLOBAL_CONFIG |
| hardware-address <mac_ucast> | | 13 | DHCP_POOL |
| host { <ipv4_ucast> <hostname> } [<1-65535>] [traps informs] | | 15 | SNMPS_HOST |
| host <ipv4_ucast> <ipv4_netmask> | | 13 | DHCP_POOL |
| host <ipv6_ucast> [<1-65535>] [traps informs] | | 15 | SNMPS_HOST |
| i ip verify source | | 13 | INTERFACE_PORT_LIST |
| informs retries <0-255> timeout <0-2147> | | 15 | SNMPS_HOST |
| ip address {{<ipv4_addr> <ipv4_netmask>} {dhcp [fallback <ipv4_addr> <ipv4_netmask> [timeout <uint>]]}} | IP address configuration | 15 | INTERFACE_VLAN |
| ip arp inspection | Use the ip arp inspection global configuration command to globally enable ARP inspection. Use the no form of this command to globally disable ARP inspection. | 13 | GLOBAL_CONFIG |
| ip arp inspection entry interface <port_type_id> <vlan_id> <mac_ucast> <ipv4_ucast> | | 13 | GLOBAL_CONFIG |
| ip arp inspection logging { deny permit all } | Use the ip arp inspection logging interface configuration command to configure a port as some logging mode for ARP inspection purposes. Use the no form of this command to configure a port as logging none. | 13 | INTERFACE_PORT_LIST |
| ip arp inspection vlan <vlan_list> | Use the ip arp inspection global configuration command to globally enable ARP inspection. Use the no form of this command to globally disable ARP inspection. | 13 | GLOBAL_CONFIG |
| ip arp inspection vlan <vlan_list> logging { deny permit all } | | 13 | GLOBAL_CONFIG |
| ip dhcp excluded-address <low_ip> [<high_ip4>] | | 13 | GLOBAL_CONFIG |
| ip dhcp pool <pool_name> | | 15 | GLOBAL_CONFIG |
| ip dhcp relay | Use the ip dhcp relay global configuration command to enable the DHCP relay server. Use the no form of this command to disable the DHCP relay server. | 15 | GLOBAL_CONFIG |
| ip dhcp relay information option | Use the ip dhcp relay information option global configuration command to enable the DHCP | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|---|----|----------------|
| | relay information option. Use the no form of this command to disable the DHCP relay information option. The option 82 circuit ID format as ""[vlan_id][module_id][port_no]"". The first four characters represent the VLAN ID, the fifth and sixth characters are the module ID(in standalone device it always equal 0, in stackable device it means switch ID), and the last two characters are the port number. For example, ""00030108"" means the DHCP message receive form VLAN ID 3, switch ID 1, port No 8. And the option 82 remote ID value is equal the switch MAC address. | | |
| ip dhcp relay information policy { drop keep replace } | Use the ip dhcp relay information policy global configuration command to configure the DHCP relay information policy. When DHCP relay information mode operation is enabled, if the agent receives a DHCP message that already contains relay agent information it will enforce the policy. The 'Replace' policy is invalid when relay information mode is disabled. | 15 | GLOBAL_CONFIG |
| ip dhcp retry interface vlan <vlan_id> | Restart the dhcp client | 15 | EXEC |
| ip dhcp server | | 13 | GLOBAL_CONFIG |
| ip dhcp server | | 13 | INTERFACE_VLAN |
| ip dhcp snooping | Use the ip dhcp snooping global configuration command to globally enable DHCP snooping. Use the no form of this command to globally disable DHCP snooping. | 15 | GLOBAL_CONFIG |
| ip dns proxy | Enable DNS proxy service | 15 | GLOBAL_CONFIG |
| ip helper-address <ipv4_ucast> | Use the ip helper-address global configuration command to configure the host address of DHCP relay server. | 15 | GLOBAL_CONFIG |
| ip http secure-redirect | Use the http secure-redirect global configuration command to enable the secure HTTP web redirection. When the secure HTTP web server is enabled, the feature automatic redirect the none secure HTTP web connection to the secure HTTP web connection. Use the no form of this command to disable the secure HTTP web redirection. | 15 | GLOBAL_CONFIG |
| ip http secure-server | Use the ip http secure-server global configuration command to enable the secure HTTP web server. Use the no form of this command to disable the secure HTTP web server. | 15 | GLOBAL_CONFIG |
| ip igmp host-proxy [leave-proxy] | | 15 | GLOBAL_CONFIG |
| ip igmp snooping | | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|--|----|---------------------|
| ip igmp snooping | | 15 | INTERFACE_VLAN |
| ip igmp snooping compatibility { auto v1 v2 v3 } | | 15 | INTERFACE_VLAN |
| ip igmp snooping filter <word16> | | 15 | INTERFACE_PORT_LIST |
| ip igmp snooping immediate-leave | | 15 | INTERFACE_VLAN |
| ip igmp snooping last-member-query-interval <0-31744> | | 15 | INTERFACE_VLAN |
| ip igmp snooping max-groups <1-10> | | 15 | INTERFACE_PORT_LIST |
| ip igmp snooping mrouter | | 15 | INTERFACE_PORT_LIST |
| ip igmp snooping priority <0-7> | | 15 | INTERFACE_VLAN |
| ip igmp snooping querier { election address <ipv4_ucast> } | | 15 | INTERFACE_VLAN |
| ip igmp snooping query-interval <1-31744> | | 15 | INTERFACE_VLAN |
| ip igmp snooping query-max-response-time <0-31744> | | 15 | INTERFACE_VLAN |
| ip igmp snooping robustness-variable <1-255> | | 15 | INTERFACE_VLAN |
| ip igmp snooping unsolicited-report-interval <0-31744> | | 15 | INTERFACE_VLAN |
| ip igmp snooping vlan <vlan_list> | | 15 | GLOBAL_CONFIG |
| ip igmp ssm-range <ipv4_mcast> <4-32> | | 15 | GLOBAL_CONFIG |
| ip igmp unknown-flooding | | 15 | GLOBAL_CONFIG |
| ip name-server { <ipv4_ucast> dhcp [interface vlan <vlan_id>] } | Set the DNS server for resolving domain names | 15 | GLOBAL_CONFIG |
| ip route <ipv4_addr> <ipv4_netmask> <ipv4_addr> [distance <1-255>] | Add new IP route | 15 | GLOBAL_CONFIG |
| ip routing | Enable routing for IPv4 and IPv6 | 15 | GLOBAL_CONFIG |
| ip source binding interface <port_type_id> <vlan_id> <ipv4_ucast> <ipv4_netmask> | | 13 | GLOBAL_CONFIG |
| ip source binding interface <port_type_id> <vlan_id> <ipv4_ucast> <mac_ucast> | | 13 | GLOBAL_CONFIG |
| ip ssh | Use the ip ssh global configuration command to enable the SSH. Use the no form of this command to disable the SSH. | 15 | GLOBAL_CONFIG |
| ipv6 mld host-proxy [leave-proxy] | | 15 | GLOBAL_CONFIG |
| ipv6 mld snooping | | 15 | GLOBAL_CONFIG |
| ipv6 mld snooping | | 15 | INTERFACE_VLAN |
| ipv6 mld snooping compatibility { auto v1 v2 } | | 15 | INTERFACE_VLAN |

| Command | Description | P | Mode |
|---|--|----|---------------------|
| ipv6 mld snooping filter <word16> | | 15 | INTERFACE_PORT_LIST |
| ipv6 mld snooping immediate-leave | | 15 | INTERFACE_PORT_LIST |
| ipv6 mld snooping last-member-query-interval <0-31744> | | 15 | INTERFACE_VLAN |
| ipv6 mld snooping max-groups <1-10> | | 15 | INTERFACE_PORT_LIST |
| ipv6 mld snooping mrouter | | 15 | INTERFACE_PORT_LIST |
| ipv6 mld snooping priority <0-7> | | 15 | INTERFACE_VLAN |
| ipv6 mld snooping querier election | | 15 | INTERFACE_VLAN |
| ipv6 mld snooping query-interval <1-31744> | | 15 | INTERFACE_VLAN |
| ipv6 mld snooping query-max-response-time <0-31744> | | 15 | INTERFACE_VLAN |
| ipv6 mld snooping robustness-variable <1-255> | | 15 | INTERFACE_VLAN |
| ipv6 mld snooping unsolicited-report-interval <0-31744> | | 15 | INTERFACE_VLAN |
| ipv6 mld snooping vlan <vlan_list> | | 15 | GLOBAL_CONFIG |
| ipv6 mld ssm-range <ipv6_mcast> <8-128> | | 15 | GLOBAL_CONFIG |
| ipv6 mld unknown-flooding | | 15 | GLOBAL_CONFIG |
| ip verify source | | 13 | GLOBAL_CONFIG |
| ip verify source limit <0-2> | | 13 | INTERFACE_PORT_LIST |
| ip verify source translate | | 13 | GLOBAL_CONFIG |
| lACP | Enable LACP on an interface | 15 | INTERFACE_PORT_LIST |
| lACP key { <1-65535> auto } | Set the LACP key | 15 | INTERFACE_PORT_LIST |
| lACP port-priority <1-65535> | Set the lACP port priority, | 15 | INTERFACE_PORT_LIST |
| lACP role { active passive } | Set the LACP role, active or passive in transmitting BPDUs | 15 | INTERFACE_PORT_LIST |
| lACP system-priority <1-65535> | Set the LACP system priority | 15 | GLOBAL_CONFIG |
| lACP timeout { fast slow } | Set the LACP timeout, i.e. how fast to transmit BPDUs, once a sec or once each 30 sec. | 15 | INTERFACE_PORT_LIST |
| lease { <0-365> [<0-23> [<uint>]] infinite } | | 13 | DHCP_POOL |
| lldp cdp-aware | Configures if the interface shall be CDP aware (CDP discovery information is added to the LLDP neighbor table) | 15 | INTERFACE_PORT_LIST |
| lldp holdtime <2-10> | Sets LLDP hold time (The neighbor switch will discarded the LLDP information after \"hold time\" multiplied with \"timer\" seconds) | 15 | GLOBAL_CONFIG |
| lldp med datum { wgs84 nad83-navd88 nad83-mlw } | Use the lldp med datum to configure the datum (geodetic system) to use. | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|---|----|---------------------|
| lldp med fast <1-10> | Use the lldp med fast to configure the number of times the fast start LLDPDU are being sent during the activation of the fast start mechanism defined by LLDP-MED (1-10). | 15 | GLOBAL_CONFIG |
| lldp med location-tlv altitude { meters floors } <word11> | Use the lldp med location-tlv altitude to configure the location altitude. | 15 | GLOBAL_CONFIG |
| lldp med location-tlv civic-addr { country state county city district block street leading-street-direction trailing-street-suffix street-suffix house-no house-no-suffix landmark additional-info name zip-code building apartment floor room-number place-type postal-community-name p-o-box additional-code } <string250> | Use lldp med location-tlv civic-addr to configure the civic address. | 15 | GLOBAL_CONFIG |
| lldp med location-tlv elin-addr <dword25> | Use the lldp med location-tlv elin-addr to configure value for the Emergency Call Service | 15 | GLOBAL_CONFIG |
| lldp med location-tlv latitude { north south } <word8> | Use the lldp med location-tlv latitude to configure the location latitude. | 15 | GLOBAL_CONFIG |
| lldp med location-tlv longitude { west east } <word9> | Use the lldp med location-tlv longitude to configure the location longitude. | 15 | GLOBAL_CONFIG |
| lldp med media-vlan-policy <0-31> { voice voice-signaling guest-voice-signaling guest-voice softphone-voice video-conferencing streaming-video video-signaling } { tagged <vlan_id> untagged } [l2-priority <0-7>] [dscp <0-63>] | Use the media-vlan-policy to create a policy, which can be assigned to an interface. | 15 | GLOBAL_CONFIG |
| lldp med media-vlan policy-list <range_list> | Use the media-vlan policy-list to assign policy to the interface. | 15 | INTERFACE_PORT_LIST |
| lldp med transmit-tlv [capabilities] [location] [network-policy] | Use the lldp med transmit-tlv to configure which TLVs to transmit to link partner. | 15 | INTERFACE_PORT_LIST |
| lldp receive | Sets if switch shall update LLDP entry table with incoming LLDP information. | 15 | INTERFACE_PORT_LIST |
| lldp reinit <1-10> | Sets LLDP reinitialization delay. | 15 | GLOBAL_CONFIG |
| lldp timer <5-32768> | Sets LLDP TX interval (The time between each LLDP frame transmitted in seconds). | 15 | GLOBAL_CONFIG |
| lldp tlv-select {management-address port-description system-capabilities system-description system-name} | Enables/disables LLDP optional TLVs. | 15 | INTERFACE_PORT_LIST |
| lldp transmission-delay <1-8192> | Sets LLDP transmission-delay. LLDP transmission delay (the amount of time that the transmission of LLDP frames will be delayed after LLDP configuration has changed) in seconds.) | 15 | GLOBAL_CONFIG |
| lldp transmit | Sets if switch shall transmit LLDP frames. | 15 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|---|--|----|---------------------|
| logging host { <ipv4_ucast> <hostname> } | Use the logging host global configuration command to configure the host address of logging server. | 15 | GLOBAL_CONFIG |
| logging level { info warning error } | Use the logging level global configuration command to configure what level of message will send to logging server. | 15 | GLOBAL_CONFIG |
| logging on | Use the logging on global configuration command to enable the logging server. Use the no form of this command to disable the logging server. | 15 | GLOBAL_CONFIG |
| loop-protect | Loop protection configuration | 15 | GLOBAL_CONFIG |
| loop-protect | Loop protection configuration | 15 | INTERFACE_PORT_LIST |
| loop-protect action { [shutdown] [log] }*1 | | 15 | INTERFACE_PORT_LIST |
| loop-protect shutdown-time <0-604800> | Loop protection shutdown time interval | 15 | GLOBAL_CONFIG |
| loop-protect transmit-time <1-10> | Loop protection transmit time interval | 15 | GLOBAL_CONFIG |
| loop-protect tx-mode | | 15 | INTERFACE_PORT_LIST |
| mac address-table aging-time <0,10-1000000> | Set switch aging time, 0 to disable. | 15 | GLOBAL_CONFIG |
| mac address-table learning [secure] | Enable learning on port | 15 | INTERFACE_PORT_LIST |
| mac address-table static <mac_addr> vlan <vlan_id> interface <port_type_list> | Assign a static mac address to this port | 15 | GLOBAL_CONFIG |
| media-type { rj45 sfp dual } | Use media-type to configure the interface media type. | 15 | INTERFACE_PORT_LIST |
| monitor destination interface <port_type_id> | Sets monitor destination port. | 15 | GLOBAL_CONFIG |
| monitor source { { interface <port_type_list> } { cpu [<range_list>] } } { both rx tx } | Sets monitor source port(s). | 15 | GLOBAL_CONFIG |
| more <word> | | 15 | EXEC |
| mtu <'VTSS_MAX_FRAME_LENGTH_STANDARD' - 'VTSS_MAX_FRAME_LENGTH_MAX'> | Use mtu to specify maximum frame size (1518-9600 bytes). | 15 | INTERFACE_PORT_LIST |
| mvr | | 15 | GLOBAL_CONFIG |
| mvr immediate-leave | | 15 | INTERFACE_PORT_LIST |
| mvr name <word16> frame priority <0-7> | | 15 | GLOBAL_CONFIG |
| mvr name <word16> frame tagged | | 15 | GLOBAL_CONFIG |
| mvr name <word16> igmp-address <ipv4_ucast> | | 15 | GLOBAL_CONFIG |
| mvr name <word16> last-member-query-interval <0-31744> | | 15 | GLOBAL_CONFIG |
| mvr name <word16> mode { dynamic compatible } | | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|---|----|---------------------|
| mvr name <word16> type { source receiver } | | 15 | INTERFACE_PORT_LIST |
| mvr vlan <vlan_list> [name <word16>] | | 15 | GLOBAL_CONFIG |
| mvr vlan <vlan_list> channel <word16> | | 15 | GLOBAL_CONFIG |
| mvr vlan <vlan_list> frame priority <0-7> | | 15 | GLOBAL_CONFIG |
| mvr vlan <vlan_list> frame tagged | | 15 | GLOBAL_CONFIG |
| mvr vlan <vlan_list> igmp-address <ipv4_ucast> | | 15 | GLOBAL_CONFIG |
| mvr vlan <vlan_list> last-member-query-interval <0-31744> | | 15 | GLOBAL_CONFIG |
| mvr vlan <vlan_list> mode { dynamic compatible } | | 15 | GLOBAL_CONFIG |
| mvr vlan <vlan_list> type { source receiver } | | 15 | INTERFACE_PORT_LIST |
| name <vword32> | Use the name <vword32> command to configure VLAN name. | 13 | CONFIG_VLAN |
| netbios-name-server <ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast>]] | | 13 | DHCP_POOL |
| netbios-node-type { b-node h-node m-node p-node } | | 13 | DHCP_POOL |
| netbios-scope <line128> | | 13 | DHCP_POOL |
| network <ipv4_addr> <ipv4_netmask> | | 13 | DHCP_POOL |
| network-clock clk-source <range_list> aneg-mode { master slave forced} | Sets the preferred negotiation. | 15 | GLOBAL_CONFIG |
| network-clock clk-source <range_list> hold-timeout <3-18> | The hold off timer value in 100 ms.Valid values are range 3-18. | 15 | GLOBAL_CONFIG |
| network-clock clk-source <range_list> nominate { clk-in {interface <port_type_id> } } | Nominate a clk input to become a selectable clock source. | 15 | GLOBAL_CONFIG |
| network-clock clk-source <range_list> priority <0-1> | Priority of nominated clock sources. | 15 | GLOBAL_CONFIG |
| network-clock clk-source <range_list> ssm-overwrite { prc ssua ssub eec2 eec1 dnu } | Clock source SSM overwrite | 15 | GLOBAL_CONFIG |
| network-clock input-source { 1544khz 2048khz 10mhz } | Sets the station clock input frequency | 15 | GLOBAL_CONFIG |
| network-clock option { eec1 eec2 } | EEC options | 15 | GLOBAL_CONFIG |
| network-clock output-source { 1544khz 2048khz 10mhz } | Sets the station clock output frequency | 15 | GLOBAL_CONFIG |
| network-clock selector { { manual clk-source <uint> } selected nonrevertive revertive holdover freerun } | Selection mode of nominated clock sources | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|--|----|---------------------|
| network-clock ssm-freerun { prc ssua ssub eec2 eec1 dnu inv } | Free Running SSM overwrite | 15 | GLOBAL_CONFIG |
| network-clock ssm-holdover { prc ssua ssub eec2 eec1 dnu inv } | Hold Over SSM overwrite | 15 | GLOBAL_CONFIG |
| network-clock synchronization ssm | SSM enable/disable. | 15 | INTERFACE_PORT_LIST |
| network-clock wait-to-restore <0-12> | WTR time (0-12 min) '0' is disable | 15 | GLOBAL_CONFIG |
| nis-domain-name <word128> | | 13 | DHCP_POOL |
| nis-server <ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast>]]] | | 13 | DHCP_POOL |
| no_ntp_server_ip_address | | 13 | GLOBAL_CONFIG |
| no aaa authentication login { telnet ssh http } | | 15 | GLOBAL_CONFIG |
| no access-list { redirect port-copy } | Use the no access-list redirect interface configuration command to disable the access-list redirect. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| no access-list ace <1~256> | Use the no access-list ace global configuration command to delete the access-list ace. | 15 | GLOBAL_CONFIG |
| no access-list evc-policer | Use the no access-list evc-policer interface configuration command to configure the access-list evc-policer ID. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| no access-list policy | Use the no access-list policy interface configuration command to restore the default access-list policy ID. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| no access-list rate-limiter | Use the no access-list rate-limiter interface configuration command to disable the access-list rate-limiter. The access-list interface configuration will affect the received frames if it doesn't match any ACE. | 15 | INTERFACE_PORT_LIST |
| no access management <1~16> | Use the no access management <AccessIdList> global configuration command to delete the specific access management entry. | 15 | GLOBAL_CONFIG |
| no aggregation group | | 15 | INTERFACE_PORT_LIST |
| no aggregation mode | | 15 | GLOBAL_CONFIG |
| no broadcast | | 13 | DHCP_POOL |
| no client-identifier | | 13 | DHCP_POOL |
| no client-name | | 13 | DHCP_POOL |

| Command | Description | P | Mode |
|--|---|----|---------------------|
| no clock summer-time | | 13 | GLOBAL_CONFIG |
| no clock summer-time | | 13 | GLOBAL_CONFIG |
| no clock timezone | | 13 | GLOBAL_CONFIG |
| no clock timezone | | 13 | GLOBAL_CONFIG |
| no default-router | | 13 | DHCP_POOL |
| no dns-server | | 13 | DHCP_POOL |
| no domain-name | | 13 | DHCP_POOL |
| no dot1x authentication timer inactivity | | 15 | GLOBAL_CONFIG |
| no dot1x authentication timer re-authenticate | | 15 | GLOBAL_CONFIG |
| no dot1x guest-vlan | Guest VLAN ID used when entering the Guest VLAN. | 15 | GLOBAL_CONFIG |
| no dot1x max-reauth-req | The number of times a Request Identity EAPOL frame is sent without response before considering entering the Guest VLAN | 15 | GLOBAL_CONFIG |
| no dot1x port-control | Sets the port security state. | 15 | INTERFACE_PORT_LIST |
| no dot1x timeout quiet-period | | 15 | GLOBAL_CONFIG |
| no dot1x timeout tx-period | | 15 | GLOBAL_CONFIG |
| no duplex | Use ""no duplex"" to set duplex to default. | 15 | INTERFACE_PORT_LIST |
| no flowcontrol | Use no flowcontrol to set flow control to default. | 15 | INTERFACE_PORT_LIST |
| no green-ethernet fan temp-max | Sets temperature at which the fan shall be running at full speed to default. | 15 | GLOBAL_CONFIG |
| no green-ethernet fan temp-on | Sets temperature at which to turn fan on to the lowest speed to default. | 15 | GLOBAL_CONFIG |
| no green-ethernet led interval <0~24> | | 15 | GLOBAL_CONFIG |
| no green-ethernet led on-event [link-change] [error] | | 15 | GLOBAL_CONFIG |
| no hardware-address | | 13 | DHCP_POOL |
| no host | | 13 | DHCP_POOL |
| no host | | 15 | SNMPS_HOST |
| no informs | | 15 | SNMPS_HOST |
| no ip address | IP address configuration | 15 | INTERFACE_VLAN |
| no ip arp inspection logging | Use the no ip arp inspection logging interface configuration command to configure a port as default logging mode for ARP inspection purposes. | 13 | INTERFACE_PORT_LIST |
| no ip arp inspection vlan <vlan_list> logging | | 13 | GLOBAL_CONFIG |
| no ip dhcp pool <word32> | | 13 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|---|----|---------------------|
| no ip dhcp relay information policy | Use the ip dhcp relay information policy global configuration command to restore the default DHCP relay information policy. | 15 | GLOBAL_CONFIG |
| no ip helper-address | Use the no ip helper-address global configuration command to clear the host address of DHCP relay server. | 15 | GLOBAL_CONFIG |
| no ip igmp snooping compatibility | | 15 | INTERFACE_VLAN |
| no ip igmp snooping filter | | 15 | INTERFACE_PORT_LIST |
| no ip igmp snooping last-member-query-interval | | 15 | INTERFACE_VLAN |
| no ip igmp snooping max-groups | | 15 | INTERFACE_PORT_LIST |
| no ip igmp snooping priority | | 15 | INTERFACE_VLAN |
| no ip igmp snooping querier { election address } | | 15 | INTERFACE_VLAN |
| no ip igmp snooping query-interval | | 15 | INTERFACE_VLAN |
| no ip igmp snooping query-max-response-time | | 15 | INTERFACE_VLAN |
| no ip igmp snooping robustness-variable | | 15 | INTERFACE_VLAN |
| no ip igmp snooping unsolicited-report-interval | | 15 | INTERFACE_VLAN |
| no ip igmp snooping vlan [<vlan_list>] | | 15 | GLOBAL_CONFIG |
| no ip igmp ssm-range | | 15 | GLOBAL_CONFIG |
| no ip name-server | Stop resolving domain names by accessing DNS server | 15 | GLOBAL_CONFIG |
| no ip route <ipv4_addr> <ipv4_netmask> <ipv4_addr> | Delete an existing IP route | 15 | GLOBAL_CONFIG |
| no ip routing | Disable routing for IPv4 and IPv6 | 15 | GLOBAL_CONFIG |
| no ipv6 mld snooping compatibility | | 15 | INTERFACE_VLAN |
| no ipv6 mld snooping filter | | 15 | INTERFACE_PORT_LIST |
| no ipv6 mld snooping last-member-query-interval | | 15 | INTERFACE_VLAN |
| no ipv6 mld snooping max-groups | | 15 | INTERFACE_PORT_LIST |
| no ipv6 mld snooping priority | | 15 | INTERFACE_VLAN |
| no ipv6 mld snooping query-interval | | 15 | INTERFACE_VLAN |
| no ipv6 mld snooping query-max-response-time | | 15 | INTERFACE_VLAN |
| no ipv6 mld snooping robustness-variable | | 15 | INTERFACE_VLAN |
| no ipv6 mld snooping unsolicited-report-interval | | 15 | INTERFACE_VLAN |
| no ipv6 mld snooping vlan [<vlan_list>] | | 15 | GLOBAL_CONFIG |
| no ipv6 mld ssm-range | | 15 | GLOBAL_CONFIG |
| no ip verify source limit | | 13 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|---|--|----|---------------------|
| no lease | | 13 | DHCP_POOL |
| no lldp holdtime | | 15 | GLOBAL_CONFIG |
| no lldp med datum | | 15 | GLOBAL_CONFIG |
| no lldp med fast | | 15 | GLOBAL_CONFIG |
| no lldp med location-tlv altitude | Use the lldp med location-tlv altitude to configure the location altitude. | 15 | GLOBAL_CONFIG |
| no lldp med location-tlv civic-addr { country state county city district block street leading-street-direction trailing-street-suffix street-suffix house-no house-no-suffix landmark additional-info name zip-code building apartment floor room-number place-type postal-community-name p-o-box additional-code } | | 15 | GLOBAL_CONFIG |
| no lldp med location-tlv elin-addr | Use the no lldp med location-tlv elin-addr to configure value for the Emergency Call Service to default value. | 15 | GLOBAL_CONFIG |
| no lldp med location-tlv latitude | Use no lldp med location-tlv latitude to configure the latitude location to north 0 degrees. | 15 | GLOBAL_CONFIG |
| no lldp med location-tlv longitude | Use no lldp med location-tlv longitude to configure the longitude location to north 0 degrees. | 15 | GLOBAL_CONFIG |
| no lldp med media-vlan-policy <0~31> | | 15 | GLOBAL_CONFIG |
| no lldp med transmit-tlv [capabilities] [location] [network-policy] | | 15 | INTERFACE_PORT_LIST |
| no lldp reinit | Sets LLDP reinitialization delay. | 15 | GLOBAL_CONFIG |
| no lldp timer | | 15 | GLOBAL_CONFIG |
| no lldp transmission-delay | | 15 | GLOBAL_CONFIG |
| no logging host | Use the no logging host global configuration command to clear the host address of logging server. | 15 | GLOBAL_CONFIG |
| no loop-protect action | | 15 | INTERFACE_PORT_LIST |
| no loop-protect shutdown-time | | 15 | GLOBAL_CONFIG |
| no loop-protect transmit-time | | 15 | GLOBAL_CONFIG |
| no mac address-table aging-time | Default aging time. | 15 | GLOBAL_CONFIG |
| no media-type | Use to configure the interface media-type type to default. | 15 | INTERFACE_PORT_LIST |
| no monitor destination | Sets monitor destination port. | 15 | GLOBAL_CONFIG |
| no monitor source {{ interface <port_type_list> } } { cpu [<range_list>] } | Sets monitor source port(s). | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|---|--|----|---------------------|
| no mtu | Use no mtu to set maximum frame size to default. | 15 | INTERFACE_PORT_LIST |
| no mvr name <word16> channel | | 15 | GLOBAL_CONFIG |
| no mvr name <word16> frame priority | | 15 | GLOBAL_CONFIG |
| no mvr name <word16> igmp-address | | 15 | GLOBAL_CONFIG |
| no mvr name <word16> last-member-query-interval | | 15 | GLOBAL_CONFIG |
| no mvr name <word16> mode | | 15 | GLOBAL_CONFIG |
| no mvr name <word16> type | | 15 | INTERFACE_PORT_LIST |
| no mvr vlan <vlan_list> | | 15 | GLOBAL_CONFIG |
| no mvr vlan <vlan_list> channel | | 15 | GLOBAL_CONFIG |
| no mvr vlan <vlan_list> frame priority | | 15 | GLOBAL_CONFIG |
| no mvr vlan <vlan_list> igmp-address | | 15 | GLOBAL_CONFIG |
| no mvr vlan <vlan_list> last-member-query-interval | | 15 | GLOBAL_CONFIG |
| no mvr vlan <vlan_list> mode | | 15 | GLOBAL_CONFIG |
| no mvr vlan <vlan_list> type | | 15 | INTERFACE_PORT_LIST |
| no name | The no form of this command will restore the VLAN name to its default. | 13 | CONFIG_VLAN |
| no netbios-name-server | | 13 | DHCP_POOL |
| no netbios-node-type | | 13 | DHCP_POOL |
| no netbios-scope | | 13 | DHCP_POOL |
| no network | | 13 | DHCP_POOL |
| no network-clock clk-source <range_list> aneg-mode | | 15 | GLOBAL_CONFIG |
| no network-clock clk-source <range_list> hold-timeout | | 15 | GLOBAL_CONFIG |
| no network-clock clk-source <range_list> nominate | | 15 | GLOBAL_CONFIG |
| no network-clock clk-source <range_list> priority | | 15 | GLOBAL_CONFIG |
| no network-clock clk-source <range_list> ssm-overwrite | | 15 | GLOBAL_CONFIG |
| no network-clock input-source | | 15 | GLOBAL_CONFIG |
| no network-clock option | | 15 | GLOBAL_CONFIG |
| no network-clock output-source | | 15 | GLOBAL_CONFIG |
| no network-clock selector | | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|---|----|---------------------|
| no network-clock ssm-freerun | | 15 | GLOBAL_CONFIG |
| no network-clock ssm-holdover | | 15 | GLOBAL_CONFIG |
| no network-clock wait-to-restore | | 15 | GLOBAL_CONFIG |
| no nis-domain-name | | 13 | DHCP_POOL |
| no nis-server | | 13 | DHCP_POOL |
| no ntp-server | | 13 | DHCP_POOL |
| no platform phy instance | | 15 | GLOBAL_CONFIG |
| no poe delay-mode <range_list> | | 15 | GLOBAL_CONFIG |
| no poe Fri | This command is used to set hour time on Friday to disable PoE. | 15 | INTERFACE_PORT_LIST |
| no poe hour <0-23> | This command is used to set hour time per week to disable PoE. | 15 | INTERFACE_PORT_LIST |
| no poe management mode | | 15 | GLOBAL_CONFIG |
| no poe mode | Use poe mode to configure of PoE mode. | 15 | INTERFACE_PORT_LIST |
| no poe Mon | This command is used to set hour time on Monday to disable PoE. | 15 | INTERFACE_PORT_LIST |
| no poe power limit | Use poe power limit to configure the maximum allowed power for the interface when power management is in allocation mode. | 15 | INTERFACE_PORT_LIST |
| no poe priority | Use poe priority to configure PoE priority. | 15 | INTERFACE_PORT_LIST |
| no poe Sat | This command is used to set hour time on Saturday to disable PoE. | 15 | INTERFACE_PORT_LIST |
| no poe schedule-all <range_list> | disable PoE power management method. | 15 | GLOBAL_CONFIG |
| no poe schedule-mode | disable PoE power management method. | 15 | INTERFACE_PORT_LIST |
| no poe Sun | This command is used to set hour time on Sunday to disable PoE. | 15 | INTERFACE_PORT_LIST |
| no poe supply [sid <1~16>] | | 15 | GLOBAL_CONFIG |
| no poe Thr | This command is used to set hour time on Thursday to enable PoE. | 15 | INTERFACE_PORT_LIST |
| no poe Tue | This command is used to set hour time on Tuesday to disable PoE. | 15 | INTERFACE_PORT_LIST |
| no poe Wed | This command is used to set hour time on Wednesday to disable PoE. | 15 | INTERFACE_PORT_LIST |
| no port-security aging time | | 15 | GLOBAL_CONFIG |
| no port-security maximum | | 15 | INTERFACE_PORT_LIST |
| no port-security shutdown [interface <port_type_list>] | Reopen one or more ports whose limit is exceeded and shut down. | 15 | EXEC |
| no port-security violation | The action involved with exceeding the limit. | 15 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|---|---|----|---------------------|
| no qos cos | | 15 | INTERFACE_PORT_LIST |
| no qos dei | | 15 | INTERFACE_PORT_LIST |
| no qos dpl | | 15 | INTERFACE_PORT_LIST |
| no qos dscp-classify | | 15 | INTERFACE_PORT_LIST |
| no qos dscp-remark | | 15 | INTERFACE_PORT_LIST |
| no qos map cos-dscp <0~7> dpl <0~1> | | 15 | GLOBAL_CONFIG |
| no qos map cos-tag cos <0~7> dpl <0~1> | | 15 | INTERFACE_PORT_LIST |
| no qos map dscp-cos { <0~63> <dscp> } | | 15 | GLOBAL_CONFIG |
| no qos map dscp-egress-translation { <0~63> <dscp> } <0~1> | | 15 | GLOBAL_CONFIG |
| no qos map dscp-ingress-translation { <0~63> <dscp> } | | 15 | GLOBAL_CONFIG |
| no qos map tag-cos pcp <0~7> dei <0~1> | | 15 | INTERFACE_PORT_LIST |
| no qos pcp | | 15 | INTERFACE_PORT_LIST |
| no qos policer | | 15 | INTERFACE_PORT_LIST |
| no qos qce { [addr] [key] } *1 | | 15 | INTERFACE_PORT_LIST |
| no qos qce <'QCE_ID_START'~'QCE_ID_END'> | | 15 | GLOBAL_CONFIG |
| no qos queue-policer queue <0~7> | | 15 | INTERFACE_PORT_LIST |
| no qos queue-shaper queue <0~7> | | 15 | INTERFACE_PORT_LIST |
| no qos shaper | | 15 | INTERFACE_PORT_LIST |
| no qos storm { unicast broadcast unknown } | | 15 | INTERFACE_PORT_LIST |
| no qos storm { unicast multicast broadcast } | | 15 | GLOBAL_CONFIG |
| no qos tag-remark | | 15 | INTERFACE_PORT_LIST |
| no qos wred queue <0~5> | | 15 | GLOBAL_CONFIG |
| no qos wrr | | 15 | INTERFACE_PORT_LIST |
| no radius-server attribute 32 | | 15 | GLOBAL_CONFIG |
| no radius-server attribute 4 | | 15 | GLOBAL_CONFIG |
| no radius-server attribute 95 | | 15 | GLOBAL_CONFIG |
| no radius-server deadline | Use the no radius-server deadline command to reset the global RADIUS deadline value to default. | 15 | GLOBAL_CONFIG |
| no radius-server host <word1-255> [auth-port <0-65535>] [acct-port <0-65535>] | Use the no radius-server host command to delete an existing RADIUS host. | 15 | GLOBAL_CONFIG |
| no radius-server key | Use the no radius-server key command to remove the global RADIUS key. | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|---|---|----|---------------------|
| no radius-server retransmit | Use the no radius-server retransmit command to reset the global RADIUS retransmit value to default. | 15 | GLOBAL_CONFIG |
| no radius-server timeout | Use the no radius-server timeout command to reset the global RADIUS timeout value to default. | 15 | GLOBAL_CONFIG |
| no rmon alarm <1-65535> | | 15 | GLOBAL_CONFIG |
| no rmon collection history <1-65535> | | 15 | INTERFACE_PORT_LIST |
| no rmon collection stats <1-65535> | | 15 | INTERFACE_PORT_LIST |
| no rmon event <1-65535> | | 15 | GLOBAL_CONFIG |
| no sflow agent-ip | Sets the agent IP address used as agent-address in UDP datagrams to 127.0.0.1. | 15 | GLOBAL_CONFIG |
| no sflow collector-address [receiver <range_list>] | | 15 | GLOBAL_CONFIG |
| no sflow collector-port [receiver <range_list>] | Collector UDP port. Valid range is 0-65536. | 15 | GLOBAL_CONFIG |
| no sflow counter-poll-interval [<range_list>] | The interval - in seconds - between counter poller samples. | 15 | INTERFACE_PORT_LIST |
| no sflow max-datagram-size [receiver <range_list>] | Maximum datagram size. | 15 | GLOBAL_CONFIG |
| no sflow max-sampling-size [sampler <range_list>] | Specifies the maximum number of bytes to transmit per flow sample. | 15 | INTERFACE_PORT_LIST |
| no sflow timeout [receiver <range_list>] | Receiver timeout measured in seconds. The switch decrements the timeout once per second, and as long as it is non-zero, the receiver receives samples. Once the timeout reaches 0, the receiver and all its configuration is reset to defaults. | 15 | GLOBAL_CONFIG |
| no snmp-server access <word32> model { v1 v2c v3 any } level { auth noauth priv } | | 15 | GLOBAL_CONFIG |
| no snmp-server community v2c | | 15 | GLOBAL_CONFIG |
| no snmp-server community v3 <word127> | | 15 | GLOBAL_CONFIG |
| no snmp-server contact | To clear the system contact string. | 15 | GLOBAL_CONFIG |
| no snmp-server engine-id local | To set SNMP server's engine ID to default value. | 15 | GLOBAL_CONFIG |
| no snmp-server host <word32> | | 15 | GLOBAL_CONFIG |
| no snmp-server host <word32> traps | | 15 | INTERFACE_PORT_LIST |
| no snmp-server location | To specify the system location string. | 15 | GLOBAL_CONFIG |
| no snmp-server security-to-group model { v1 v2c v3 } name <word32> | | 15 | GLOBAL_CONFIG |
| no snmp-server user <word32> engine-id <word10-32> | | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|---|--|----|---------------------|
| no snmp-server version | Set SNMP server's version to default setting. | 15 | GLOBAL_CONFIG |
| no snmp-server view <word32> <word255> | | 15 | GLOBAL_CONFIG |
| no spanning-tree link-type | | 15 | INTERFACE_PORT_LIST |
| no spanning-tree link-type | | 15 | STP_AGGR |
| no spanning-tree mode | | 15 | GLOBAL_CONFIG |
| no spanning-tree mst <0-7> cost | | 15 | INTERFACE_PORT_LIST |
| no spanning-tree mst <0-7> cost | | 15 | STP_AGGR |
| no spanning-tree mst <0-7> port-priority | | 15 | INTERFACE_PORT_LIST |
| no spanning-tree mst <0-7> port-priority | | 15 | STP_AGGR |
| no spanning-tree mst <0-7> priority | | 15 | GLOBAL_CONFIG |
| no spanning-tree mst <0-7> vlan | | 15 | GLOBAL_CONFIG |
| no spanning-tree mst forward-time | | 15 | GLOBAL_CONFIG |
| no spanning-tree mst max-age | | 15 | GLOBAL_CONFIG |
| no spanning-tree mst max-hops | | 15 | GLOBAL_CONFIG |
| no spanning-tree mst name | | 15 | GLOBAL_CONFIG |
| no spanning-tree recovery interval | | 15 | GLOBAL_CONFIG |
| no spanning-tree transmit hold-count | | 15 | GLOBAL_CONFIG |
| no speed | Use ""no speed"" to configure interface to default speed. | 15 | INTERFACE_PORT_LIST |
| no switchport access vlan | | 13 | INTERFACE_PORT_LIST |
| no switchport forbidden vlan | Allows for adding VLANs to an interface | 15 | INTERFACE_PORT_LIST |
| no switchport hybrid acceptable-frame-type | Set hybrid characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| no switchport hybrid allowed vlan | Set hybrid characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| no switchport hybrid egress-tag | Set hybrid characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| no switchport hybrid native vlan | Set hybrid mode characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| no switchport hybrid port-type | Set hybrid characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| no switchport mode | | 13 | INTERFACE_PORT_LIST |
| no switchport trunk allowed vlan | Set trunk characteristics of the interface, | 13 | INTERFACE_PORT_LIST |
| no switchport trunk native vlan | Set trunk mode characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| no switchport vlan ip-subnet id <1~128> | | 13 | INTERFACE_PORT_LIST |
| no switchport voice vlan discovery-protocol | Use the no switchport voice vlan discovery-protocol interface configuration command to restore the default switchport voice vlan discovery-protocol. | 15 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|--|--|----|---------------------|
| no switchport voice vlan mode | Use the no switchport voice vlan mode interface configuration command to restore the default switchport voice vlan mode. | 15 | INTERFACE_PORT_LIST |
| no switch stack <1-16> | | 13 | GLOBAL_CONFIG |
| no system contact | To clear the system contact string. | 15 | GLOBAL_CONFIG |
| no system location | To specify the system location string. | 15 | GLOBAL_CONFIG |
| no system name | To specify the system model name string. | 15 | GLOBAL_CONFIG |
| no tacacs-server deadtime | Use the no tacacs-server deadtime command to reset the global TACACS+ deadtime value to default. | 15 | GLOBAL_CONFIG |
| no tacacs-server host <word1-255> [port <0-65535>] | Use the no tacacs-server host command to delete an existing TACACS+ host. | 15 | GLOBAL_CONFIG |
| no tacacs-server key | Use the no tacacs-server key command to remove the global TACACS+ key. | 15 | GLOBAL_CONFIG |
| no tacacs-server timeout | Use the no tacacs-server timeout command to reset the global TACACS+ timeout value to default. | 15 | GLOBAL_CONFIG |
| no thermal-protect port-prio | Sets temperature at which to turn ports with the corresponding priority off. | 15 | INTERFACE_PORT_LIST |
| no thermal-protect prio <0~3> | Sets temperature at which to turn ports with the corresponding priority off. | 15 | GLOBAL_CONFIG |
| no traps | | 15 | SNMPS_HOST |
| no upnp advertising-duration | | 15 | GLOBAL_CONFIG |
| no upnp ttl | | 15 | GLOBAL_CONFIG |
| no username <word31> | Use the no username <username> global configuration command to delete a local user. | 15 | GLOBAL_CONFIG |
| no vendor class-identifier <string64> | | 13 | DHCP_POOL |
| no version | | 15 | SNMPS_HOST |
| no vlan {{ethertype s-custom-port} <vlan_list>} | | 15 | GLOBAL_CONFIG |
| no voice vlan aging-time | Use the no voice vlan aging-time global configuration command to restore the default voice vlan aging-time. | 15 | GLOBAL_CONFIG |
| no voice vlan class | Use the no voice vlan class global configuration command to restore the default voice vlan class. | 15 | GLOBAL_CONFIG |
| no voice vlan oui <oui> | Use the no voice vlan oui global configuration command to delete the oui entry. | 15 | GLOBAL_CONFIG |
| no voice vlan vid | Use the no voice vlan vid global configuration command to restore the default voice vlan vid. | 15 | GLOBAL_CONFIG |
| no web privilege group [<word>] level | | 15 | GLOBAL_CONFIG |
| ntp | Enable NTP | 13 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|---|---|----|---------------------|
| ntp server <1-5> ip-address {<ipv4_ucast> <hostname>} | | 13 | GLOBAL_CONFIG |
| ntp server <1-5> ip-address {<ipv4_ucast> <ipv6_ucast> <hostname>} | | 13 | GLOBAL_CONFIG |
| ntp-server <ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast> [<ipv4_ucast>]]] | | 13 | DHCP_POOL |
| password encrypted <word4-44> | Use the password encrypted <password> global configuration command to configure administrator password with encrypted password for the local switch access. | 15 | GLOBAL_CONFIG |
| password none | Use the password none global configuration command to remove the administrator password. | 15 | GLOBAL_CONFIG |
| password unencrypted <line31> | Use the password encrypted <password> global configuration command to configure administrator password with unencrypted password for the local switch access. | 15 | GLOBAL_CONFIG |
| ping ip <word1-255> [repeat <1-60>] [size <2-1452>] [interval <0-30>] | | 0 | EXEC |
| platform phy failover | | 15 | INTERFACE_PORT_LIST |
| platform phy instance default-activate | | 15 | EXEC |
| platform phy instance restart { cool warm } | | 15 | EXEC |
| poE delay-mode <range_list> | Configure PoE Power Delay mode. | 15 | GLOBAL_CONFIG |
| poE delay-time <range_list> <0-300> | Configure PoE Power Delay time. | 15 | GLOBAL_CONFIG |
| poE Fri | This command is used to set hour time on Friday to enable PoE. | 15 | INTERFACE_PORT_LIST |
| poE hour <0-23> | This command is used to set hour time per week to enable PoE. | 15 | INTERFACE_PORT_LIST |
| poE management mode { class-consumption class-reserved-power allocation-consumption allocation-reserved-power lldp-consumption lldp-reserved-power } | Use management mode to configure PoE power management method. | 15 | GLOBAL_CONFIG |
| poE mode { standard plus } | Use poE mode to configure of PoE mode. | 15 | INTERFACE_PORT_LIST |
| poE Mon | This command is used to set hour time on Monday to enable PoE. | 15 | INTERFACE_PORT_LIST |
| poE power limit { <fword2.1> } | Use poE power limit to configure the maximum allowed power for the interface when power management is in allocation mode. | 15 | INTERFACE_PORT_LIST |
| poE priority { low high critical } | Use poE priority to configure PoE priority. | 15 | INTERFACE_PORT_LIST |
| poE Sat | This command is used to set hour time on Saturday to enable PoE. | 15 | INTERFACE_PORT_LIST |
| poE schedule-mode | Configure PoE Schedule mode. | 15 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|--|--|----|---------------------|
| poe select-all <range_list> | Configure PoE Schedule mode. | 15 | GLOBAL_CONFIG |
| poe Sun | This command is used to set hour time on Sunday to enable PoE. | 15 | INTERFACE_PORT_LIST |
| poe supply sid <1~16> <1-2000> | Use poe supply to specify the maximum power the power supply can deliver. | 15 | GLOBAL_CONFIG |
| poe Thr | This command is used to set hour time on Thursday to enable PoE. | 15 | INTERFACE_PORT_LIST |
| poe Tue | This command is used to set hour time on Tuesday to enable PoE. | 15 | INTERFACE_PORT_LIST |
| poe Wed | This command is used to set hour time on Wednesday to enable PoE. | 15 | INTERFACE_PORT_LIST |
| port-security | Enable/disable port security globally. | 15 | GLOBAL_CONFIG |
| port-security | Enable/disable port security per interface. | 15 | INTERFACE_PORT_LIST |
| port-security aging | Enable/disable port security aging. | 15 | GLOBAL_CONFIG |
| port-security aging time <10-10000000> | Time in seconds between check for activity on learned MAC addresses. | 15 | GLOBAL_CONFIG |
| port-security maximum [<1-1024>] | Maximum number of MAC addresses that can be learned on this set of interfaces. | 15 | INTERFACE_PORT_LIST |
| port-security violation { protect trap trap-shutdown shutdown } | The action involved with exceeding the limit. | 15 | INTERFACE_PORT_LIST |
| pvlan <range_list> | Use the pvlan add or remove command to add or remove a port from a PVLAN. | 13 | INTERFACE_PORT_LIST |
| pvlan isolation | Use the pvlan isolation command to add the port into an isolation group. | 13 | INTERFACE_PORT_LIST |
| qos cos <0-7> | | 15 | GLOBAL_CONFIG |
| qos dei <0-1> | | 15 | INTERFACE_PORT_LIST |
| qos dpl <dpl> | | 15 | INTERFACE_PORT_LIST |
| qos dscp-classify { zero selected any } | | 15 | INTERFACE_PORT_LIST |
| qos dscp-remark { rewrite remap remap-dp } | | 15 | INTERFACE_PORT_LIST |
| qos dscp-translate | | 15 | INTERFACE_PORT_LIST |
| qos map cos-dscp <0~7> dpl <0~1> dscp { <0-63> <dscp> } | | 15 | GLOBAL_CONFIG |
| qos map cos-tag cos <0~7> dpl <0~1> pcp <0-7> dei <0-1> | | 15 | INTERFACE_PORT_LIST |
| qos map dscp-classify { <0~63> <dscp> } | | 15 | GLOBAL_CONFIG |
| qos map dscp-cos { <0~63> <dscp> } cos <0-7> dpl <dpl> | | 15 | GLOBAL_CONFIG |
| qos map dscp-egress-translation { <0~63> <dscp> } <0~1> to { <0-63> <dscp> } | | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|-------------|----|---------------------|
| qos map dscp-ingress-translation { <0~63> <dscp> } to { <0-63> <dscp> } | | 15 | GLOBAL_CONFIG |
| qos map tag-cos pcp <0~7> dei <0~1> cos <0-7> dpl <dpl> | | 15 | INTERFACE_PORT_LIST |
| qos pcp <0-7> | | 15 | INTERFACE_PORT_LIST |
| qos policer <uint> [fps] [flowcontrol] | | 15 | INTERFACE_PORT_LIST |
| qos qce { [addr { source destination }] [key { double-tag normal ip-addr mac-ip-addr }] }*1 | | 15 | INTERFACE_PORT_LIST |
| qos qce { [update] } <uint> [{ next <uint> } last] [interface <port_type_list>] [smac { <mac_addr> <oui> any }] [dmac { <mac_addr> unicast multicast broadcast any }] [tag { [type { untagged tagged c-tagged s-tagged any }] [vid { <vcap_vr> any }] [pcp { <pcp> any }] [dei { <0-1> any }] }*1] [inner-tag { [type { untagged tagged c-tagged s-tagged any }] [vid { <vcap_vr> any }] [pcp { <pcp> any }] [dei { <0-1> any }] }*1] [frame-type { any } { etype [{ <0x600-0x7ff,0x801-0x86dc,0x86de-0xffff> any }] } llc [dsap { <0-0xff> any }] [ssap { <0-0xff> any }] [control { <0-0xff> any }] } { snap [{ <0-0xffff> any }] } { ipv4 [proto { <0-255> tcp udp any }] [sip { <ipv4_subnet> any }] [dip { <ipv4_subnet> any }] [dscp { <vcap_vr> <dscp> any }] [fragment { yes no any }] [sport { <vcap_vr> any }] [dport { <vcap_vr> any }] } { ipv6 [proto { <0-255> tcp udp any }] [sip { <ipv4_subnet> any }] [dip { <ipv4_subnet> any }] [dscp { <vcap_vr> <dscp> any }] [sport { <vcap_vr> any }] [dport { <vcap_vr> any }] } }] [action { [cos { <0-7> default }] [dpl { <0-1> default }] [pcp-dei { <0-7> <0-1> default }] [dscp { <0-63> <dscp> default }] [policy { <uint> default }] }*1] | | 15 | GLOBAL_CONFIG |
| qos qce refresh | | 15 | GLOBAL_CONFIG |
| qos queue-policer queue <0~7> <uint> | | 15 | INTERFACE_PORT_LIST |
| qos queue-policer queue <0~7> <uint> | | 15 | INTERFACE_PORT_LIST |
| qos queue-shaper queue <0~7> <uint> [excess] | | 15 | INTERFACE_PORT_LIST |
| qos shaper <uint> | | 15 | INTERFACE_PORT_LIST |
| qos storm { unicast broadcast unknown } <100-13200000> [fps] | | 15 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|---|---|----|---------------------|
| qos storm { unicast multicast broadcast } { { <1,2,4,8,16,32,64,128,256,512> [kfps] } { 1024 kfps } } | | 15 | GLOBAL_CONFIG |
| qos tag-remark { pcp <0-7> dei <0-1> mapped } | | 15 | INTERFACE_PORT_LIST |
| qos trust dscp | | 15 | INTERFACE_PORT_LIST |
| qos trust tag | | 15 | INTERFACE_PORT_LIST |
| qos wred queue <0~5> min-fl <0-100> max <1-100> [fill-level] | | 15 | GLOBAL_CONFIG |
| qos wred queue <0~5> min-th <0-100> mdp-1 <0-100> mdp-2 <0-100> mdp-3 <0-100> | | 15 | GLOBAL_CONFIG |
| qos wrr <1-100> <1-100> <1-100> <1-100> <1-100> <1-100> | | 15 | INTERFACE_PORT_LIST |
| radius-server attribute 32 <line1-253> | | 15 | GLOBAL_CONFIG |
| radius-server attribute 4 <ipv4_ucast> | | 15 | GLOBAL_CONFIG |
| radius-server attribute 95 <ipv6_ucast> | | 15 | GLOBAL_CONFIG |
| radius-server deadtime <1-1440> | Use the radius-server deadtime command to configure the global RADIUS deadtime value. | 15 | GLOBAL_CONFIG |
| radius-server host <word1-255> [auth-port <0-65535>] [acct-port <0-65535>] [timeout <1-1000>] [retransmit <1-1000>] [key <line1-63>] | Use the radius-server host command to add a new RADIUS host. | 15 | GLOBAL_CONFIG |
| radius-server key <line1-63> | Use the radius-server key command to configure the global RADIUS key. | 15 | GLOBAL_CONFIG |
| radius-server retransmit <1-1000> | Use the radius-server retransmit command to configure the global RADIUS retransmit value. | 15 | GLOBAL_CONFIG |
| radius-server timeout <1-1000> | Use the radius-server timeout command to configure the global RADIUS timeout value. | 15 | GLOBAL_CONFIG |
| reload { { cold warm } [sid <1-16>] } { defaults [keep-ip] [force] } | Reload system, either cold (reboot) or restore defaults without reboot. | 15 | EXEC |
| rmon alarm <1-65535> <word255> <1-2147483647> {absolute delta} rising-threshold <-2147483648-2147483647> [<0-65535>] falling-threshold <-2147483648-2147483647> [<0-65535>] {[rising falling both]} | | 15 | GLOBAL_CONFIG |
| rmon collection history <1-65535> [buckets <1-65535>] [interval <1-3600>] | | 15 | INTERFACE_PORT_LIST |
| rmon collection stats <1-65535> | | 15 | INTERFACE_PORT_LIST |
| rmon event <1-65535> [log] [trap <word127>] {[description <line127>]} | | 15 | GLOBAL_CONFIG |
| sflow [<range_list>] | Enables/disables flow sampling on this port. | 15 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|---|---|----|---------------------|
| sflow agent-ip {ipv4 <ipv4_addr> ipv6 <ipv6_addr>} | The agent IP address used as agent-address in UDP datagrams. Defaults to IPv4 loopback address. | 15 | GLOBAL_CONFIG |
| sflow collector-address [receiver <range_list>] [<word>] | Collector address | 15 | GLOBAL_CONFIG |
| sflow collector-port [receiver <range_list>] <1-65535> | Collector UDP port. Valid range is 0-65536. | 15 | GLOBAL_CONFIG |
| sflow counter-poll-interval [sampler <range_list>] [<1-3600>] | The interval - in seconds - between counter poller samples. | 15 | INTERFACE_PORT_LIST |
| sflow max-datagram-size [receiver <range_list>] <200-1468> | Maximum datagram size. | 15 | GLOBAL_CONFIG |
| sflow max-sampling-size [sampler <range_list>] [<14-200>] | Specifies the maximum number of bytes to transmit per flow sample. | 15 | INTERFACE_PORT_LIST |
| sflow sampling-rate [sampler <range_list>] [<1-4294967295>] | Specifies the statistical sampling rate. The sample rate is specified as N to sample 1/Nth of the packets in the monitored flows. There are no restrictions on the value, but the switch will adjust it to the closest possible sampling rate. | 15 | INTERFACE_PORT_LIST |
| sflow timeout [receiver <range_list>] <0-2147483647> | Receiver timeout measured in seconds. The switch decrements the timeout once per second, and as long as it is non-zero, the receiver receives samples. Once the timeout reaches 0, the receiver and all its configuration is reset to defaults. | 15 | GLOBAL_CONFIG |
| show aaa | Use the show aaa command to view the currently active authentication login methods. | 15 | GLOBAL_CONFIG |
| show access-list [interface [<port_type_list>]] [rate-limiter [<1~16>]] [ace statistics [<1~256>]] | Use the show access-list privilege EXEC command without keywords to display the access-list configuration, or particularly the show access-list interface for the access-list interface configuration, or use the rate-limiter keyword to display access-list rate-limiter configuration, or use the ace keyword to display access-list ace configuration. | 15 | EXEC |
| show access-list ace-status [static] [link-oam] [loop-protect] [dhcp] [upnp] [arp-inspection] [ipmc] [ip-source-guard] [ip-mgmt] [conflicts] [switch <switch_list>] | Use the show access-list ace-status privilege EXEC command without keywords to display the access-list ace status for all access-list users, or particularly the access-list user for the access-list ace status. Use conflicts keyword to display the access-list ace that doesn't apply on the hardware. In other word, it means the specific ACE is not applied to the hardware due to hardware limitations. | 15 | EXEC |
| show access management | Use the show access management user EXEC command without keywords to display the access management configuration, or use the statistics keyword to display statistics, or use | 15 | EXEC |

| Command | Description | P | Mode |
|--|---|----|---------------|
| | the <AccessId> keyword to display the specific access management entry. | | |
| show aggregation [mode] | | 15 | EXEC |
| show clock | Show running rmination | 0 | EXEC |
| show clock detail | | 0 | EXEC |
| show clock detail | | 0 | EXEC |
| show dot1x statistics { eapol radius all } [interface <port_type_list>] | Shows statistics for either eapol or radius. | 0 | EXEC |
| show dot1x statistics { eapol radius all } [interface <port_type_list>] | Shows statistics for either eapol or radius. | 0 | EXEC |
| show dot1x status [interface <port_type_list>] [brief] | Shows dot1x status, such as admin state, port state and last source. | 0 | EXEC |
| show green-ethernet [interface <port_type_list>] | Shows Green Ethernet status. | 15 | EXEC |
| show green-ethernet eee [interface <port_type_list>] | Shows Green Ethernet EEE status. | 15 | EXEC |
| show green-ethernet energy-detect [interface <port_type_list>] | Shows Green Ethernet energy-detect status. | 15 | EXEC |
| show green-ethernet fan | Shows Fan status (chip Temperature and fan speed). | 15 | GLOBAL_CONFIG |
| show green-ethernet short-reach [interface <port_type_list>] | Shows Green Ethernet short-reach status. | 15 | EXEC |
| show interface <port_type_list> capabilities | | 0 | EXEC |
| show interface <port_type_list> statistics [{ packets bytes errors discards filtered { priority [<0~7>] } }] [{ up down }] | Shows the statistics for the interface. | 0 | EXEC |
| show interface <port_type_list> status | Display status for the interface. | 0 | EXEC |
| show interface <port_type_list> switchport [access trunk hybrid] | Use the how interfaces command to display the administrative and operational status of all interfaces or a specified interface. | 0 | EXEC |
| show interface <port_type_list> verify | Run and display cable diagnostics. | 0 | EXEC |
| show interface vlan [<vlan_list>] | Vlan interface status | 15 | EXEC |
| show ip arp | Print ARP table | 0 | EXEC |
| show ip arp inspection [interface <port_type_list> vlan <vlan_list>] | | 0 | EXEC |
| show ip arp inspection entry [dhcp-snooping static] [interface <port_type_list>] | | 13 | EXEC |
| show ip dhcp detailed statistics { server client snooping relay normal-forward combined } [interface <port_type_list>] | Use the show ip dhcp detailed statistics user EXEC command to display statistics. Notice that the normal forward per-port TX statistics isn't increased if the incoming DHCP packet is done | 0 | EXEC |

| Command | Description | P | Mode |
|---|--|----|------|
| | by L3 forwarding mechanism. Notice that the normal forward per-port TX statistics isn't increased if the incoming DHCP packet is done by L3 forwarding mechanism. | | |
| show ip dhcp excluded-address | | 0 | EXEC |
| show ip dhcp pool [<word32>] | | 0 | EXEC |
| show ip dhcp relay [statistics] | Use the show ip dhcp relay user EXEC command without keywords to display the DHCP relay configuration, or use the statistics keyword to display statistics. | 0 | EXEC |
| show ip dhcp server | | 0 | EXEC |
| show ip dhcp server binding [state {allocated committed expired}] [type {automatic manual expired}] | | 0 | EXEC |
| show ip dhcp server binding <ipv4_ucast> | | 0 | EXEC |
| show ip dhcp server declined-ip | | 0 | EXEC |
| show ip dhcp server declined-ip <ipv4_addr> | | 0 | EXEC |
| show ip dhcp server statistics | | 0 | EXEC |
| show ip dhcp snooping [interface <port_type_list>] | Use the show ip dhcp snooping user EXEC command to display the DHCP snooping configuration. | 0 | EXEC |
| show ip dhcp snooping [statistics] [interface <port_type_list>] | Use the show ip dhcp snooping user EXEC command without keywords to display the DHCP snooping configuration, or particularly the ip dhcp snooping statistics for the interface, or use the statistics keyword to display statistics. | 0 | EXEC |
| show ip dhcp snooping table | Use the show ip dhcp snooping table user EXEC command to display the IP assigned information that is obtained from DHCP server except for local VLAN interface IP addresses. | 15 | EXEC |
| show ip http server secure status | Use the show ip http server secure status privileged EXEC command to display the secure HTTP web server status. | 15 | EXEC |
| show ip igmp snooping [vlan <vlan_list>] [group-database [interface <port_type_list>] [sfm-information]] [detail] | | 0 | EXEC |
| show ip igmp snooping mrouter [detail] | | 0 | EXEC |
| show ip interface brief | Brief IP interface status | 0 | EXEC |
| show ip name-server | Display the active domain name server information | 0 | EXEC |
| show ip route | Routing table status | 0 | EXEC |
| show ip source binding [dhcp-snooping static] [interface <port_type_list>] | | 13 | EXEC |

| Command | Description | P | Mode |
|---|--|----|------|
| show ip ssh | Use the show ip ssh privileged EXEC command to display the SSH status. | 15 | EXEC |
| show ip statistics [system] [interface vlan <vlan_list>] [icmp] [icmp-msg <0~255>] | | 0 | EXEC |
| show ipv6 mld snooping [vlan <vlan_list>] [group-database [interface <port_type_list>] [sfm-information]] [detail] | | 0 | EXEC |
| show ipv6 mld snooping mrouter [detail] | | 0 | EXEC |
| show ip verify source [interface <port_type_list>] | | 0 | EXEC |
| show lacp { internal statistics system-id neighbour } | Show LACP configuration and status | 15 | EXEC |
| show lldp med media-vlan-policy [<0~31>] | Show media vlan policy(ies) | 0 | EXEC |
| show lldp med remote-device [interface <port_type_list>] | Show LLDP-MED neighbor device information. | 0 | EXEC |
| show lldp neighbors [interface <port_type_list>] | Shows the LLDP neighbors information. | 0 | EXEC |
| show lldp statistics [interface <port_type_list>] | Shows the LLDP statistics information. | 0 | EXEC |
| show logging [info] [warning] [error] [switch <switch_list>] | Use the show logging privileged EXEC command without keywords to display the logging configuration, or particularly the logging message summary for the logging level. | 15 | EXEC |
| show logging <1-4294967295> [switch <switch_list>] | Use the show logging privileged EXEC command with logging ID to display the detail logging message. OC_CMD_DEFAULT = | 15 | EXEC |
| show loop-protect [interface <port_type_list>] | | 13 | EXEC |
| show mac address-table [conf static aging-time { learning count } [interface <port_type_list>]] { address <mac_addr> [vlan <vlan_id>] } vlan <vlan_id> interface <port_type_list>] | | 0 | EXEC |
| show mvr [vlan <vlan_list> name <word16>] [group-database [interface <port_type_list>] [sfm-information]] [detail] | | 0 | EXEC |
| show network-clock | Show selector state. | 0 | EXEC |
| show ntp status | | 13 | EXEC |
| show platform phy [interface <port_type_list>] | Show PHY module's information for all or a given interface | 15 | EXEC |
| show platform phy failover | | 15 | EXEC |

6 CLI Command / Privilege Reference

| Command | Description | P | Mode |
|--|---|----|------|
| show platform phy id [interface <port_type_list>] | Platform PHY's IDs | 15 | EXEC |
| show platform phy instance | | 15 | EXEC |
| show platform phy status [interface <port_type_list>] | | 15 | EXEC |
| show poe [interface <port_type_list>] | Use the show poe to show PoE status. | 0 | EXEC |
| show port-security port [interface <port_type_list>] | Show MAC Addresses learned by Port Security | 0 | EXEC |
| show port-security switch [interface <port_type_list>] | Show Port Security status. | 0 | EXEC |
| show pvlan [<range_list>] | Use the show pvlan command to view the PVLAN configuration. | 13 | EXEC |
| show pvlan isolation [interface <port_type_list>] | Use the show pvlan isolation command to view the PVLAN isolation configuration. | 13 | EXEC |
| show qos [{ interface [<port_type_list>] } wred [{ maps [dscp-cos] [dscp-ingress-translation] [dscp-classify] [cos-dscp] [dscp-egress-translation] }] storm [{ qce [<1-256>] }] | | 15 | EXEC |
| show radius-server [statistics] | Use the show radius-server command to view the current RADIUS configuration and statistics. | 15 | EXEC |
| show rmon alarm [<1~65535>] | | 15 | EXEC |
| show rmon event [<1~65535>] | | 15 | EXEC |
| show rmon history [<1~65535>] | | 15 | EXEC |
| show rmon statistics [<1~65535>] | | 15 | EXEC |
| show running-config [all-defaults] | | 15 | EXEC |
| show running-config feature <word> [all-defaults] | | 15 | EXEC |
| show running-config interface <port_type_list> [all-defaults] | | 15 | EXEC |
| show running-config interface vlan <vlan_list> [all-defaults] | | 15 | EXEC |
| show running-config line vty <range_list> [all-defaults] | | 15 | EXEC |
| show running-config vlan <vlan_list> [all-defaults] | | 15 | EXEC |
| show sflow | Use show sflow to display the current sFlow configuration. | 0 | EXEC |
| show sflow statistics { receiver [<range_list>] samplers [interface <range_list> <port_type_list>]} | Use sflow statistics to show statistics for either receiver or sample interface. | 0 | EXEC |

| Command | Description | P | Mode |
|---|--|----|------|
| show smtp | Email information | 0 | EXEC |
| show snmp | | 15 | EXEC |
| show snmp access [<word32> { v1 v2c v3 any } { auth noauth priv }] | | | |
| show snmp community v3 [<word127>] | | 15 | EXEC |
| show snmp host [<word32>] [system] [switch] [interface] [aaa] | | 15 | EXEC |
| show snmp mib context | Use the show snmp mib context user EXEC command to display the supported MIBs in the switch. | 15 | EXEC |
| show snmp mib ifmib ifIndex | Use the show snmp mib ifmib ifIndex user EXEC command to display the SNMP ifIndex(defined in IF-MIB) mapping information in the switch. | 15 | EXEC |
| show snmp mib redefine | Use the show snmp mib redefine user EXEC command to display the redefined MIBs in the switch, that are different definitions from the standard MIBs. | 15 | EXEC |
| show snmp security-to-group [{ v1 v2c v3 } <word32>] | | | |
| show snmp user [<word32> <word10-32>] | | | |
| show snmp view [<word32> <word255>] | | | |
| show spanning-tree [summary active { interface <port_type_list> } { detailed [interface <port_type_list>] } { mst [configuration { <0-7> [interface <port_type_list>] }] }] | | 15 | EXEC |
| show switchport forbidden [{vlan <vlan_id> } {name <word>}] | Lookup VLAN Forbidden port entry. | 0 | EXEC |
| show switch stack [details] | Show switch Detail information | 0 | EXEC |
| show system | Show system information | 0 | EXEC |
| show tacacs-server | Use the show tacacs-server command to view the current TACACS+ configuration. | 15 | EXEC |
| show thermal-protect [interface <port_type_list>] | Shows thermal protection status (chip temperature and port status). | 15 | EXEC |
| show upnp | | 15 | EXEC |
| show version | Use show version to display firmware information. | 0 | EXEC |
| show version | System hardware and software status | 0 | EXEC |
| show vlan [id <vlan_list> name <vword32> brief] | Use the show vlan command to view the VLAN configuration. | 13 | EXEC |
| show vlan ip-subnet [id <1-128>] | | 13 | EXEC |

| Command | Description | P | Mode |
|---|---|----|---------------------|
| show vlan mac [address <mac_ucast>] | | 13 | EXEC |
| show vlan protocol [eth2 {<0x600-0xffff> arp ip ipx at}] [snap {<0x0-0xffff> rfc-1042 snap-8021h} <0x0-0xffff>] [llc <0x0-0xff> <0x0-0xff>] | Use the switchport vlan protocol group command to add group to vlan mapping. | 13 | EXEC |
| show vlan status [interface <port_type_list>] [combined admin nas mvr voice-vlan mstp erps vcl evc grp all conflicts] | Use the show VLAN status command to view the VLANs configured for each interface. | 13 | EXEC |
| show voice vlan [oui <oui> interface <port_type_list>] | Use the show voice vlan privilege EXEC command without keywords to display the voice vlan configuration, or particularly switchport configuration for the interface, or use the oui keyword to display oui table. | 15 | EXEC |
| show web privilege group [<cword>] level | | 0 | EXEC |
| shutdown | Use shutdown to shutdown the interface. | 15 | INTERFACE_PORT_LIST |
| shutdown | | 15 | SNMPS_HOST |
| smtp delete { server username sender returnpath mailaddress <1-6> } | Delete email server | 15 | GLOBAL_CONFIG |
| smtp level <0-7> | | 15 | GLOBAL_CONFIG |
| smtp mailaddress <1-6> <word47> | Set email server | 15 | GLOBAL_CONFIG |
| smtp returnpath <word47> | | 15 | GLOBAL_CONFIG |
| smtp returnpath <word47> | | 15 | GLOBAL_CONFIG |
| smtp sender <word47> | | 15 | GLOBAL_CONFIG |
| smtp server <word47> | | 15 | GLOBAL_CONFIG |
| smtp username <word31> <word31> | | 15 | GLOBAL_CONFIG |
| snmp-server | Enable SNMP server. | 13 | GLOBAL_CONFIG |
| snmp-server access <word32> model { v1 v2c v3 any } level { auth noauth priv } [read <word255>] [write <word255>] | | 15 | GLOBAL_CONFIG |
| snmp-server community v2c <word127> [ro rw] | | 15 | GLOBAL_CONFIG |
| snmp-server community v3 <word127> [<ipv4_addr> <ipv4_netmask>] | | 15 | GLOBAL_CONFIG |
| snmp-server contact <line255> | To specify the system contact string. | 15 | GLOBAL_CONFIG |
| snmp-server engine-id local <word10-32> | To specify SNMP server's engine ID. | 13 | GLOBAL_CONFIG |
| snmp-server host <word32> traps [linkup] [linkdown] [lldp] | | 15 | INTERFACE_PORT_LIST |
| snmp-server location <line255> | To specify the system location string. | 15 | GLOBAL_CONFIG |
| snmp-server security-to-group model { v1 v2c v3 } name <word32> group <word32> | | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|--|---|----|---------------------|
| snmp-server trap | | 15 | GLOBAL_CONFIG |
| snmp-server user <word32> engine-id <word10-32> [{md5 <word8-32> sha <word8-40> } [priv { des aes } <word8-32>]] | | 15 | GLOBAL_CONFIG |
| snmp-server version { v1 v2c v3 } | Set the SNMP server version to SNMPv1, SNMPv2c or SNMPv3. | 15 | GLOBAL_CONFIG |
| snmp-server view <word32> <word255> { include exclude } | | 15 | GLOBAL_CONFIG |
| spanning-tree | | 15 | INTERFACE_PORT_LIST |
| spanning-tree | | 15 | STP_AGGR |
| spanning-tree auto-edge | | 15 | INTERFACE_PORT_LIST |
| spanning-tree auto-edge | | 15 | STP_AGGR |
| spanning-tree bpdu-guard | | 15 | INTERFACE_PORT_LIST |
| spanning-tree bpdu-guard | | 15 | STP_AGGR |
| spanning-tree edge | | 15 | INTERFACE_PORT_LIST |
| spanning-tree edge | | 15 | STP_AGGR |
| spanning-tree edge bpdu-filter | | 15 | GLOBAL_CONFIG |
| spanning-tree edge bpdu-guard | | 15 | GLOBAL_CONFIG |
| spanning-tree link-type { point-to-point shared auto } | | 15 | INTERFACE_PORT_LIST |
| spanning-tree link-type { point-to-point shared auto } | | 15 | STP_AGGR |
| spanning-tree mode { stp rstp mstp } | | 15 | GLOBAL_CONFIG |
| spanning-tree mst <0-7> cost { <1-200000000> auto } | | 15 | INTERFACE_PORT_LIST |
| spanning-tree mst <0-7> cost { <1-200000000> auto } | | 15 | STP_AGGR |
| spanning-tree mst <0-7> port-priority <0-240> | | 15 | INTERFACE_PORT_LIST |
| spanning-tree mst <0-7> port-priority <0-240> | | 15 | STP_AGGR |
| spanning-tree mst <0-7> priority <0-61440> | | 15 | GLOBAL_CONFIG |
| spanning-tree mst <0-7> vlan <vlan_list> | | 15 | GLOBAL_CONFIG |
| spanning-tree mst forward-time <4-30> | | 15 | GLOBAL_CONFIG |
| spanning-tree mst max-age <6-40> [forward-time <4-30>] | | 15 | GLOBAL_CONFIG |
| spanning-tree mst max-hops <6-40> | | 15 | GLOBAL_CONFIG |
| spanning-tree mst name <word32> revision <0-65535> | | 15 | GLOBAL_CONFIG |

| Command | Description | P | Mode |
|---|--|----|---------------------|
| spanning-tree recovery interval <30-86400> | | 15 | GLOBAL_CONFIG |
| spanning-tree restricted-role | | 15 | INTERFACE_PORT_LIST |
| spanning-tree restricted-role | | 15 | STP_AGGR |
| spanning-tree restricted-tcn | | 15 | INTERFACE_PORT_LIST |
| spanning-tree restricted-tcn | | 15 | STP_AGGR |
| spanning-tree transmit hold-count <1-10> | | 15 | GLOBAL_CONFIG |
| speed {2500 1000 100 10 auto {[10] [100] [1000]} } | Configures interface speed. If you use 10, 100, or 1000 keywords with the auto keyword the port will only advertise the specified speeds. | 15 | INTERFACE_PORT_LIST |
| switchport access vlan <vlan_id> | Use the switchport access vlan command to configure a port to a VLAN. Valid VLAN IDs are 1 to 4095. | 13 | INTERFACE_PORT_LIST |
| switchport forbidden vlan {add remove} <vlan_list> | Adds or removes forbidden VLANs from the current list of forbidden VLANs | 15 | INTERFACE_PORT_LIST |
| switchport hybrid acceptable-frame-type { all tagged untagged } | Set hybrid characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| switchport hybrid allowed vlan {all none [add remove except] <vlan_list>} | Set hybrid characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| switchport hybrid egress-tag {none all [except-native]} | Set hybrid characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| switchport hybrid ingress-filtering | Set hybrid characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| switchport hybrid native vlan <vlan_id> | Use the switchport native vlan command to configure a port VLAN ID for a hybrid port. | 13 | INTERFACE_PORT_LIST |
| switchport hybrid port-type { unaware c-port s-port s-custom-port } | Set hybrid characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| switchport mode {access trunk hybrid} | Use the switchport mode command to define the type of the port. | 13 | INTERFACE_PORT_LIST |
| switchport trunk allowed vlan {all none [add remove except] <vlan_list>} | Set trunk mode characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| switchport trunk native vlan <vlan_id> | Use the switchport native vlan command to configure a port VLAN ID for a trunk port. | 13 | INTERFACE_PORT_LIST |
| switchport trunk vlan tag native | Set trunk characteristics of the interface | 13 | INTERFACE_PORT_LIST |
| switchport vlan ip-subnet id <1-128> <ipv4_subnet> vlan <vlan_id> | | 13 | INTERFACE_PORT_LIST |
| switchport vlan mac <mac_ucast> vlan <vlan_id> | Use the switchport vlan mac command to associate a MAC address to VLAN ID. | 13 | INTERFACE_PORT_LIST |
| switchport vlan protocol group <word16> vlan <vlan_id> | Use the no form of this command to remove the group to vlan mapping. | 13 | INTERFACE_PORT_LIST |
| switchport voice vlan discovery-protocol {oui lldp both} | Use the switchport voice vlan discovery-protocol interface configuration command to configure to switchport voice vlan discovery-protocol. | 15 | INTERFACE_PORT_LIST |

| Command | Description | P | Mode |
|---|---|----|---------------------|
| switchport voice vlan mode { auto force disable } | Use the switchport voice vlan mode interface configuration command to configure to switchport voice vlan mode. | 15 | INTERFACE_PORT_LIST |
| switchport voice vlan security | Use the switchport voice vlan security interface configuration command to configure switchport voice vlan security mode. Use the no form of this command to globally disable switchport voice vlan security mode. | 15 | INTERFACE_PORT_LIST |
| system contact <line255> | To specify the system contact string. | 15 | GLOBAL_CONFIG |
| system location <line255> | To specify the system location string. | 15 | GLOBAL_CONFIG |
| system name <line255> | To specify the system mode name string. | 15 | GLOBAL_CONFIG |
| tacacs-server deadline <1-1440> | Use the tacacs-server deadline command to configure the global TACACS+ deadline value. | 15 | GLOBAL_CONFIG |
| tacacs-server host <word1-255> [port <0-65535>] [timeout <1-1000>] [key <line1-63>] | Use the tacacs-server host command to add a new TACACS+ host. | 15 | GLOBAL_CONFIG |
| tacacs-server key <line1-63> | Use the tacacs-server key command to configure the global TACACS+ key. | 15 | GLOBAL_CONFIG |
| tacacs-server timeout <1-1000> | Use the tacacs-server timeout command to configure the global TACACS+ timeout value. | 15 | GLOBAL_CONFIG |
| thermal-protect port-prio <0-3> | Sets temperature at which to turn ports with the corresponding priority off. | 15 | INTERFACE_PORT_LIST |
| thermal-protect prio <0~3> temperature <0-255> | Thermal protection configurations. | 15 | GLOBAL_CONFIG |
| traps [aaa authentication] [system [coldstart] [warmstart]] [switch [stp] [rmon]] | | 15 | SNMPS_HOST |
| upnp | | 15 | GLOBAL_CONFIG |
| upnp advertising-duration <100-86400> | | 15 | GLOBAL_CONFIG |
| upnp ttl <1-255> | | 15 | GLOBAL_CONFIG |
| username <word31> privilege <0-15> password encrypted <word4-44> | Use the username <username> privilege <level> password encrypted <password> global configuration command to add a user with encrypted password for the local switch access. | 15 | GLOBAL_CONFIG |
| username <word31> privilege <0-15> password none | Use the username <username> privilege <level> password none global configuration command to remove the password for specific username. | 15 | GLOBAL_CONFIG |
| username <word31> privilege <0-15> password unencrypted <line31> | Use the username <username> privilege <level> password unencrypted <password> global configuration command to add a user with unencrypted password for the local switch access. | 15 | GLOBAL_CONFIG |
| vendor class-identifier <string64> specific-info <hexval32> | | 13 | DHCP_POOL |

| Command | Description | P | Mode |
|--|---|----|---------------|
| version { v1 [<word127>] v2 [<word127>] v3 [probe engineID <word10-32>] [<word32>] } | | 15 | SNMPS_HOST |
| vlan ethertype s-custom-port <0x0600-0xffff> | | 13 | GLOBAL_CONFIG |
| vlan protocol {{eth2 {<0x600-0xffff> arp ip ipx at}} {snap {<0x0-0xffff> rfc-1042 snap-8021h} <0x0-0xffff> } {llc <0x0-0xff> <0x0-0xff> } } group <word16> | | 13 | GLOBAL_CONFIG |
| voice vlan | Use the voice vlan global configuration command to enable voice vlan. Use the no form of this command to globally disable voice vlan. | 15 | GLOBAL_CONFIG |
| voice vlan aging-time <10-10000000> | Use the voice vlan aging-time global configuration command to configure default voice vlan aging-time. | 15 | GLOBAL_CONFIG |
| voice vlan class { <0-7> low normal medium high } | Use the voice vlan class global configuration command to configure voice vlan class. | 15 | GLOBAL_CONFIG |
| voice vlan oui <oui> [description <line32>] | Use the voice vlan oui global configuration command to set the oui entry for voice vlan. | 15 | GLOBAL_CONFIG |
| voice vlan vid <vlan_id> | Use the voice vlan vid global configuration command to configure voice vlan vid. | 15 | GLOBAL_CONFIG |
| web privilege group <word> level { [cro <0-15>] [crw <0-15>] [sro <0-15>] [srw <0-15>] }*1 | | 15 | GLOBAL_CONFIG |