NETGEAR®

Lite CLI Reference Manual

Smart Switches with Optional Remote/Cloud Management

GS108Tv3 and GS110TPv3
GS308T and GS310TP
GS724TPv2 and GS724TPP
GS724TPv3 and GS724TPPv3
GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
GS728TPv3, GS728TPPv3, GS752TPv3, and GS752TPPv3
MS510TXM and MS510TXUP

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Trademarks

Revision History

Publication Part Number	Publish Date	Comments
202-12657-01	February 2023	Added support for the following switch models: • GS724TPv3 and GS724TPPv3 • GS728TPv3, GS728TPPv3, GS752TPv3, and GS752TPPv3
202-12599-01	February 2022	Added support for the following switch models and modified existing commands as needed: • GS108Tv3 and GS110TPv3 • GS308T and GS310TP • GS724TPv2 and GS724TPP • MS510TXM and MS510TXUP Added the following commands: • interface (for Multi-Gigabit switches) • speed (for Multi-Gigabit switches) • 10g-media • voice-vlan oui • voip act
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Table of Contents

How to Use the CLI

The command-line interface (CLI) is a text-based way to manage and monitor the system. You can access the CLI by using a direct serial connection, or by using a remote logical connection with telnet or SSH.

Command syntax

A command is one or more words that might be followed by one or more parameters. Parameters can be required or optional values.

Some commands, such as **show version** and **clear arp-cache**, do not require parameters. Other commands, such as **show interfaces** *id* [**status** | **protected**], require that you supply a value for the *id* parameter. You must type the parameter values in a specific order, and optional parameters follow required parameters. The following example describes the **show interfaces** *id* [**status** | **protected**] command syntax:

```
show interfaces id [status | protected]
```

- **show interfaces** is the command name.
- *id* is the parameter and represents a required value that you must enter after you type the command keywords.
- **status** and **protected** are optional and mutually exclusive keywords, so you are not required to enter a value in place of the keyword.

This manual lists each command by the command name and provides a brief description of the command ("Usage"). Each command reference also contains the following information:

- **Syntax**: The order of the command, the required and optional keywords, and the required and optional parameters.
- **Parameter**: The keywords and parameters with a description. The show commands also include a description of the information that the command shows.
- **Default**: The default value, if any, of a configurable setting on the device.
- **Mode**: The command mode you must be in to access the command.
- **Usage**: The usage and purpose of the command.
- **Example**: One or more command examples.

Command conventions

The parameters for a command might include mandatory values, optional values, or keyword choices. Parameters are order-dependent. The following table describes the conventions this manual uses to distinguish between value types.

Symbol	Example	Description
italic font	*value* or [*value*]	Indicates a variable value. You must replace the italicized text, which can be placed within curly brackets or square brackets, with an appropriate value, which might be a name or number.
[ ] square brackets	[keyword]	Indicates an optional parameter.
{ } curly braces	{choice1 | choice2}	Indicates that you must select a parameter from the list of choices.
| Vertical bars	choice1 | choice2	Separates the mutually exclusive choices.
[{ }] Braces within square brackets	[{choice1 | choice2}]	Indicates a choice within an optional element. This format is used mainly for complicated commands.

'no' form of a command

The **no** keyword is a specific form of an existing command and does not represent a new or distinct command. Almost every configuration command has a no form. In general, use the no form to reverse the action of a command or reset a value back to the default.
For example, the **no shutdown** configuration command reverses the shutdown of an interface. Use the command without the **no** keyword to reenable a disabled feature or to enable a feature that is disabled by default. Only the configuration commands are available in the no form.

'show' commands

All show commands can be issued from any configuration mode (Global Configuration, Interface Configuration, VLAN Configuration, etc.). The show commands provide information about system and feature-specific configuration, status, and statistics.

Access the CLI

You can access the CLI over a secure shell (SSH) connection from a computer that is directly connected to an Ethernet port on the switch or remotely connected to the same network that the switch is connected to.
You need to install an SSH client program on your computer. Examples of SSH clients are applications such as PuTTY and WinSCP, both of which are available on the Internet free of charge.
You cannot access the switch remotely until the it has an IP address, subnet mask, and default gateway configured. For information about setting up the switch, see the installation guide and user manual.

Command completion and abbreviation

Command completion finishes spelling the command when you have entered enough letters to uniquely identify the command. Once you have entered enough letters, press the SPACEBAR or TAB key to complete the word.

Command abbreviation allows you to execute a command when you have entered there are enough letters to uniquely identify the command. You must enter all of the required keywords and parameters before you enter the command.

CLI line-editing conventions

The following table describes the key combinations you can use to edit commands or increase the speed of command entry:

Key Sequence	Description
DEL or Backspace	Delete previous character.
Ctrl-A	Go to beginning of line.
Ctrl-E	Go to end of line.
Ctrl-F	Go forward one character.
Ctrl-B	Go backward one character.
Ctrl-D	Delete current character.
Ctrl-U	Delete to beginning of line.
Ctrl-K	Delete to end of line.
Ctrl-W	Delete the previous word.
Ctrl-P	Go to previous line in history buffer.
Ctrl-R	Searches backwards through the history for a string that is typed interactively.
Ctrl-N	Go to next line in history buffer.
Ctrl-Z	Return to root command prompt.
Tab	Command-line completion.
Exit	Go to next lower command prompt.
?	List available commands, keywords, or parameters.

CLI Modes and Common Commands

The CLI groups commands into modes according to the command function. Each of the command modes supports specific commands. The commands in one mode are not available until you enter that specific mode. The only exception are the User EXEC mode commands, which you execute in either the User EXEC mode or the Privileged EXEC mode.

The command prompt changes in each command mode to help you identify the current mode. The following table describes the command modes and the prompts visible in that mode.

Command Mode	Prompt	Mode Description
User Exec	Switch>	Contains a limited set of commands to view basic system information.
Privileged EXEC	Switch#	Lets you issue any EXEC command or enter the Global Configuration mode.
Global Configuration	Switch (config)#	Groups general setup commands and permits you to make modifications to the running configuration.
VLAN Configuration	Switch (config-vlan)#	Groups all the VLAN commands together.
Interface Configuration	Switch (config-if)#	Manages the operation of one or more interfaces, LAGs, or both.
Interface Range Configuration	Switch (config-if-range)#	Manages the operation of a range of interfaces or LAGs.
Line Configuration	Switch (config-line)#	Contains commands to configure SSH authentication.

How to enter or exit a command mode

The following table describes how to enter or exit each mode.

Command Mode	Access Method	Exit or Access Previous Mode
User Exec	From the Privileged EXEC mode, enter **exit**.	To return to the Privileged EXEC mode, enter **enable** and leave the password blank.

Privileged EXEC	This is the default mode when you log in to the CLI. If in User ECEX mode, enter **enable** and leave the password blank	To exit to the User EXEC mode, enter **exit**.
Global Configuration	From the Privileged EXEC mode, enter **configure**.	To exit to the Privileged EXEC mode, enter **exit**, or press **Ctrl-Z**.
VLAN Configuration	From the Global Configuration mode, enter **vlan** with a VLAN ID	To exit to the Global Configuration mode, enter **exit**. To return to the Privileged EXEC mode, enter **Ctrl-Z**.
Interface Configuration	From the Global Configuration mode, enter **interface** with an interface ID.	
Interface Range Configuration	From the Global Configuration mode, enter **interface range** with an interface range ID.	
Line Configuration	From the Global Configuration mode, enter **line ssh**.	

Common commands

When you log in to the CLI, you enter the Privileged EXEC mode, in which the CLI prompt displays as follows:

```
Switch#
```

The Privileged EXEC mode is the base mode from which you can enter other CLI modes.

enable

Syntax	enable
Parameter	
Default	No default value.
Mode	User EXEC
Usage	Use this command to enter Privileged EXEC mode. A password is not required. In Privileged EXEC mode, the prompt displays as follows with a number sign (#): `Switch#`

Example	This example shows how to enter Privileged EXEC mode (a password is not required):
	
	`Switch> enable`
	`Password:`
	`Switch#`

configure

Syntax	configure
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to enter Global Configuration mode, in which the CLI prompt displays as follows: `Switch(config)#`

Example	This example shows how to enter global configuration mode:
	
	`Switch# configure`
	`Switch(config)#`

vlan

Syntax	vlan *vlan-list*	
Parameter	*vlan-list*	The VLAN ID or list of IDs to be created. The *vlan-list* parameter represents a single VLAN ID (Example: 3), a range of VLAN IDs in which the IDs are separated by a hyphen (Example: 5-9), or a combination of both, in which the single IDs and ranges of IDs are separated by one or more commas (Example: 3,5-9,14,101-104). VLAN IDs can be from 1 to 4094.
Default	No default value.	

Mode	Global Configuration
Usage	Use this command to enter the VLAN Configuration mode, in which the CLI prompt displays as follows: `Switch(config-vlan)#`

Example	This example shows how to enter VLAN Configuration mode for VLANs 5 through 9 and VLAN 101:
	
	`Switch# configure`
	`Switch(config)# vlan 5-9,101`
	`Switch (config-vlan)#`

interface (for Gigabit switches)

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS308T and GS310TP
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP

Syntax	interface *id*	
Parameter	*id*	Specify the interface. The *id* parameter represents the interface number, allows a partial port name, and is not case-sensitive. For example, g1 or GigabitEthernet 2.
Default	No default value.	
Mode	Global Configuration	
Usage	Some configurations are interface-based, requiring you to enter Interface Configuration mode. Use this command to enter the Interface Configuration mode and select one or more interfaces to configure. In Interface Configuration mode, the prompt displays as follows: `Switch(config-if)#`	

Example	This example shows how to enter Interface Configuration mode for interface Gigabit Ethernet 1:
	
	`Switch# configure`
	`Switch(config)# interface GigabitEthernet 1`	

```
Switch(config-if)#
```

This example shows how to enter Interface Configuration mode for interface g2:

```
Switch# configure
Switch(config)# interface g2
Switch(config-if)#
```

interface (for Multi-Gigabit switches)

This command is supported on the MS510TXM and MS510TXUP. This command refers to the ports and their supported speeds as follows:

- MultiGigabitEthernet: Ports 1–4, supporting 2.5G, 1G, and 100M speed.
- XMultiGigabitEthernet: Ports 5–8, supporting 10G, 5G, 2.5G, 1G, and 100M speed.
- XGigabitEthernet: Ports 9 and 10, which are SFP+ fiber ports supporting 10G and 1G

Syntax	interface *id*	
Parameter	*id*	Specify the interface. The *id* parameter represents the interface number, allows a partial port name, and is not case-sensitive. For example, mg1 or MultiGigabitEthernet 2. The CLI supports three different port types for this switch: • MultiGigabitEthernet (or mg): Ports 1–4. • XMultiGigabitEthernet (or xmg): Ports 5–8. • XGigabitEthernet (xg): Ports 9 and 10. You can also specify a port range. For example, mg1-4, or xmg 5-8, or xg9,10.
Default	No default value.	
Mode	Global Configuration	
Usage	Some configurations are interface-based, requiring you to enter Interface Configuration mode. Use this command to enter the Interface Configuration mode and select one or more interfaces to configure. In Interface Configuration mode, the prompt displays as follows: `Switch(config-if)#`	

Example

This example shows how to enter Interface Configuration mode for interface MultiGigabitEthernet 3:

```
Switch# configure
Switch(config)# interface MultiGigabitEthernet 3
Switch(config-if)#
```

This example shows how to enter Interface Configuration mode for interface xmg7:

```
Switch# configure
Switch(config)# interface xmg7
Switch(config-if)#
```

interface range

Syntax

interface range *id*

Parameter

id	Specify a range or group of interfaces. The *id* parameter represents a range of interface numbers in which each interface number is separated by a comma (Example: g1,3,5). You can also enter a range of interface numbers in which the interface numbers are separated by a hyphen (Example: g8-9). Another option is to combine individual interfaces and ranges by separating them by one or more commas (Example: g1-4,g6,g8-9).

Default

No default value.

Mode

Global Configuration

Usage

Some configurations are interface-range based, requiring you to enter Interface Range Configuration mode. Use this command to enter the Interface Range Configuration mode and select the range of interfaces to configure.
In Interface Range Configuration mode, the prompt displays as follows:
`Switch(config-if-range)#`

Example

This example shows how to enter Interface Range Configuration mode for interfaces g3 through g5:

```
Switch# configure
Switch(config)# interface range g3-g5
```

```
Switch(config-if-range)#
```

This example shows how to enter Interface Configuration mode for interfaces g6, g7, g10, and g11:

```
Switch# configure
Switch(config)# interface range g6-g7,g10-g11
Switch(config-if-range)#
```

line ssh

Syntax	line ssh
Parameter	
Default	No default value.
Mode	Global Configuration
Usage	Use this command to enter Line Configuration mode, in which the CLI prompt displays as follows: `Switch(config-line)#`

Example	This example shows how to enter Line Configuration mode:
	
	`Switch# configure`
	`Switch(config)# line ssh`
	`Switch(config-line)#`

end

Syntax	end
Parameter	
Default	No default value.
Mode	Privileged EXEC Global Configuration VLAN Configuration Interface Configuration Interface Range Configuration

Line Configuration

Usage

Use this command to return to the privileged EXEC mode. Each mode, except for the User EXEC mode, allows the **end** command.

Example

This example shows how to enter the Interface Configuration mode and use the **end** command to return to the privileged EXEC mode:

```
Switch# configure
Switch(config)# interface GigabitEthernet 1
Switch(config-if)# end
Switch#
```

exit

Syntax

exit

Parameter

Default

No default value.

Mode

User EXEC
Privileged EXEC
Global Configuration
VLAN Configuration
Interface Configuration
Interface Range Configuration
Line Configuration

Usage

In User EXEC mode, the **exit** command closes the current CLI session. In other modes, the **exit** command lets you return to the parent mode. Each mode lets you enter the **exit** command. The following table describes the relationships between each mode.

Command Mode	**Parent Mode**
User Exec	None
Privileged EXEC	User Exec
Global Configuration	Privileged EXEC
VLAN Configuration	Global Configuration
Interface Configuration	Global Configuration
Interface Range Configuration	Global Configuration
Line Configuration	Global Configuration

Example	This example shows how to enter privileged EXEC mode and then use the **exit** command to return to the user EXEC mode:
	
	`Switch> enable`
	`Switch# exit`
	`Switch>`

System Commands

Management commands

system name

Syntax	system name *name*	
Parameter	*name*	Specify the system name string. The *name* parameter can represent any combination of printable characters and a space except for a question mark (?), single quote (‘), and double quote (”).
Default	The default name is the switch model name.	
Mode	Global Configuration	
Usage	Use this command to modify the system name of the switch. The system name is also used as the CLI prompt.	
Example	This example shows how to modify the contact information:	

```
Switch(config)# system name myname
myname(config)#
```

This example shows how to display the system name information

```
myname# show info
System Name      : myname
System Location  :
System Contact   :
MAC Address      : 00:01:02:03:04:05
IP Address       : 192.168.0.239
Subnet Mask      : 255.255.255.0
Hardware Version : 2
Loader Version   : 1.0.0.1
Loader Date      : 2017-12-28 09:35:22 UTC
Firmware Version : 6.0.9.2
Firmware Date    : Oct 29 2021 - 14:16:17
System Object ID : 1.3.6.1.4.1.4526.100.4.48
System Up Time   : 0 days, 0 hours, 2 mins, 37 secs
```

system contact

Syntax	system contact *contact*
Parameter	*contact* Set the contact information.
Default	No default value.
Mode	Global Configuration
Usage	Use this command to set the contact information for the switch.
Example	This example shows how to set the contact information:

```
Switch(config)# system contact callme
```

This example shows how to display the system contact information:

```
Switch# show info
System Name      : Switch
System Location  :
System Contact   : callme
MAC Address      : 00:01:02:03:04:05
IP Address       : 192.168.0.239
Subnet Mask      : 255.255.255.0
Hardware Version : 2
Loader Version   : 1.0.0.1
Loader Date      : 2017-12-28 09:35:22 UTC
Firmware Version : 6.0.9.2
Firmware Date    : Oct 29 2021 - 14:16:17
System Object ID : 1.3.6.1.4.1.4526.100.4.48
System Up Time   : 0 days, 0 hours, 2 mins, 37 secs
```

system location

Syntax	system location *location*
Parameter	*location* Set the location information
Default	No default value.
Mode	Global Configuration

Usage

Use this command to set the location information for the switch.

Example

This example shows how to set the system location information:

```
Switch(config)# system location main office
```

This example shows how to display the system location information:

```
Switch# show info
System Name      : SwitchEF0102
System Location  : main office
System Contact   :
MAC Address      : 00:01:02:03:04:05
IP Address       : 192.168.0.239
Subnet Mask      : 255.255.255.0
Hardware Version : 2
Loader Version   : 1.0.0.1
Loader Date      : 2017-12-28 09:35:22 UTC
Firmware Version : 6.0.9.2
Firmware Date    : Oct 29 2021 - 14:16:17
System Object ID : 1.3.6.1.4.1.4526.100.4.48
System Up Time   : 0 days, 0 hours, 2 mins, 37 secs
```

show info

Syntax

show info

Parameter

Default

No default value.

Mode

User EXEC
Privileged EXEC

Usage

Use this command to show system summary information.

Example

This example shows how to display system summary information:

```
Switch# show info

System Name      : Switch
System Location  :
System Contact   :
MAC Address      : 00:01:02:03:04:05
IP Address       : 192.168.0.239
Subnet Mask      : 255.255.255.0
Hardware Version : 2
```

```
Loader Version   : 1.0.0.1
Loader Date      : 2017-12-28 09:35:22 UTC
Firmware Version : 6.0.9.2
Firmware Date    : Oct 29 2021 - 14:16:17
System Object ID : 1.3.6.1.4.1.4526.100.4.48
System Up Time   : 0 days, 0 hours, 2 mins, 37 secs
```

show environment

This command is supported on the following switch models:

- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax

show environment

Parameter

Default

No default value.

Mode

User EXEC
Privileged EXEC

Usage

Use this command to show system environment information such as temperature and sensor status. The hardware of the switch model determines the output of this command.

Example

This example shows how to show system environment information:

```
Switch# show environment
Fan Description Type  Speed Level State
--- ----------- ----- ----- ----- ------------
  1 Fan-1       Fixed  4000   40% Operational
  2 Fan-2       Fixed  4000   40% Operational

Sensor Description Temp(C) State         Max Temp(C)
------ ----------- ------- ------------- -----------
     1 System      43      Normal        44
     2 MAC         43      Normal        44

Power Type             State           Description
----- ---------- ---------------- ------------------------
   1  Fixed            Operational      PS-1
```

show version

Syntax	show version
Parameter	
Default	No default value.
Mode	User EXEC Privileged EXEC
Usage	Use this command to show the loader and firmware versions and the build dates.

Example	This example shows how to display the system versions and build dates:
	
	`Switch# show version`
	`Loader Version : 1.0.0.1`
	`Loader Date : 2017-12-28 09:35:22 UTC`
	`Firmware Version : 6.0.9.2`
	`Firmware Date : Oct 29 2021 - 14:16:17`
	`MAC Address : 00:01:02:03:04:05`
	`SN : 0000000000001`

show cpu status

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS308T and GS310TP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	show cpu status
Parameter	
Default	No default value.
Mode	Privileged EXEC

Usage

Use this command to show current CPU status and utilization.

Example

This example shows how to show current CPU utilization:

```
Switch# show cpu status

Memory Utilization Report:

status     KBytes
------ ----------
free        43280
alloc       82360

CPU Utilization:

PID          Name                    5 Secs    60 Secs   300 Secs
----------- --------------------  --------  --------  --------
          3          [ksoftirqd/0]    0.09%     0.00%     0.00%

        500          DiscoveryAgent   0.94%     0.69%     0.74%

        412                  usaged   4.33%     4.29%     4.29%

        420                   snmpd   0.00%     0.01%     0.01%

        440                   polld   1.69%     1.61%     1.62%

        445                     cli   0.00%     0.00%     0.01%

----------- --------------------- --------  --------  --------
Total CPU Utilization                7.07%     6.64%     6.72%
```

ip address

Syntax

ip address *a.b.c.d* mask *a.b.c.d*

Parameter

address *a.b.c.d*	Set the IPv4 address for switch. The IP address is represented by *a.b.c.d*.
mask *a.b.c.d*	Set the netmask address for switch. The netmask is represented by *a.b.c.d*.

Default

The default IP address is 192.168.0.239 and default netmask is 255.255.255.0.

Mode

Global Configuration

Usage

Use this command to set the administration IPv4 address for access to the switch. When you use Telnet, SSH, HTTP, HTTPS, or SNMP to connect to the switch, you must use this IP address to access the switch.

Example

This example shows how to modify the IPv4 address of the switch:

```
Switch(config)# ip address 192.168.0.200 mask 255.255.255.0
```

This example shows how to show current ipv4 address of the switch:

```
Switch# show ip
###### Config ######
IP Address: 192.168.0.239
Subnet Netmask: 255.255.255.0
Default Gateway: 192.168.0.254

###### Status ######
IP Address: 192.168.0.239
Subnet Netmask: 255.255.255.0
Default Gateway: 192.168.0.254
```

ip default-gateway

Syntax

ip default-gateway *a.b.c.d*

Parameter

a.b.c.d	Specify the default gateway IPv4 address for switch. The IP address is represented by *a.b.c.d*.

Default

The default IP address of default gateway is 192.168.0.254.

Mode

Global Configuration

Usage

Use this command to set the default gateway address.

Example

This example shows how to modify the default gateway address of the switch:

```
Switch(config)# ip default-gateway 192.168.0.100
```

This example shows how to show current default gateway address of the switch:

```
Switch# show ip
###### Config ######
IP Address: 192.168.0.239
Subnet Netmask: 255.255.255.0
Default Gateway: 192.168.0.100

###### Status ######
IP Address: 192.168.0.239
Subnet Netmask: 255.255.255.0
Default Gateway: 192.168.0.100
```

ip dhcp

Syntax	ip dhcp no ip dhcp
Parameter	
Default	The DHCP client is disabled.
Mode	Global Configuration
Usage	Use the **ip dhcp** command to enable the DHCP client to let the switch receive an IP address from a DHCP server. Use the **no ip dhcp** command to disable the DHCP client so that you can set a static IP address.
Example	This example shows how to enable the DHCP client: `Switch(config)# ip dhcp`

ip bootp

Syntax	ip bootp no ip bootp
Parameter	
Default	The Bootp client is disabled.
Mode	Global Configuration
Usage	Use the **ip bootp** command to enable the Bootp client to let the switch receive an IP address from a DHCP or Bootp server. Use the **no ip bootp** command to disable the Bootp client so that you can set a static IP address.
Example	This example shows how to enable the Bootp client: `Switch(config)# ip bootp`

show ip

Syntax	show ip
Parameter	
Default	No default value.
Mode	User EXEC Privileged EXEC
Usage	Use this command to show the system IPv4 address, netmask, and default gateway.

Example	This example shows how to display the current IPv4 address settings of the switch:
	
	`Switch# show ip`
	`###### Config ######`
	`IP Address: 192.168.0.239`
	`Subnet Netmask: 255.255.255.0`
	`Default Gateway: 192.168.0.254`
	
	`###### Status ######`
	`IP Address: 192.168.0.239`
	`Subnet Netmask: 255.255.255.0`
	`Default Gateway: 192.168.0.254`

ipv6

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	ipv6 no ipv6
Parameter	
Default	IPv6 is enabled.

Mode	Global Configuration
Usage	Use the **ipv6** command to enable IPv6. Use the **no ipv6** command to disable IPv6.
Example	This example shows how to disable IPv6 globally on the switch: `Switch(config)# no ipv6`

ipv6 autoconfig

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	ipv6 autoconfig no ipv6 autoconfig
Parameter	
Default	IPv6 autoconfiguration is enabled.
Mode	Global Configuration
Usage	Use the **ipv6 autoconfig** command to enable IPv6 autoconfiguration. Use the **no ipv6 autoconfig** command to disable IPv6 autoconfiguration.
Example	This example shows how to disable IPv6 autoconfiguration: `Switch(config)# no ipv6 autoconfig`

ipv6 address

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	ipv6 address *x:x::x:x* prefix *<0-128>* no ipv6 address x*:x::x:x*	
Parameter	address *x:x::x:x*	Specify the IPv6 address for switch. The IPv6 address is represented by *x:x::x:x*.
	prefix *<0-128>*	Specify the IPv6 prefix length for switch. This can be a value from 0 to 128.
Default	No default IPv6 address is configured for the switch.	
Mode	Global Configuration	
Usage	Use the **ipv6 address** command to add a static IPv6 address. Use the **no ipv6 address** command to remove an IPv6 address.	
Example	This example shows how to add a static IPv6 address for the switch: `Switch(config)# ipv6 address fe80::20e:2eff:fef1:4b3c prefix 128`	

ipv6 default-gateway

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	ipv6 default-gateway *x:x::x:x* no ipv6 default-gateway	
Parameter	*x:x::x:x*	Specify the default gateway IPv6 address for the switch. The IPv6 address is represented by *x:x::x:x*.

Default	No IPv6 default gateway address is configured on the switch.
Mode	Global Configuration
Usage	Use the **ipv6 default-gateway** command to set the IPv6 default gateway address. Use the **no ipv6 default-gateway** command to remove the IPv6 default gateway address.
Example	This example shows how to modify the IPv6 default gateway address on the switch: `Switch(config)# ipv6 default-gateway fe80::dcad:beff:feef:103`

ipv6 dhcp

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	ipv6 dhcp no ipv6 dhcp
Parameter	
Default	The DHCPv6 client is disabled.
Mode	Global Configuration
Usage	Use the **ipv6 dhcp** command to enable the DHCPv6 client to let the switch receive an IP address from a DHCPv6 server. Use the **no ipv6 dhcp** command to disable the DHCPv6 client so that you can set a static IPv6 address or IPv6 autoconfiguration address for the switch.
Example	This example shows how to enable the DHCPv6 client: `Switch(config)# ipv6 dhcp`

show ipv6 neighbors

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	show ipv6 neighbors
Parameter	
Default	No default value.
Mode	User EXEC Privileged EXEC
Usage	Use this command to show information about the IPv6 neighbor entries cached on the system.
Example	This example shows how to display the ipv6 neighbor entries:

```
Switch# show ipv6 neighbors

VLAN Interface IPv6 address              HW address        Status   Router State
-------------  ------------------------- ----------------  -------- ------ ---------
vlan 1         fe80::b498:654a:75f5:9c7b 50:3e:aa:07:ab:46  Dynamic  No     Reachable
```

show clock

Syntax	show clock [detail]	
Parameter	detail	Optional keyword that displays more detailed information about the clock.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to show information about the clock of the switch. The **detail** keyword means display more information about the clock such as the time zone and daylight saving time.	

Example

This example shows how to display information about the clock of the switch:

```
Switch# show clock
Jan 01 02:08:52 2021 (UTC+0)
Time set manually
```

This example shows how to display detailed information about the clock of the switch:

```
Switch# show clock detail
Jan 01 02:08:54 2021 (UTC+0)
Time set manually

Time zone:
Acronym is
Offset is UTC+0
```

sntp

Syntax

sntp <*1-3*> host *hostname* port <*1-65535*> [ver <*1-4*>]
no sntp <*1-3*>

Parameter

sntp <*1-3*>	Set the SNTP protocol version, which can be 1, 2, or 3.
hostname	Set the IP address or hostname of the SNTP server.
port <*1-65535*>	Set the port number of the SNTP server, which can be a number from 1 to 65,535.
ver <*1-4*>	Set the SNTP server version, which can be 1, 2, 3, or 4.

Default

No default SNTP server is defined. If you add an SNTP server, by default, the server version is 4. (You can configure a different version.)

Mode

Global Configuration

Usage

Use the **sntp** command to set a remote SNTP server.
Use the **no sntp** command to reset the SNTP configuration for a specific SNTP protocol version.
You can verify your SNTP settings in the output of the **show sntp** command.

Example

This example shows how to set a remote SNTP server for the switch:

```
switch(config)# sntp 1 host 192.168.0.100 port 123
```

show sntp

Syntax	show sntp
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to display the remote SNTP server information.
Example	This example shows how to display the remote SNTP server information:

```
Switch# show sntp
SNTP is Enabled

SNTP Server address: 192.168.0.100
SNTP Server port: 123
SNTP Server pri: 1
SNTP Server ver: 4
SNTP Server attemps: 0
SNTP Server failures: 0
SNTP Server reason:
SNTP Server last_success: 0
SNTP Server lastAttemptTime:
SNTP Server lastUpdateTime
……
```

PoE commands

power inline

This command is supported on the following switch models:

- GS110TPv3
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXUP

Syntax	power inline {never | auto}	
Parameter	never	Disables PoE functionality on an interface.
	auto	Enables PoE functionality on an interface.
Default	The default is auto.	
Mode	Interface Configuration	
Usage	Use this command to enable or disable PoE functionality on an interface.	

Example

This example shows how to disable PoE on an interface:

```
Switch(config)#interface g1
Switch(config-if)# power inline never
Switch# show power inline interfaces g1

Port State  Status      Priority  Class   Power Up   Max.Power (Admin)

(mW)
---- ------ ----------  --------  ------- --------   --------- --------
g1   Never  off         low        N/A    802.3at    0         (30000)

Port Overload Short Current  Power Denied  MPS Absent  Invalid Sig.
---- -------- -------------  ------------- ----------  ----------
g1   0        0              0             0           0

Port Time Range                       Status
---- ---------------------------------- --------
g1
```

power inline reset

This command is supported on the following switch models:

- GS110TPv3
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXUP

Syntax	power inline reset
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to reset all PoE ports. When one or more PoE ports are in an error state, you can use this command to reset the PoE ports. You can also use this command to reset PoE ports that are delivering power. This command takes effect only once after it is executed and cannot be saved in the running configuration.
Example	This example shows how reset all PoE ports: `Switch# power inline reset`

show power inline

This command is supported on the following switch models:

- GS110TPv3
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXUP

Syntax	show power inline [interfaces *id*]	
Parameter	interfaces *id*	Displays the PoE information for a physical port or a range of physical ports. (The command does not apply to logical ports.) The *id* parameter represents the port number or a range of port numbers. Use a hyphen to indicate a range. Use a

comma to separate individual ports, ranges, or a combination of both.

Default No default value.

Mode Privileged EXEC

Usage Use this command to show the global PoE status, or to show detailed information for one or more specific PoE ports.

Example This example shows how to display the global PoE status:

```
Switch# show power inline

Power management mode: Port limit mode
Pre-allocation       : Disabled
Power-up sequence    : Staggered

Unit  Power Status  Nominal   Allocated     Consumed Available
                      Power       Power        Power     Power
----- ----- ------- --------- ------------  -------- ---------
1      Off  Normal  190Watts  0Watts ( 0%)  0Watts   190Watts

Port State  Status     Priority  Class   Power Up  Max.Power (Admin)
                                                   (mW)
---- -----  ---------  --------- ------- --------  --------- ----------
g1   Never  off        low       N/A     802.3at   0       (30000)
g2   Auto   searching  low       N/A     802.3at   0       (30000)
……
```

This example shows how to display the PoE status for interface g1:

```
Switch# show power inline interfaces g1

Port State  Status      Priority  Class   Power Up   Max.Power (Admin)

(mW)
---- ------ ----------  --------  ------- --------   --------- --------
g1   Never  off         low        N/A    802.3at    0         (30000)

Port Overload Short Current  Power Denied  MPS Absent  Invalid Sig.
---- -------- -------------  ------------- ----------  ----------
g1   0        0              0             0           0

Port Time Range                       Status
---- ---------------------------------- --------
g1
```

LLDP commands

clear lldp statistics

Syntax	clear lldp {global | interfaces *id*} statistics	
Parameter	global	Clears the LLDP information for all interfaces and LAGs.
	interfaces *id*	Clears the LLDP information for an interface, LAG, a range of interfaces, or a range of LAGs. The *id* parameter represents the interface or LAG number or a range of interface numbers or LAG numbers. Use a hyphen to indicate a range. Use a comma to separate individual interfaces, ranges, or a combination of both.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to clear the LLDP RX/TX statistics.	
Example	This example shows how to clear the LLDP statistics globally: `Switch# clear lldp global statistics`	

show lldp local-device

Syntax	show lldp interfaces *id* local-device	
Parameter	interfaces *id*	The interface or a range of interfaces for which the LLDP information must be displayed. The *id* parameter represents the interface number or a range of interface numbers. Use a hyphen to indicate a range. Use a comma to separate individual interfaces, ranges, or a combination of both.
Default	No default value.	

Mode	Privileged EXEC
Usage	Use this command to show the local configuration of LLDP PDUs, including the contents of LLDP/LLDP-MED TLVs.
Example	This example shows how to display the local device information for interface g1:

```
Switch# show lldp interfaces g1 local-device

Device ID: 00:12:12:12:12:12
Port ID: g1
System Name: Switch
Capabilities: Bridge
System description:
Port description:
Management address: 192.168.0.239
Time To Live: 120
802.3 MAC/PHY Configur/Status
Auto-negotiation support: Supported
Auto-negotiation status: Enabled
Auto-negotiation Advertised Capabilities: 10BASE-T  half
duplex, 10BASE-T  full duplex, 100BASE-TX half duplex,
100BASE-TX full duplex
Operational MAU type: Other or unknown
LLDP-MED capabilities: Capabilities, Network Policy
LLDP-MED Device type: Network Connectivity
```

show lldp med

Syntax	show lldp med
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to display the LLDP MED configuration information for the switch.

Example

This example shows how to display the LLDP MED information:

```
Switch# show lldp med

 Fast Start Repeat Count: 3


Network policy 1
-------------------
Application type: Voice Signaling
VLAN ID: 2 tagged
Layer 2 priority: 3
DSCP: 4

Network policy 32
-------------------
Application type: Conferencing
VLAN ID: 5 tagged
Layer 2 priority: 1
DSCP: 63

  Port   | Capabilities | Network Policy | Location | Inventory | PoE PSE
 ------ + ------------ + -------------- + -------- + --------- + -------
     g1 |          Yes |            Yes |       No |        No |      No
     g2 |          Yes |            Yes |       No |        No |      No
     g3 |          Yes |            Yes |       No |        No |      No
     g4 |          Yes |            Yes |       No |        No |      No
     g5 |          Yes |            Yes |       No |        No |      No
     g6 |          Yes |            Yes |       No |        No |      No
     g7 |          Yes |            Yes |       No |        No |      No
     g8 |          Yes |            Yes |       No |        No |      No
     g9 |          Yes |            Yes |       No |        No |      No
    g10 |          Yes |            Yes |       No |        No |      No
.............
```

show lldp neighbor

Syntax

show lldp [interfaces *id*] neighbor

Parameter

interfaces *id*	As an option, specify the interface or a range of interfaces for which you want to display the LLDP neighbor information. The *id* parameter represents the interface number or a range of interface numbers. Use a hyphen to indicate a range. Use a comma to separate individual interfaces, ranges, or a combination of both.

Default

No default value.

Mode

Privileged EXEC

Usage

Use this command to display the received neighbor LLDP PDU information. As an option, you can display the information for one or more interfaces only. When LLDP PDUs are received on interfaces on which LLDP RX is enabled, the switch stores the PDU information in its database until the time-to-live (TTL) is expired.

Example

This example shows how to display the LLDP neighbor information:

```
Switch# show lldp neighbor

 Port |  Device ID    | Port ID   |  SysName  | Capabilities    | TTL
 ---- + ------------- + --------- + --------- + --------------- +-----
  g1  |    TREEBASE   |   g11     |  TREEBASE | Station Only    |  33
```

show lldp statistics

Syntax

show lldp statistics

Parameter

Default

No default value.

Mode

Privileged EXEC

Usage

Use this command to display the LLDP RX/TX statistics.

Example

This example shows how to display the LLDP statistics:

```
Switch# show lldp statistics

LLDP Global Statistics:
Insertions : 3
Deletions  : 0
Drops      : 0
Age Outs   : 1

        | TX Frames |          RX Frames          |          RX TLVs          | RX Ageouts
  Port  |   Total   | Total | Discarded | Errors | Discarded | Unrecognized |    Total
--------+-----------+-------+-----------+--------+-----------+--------------+----------
    g1  |        50 |     0 |         0 |      0 |         0 |            0 |         0
    g2  |         0 |     0 |         0 |      0 |         0 |            0 |         0
    g3  |         0 |    50 |         0 |      0 |         0 |            0 |         1
    g4  |         0 |     0 |         0 |      0 |         0 |            0 |         0
    g5  |         0 |     0 |         0 |      0 |         0 |            0 |         0
    g6  |         0 |     0 |         0 |      0 |         0 |            0 |         0
    g7  |         0 |     0 |         0 |      0 |         0 |            0 |         0
    g8  |         0 |     0 |         0 |      0 |         0 |            0 |         0
    g9  |         0 |     0 |         0 |      0 |         0 |            0 |         0
   g10  |         0 |     0 |         0 |      0 |         0 |            0 |         0
```

Switching Commands

Interface commands

interface (for Gigabit switches)

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS308T and GS310TP
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP

Syntax	interface *id*	
Parameter	*id*	Specify the interface. The *id* parameter represents the interface number, allows a partial port name, and is not case-sensitive. For example, g1 or GigabitEthernet 2.
Default	No default value.	
Mode	Global Configuration	
Usage	Some configurations are interface-based, requiring you to enter Interface Configuration mode. Use this command to enter the Interface Configuration mode and select one or more interfaces to configure. In Interface Configuration mode, the prompt displays as follows: `Switch(config-if)#`	

Example	This example shows how to enter Interface Configuration mode for interface Gigabit Ethernet 1:
	
	`Switch# configure`
	`Switch(config)# interface GigabitEthernet 1`
	`Switch(config-if)#`
	
	This example shows how to enter Interface Configuration mode for interface g2:
	
	`Switch# configure`
	`Switch(config)# interface g2`
	`Switch(config-if)#`	

interface (for Multi-Gigabit switches)

This command is supported on the MS510TXM and MS510TXUP. This command refers to the ports and their supported speeds as follows:

- MultiGigabitEthernet: Ports 1–4, supporting 2.5G, 1G, and 100M speed.
- XMultiGigabitEthernet: Ports 5–8, supporting 10G, 5G, 2.5G, 1G, and 100M speed.
- XGigabitEthernet: Ports 9 and 10, which are SFP+ fiber ports supporting 10G and 1G

Syntax	interface *id*	
Parameter	*id*	Specify the interface. The *id* parameter represents the interface number, allows a partial port name, and is not case-sensitive. For example, mg1 or MultiGigabitEthernet 2. The CLI supports three different port types for this switch: • MultiGigabitEthernet (or mg): Ports 1–4. • XMultiGigabitEthernet (or xmg): Ports 5–8. • XGigabitEthernet (xg): Ports 9 and 10. You can also specify a port range. For example, mg1-4, or xmg 5-8, or xg9,10.
Default	No default value.	
Mode	Global Configuration	
Usage	Some configurations are interface-based, requiring you to enter Interface Configuration mode. Use this command to enter the Interface Configuration mode and select one or more interfaces to configure. In Interface Configuration mode, the prompt displays as follows: `Switch(config-if)#`	

Example

This example shows how to enter Interface Configuration mode for interface MultiGigabitEthernet 3:

```
Switch# configure
Switch(config)# interface MultiGigabitEthernet 3
Switch(config-if)#
```

This example shows how to enter Interface Configuration mode for interface xmg7:

```
Switch# configure
Switch(config)# interface xmg7
Switch(config-if)#
```

interface range

Syntax	interface range *id*	
Parameter	*id*	Specify a range or group of interfaces. The *id* parameter represents a range of interface numbers in which each interface number is separated by a comma (Example: g1,3,5). You can also enter a range of interface numbers in which the interface numbers are separated by a hyphen (Example: g8-9). Another option is to combine individual interfaces and ranges by separating them by one or more commas (Example: g1-4,g6,g8-9).
Default	No default value.	
Mode	Global Configuration	
Usage	Some configurations are interface-range based, requiring you to enter Interface Range Configuration mode. Use this command to enter the Interface Range Configuration mode and select the range of interfaces to configure. In Interface Range Configuration mode, the prompt displays as follows: `Switch(config-if-range)#`	

Example	This example shows how to enter Interface Range Configuration mode for interfaces g3 through g5:
	
	`Switch# configure`
	`Switch(config)# interface range g3-g5`
	`Switch(config-if-range)#`
	
	This example shows how to enter Interface Configuration mode for interfaces g6, g7, g10, and g11:
	
	`Switch# configure`
	`Switch(config)# interface range g6-g7,g10-g11`
	`Switch(config-if-range)#`	

clear interface

Syntax	clear interfaces *id* counters	
Parameter	*id*	Specify the interface. The *id* parameter represents the interface number.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to clear statistical counters for a specific interface.	
Example	This example shows how to clear the counters on interface g1: `Switch# clear interfaces g1 counters`	

description

Syntax	description *word* no description	
Parameter	*word*	A port description with a length from 1 to 64 characters. If the description includes a space character, place the entire string in double quotes.
Default	No default value.	
Mode	Interface Configuration	
Usage	Use the **description** command to set a port description so that you can identify it easily. Use the **no description** command to reset the description to a blank string.	

Example	This example shows how to set a port description:
	`Switch(config)# interface g1`
	`Switch(config-if)# description userport`
	`Switch(config-if)# exit`	

```
Switch(config)# interface g2
Switch(config-if)# description "uplink port"
```

This example shows how to display the port description on interface g1 and g2:

```
Switch# show interfaces g1-2 status
Port  Name         Status      Vlan  Duplex  Speed    Type
g1    userport     notconnect  1     auto    auto     Copper
g2    uplink port  notconnect  1     auto    auto     Copper
```

flowcontrol

Syntax

flowcontrol {auto | asymmetric | symmetric | off}
no flowcontrol

Parameter

auto	Automatically enables or disables flow control on the interface.
asymmetric	Forces flow-control as asymmetric on the interface
symmetric	Forces flow-control as symmetric on the interface.
off	Disables flow control on the interface.

Default

Flow control is disabled.

Mode

Interface Configuration

Usage

Use the **flowcontrol** command to set the flow control configuration for an interface.
Use **no flowcontrol** command to reset flow control to its default (off).

Example

This example shows how to set the flow control configuration for interface g1:

```
Switch(config)# interface g1
Switch(config-if)# flowcontrol auto
```

This example shows how to display the configuration, including flow control, for interface g1:

```
Switch# show interfaces g1
  Hardware is Gigabit Ethernet
  Full-duplex, Auto-speed, media type is Copper
  flow-control is auto
back-pressure is enabled
     0 packets input, 0 bytes, 0 throttles
```

```
Received 0 broadcasts (0 multicasts)
0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 multicast, 0 pause input
0 input packets with dribble condition detected
379 packets output, 31981 bytes, 0 underrun
0 output errors, 0 collisions, 0 interface resets
0 babbles, 0 late collision, 0 deferred
0 PAUSE output
```

jumbo-frame

Syntax

jumbo-frame [<*1522-10000*>]
no jumbo-frame

Parameter

<*1522-10000*>	As an option, set a specific maximum frame size from a value from 1522 to 10,000. If you do not set a specific value, the **jumbo-frame** command sets the value automatically to 10,000.

Default

The default maximum frame size is 1522.

Mode

Global Configuration

Usage

Use the **jumbo-frame** command to set the maximum frame size to 10,000.
Use the **jumbo-frame** [<*1522-10000*>] command to set the maximum frame size to a specific value.
Use the **no jumbo-frame** command to reset maximum frame size to its default value.

Example

This example shows how to modify the maximum frame size to 9216 bytes:

```
Switch(config)# jumbo-frame 9216
```

This example shows how to display the running configuration, which includes the jumbo-frame size:

```
Switch# show running-config

jumbo-frame 9216
```

show interfaces

Syntax

show interfaces *id* [status | protected]

Parameter

id	Specify the interface or LAG. The *id* parameter represents the interface or LAG number or a range of interface numbers or LAG numbers. Use a hyphen to indicate a range. Use a comma to separate individual interfaces, ranges, or a combination of both.
status	Use this optional keyword to display a brief status for the interface.
protected	Use this optional keyword to display the protected status of the interface.

Default

No default value.

Mode

Privileged EXEC

Usage

Use the **show interface** command to display detailed interface counters, the parameters, and the status.
Use the **show interface status** command to display a brief status of the interface.
Use the **show interface protected** command to display the protected status of an interface.

Example

This example shows how to display the counters for interface g1:

```
Switch# show interfaces g1
  Hardware is Gigabit Ethernet
  Auto-duplex, Auto-speed, media type is Copper
  flow-control is off
back-pressure is enabled
     0 packets input, 0 bytes, 0 throttles
     Received 0 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 multicast, 0 pause input
     0 input packets with dribble condition detected
     0 packets output, 0 bytes, 0 underrun
     0 output errors, 0 collisions, 0 interface resets
     0 babbles, 0 late collision, 0 deferred
     0 PAUSE output
```

This example shows how to display the port status for interface g1:

```
Switch# show interfaces g1 status
Port  Name                Status      Vlan  Duplex  Speed    Type
g1                        connected   1     auto    auto     Copper
```

This example shows how to display the protected port state for interfaces g1 and g2:

```
Switch# show interfaces g1-2 protected
Port    | Protected State
--------+----------------
    g1  | enabled
    g2  | enabled
```

speed (for Gigabit switches)

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS308T and GS310TP
- GS724TPv2 and GS724TPP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP

Syntax	speed {{10 | 100 | 1000} | {auto [10 | 100 | 1000 | 10/100 | 10/100/1000]}}	
Parameter	auto	Sets the port speed to autonegotiation (which is also the default setting).
	10	Forces the port speed to 10 Mbits/s, or if used with the **auto** keyword, to autonegotiation with 10 Mbits/s ability.
	100	Forces the port speed to 100 Mbits/s, or if used with the **auto** keyword, to autonegotiation with 100 Mbits/s ability.
	1000	Forces the port speed to 1000 Mbits/s, or if used with the **auto** keyword, to autonegotiation with 1000 Mbits/s ability.
	10/100	Forces the port speed to autonegotiation with 10 Mbits/s and 100 Mbits/s ability.
	10/100/1000	Forces the port speed to autonegotiation with 10 Mbits/s,100 Mbits/s and 1000 Mbits/s ability.
Default	auto (autonegotiation) with all available abilities.	
Mode	Interface Configuration	
Usage	Use this command to change the port speed configuration up to the maximum physical speed.	

The output of the **show interfaces** command with the **status** keyword (see an example below) shows the following:

- For a port that is connected, if the port speed is set to automatic, the Speed field shows the "a-" prefix before the detected speed. If the speed is set to a specific value, the Speed field shows only the set speed.
- For a port that is not connected, if the port speed is set to automatic, the Speed field shows "auto." If the speed is set to a specific value, the Speed field shows the set speed.

Example

This example shows how to modify the port speed configuration:

```
Switch(config)# interface g1
Switch(config-if)# speed 100
Switch(config-if)# exit
Switch(config)# interface g2
Switch(config-if)# speed auto 10/100
```

This example shows how to display the running configuration, which includes the port speed configuration:

```
Switch# show running-config interfaces g1-2
interface g1
 speed 100
interface g2
 speed auto 10/100
```

This example shows how to display information about interfaces, including the interface link speed:

```
Switch# show interfaces g1-4 status
Port  Name                Status      Vlan  Duplex  Speed    Type
g1                        connected   1     a-full  100M     Copper
g2                        connected   1     a-full  a-100M   Copper
g3                        notconnect  1     auto    auto     Copper
g4                        notconnect  1     auto    1000M    Copper
```

speed (for Multi-Gigabit switches)

This command is supported on the MS510TXM and MS510TXUP. This command refers to the ports and their supported speeds as follows:

- MultiGigabitEthernet: Ports 1–4, supporting 2.5G, 1G, and 100M speed. Note that on these ports, 2.5G speed is available only if you configure the **auto** parameter.
- XMultiGigabitEthernet: Ports 5–8, supporting 10G, 5G, 2.5G, 1G, and 100M speed. Note that on these ports, 10G speed is available only if you configure the **auto** parameter.

Syntax	speed {auto | 100 | 1000 | 2500 | 5000}	
Parameter	auto	Sets the port speed to autonegotiation, which is an option for MultiGigabitEthernet ports (1–4) and XMultiGigabitEthernet ports (5–8).
	100	Forces the port speed to 100 Mbits/s, which is an option for MultiGigabitEthernet ports (1–4) and XMultiGigabitEthernet ports (5–8).
	1000	Forces the port speed to 1000 Mbits/s, which is an option for MultiGigabitEthernet ports (1–4) and XMultiGigabitEthernet ports (5–8).
	2500	Forces the port speed to 2500 Mbits/s, which is an option for XMultiGigabitEthernet ports (5–8).
	5000	Forces the port speed to 5000 Mbits/s, which is an option for XMultiGigabitEthernet ports (5–8).
Default	auto (autonegotiation) with all available abilities.	
Mode	Interface Configuration	

Usage

Use this command to change the port speed configuration up to the maximum physical speed.
The output of the **show interfaces** command with the **status** keyword (see an example below) shows the following:

- For a port that is connected, if the port speed is set to automatic, the Speed field shows the "a-" prefix before the detected speed. If the speed is set to a specific value, the Speed field shows only the set speed.
- For a port that is not connected, if the port speed is set to automatic, the Speed field shows "auto." If the speed is set to a specific value, the Speed field shows the set speed.

Example

This example shows how to modify the port speed configuration:

```
Switch(config)# interface mg1
Switch(config-if)# speed 1000
Switch(config-if)# exit
Switch(config)# interface xmg5
Switch(config-if)# speed 2500
```

This example shows how to display the running configuration, which includes the port speed configuration:

```
Switch# show running-config interfaces mg1
interface mg1
 speed 1000
```

This example shows how to display information about interfaces, including the interface link speed:

```
Switch# show interfaces mg1,xmg5 status
Port  Name               Status      Vlan  Duplex  Speed  Type
mg1                      connected   1     a-full  1000M  Copper
xmg5                     notconnect  1     auto    2500M  Copper
```

10g-media

This command is supported on the MS510TXM and MS510TXUP. The SFP+ fiber uplink ports (9 and 10) of these switch models are capable of 10G and 1G.

Syntax	10g-media {auto-detect | fiber-1g}	
Parameter	auto-detect	Detects the media automatically and sets the speed according to the detected media type.
	fiber-1g	Forces the media to fiber and sets the speed to 1000 Mbits/s.
Default	auto-detect	
Mode	Interface Configuration	
Usage	Use this command to set the media configuration on an XGigabitEthernet port.	

Example

This example shows how to modify the media on XGigabitEthernet port 9:

```
Switch(config)# interface xg9
Switch(config-if)# 10g-media auto-detect
```

auto-nego

Syntax	auto-nego no auto-nego
Parameter	
Default	autonegotiation is enabled.
Mode	Interface Configuration
Usage	Use the **auto-nego** command to enable autonegotiation on an interface. Use the **no auto-nego** command to disable autonegotiation on an interface.

Example	This example shows how to disable autonegotiation on interface g1 and to enable autonegotiation on interface g2:
	
	`Switch(config)# interface g1`
	`Switch(config-if)# no auto-nego`
	`Switch(config-if)# exit`
	`Switch(config)# interface g2`
	`Switch(config-if)# auto-nego`

shutdown

Syntax	shutdown no shutdown
Parameter	
Default	The administration state is no shutdown.
Mode	Interface Configuration
Usage	Use the **shutdown** command to disable an interface. Use the **no shutdown** command to enable an interface. If an interface is error-disabled, use the **no shutdown** command to try to recover the interface.

Example

This example shows how to shut down interface g1:

```
Switch(config)# interface g1
Switch(config-if)# shutdown
```

This example shows how to display the running configuration for interface g1, which also display the administrative state of an interface:

```
Switch# show running-config interfaces g1
interface g1
 shutdown
```

show fiber-transceiver

Syntax

show fiber-transceiver interfaces *id*

Parameter

interfaces *id*	Display the information about the fiber transceiver module that is installed in a physical port or the modules that are installed in multiple physical ports. The *id* parameter represents the port number or a range of port numbers. Use a hyphen to indicate a range. Use a comma to separate individual ports, ranges, or a combination of both.

Default

No default value.

Mode

Privileged EXEC

Usage

Use this command to display information about one or more fiber transceiver modules that are installed in one or more ports.

Example

This example shows how to display information about a fiber transceiver module that is installed in port g1:

```
Switch# show fiber-transceiver interfaces GigabitEthernet 1

Port| Temperature| Voltage| Current| Output power| Input power| OE-Present|LOS
    | [C]        | [Volt] | [mA]   | [mWatt]     | [mWatt]    |           |
=============================================================================
 g1 |  N/S       |  N/S   |  N/S   |  N/S        |  N/S       | Remove    |Loss
```

LAG commands

lag

Syntax	lag *lag-id* mode {static | active | passive} no lag	
Parameter	*lag-id*	Set the LAG ID for the interface. The *lag-id* parameter represents the LAG number. The number of LAGs that can be supported depends on the switch model.
	static	Set static mode for the LAG
	active	Set dynamic mode for the LAG with the LACP ports participating as active ports.
	passive	Set dynamic mode for the LAG with the LACP ports participating as passive ports.
Default	No default value.	
Mode	Interface Configuration	
Usage	A link aggregation group (LAG) lets you aggregate multiple physical ports into one logic port for load sharing (increased bandwidth) or fault tolerance. Use the **lag** command to let one or more ports join a LAG in static or dynamic mode. Use the **no lag** command to remove one or more ports from a LAG.	
Example	This example shows how to create a dynamic LAG in which ports g1 through g3 are members:	

```
Switch(config)# interface range g1-3
Switch(config-if)# lag 1 mode active
```

This example shows how to display the LAG status:

```
Switch# show lag

 Group ID |  Type  |          Ports
----------+--------+--------------------------------
   1      |   LACP |  Inactive: g1-3
   2      | ------ |
   3      | ------ |
   4      | ------ |
   ..............
```

lag type

Syntax	lag type {lacp | static}
Parameter	lacp Set the LAG type as LACP static Set the LAG type as static
Default	Static
Mode	Interface Configuration
Usage	Use this command to set a LAG group as a static or dynamic (LACP) LAG.
Example	This example shows how to set LAG 1 as a dynamic (LACP) LAG:

```
Switch(config)# interface LAG 1
Switch(config-if)# lag type lacp
```

This example shows how to display the status of the LAGs:

```
Switch# show lag

 Group ID |  Type  |          Ports
----------+--------+--------------------------------
   1      |   LACP |  Inactive: g1-3
   2      | ------ |
   3      | ------ |
   4      | ------ |

..............
```

show lag

Syntax	show lag
Parameter	
Default	No default value.
Mode	Privileged EXEC

Usage

Use this command to display the status of the LAGs and their members.

Example

This example shows how to display the status of the LAGs and if LAG members are active or inactive.

```
Switch# show lag

 Group ID |  Type  |          Ports
----------+--------+----------------------
   1      |   LACP |  Inactive: g1-3
   2      | ------ |
   3      | ------ |
   4      | ------ |
.............
```

VLAN commands

vlan

Syntax

vlan *vlan-list*
no vlan *vlan-list*

Parameter

vlan-list	The VLAN ID or list of IDs to be created. The *vlan-list* parameter represents a single VLAN ID (Example: 3), a range of VLAN IDs in which the IDs are separated by a hyphen (Example: 5-9), or a combination of both, in which the single IDs and ranges of IDs are separated by one or more commas (Example: 3,5-9,14,101-104). VLAN IDs can be from 1 to 4094.

Default

VLAN 1

Mode

Global Configuration

Usage

Use the **vlan** command to create a VLAN.
Use the **no vlan** to remove an existing VLAN.
You can verify the VLAN setting in the output of the **show vlan** command.

Example

This example creates VLAN 100:

```
Switch# configure
Switch (config)# vlan 100
Switch (config-vlan)#
```

name

Syntax	name *name* no name *name*	
Parameter	*name*	Set the name for the VLAN. The *name* parameter can be a maximum of 32 characters.
Default	VLANxxxx, in which xxxx is the 4-digit VLAN number.	
Mode	VLAN Configuration	
Usage	Use the **name** command to set a name for a VLAN. Use the **no name** command to remove a name from a VLAN. You can verify your setting in the output of the **show vlan** command.	

Example

This example sets the name of VLAN 100 to VLAN-one-hundred:

```
Switch (config)# vlan 100
Switch (config-vlan)# name VLAN-one-hundred
Switch# show vlan 100

  VID  | VLAN Name        |  Untagged Ports  |  Tagged Ports  |  Type
-------+------------------+------------------+----------------+------
  100  | VLAN-one-hundred |              --- |            --- | Static
```

switchport hybrid pvid

Syntax	switchport hybrid pvid *<1-4094>*	
Parameter	*<1-4094>*	The port VLAN ID (PVID) is a number from 1 to 4094.
Default	The PVID is 1.	
Mode	Interface Configuration	
Usage	Use this command to set the PVID of an interface. You can verify your setting in the output of the **show interfaces** command.	

Example

This example sets the PVID for interface g1 to 100:

```
Switch (config)# interface g10
Switch (config-if)# switchport hybrid pvid 100
```

The example shows the output of the **show interfaces** command:

```
Switch# show interfaces switchport g10
Port : g10
Port Mode : Hybrid
Ingress Filtering : enabled
Acceptable Frame Type : all
Ingress UnTagged VLAN ( NATIVE ) : 100
Trunking VLANs Enabled:
```

switchport hybrid allowed vlan

Syntax

switchport hybrid allowed vlan add *vlan-list* [tagged | untagged]

Parameter

vlan-list	The VLAN ID or list of IDs to which the interface must be added. The *vlan-list* parameter represents a single VLAN ID (Example: 3), a range of VLAN IDs in which the IDs are separated by a hyphen (Example: 5-9), or a combination of both, in which the single IDs and ranges of IDs are separated by one or more commas (Example: 3,5-9,14,101-104). VLAN IDs can be from 1 to 4094.
tagged	Optional keyword that sets the interface as a tagged member of the VLAN or VLANs.
untagged	Optional keyword that sets the interface as an untagged member of the VLAN or VLANs.

Default

Each interface is an untagged member of VLAN 1.
When you add an interface to a VLAN, by default it is a tagged member.

Mode

Interface Configuration

Usage

Use this command to add an interface to a VLAN.
You can verify your setting in the output of the **show interfaces switchport** command.

Example

This example adds interface g10 as a tagged member to VLANs 100, 101, 102, 103, 104, and 105:

```
Switch (config)# interface g10
Switch (config-if)# switchport hybrid allowed vlan add 100-
105
```

This example shows the output of the **show interfaces switchport** command for interface g10:

```
Switch# show interfaces switchport g10
Port : g10
Port Mode : Hybrid
Ingress Filtering : disabled
Acceptable Frame Type : tagged-only
Ingress UnTagged VLAN ( NATIVE ) : 100
Trunking VLANs Enabled:

Port is member in:
 Vlan        Name                          Egress rule
------- ------------------------------ -----------------
    1        default                     Untagged
  100       VLAN-one-hundred            Tagged
  101       VLAN0101                    Tagged
  102       VLAN0102                    Tagged
  103       VLAN0103                    Tagged
  104       VLAN0104                    Tagged
  105       VLAN0105                    Tagged

Forbidden VLANs:
 Vlan     Name
------- ----------------------
```

switchport hybrid remove vlan

Syntax

switchport hybrid allowed vlan remove *vlan-list*

Parameter

vlan-list	The VLAN ID or list of IDs from which the interface must be removed. The *vlan-list* parameter represents a single VLAN ID (Example: 3), a range of VLAN IDs in which the IDs are separated by a hyphen (Example: 5-9), or a combination of both, in which the single IDs and ranges of IDs are separated by one or more commas (Example: 3,5-9,14,101-104). VLAN IDs can be from 1 to 4094.

Mode — Interface Configuration

Usage — Use this command to remove an interface from a VLAN. You can verify your setting in the output of the **show interfaces switchport** command.

Example — This example removes interface g10 from VLAN 105:

```
Switch (config)# interface g10
Switch (config-if)# switchport hybrid allowed vlan remove
105
```

This example shows the output of the **show interfaces switchport** command for interface g10:

```
Switch# show interfaces switchport g10
Port : g10
Port Mode : Hybrid
Ingress Filtering : disabled
Acceptable Frame Type : tagged-only
Ingress UnTagged VLAN ( NATIVE ) : 100
Trunking VLANs Enabled:

Port is member in:
 Vlan        Name                          Egress rule
------- ------------------------------ -----------------
    1        default                      Untagged
  100       VLAN-one-hundred             Tagged
  101       VLAN0101                     Tagged
  102       VLAN0102                     Tagged
  103       VLAN0103                     Tagged
  104       VLAN0104                     Tagged

Forbidden VLANs:
 Vlan     Name
------- ----------------------
```

management-vlan

Syntax — management-vlan vlan *id*
no management-vlan

Parameter — *id* — Set the ID of the management VLAN, which can be a single VLAN only, with an ID from 1 to 4094.

Default — VLAN 1 is the management VLAN

Mode	Global Configuration
Usage	Use the **management vlan vlan** command to set the ID of the management VLAN. (The VLAN must already exist.) Use the **no management vlan vlan** command to restore the management VLAN to VLAN 1.

Example	This example creates VLAN 2 and then sets VLAN 2 as the management VLAN:
	
	`Switch(config)#vlan 2`
	`Switch(config)# management-vlan vlan 2`
	
	This example restores the management VLAN to the default management VLAN (VLAN 1):
	
	`Switch(config)# no management-vlan`

show vlan

Syntax	show vlan *vlan-list*	
Parameter	*vlan-list*	The VLAN ID or list of IDs for which information must be displayed. The *vlan-list* parameter represents a single VLAN ID (Example: 3), a range of VLAN IDs in which the IDs are separated by a hyphen (Example: 5-9), or a combination of both, in which the single IDs and ranges of IDs are separated by one or more commas (Example: 3,5-9,14,101-104). VLAN IDs can be from 1 to 4094.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to display information about one or more VLANs.	

Example

This example shows how to display information about VLAN 1:

```
Switch# show vlan 1

  VID  | VLAN Name     |  Untagged Port     | Tagged Port |  Type
-----  -+---------------+--------------------+-------------+--------
     1 |    default    |  g1-28,lag1-4      |         --- | Default
```

show interfaces switchport

Syntax	show interfaces switchport *id*	
Parameter	*id*	Specify the interface, LAG, a range of interfaces, or a range of LAGs. The *id* parameter represents the interface or LAG number or a range of interface numbers or LAG numbers. Use a hyphen to indicate a range. Use a comma to separate individual interfaces, ranges, or a combination of both.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to show switchport information for one or more interfaces.	
Example	This example shows how to display switchport information for interface g10:	

```
Switch# show interfaces switchport g10
Port : g10
Port Mode : Trunk
Ingress Filtering : enabled
Acceptable Frame Type : all
Ingress UnTagged VLAN ( NATIVE ) : 1
Trunking VLANs Enabled: 100

Port is member in:
 Vlan   Name                      Egress rule
------- ------------------------  ----------------
    1   default                   Untagged
  100   VLAN-one-hundred          Tagged

Forbidden VLANs:
 Vlan       Name
```

Auto-VoIP commands

voice-vlan

Syntax	voice-vlan no voice-vlan
Parameter	
Default	No interfaces are members of the voice VLAN.
Mode	Interface Configuration
Usage	Use the **voice vlan** command to enable Auto-VoIP OUI-based mode on an interface. Use the **no voice vlan** command to disable Auto-VoIP OUI-based mode on an interface With OUI–based Auto-VoIP, the voice prioritization is based on Organizationally Unique Identifier (OUI) bits.

Example	This example shows how to enable Auto-VoIP OUI-based mode on interfaces 1, 2, and 3:
	`Switch(config)#interface range g1-3`
	`Switch(config-if)#voice-vlan`

voice-vlan vlan

Syntax	voice-vlan vlan *id*	
Parameter	*id*	Set the ID of the Auto-VoIP VLAN, which can be a single VLAN only, with an ID from 0 to 4094.
Default	No default value.	
Mode	Global Configuration	
Usage	Use this command to configure the ID of the Auto-VoIP VLAN in OUI-based mode.	

	With OUI–based Auto-VoIP, the voice prioritization is based on Organizationally Unique Identifier (OUI) bits. The VLAN must already exist before you can configure the VLAN as the Auto-VoIP VLAN.
Example	This example sets VLAN 128 as the Auto-VoIP VLAN in OUI-based mode: `Switch(config)# voice-vlan vlan 128`

voice-vlan cos

Syntax	voice-vlan cos *<0-7>*	
Parameter	*<0-7>*	Set the class of service (CoS) value for the AutoVoIP VLAN in OUI-based mode. The value must be a number from 0 to 7.
Default	CoS value 6	
Mode	Global Configuration	
Usage	Use this command to configure the CoS value for the Auto-VoIP VLAN. With OUI–based Auto-VoIP, the voice prioritization is based on Organizationally Unique Identifier (OUI) bits.	
Example	This example shows how to set the CoS value: `Switch(config)# voice-vlan cos 7`	

voice-vlan oui

Syntax	voice-vlan oui *<0-31> a :b :c* [description] no voice-vlan oui <0-31>	
Parameter	*<0-31>*	Set the index of the OUI entry to be added or removed. The value must be a number from 0 to 31.
	a :b :c	The OUI address in the 24-bit number format. For example, 00:11:22 or 00:A1:B2.
	description	As an option, add a text as a description of the OUI

Default	9 default OUI entries exist for an OUI-based Auto-VoIP
Mode	Global Configuration
Usage	Use the **voice-vlan oui** command to add an OUI entry to an OUI-based Auto-VoIP. Use the **no voice-vlan oui** command to remove an OUI entry from an OUI-based Auto-VoIP. You can verify the OUI settings in the output of the **show running-config** command.
Example	This example shows how to add a new OUI entry 00:11:22 with index 9 and a description of test: `Switch(config)# voice-vlan oui 9 00:11:22 test`

voip

Syntax	voip no voip
Parameter	
Default	Disabled
Mode	Interface Configuration
Usage	Use the **voip** command to enable Auto-VoIP in protocol-based mode on an interface. Use the **no voip** command to disable Auto-VoIP in protocol-based mode on an interface.

Example	This example shows how to enable Auto-VoIP in protocol-based mode on interfaces g1, g2, and g3:
	`Switch(config)#interface range g1-3`
	`Switch(config-if)#voip`

voip pri

Syntax	voip pri *<0-7>*	
Parameter	*<0-7>*	Set the class of service (CoS) value for VoIP packets that are detected by Auto-VoIP in protocol-based mode. The value must be a number from 0 to 7.
Default	CoS value 7	
Mode	Global Configuration	
Usage	Use this command to configure the Auto-VoIP Cos value in protocol-based mode. This CoS value is applied to VoIP packets.	
Example	This example shows how to set the Auto-VoIP CoS value in protocol-based mode to 3: `Switch(config)# voip pri 3`	

voip act

Syntax	voip act {remark | traffic-class}	
Parameter	remark	Applies the CoS value that is set in the **voip pri** command and the remark flag to tagged VoIP packets that are detected by Auto-VoIP in protocol-based mode. For untagged VoIP packets, the remark flag is ignored, so the behavior is the same as when you set the **traffic-class** parameter.
	traffic-class	Applies the CoS value that is set in the **voip pri** command to tagged or untagged VoIP packets that are detected by Auto-VoIP in protocol-based mode.
Default	The default action is to apply traffic-class	
Mode	Global Configuration	
Usage	Use this command to configure the prioritization type for Auto-VoIP in protocol-based mode.	

Example

This example shows how to set the prioritization type to remark for Auto-VoIP in protocol-based mode:

```
Switch(config)# voip act remark
```

Spanning tree protocol commands

show spanning-tree

Syntax

show spanning-tree

Parameter

Default

No default value.

Mode

Privileged EXEC

Usage

Use this command to display the spanning tree configuration.

Example

This example shows how to display the spanning tree configuration:

```
Switch# show spanning-tree

Spanning tree enabled mode RSTP
Default port cost method:  short

  Root ID    Priority    32768
             Address     00:11:22:33:44:55
             This switch is the root
             Hello Time  4 sec  Max Age 10 sec  Forward Delay 25 sec

  Number of topology changes 2 last change occurred 20:34:30 ago
  Times:  hold 0, topology change 0, notification 0
          hello 4, max age 10, forward delay 25

Interfaces
  Name State   Prio.Nbr Cost  Sts    Role EdgePort Type
------ ------- -------- ----- ------ ---- -------- -----------
   g23 enabled 128.23   19    Blk    Desg       No P2P (RSTP)
```

show spanning-tree interfaces

Syntax	show spanning-tree interfaces *id*	
Parameter	*id*	Specify the interface, LAG, a range of interfaces, or a range of LAGs. The *id* parameter represents the interface or LAG number or a range of interface numbers or LAG numbers. Use a hyphen to indicate a range. Use a comma to separate individual interfaces, ranges, or a combination of both.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to show the STP configuration and statistics for an interface or LAG.	

Example

This example shows how to display the STP configuration for interface g23:

```
Switch# show spanning-tree interfaces g23

Port g23 enabled
State: forwarding                              Role: designated
Port id: 128.23                                Port cost: 19
Type: P2P (RSTP)                               Edge Port: No
Designated bridge Priority : 32768             Address:
00:11:22:33:44:55
Designated port id: 128.23                     Designated path
cost: 0
BPDU Filter: Disabled                          BPDU guard:
Disabled
BPDU: sent 21886, received 0
```

show spanning-tree mst configuration

Syntax	show spanning-tree mst configuration
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to show the global MST configuration.
Example	This example shows how to display the global MST configuration:

```
Switch# show spanning-tree mst configuration
Name      [00:11:22:33:44:55]
Revision  0     Instances configured 2

Instance  Vlans mapped
--------  --------------------
0         1-99,111-4094
1         100-110
-------------------------------
```

show spanning-tree mst interfaces

Syntax	show spanning-tree mst *instance-id* interfaces *id*	
Parameter	*instance-id*	The ID of the MST instance. The *instance-id* parameter represents a value from 0 to 15.
	id	Specify the interface, LAG, a range of interfaces, or a range of LAGs. The *id* parameter represents the interface or LAG number or a range of interface numbers or LAG numbers. Use a hyphen to indicate a range. Use a comma to separate individual interfaces, ranges, or a combination of both.
Default	No default value.	

Mode

Privileged EXEC

Usage

Use this command to show the MSTP information for a specific MST instance on an interface.

Example

This example shows how to display MSTP information for MST instance 0 on interface g23:

```
Switch# show spanning-tree mst 0 interfaces g23

 MST Port Information
============================================================
 Instance Type : CIST (0)
------------------------------------------------------------

      Port Identifier : 128/23
   External Path-Cost : 0        /19
   Internal Path-Cost : 0        /19
------------------------------------------------------------
  Designated Root Bridge : 32768/00:11:22:33:44:55
      External Root Cost : 0
    Regional Root Bridge : 32768/00:11:22:33:44:55
      Internal Root Cost : 0
       Designated Bridge : 32768/00:11:22:33:44:55
 Internal Port Path Cost : 19
               Port Role : Designated
              Port State : Forwarding
------------------------------------------------------------
```

This example shows how to display MSTP information for MST instance 1 on interface g23:

```
Switch# show spanning-tree mst 1 interfaces g23

 MST Port Information
============================================================
 Instance Type : MSTI (1)
------------------------------------------------------------

      Port Identifier : 128/23
   Internal Path-Cost : 0        /19
------------------------------------------------------------
    Regional Root Bridge : 32768/00:11:22:33:44:55
      Internal Root Cost : 0
       Designated Bridge : 32768/00:11:22:33:44:55
 Internal Port Path Cost : 19
               Port Role : Designated
             Port State : Forwarding
------------------------------------------------------------
```

MAC address table commands

clear mac address-table dynamic

Syntax	clear mac address-table dynamic [interfaces *id* | vlan *vlan-id*]	
Parameter	interfaces *id*	As an option, specify the interface, LAG, a range of interfaces, or a range of LAGs from which all dynamically learned addresses must be deleted. The *id* parameter represents the interface or LAG number or a range of interface numbers or LAG numbers. Use a hyphen to indicate a range. Use a comma to separate individual interfaces, ranges, or a combination of both.
	vlan *vlan-id*	As an option, specify the VLAN ID from which all dynamically learned addresses must be deleted. The *vlan-id* parameter represents the VLAN ID.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to delete the dynamically learned MAC entries from the MAC address table. As an option, you can specify an interface, LAG, or VLAN from which the dynamically learned address entries must be cleared. If you do not specify an interface or a VLAN, all dynamically learned address entries on the switch are deleted.	
Example	This example deletes the dynamically learned MAC addresses on interface g1. `Switch# clear mac address-table dynamic interfaces g1`	

show mac address-table

Syntax	show mac address-table [*mac-address*]	
Parameter	*mac-address*	As an option, specify a MAC address for which the entries in the MAC address table must be displayed. The *mac-address* parameter represents the MAC address in the standard xx.xx.xx.xx.xx.xx format.

Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to show the entries in the MAC address table. As an option, you can specify a single MAC address for which entries in the MAC address table must be displayed.
Example	This example shows how to display the entire MAC address table:

```
Switch# show mac address-table
 VID  |    MAC Address    |       Type        |   Ports
------+-------------------+-------------------+------------
---
    1 | DE:AD:BE:EF:01:02 |    Management     |   CPU
    1 | 1C:E6:C7:8F:10:02 |      Dynamic      |   g3

Total number of entries: 2
```

This example shows how to displays address table entries that contain MAC address 00:11:22:33:44:55:

```
Switch# show mac address-table 00:11:22:33:44:55
 VID  |    MAC Address    |    Type    |   Ports
------+-------------------+------------+----------------
  100 | 00:11:22:33:44:55 |   Static   |   g1

Total number of entries: 1
```

Routing Commands

IP routing commands

show ip interface

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	show ip interface [vlan *vlan-id*]	
Parameter	vlan *vlan-id*	As an option, specify the VLAN ID for which the Layer 3 routing interfaces must be displayed. The *vlan-id* parameter represents the VLAN ID.
Default	No default value.	
Mode	User EXEC Privileged EXEC	
Usage	Use this command to show the L3 routing interfaces. As an option, you can specify a VLAN for which the routing interfaces must be displayed. If you do not specify a VLAN, all routing interfaces on the switch are displayed. If the switch does not support static routing, or you did not configure any routing interfaces, the command does not work.	
Example	This example shows how to display all routing interfaces:	

```
Switch# show ip interface

IP Address         I/F        I/F Status Type    Status
                              admin/oper
------------------ ---------- ---------- ------- ------
192.168.1.1/24     VLAN 2     UP/DOWN    Static  Valid
192.168.2.1/24     VLAN 3     UP/DOWN    Static  Valid
```

Routing table commands

show ip route

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	show ip route
Parameter	
Default	No default value.
Mode	User EXEC Privileged EXEC
Usage	Use this command to show the route entries on the switch. If the switch does not support static routing, the command does not work.

Example	This example shows how to display the route entries on the switch:
	`Switch# show ip route`
	`Codes: > - best, C - connected, S - static`
	`C>  192.168.0.0/24 is directly connected, MGMT VLAN`

ARP commands

clear arp-cache

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	clear arp-cache
Parameter	
Default	No default value.
Mode	User EXEC Privileged EXEC
Usage	Use this command to delete all ARP entries on the switch.
Example	This example shows how to delete all ARP entries on the switch: `Switch(config)# clear arp-cache`

show arp

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax	show arp
Parameter	
Default	No default value.
Mode	User EXEC Privileged EXEC

Usage	Use this command to show all ARP entries on the switch.
Example	This example shows how to display all ARP entries on the switch:

```
Switch# show arp
  VLAN Interface    IP address        HW address        Status
---------------- --------------- ------------------ ----------
vlan 1            192.168.0.1     50:3e:aa:07:ab:46  Dynamic
```

show arp configuration

This command is supported on the following switch models:

- GS108Tv3 and GS110TPv3
- MS510TXM and MS510TXUP
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP

Syntax	show arp configuration
Parameter	
Default	No default value.
Mode	User EXEC Privileged EXEC
Usage	Use this command to show the ARP configuration on the switch.
Example	This example shows how to display the ARP configuration on the switch:

```
Switch# show arp configuration

Global configuration:
ARP timeout:  1200 Seconds
ARP response: 1 Seconds
ARP retry:    4 times
ARP cache:    512
ARP renew:    enabled
```

Security Commands

Management security commands

username

Syntax	username *name* algorithm-type sha256 secret *password* no username *name*	
Parameter	*name*	The user name that must be added. The *name* parameter represents the user name and can consist of a maximum number of 32 characters. You can use alphabetical and digital characters and the following special characters: ! # $ % & ( ) * + , - / ; < = > @ [ ] ^ _ `{ | } ~ \
	password	The password that must be associated with the user name. The *password* parameter represents the password in non-encrypted format. The password can be from 8 to 20 characters, and must include at least one uppercase letter, one lowercase letter, and one number. You can use alphabetical and digital characters and the following special characters: ! # $ % & ( ) * + - . / : ; < = > @ [ ] ^ _ `{ | } ~
Default	User name "admin" with password "password" and privilege level 15.	
Mode	Global Configuration	
Usage	Use the **username** command to add a new user account or change an existing user account. Use the **no username** command to delete an existing user account. You cannot remove the default admin account. The user accounts are stored in the local database for login authentication.	

Example	This example shows how to add a new user account with the name NewUser and password QaZWSx123: `Switch(config)# username NewUser algorithm-type sha256 secret QaZWSx123`

show username

Syntax	show username
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to show all user accounts in the local database.

Example	This example shows how to display all existing user accounts:
	
	`Switch# show username`
	`Priv | Type | User Name | Password`
	`-------+--------+-----------------+--------------------------`
	`-`
	`15 | secret | admin | DYVk7/C3+pxgiCTjJLFGQg==`
	`15 | secret | test1 | wTqZERR1UWif6EcDR+b6DQ==`
	`15 | secret | test2 | 9T3Vlx8TA0ZkfxZ8Fx+NWA==`
	`15 | secret | test3 | mCgN/jKs2n9FbPIurDqY7g==`

show users

Syntax	show users
Parameter	
Default	No default value.
Mode	Privileged EXEC

Usage	Use this command to show information about all active users.

Example	This example shows how to display information about all active users:
	
	`Switch# show users`
	`   Username       Protocol          Location`
	`-------------- ------------ ----------------------`
	`       admin       console      ---`
	`       user1        telnet      192.168.0.1`
	`       user2           ssh      192.168.0.1`

Access commands

ip ssh

Syntax	ip ssh no ip ssh
Parameter	
Default	Enabled
Mode	Global Configuration
Usage	Use the **ip ssh** command to enable SSH access to the switch. Use the **no ip ssh** command to disable SSH access to the switch. **Warning**: If you disable SSH access, all current SSH sessions are terminated, and you can no longer access the switch over the CLI. To restore SSH access, log in to the local browser UI, and reenable SSH access.

Example	This example shows how to disable SSH service:
	
	`Switch(config)# no ip ssh`
	`SSH daemon disabled.`

ip ssh port

Syntax	ip ssh port <*1025-65535*> no ip ssh port	
Parameter	<*1025-65535*>	Set the secure shell (SSH) TCP service port, which can be a number in the range from 1025 to 65535.
Default	22	
Mode	Global Configuration	
Usage	Use the **ip ssh port** command to set the TCP port number on which the switch can detect SSH requests. Use the **no ip ssh port** command to reset the port number to the default.	
Example	This example shows how to set the SSH TCP port number to port 1025: `Switch(config)# ip ssh 1025`	

ip ssh protocol

Syntax	ip ssh protocol *number*	
Parameter	*Number*	The SSH version. The *number* parameter represents the SSH version, which can be 2 only. Currently. only SSH version 2 is supported.
Default	2	
Mode	Global Configuration	
Usage	Use this command to set the SSH version. Currently, only SSH version 2 is supported.	
Example	This example shows how the set the SSH version on the switch to version 2: `Switch# ip ssh protocol 2`	

exec-timeout

Syntax	exec-timeout *<1-60>*	
Parameter	*<1-60>*	Set the SSH session time-out period in minutes, from 1 to 60 minutes.
Default	5 minutes	
Mode	Line Configuration	
Usage	Use this command to set the SSH session time-out period in minutes. If a user is logged in to the CLI, but does not take action, the user is automatically logged out from the CLI when the time-out period is reached.	

Example	This example shows how to set the SSH session time-out period to 25 minutes:
	`Switch(config)# line ssh`
	`Switch(config-line)# exec-timeout 25`	

max-session

Syntax	max-session *<1-4>*	
Parameter	*<1-4>*	Set the maximum number of simultaneous SSH sessions, from 1 to 4.
Default	4	
Mode	Line Configuration	
Usage	Use this command to set the maximum number of simultaneous SSH session on the switch.	

Example	This example shows how to set the maximum number of SSH sessions to 3:
	`Switch(config)# line ssh`
	`Switch(config-line)# max-session 3`	

ip ssh crypto key generate

Syntax	ip ssh crypto key generate rsa no ip ssh crypto key
Parameter	
Default	A default RSA key exists.
Mode	Privileged EXEC
Usage	Use the **ip ssh crypto key generate rsa** command to generate a new RSA key or replace the existing RSA key. Use the **no ip ssh crypto key** command to delete the existing RSA key. This process may take a few minutes.
Example	This example shows how to generate a new RSA key: `Switch# ip ssh crypto key generate rsa`

show ip ssh

Syntax	show ip ssh
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to display the SSH configuration and status.

Example	This example shows how to display the configuration and status of SSH:
	`Switch# show ip ssh`
	
	`SSH Configuration`
	
	`Administrative Mode : Disabled`
	`SSH Port : 22`
	`Protocol Levels : Version 2`
	`SSH Sessions Currently Active : 0`

```
Max SSH Sessions Allowed      : 4
SSH Timeout (mins)            : 5
Keys Present                  : RSA
Key Generation In Progress    : None
```

Traffic control commands

storm-control

Syntax

storm-control {broadcast | multicast | unknown-unicast} [level *percent*]
no storm-control {broadcast | multicast | unknown-unicast}

Parameter

broadcast	Select broadcast as the storm control type.
multicast	Select multicast as the storm control types.
unknown-unicast	Select unknown unicast as the storm control type.
percent	As an option, set a rate value. The *percent* parameter represents a percentage.

Default

All types of storm control are disabled.
If you enable any type of storm control, the default level is 5 (that is, 5 percent).

Mode

Global Configuration
Interface Configuration

Usage

Use the **storm-control {broadcast| multicast | unknown-unicast}** command to enable storm control of a specific type.
The different types of storm control (broadcast, multicast, and unknown unicast) are not mutually exclusive, but can each be enabled by issuing the command several times.
Use **no storm-control {broadcast| multicast | unknown-unicast}** command to disable storm control of a specific type.

Example

This example shows how to enable broadcast storm control on interface g1 and set a broadcast storm control rate of 10 percent:

```
Switch(config)# interface g1
Switch(config-if)# storm-control broadcast level 10
```

storm-control action

Syntax

storm-control {broadcast | multicast | unknown-unicast} action {trap | shutdown}
no storm-control {broadcast | multicast | unknown-unicast} action

Parameter

broadcast	The action must apply to broadcast traffic that exceeds the threshold.
multicast	The action must apply to multicast traffic that exceeds the threshold.
unknown-unicast	The action must apply to unknown unicast traffic that exceeds the threshold.
trap	Discard the frames that exceed the threshold and send an SNMP trap.
shutdown	Shut down the interface.

Default

All frames that exceed the threshold are discarded (dropped).

Mode

Global Configuration
Interface Configuration

Usage

Use the **storm-control {broadcast | multicast | unknown-unicast} action** command to set the action that must occur when the received storm control packets exceed the maximum rate.
Use **no storm-control {broadcast | multicast | unknown-unicast} action** command to reset the action to the default.

Example

This example shows how to set the action for broadcast storm control globally (because of the Global Configuration command mode) to shut down the interface or interfaces on which the maximum rate is exceeded:

```
Switch(config)# storm-control broadcast action shutdown
```

show storm-control

Syntax	show storm-control
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to show all storm control configurations, including the global configuration and the per-interface configurations.
Example	This example shows how to display all storm control configurations on the switch. For each of the three types of storm control, the output shows if the type is enabled or disabled for an interface.

```
Switch# show storm-control
 Storm control preamble and IFG: Excluded
 Storm control unit: bps

Port   | Broadcast           | Multicast           | Unknown-Unicast
       | %                   | %                   | %
-------+---------------------+---------------------+----------------------
  g1     5.0   Drop            5.0   Drop     (Off)  5.0   Drop     (Off)
  g2     5.0   Drop            5.0   Drop     (Off)  5.0   Drop     (Off)
  g3     5.0   Drop     (Off)  5.0   Drop     (Off)  5.0   Drop     (Off)
  g4     5.0   Drop     (Off)  5.0   Drop     (Off)  5.0   Drop     (Off)
   ..............
```

Monitoring Commands

Port commands

show cable-diag

Syntax	show cable-diag interfaces *id*	
Parameter	interfaces *id*	Specify the interface for which the diagnostic information must be displayed. The *id* parameter represents the interface number or a range of interface numbers. Use a hyphen to indicate a range. Use a comma to separate individual interfaces, ranges, or a combination of both.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to show the estimated length of the Ethernet cable that is attached to an interface. The interface must be active, and in the link-up state.	
Example	This example shows how to display the diagnostic information for the cables that are attached to interfaces g1 and g2:	

```
Switch# show cable-diag interfaces GigabitEthernet 1-2

 Port   |  Speed | Local pair | Pair length | Pair status
--------+--------+------------+-------------+---------------
   g1   |  auto  |    Pair A  |     0.88    | Open
                    Pair B  |     0.82    | Open
                    Pair C  |     0.80    | Open
                    Pair D  |     0.78    | Open

   g2   |  auto  |    Pair A  |     0.81    | Open
                    Pair B  |     0.81    | Open
                    Pair C  |     0.77    | Open
                    Pair D  |     0.81    | Open
```

Logging commands

clear logging

Syntax	clear logging {buffered | file}	
Parameter	buffered	Clears the log messages stored in RAM.
	file	Clears the log messages stored in the flash memory.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to clear the log messages from the internal logging buffer in the RAM or the flash memory.	

Example	This example first clears the log messages stored in RAM and then clears the log messages in flash memory:
	
	`Switch# clear logging buffered`
	`Switch# clear logging file`	

show logging

Syntax	show logging [buffered | file | traplogs}	
Parameter	buffered	Displays the log messages stored in RAM.
	file	Displays the log messages stored in flash memory.
	traplogs	Displays the log messages for SNMP traps.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use this command to show the log messages in RAM, flash memory, or the SNMP trap logs.	

Example

This example shows the log messages stored in the RAM:

```
Switch# show logging buffered
Logging service is enabled

Aggregation: disabled
Aggregation aging time: 300 sec

Console Logging: level notice
Buffer Logging : level info
File Logging   : disabled
Trap Logging   : level debug


Buffer Logging
--------------
<182>1 2021-01-01T00:01:33.480Z 192.168.0.239-1 discAgent-6
%% UPnP restart as no new routing interface is up w.r.t
intfm.
<182>1 2021-01-01T00:01:33.480Z 192.168.0.239-1 discAgent-6
%% Started UPnP service pid (591).
<182>1 2021-01-01T00:01:07.330Z 192.168.0.239-1 discAgent-6
%% Started UPnP service.
<182>1 2021-01-01T00:01:07.330Z 192.168.0.239-1 discAgent-6
%% Started UPnP service pid (555).
```

Mirroring commands

mirror session destination interface

Syntax

mirror session <*1-4*> destination interface *id* [allow-ingress]
no mirror session {all | <*1-4*> | [<*1-4*> destination interface *id*]}

Parameter

<*1-4*>	Specify the mirror session, which can be a number from 1 to 4. The switch can support a total of four simultaneous mirroring sessions.
id	Specify the destination interface (a single physical port) to which the traffic is mirrored. The *id* parameter represents the interface number, allows a partial port name, and is not case-sensitive. For example, g1 or GigabitEthernet2.
allow-ingress	As an option, enable forwarding of ingress traffic.
all	For the no form of the command, specify all mirroring sessions. The switch can support up to four simultaneous mirroring sessions.

Default	No destination port is configured.
Mode	Global Configuration
Usage	Use the **mirror session destination interface** command to set the physical destination port for a specific port mirror session. Use the **no mirror session** command to stop either all mirroring sessions on the switch, a single mirroring session on the switch, or one specific mirroring session on a specific physical destination port.
Example	This example shows how to set interface g1 as the destination port for both incoming and outgoing traffic for mirroring session 1: `Switch(config)# mirror session 1 destination interface g1`

mirror session source interface

Syntax	mirror session <*1-4*> source interface *id* {both | rx | tx} no mirror session {all | <*1-4*> | [<*1-4*> source interface *id* {both | rx | tx}]}

Parameter		
	<*1-4*>	Specify the mirror session, which can be a number from 1 to 4. The switch can support a total of four simultaneous mirroring sessions.
	id	Specify the source interface, which can be a physical port or LAG, from which traffic is mirrored. The *id* parameter represents the interface number, allows a partial port name, and is not case-sensitive.
	both	Mirroring applies to both incoming and outgoing traffic.
	rx	Mirroring applies to incoming traffic only.
	tx	Mirroring applies to outgoing traffic only.
	all	For the no form of the command, specify all mirroring sessions. The switch can support up to four simultaneous mirroring sessions.

Default	No monitor sessions are configured for any source interfaces.
Mode	Global Configuration

Usage	Use the **mirror session source interface** command to start a port mirroring session from a specific source interface. Note: Before you start a port mirroring session, first configure the destination port for the session. Use the **no mirror session** command to stop either all mirroring sessions on the switch, a single mirroring session on the switch, or one specific mirroring session on a specific source port. If you stop it on a specific source port, you must stop it for either a specific direction or both directions.
Example	This example shows how to start port mirroring session 1 to mirror both incoming and outgoing traffic on interfaces g2, g3, g4, and g5: `Switch(config)# mirror session 1 source interface g2-5 both`

Maintenance Commands

Reset commands

reboot

Syntax	reboot
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to reboot the switch without powering down the switch. If you reboot the switch, all network connections are terminated. The switch uses the saved startup configuration to initialize the switch. The CLI prompts you to confirm that the reboot action must proceed.

Example	This example shows how to reboot the switch:
	
	`Switch# reboot`
	`Are you sure you want to reboot the system? (Y/N)[N]y`
	`Rebooting system ...`

restore-defaults

Syntax	restore-defaults
Parameter	
Default	No default value.
Mode	Privileged EXEC

Usage	Use this command to restore the switch to factory default settings, after which the switch automatically reboots. Note: This command has the same effect as the **delete startup-config** command.

Example	This example shows how to restore the switch to factory default settings and then reboot the switch:
	
	`Switch# restore-defaults`
	`Rebooting now...`

delete

Syntax	delete {[startup-config | flash://startup-config] | [backup-config | flash://backup-config]}
Parameter	startup-config — Deletes the startup configuration file from flash memory. flash://startup-config — Deletes the startup configuration file from flash memory. backup-config — Deletes the backup configuration file from flash memory. flash://backup-config — Deletes the backup configuration file from flash memory.
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to delete the startup configuration file or backup configuration file from flash memory. Notes: • The **delete startup-config** command is identical to the **delete flash://startup-config** command. • The **delete backup-config** command is identical to the **delete flash://backup-config** command. • The **delete startup-config** command has the same effect as the **restore-defaults** command.
Example	This example shows how to delete the backup configuration file from flash memory: `Switch# delete backup-config`

delete system

Syntax	delete system {image0 | image1}
Parameter	image0 Deletes image0 from the flash memory. image1 Deletes image1 from the flash memory.
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to delete a firmware image that is stored in flash memory. **Important**: The numbering of the firmware images in the CLI differs from the numbering in the device UI: • image0 in the CLI = image1 in the device UI • image1 in the CLI = image2 in the device UI
Example	This example shows how to delete firmware image1 from flash memory: `Switch# delete system image1`

Copy, export, and update commands

Copy

Syntax	copy {*flash://* | *tftp://*} {*flash://* | *tftp://*} copy {*flash://* | *usb://*} {*flash://* | *usb://*} copy *scp:// flash://* copy {*tftp://* | *scp://* | usb://} {backup-config | running-config | startup-config} copy {backup-config | running-config | startup-config} {*tftp://* | *scp://* | *usb://*} copy {backup-config | startup-config} running-config copy {backup-config | running-config} startup-config copy {running-config | startup-config} backup-config copy tech-support {*tftp://* | *scp://*}

Parameter	*flash://*	Specifies either the source file that is in flash memory or the destination file that must be stored in flash memory. The *flash://* parameter can be one of the following files: flash://startup-config flash://running-config flash://backup-config flash://image0 flash://image1 flash://ram.log flash://flash.log
	tftp://	Specify the IP address of the remote TFTP server and the remote file name. Use the following format: tftp://<ip-address>/<path-to-remote-file>
	usb://	Specify the file name on the USB device. Use the following format: usb://<filename> This parameter is supported only on switch models GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP.
	scp://	Specify the IP address of the remote SSH server and the remote file name. Use the following format: scp://<username>@<ip-address>**:**<path-to-remote-file>
	running-config	Selects the running configuration file.
	startup-config	Selects the startup configuration file.
	backup-config	Selects the backup configuration file.
	tech-support	Selects the technical support file.
Default	No default value.	
Mode	Privileged EXEC	
Usage	The switch includes multiple types of files, many of which are important for its management. The most common file operation is copy. The **copy** command lets you upgrade, back up, and copy the following types of files. • Firmware images • Configuration files • Syslog files	

Important: The numbering of the firmware images in the CLI differs from the numbering in the device UI:

- image0 in the CLI = image1 in the device UI
- image1 in the CLI = image2 in the device UI

Example

This example shows how to copy the running configuration to the startup configuration:

```
Switch# copy running-config startup-config
```

This example shows how to back up the running configuration to a file named test1.cfg on a remote TFTP server with IP address 192.168.0.1:

```
Switch# copy running-config tftp://192.168.0.1/test1.cfg
Uploading file...Please Wait...
Uploading Done
```

This example shows how to upgrade the startup configuration from a file named test2.cfg on remote TFTP server with IP address 192.168.0.1:

```
Switch# copy tftp://192.168.0.1/test2.cfg startup-config
Downloading file...Please Wait...
Downloading Done
Upgrade config success. Do you want to reboot now? (y/n)n
```

This example shows how to back up the startup-config configuration to a file named test3.cfg on a remote SSH server with IP address 192.168.0.1. The file is backed up using an account with user name 'user' and placed in the /home/user/test directory:

```
Switch# copy startup-config
scp://user@192.168.0.1:/home/user/test/test3.cfg
Uploading file. Please wait...
The authenticity of host '192.168.0.1 (192.168.0.1)' can't
be established.
ED25519 key fingerprint is
SHA256:dI8nnu4v2YrnaTCyYvV0Jn3vV/poRS4qoK38JD0aJr0.
This key is not known by any other names
Are you sure you want to continue connecting
(yes/no/[fingerprint])?
Warning: Permanently added '192.168.0.1' (ED25519) to the
list of known hosts.
user@192.168.0.1's password:
startup-config                                100% 1500
1.5KB/s   00:00
Uploading Done
Success
```

File management commands

save

Syntax	save
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to save the running configuration to the startup configuration file. Note: This command has the same effect as the **copy running-config startup-config** command.

Example	This example shows how to save the running configuration to the startup configuration file:
	
	`Switch# save`
	`Success`
	
	This example shows how to display the startup configuration:
	
	`Switch# show startup-config`
	`! Model: GS728TPv2`
	`! System Description: NETGEAR 24-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS728TPv2)`
	`.....`

boot system

Syntax	boot system {image0 | image1}	
Parameter	image0	Boots the switch from flash image partition 0
	image1	Boots the switch from flash image partition 1
Default	The default boot image is image0.	

Mode	Global Configuration
Usage	The switch support two images, which lets you store a backup image in the flash memory of the switch. Use this command to select the active firmware image. If you select image1 to become the new active firmware, image0 becomes the new backup image.

Example	This example shows how to select image1 as the active image:
	
	`Switch(config)# boot system image1`
	`Select "image1" Success`

show bootvar

Syntax	show bootvar
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to show the image information in both partitions of the flash memory. The output of the command also shows the currently active image and the image that will be the active image after the switch boots.

Example	This example shows how to display the dual image information on the switch:
	
	`Switch# show bootvar`
	`Image Version Date Status File Name`
	`----- ------- ---------- -------- ----------`
	`0 6.0.9.1 2021-09-22 16:53:53 Active GS728_752TP_TPP_V6.0.9.1.bix`
	`1 6.0.9.2 2021-10-09 18:32:26 Not active* GS728_752TP_TPP_V6.0.9.2.bix`

show startup-config

Syntax	show startup-config
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to show the contents of the startup configuration for the switch. Note: The configuration file is text based.

Example	This example shows how to the display the startup configuration for the switch:
	
	`Switch# show startup-config`
	`! Model: GS728TPv2`
	`! System Description: NETGEAR 24-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS728TPv2)`
	`!`
	
	`.....`

show running-config

Syntax	show running-config [interfaces *id*]	
Parameter	*id*	Show the content of the running configuration. As an option, show the content of the running configuration for a specific interface. The *id* parameter represents the interface number, allows a partial port name, and is not case-sensitive.
Default	No default value.	
Mode	Privileged EXEC	
Usage	Use the **show running-config** command to show the running configuration for the switch.	

	Use the **show running-config interfaces** command to show the running configuration for a specific interface. Note: The configuration file is text based.

Example	This example shows how to display the running configuration for the switch:
	
	`Switch# show running-config`
	`! Model: GS728TPv2`
	`! System Description: NETGEAR 24-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS728TPv2)`
	`!`
	
	`.....`
	
	This example shows how to display the running configuration for interface g1:
	
	`Switch# show running-config interfaces g1`
	`interface g1`
	`speed 1000`
	
	`.....`

show backup-config

Syntax	show backup-config
Parameter	
Default	No default value.
Mode	Privileged EXEC
Usage	Use this command to show the backup configuration for the switch. Note: The configuration file is text based.

Example	This example shows how to the display the backup configuration for the switch:
	
	`Switch# show backup-config`
	`! Model: GS728TPv2`
	`! System Description: NETGEAR 24-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS728TPv2)`
	`!`
	`.....`

show tech-support

Syntax	show tech-support
Parameter	
Default	N/A
Mode	Privileged EXEC
Usage	Use this command to display system and configuration information that can be beneficial to technical support.
Example	This example shows how to display technical information for technical support:

```
Switch(config)# show tech-support

!!!!!!!!!

------------------ System Information ------------------

System Name      : Switch
System Location  :
System Contact   :
MAC Address      : 00:01:02:03:04:05
IP Address       : 192.168.0.239
Subnet Mask      : 255.255.255.0
Board Name       : GS728TPv2 (BID:2)
Hardware Version : 2
Loader Version   : 1.0.0.1
Loader Date      : 2017-12-28 09:35:22 UTC
Firmware Version : 6.0.9.2
Firmware Date    : Oct 29 2021 - 14:16:17
System Object ID : 1.3.6.1.4.1.4526.100.4.48
System Up Time   : 0 days, 17 hours, 2 mins, 50 secs

……
```

Troubleshooting commands

ping

Syntax	ping {*a.b.c.d* | *hostname* | *x:x::x:x*} [count *number*]	
Parameter	*a.b.c.d*	Sets the IPv4 address to be pinged, which is represented by *a.b.c.d*.
	hostname	Sets the host name, which is represented by *hostname*.
	x:x::x:x	Sets the IPv6 address to be pinged, which is represented by *x:x::x:x*.
	count <*number*>	As an option, specify how many times the ping must be sent. The *number* parameter represents the number of times, which can be from 1 to 999999999. If you do not use the **count** keyword and do not specify the *number* parameter, the ping is sent four times.
Default	No default value.	
Mode	User EXEC Privileged EXEC	
Usage	Use this command to ping an IPv4 address, IPV6 address, or hostname.	

Example

This example shows how to ping a host with IPv4 address 192.168.0.111:

```
Switch# ping 192.168.0.111
PING 192.168.0.111 (192.168.0.111): 56 data bytes
64 bytes from 192.168.0.111: icmp_seq=0 ttl=128 time=10.0
ms
64 bytes from 192.168.0.111: icmp_seq=1 ttl=128 time=0.0 ms
64 bytes from 192.168.0.111: icmp_seq=2 ttl=128 time=0.0 ms
64 bytes from 192.168.0.111: icmp_seq=3 ttl=128 time=0.0 ms

--- 192.168.0.111 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 0.0/2.5/10.0 ms
```