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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Revision History

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<th>Publication Part Number</th>
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| 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 |
| 202-12580-01            | December 2021| Initial publication with support for the GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP switch models. |
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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.
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<table>
<thead>
<tr>
<th>Symbol</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>italic font</td>
<td>value or [value]</td>
<td>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.</td>
</tr>
<tr>
<td>[ ] square brackets</td>
<td>[keyword]</td>
<td>Indicates an optional parameter.</td>
</tr>
<tr>
<td>{ } curly braces</td>
<td>{choice1</td>
<td>choice2}</td>
</tr>
<tr>
<td></td>
<td>choice1</td>
<td>choice2</td>
</tr>
<tr>
<td>[[]] Braces within square brackets</td>
<td>[{choice1</td>
<td>choice2}]</td>
</tr>
</tbody>
</table>

‘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 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:

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

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

How to enter or exit a command mode

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

<table>
<thead>
<tr>
<th>Command Mode</th>
<th>Access Method</th>
<th>Exit or Access Previous Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Exec</td>
<td>From the Privileged EXEC mode, enter exit.</td>
<td>To return to the Privileged EXEC mode, enter enable and leave the password blank.</td>
</tr>
</tbody>
</table>
### CLI Modes and Common Commands

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
<th>To exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privileged EXEC</td>
<td>This is the default mode when you log in to the CLI. For CLI mode, enter enable and leave the password blank.</td>
<td>exit.</td>
</tr>
<tr>
<td>Global Configuration</td>
<td>From the Privileged EXEC mode, enter configure.</td>
<td>exit.</td>
</tr>
<tr>
<td>VLAN Configuration</td>
<td>From the Global Configuration mode, enter vlan with a VLAN ID.</td>
<td></td>
</tr>
<tr>
<td>Interface Configuration</td>
<td>From the Global Configuration mode, enter interface with an interface ID.</td>
<td>exit.</td>
</tr>
<tr>
<td>Interface Range Configuration</td>
<td>From the Global Configuration mode, enter interface range with an interface range ID.</td>
<td>exit.</td>
</tr>
<tr>
<td>Line Configuration</td>
<td>From the Global Configuration mode, enter line ssh.</td>
<td>Ctrl-Z.</td>
</tr>
</tbody>
</table>

### 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**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>enable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>No default value.</td>
</tr>
<tr>
<td>Mode</td>
<td>User EXEC</td>
</tr>
</tbody>
</table>
| 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.
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<table>
<thead>
<tr>
<th>Mode</th>
<th>Global Configuration</th>
</tr>
</thead>
</table>
| 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

<table>
<thead>
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<th>Syntax</th>
<th>interface id</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>id</td>
</tr>
<tr>
<td>Default</td>
<td>No default value.</td>
</tr>
<tr>
<td>Mode</td>
<td>Global Configuration</td>
</tr>
<tr>
<td>Usage</td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td>Switch(config-if)#</td>
</tr>
<tr>
<td>Example</td>
<td>This example shows how to enter Interface Configuration mode for interface Gigabit Ethernet 1:</td>
</tr>
<tr>
<td></td>
<td>Switch# configure</td>
</tr>
<tr>
<td></td>
<td>Switch(config)# interface GigabitEthernet 1</td>
</tr>
</tbody>
</table>
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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)#
```
### 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
```
Smart Switches with Optional Remote/Cloud Management

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)#

drop

Syntax
drop

Parameter

Default
No default value.

Mode
Privileged EXEC
Global Configuration
VLAN Configuration
Interface Configuration
Interface Range Configuration
Smart Switches with Optional Remote/Cloud Management

---

**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.

<table>
<thead>
<tr>
<th>Command Mode</th>
<th>Parent Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Exec</td>
<td>None</td>
</tr>
<tr>
<td>Privileged EXEC</td>
<td>User Exec</td>
</tr>
<tr>
<td>Global Configuration</td>
<td>Privileged EXEC</td>
</tr>
<tr>
<td>VLAN Configuration</td>
<td>Global Configuration</td>
</tr>
<tr>
<td>Interface Configuration</td>
<td>Global Configuration</td>
</tr>
<tr>
<td>Interface Range Configuration</td>
<td>Global Configuration</td>
</tr>
<tr>
<td>Line Configuration</td>
<td>Global Configuration</td>
</tr>
</tbody>
</table>
### Smart Switches with Optional Remote/Cloud Management

<table>
<thead>
<tr>
<th>Example</th>
<th>This example shows how to enter privileged EXEC mode and then use the <strong>exit</strong> command to return to the user EXEC mode:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Switch&gt; enable</td>
</tr>
<tr>
<td></td>
<td>Switch# exit</td>
</tr>
<tr>
<td></td>
<td>Switch&gt;</td>
</tr>
</tbody>
</table>
### System Commands

#### Management commands

**system name**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>system name name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parameter</strong></td>
<td>name</td>
</tr>
<tr>
<td>name</td>
<td>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 (&quot;).</td>
</tr>
</tbody>
</table>

| 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
Smart Switches with Optional Remote/Cloud Management

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
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 : 000000000001

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:

<table>
<thead>
<tr>
<th>status</th>
<th>KBytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>free</td>
<td>43280</td>
</tr>
<tr>
<td>alloc</td>
<td>82360</td>
</tr>
</tbody>
</table>

CPU Utilization:

<table>
<thead>
<tr>
<th>PID</th>
<th>Name</th>
<th>5 Secs</th>
<th>60 Secs</th>
<th>300 Secs</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>[ksoftirqd/0]</td>
<td>0.09%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>500</td>
<td>DiscoveryAgent</td>
<td>0.94%</td>
<td>0.69%</td>
<td>0.74%</td>
</tr>
<tr>
<td>412</td>
<td>usaged</td>
<td>4.33%</td>
<td>4.29%</td>
<td>4.29%</td>
</tr>
<tr>
<td>420</td>
<td>snmpd</td>
<td>0.00%</td>
<td>0.01%</td>
<td>0.01%</td>
</tr>
<tr>
<td>440</td>
<td>polld</td>
<td>1.69%</td>
<td>1.61%</td>
<td>1.62%</td>
</tr>
<tr>
<td>445</td>
<td>cli</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.01%</td>
</tr>
</tbody>
</table>

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.
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**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, GS728TPPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

Syntax
ipv6
no ipv6

Parameter

Default
IPv6 is enabled.
**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
```
Smart Switches with Optional Remote/Cloud Management

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 prefix <0-128>
no ipv6 address x:x::x

Parameter

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

Parameter

x:x::x Specify the default gateway IPv6 address for the switch. The IPv6 address is represented by x:x:x.
### Smart Switches with Optional Remote/Cloud Management

<table>
<thead>
<tr>
<th>Default</th>
<th>No IPv6 default gateway address is configured on the switch.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Global Configuration</td>
</tr>
<tr>
<td>Usage</td>
<td>Use the <strong>ipv6 default-gateway</strong> command to set the IPv6 default gateway address. Use the <strong>no ipv6 default-gateway</strong> command to remove the IPv6 default gateway address.</td>
</tr>
<tr>
<td>Example</td>
<td>This example shows how to modify the IPv6 default gateway address on the switch:</td>
</tr>
</tbody>
</table>

```
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

<table>
<thead>
<tr>
<th>Syntax</th>
<th>ipv6 dhcp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>ipv6 dhcp</td>
</tr>
<tr>
<td>Default</td>
<td>The DHCPv6 client is disabled.</td>
</tr>
<tr>
<td>Mode</td>
<td>Global Configuration</td>
</tr>
<tr>
<td>Usage</td>
<td>Use the <strong>ipv6 dhcp</strong> command to enable the DHCPv6 client to let the switch receive an IP address from a DHCPv6 server. Use the <strong>no ipv6 dhcp</strong> command to disable the DHCPv6 client so that you can set a static IPv6 address or IPv6 autoconfiguration address for the switch.</td>
</tr>
<tr>
<td>Example</td>
<td>This example shows how to enable the DHCPv6 client:</td>
</tr>
</tbody>
</table>

```
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

<table>
<thead>
<tr>
<th>VLAN</th>
<th>Interface</th>
<th>IPv6 address</th>
<th>HW address</th>
<th>Status</th>
<th>Router State</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>vlan 1</td>
<td>fe80::b498:654a:75f5:9c7b</td>
<td>50:3e:aa:07:ab:46</td>
<td>Dynamic</td>
<td>No</td>
</tr>
</tbody>
</table>

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.
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 attempts: 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
- GS724Tp2 and GS724TPP
- GS728Tp2, GS728TPPv2, GS752Tp2, 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
```

<table>
<thead>
<tr>
<th>Port</th>
<th>State</th>
<th>Priority</th>
<th>Class</th>
<th>Power Up</th>
<th>Max.Power (Admin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>g1</td>
<td>Never</td>
<td>off</td>
<td>low</td>
<td>N/A</td>
<td>802.3at 0</td>
</tr>
</tbody>
</table>

Port Overload Short Current Power Denied MPS Absent Invalid Sig.

| g1   | 0     | 0        | 0       | 0        |

Port Time Range Status

<table>
<thead>
<tr>
<th>g1</th>
<th>-------------------</th>
</tr>
</thead>
</table>
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: 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
Smart Switches with Optional Remote/Cloud Management

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
----- ----- ------- --------- ------------ -------- ---------
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

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**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>show lldp interfaces id local-device</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>interfaces id</td>
</tr>
</tbody>
</table>

| Default              | No default value.                   |
### Smart Switches with Optional Remote/Cloud Management

<table>
<thead>
<tr>
<th>Mode</th>
<th>Privileged EXEC</th>
</tr>
</thead>
</table>

| 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**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>show lldp med</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Default</th>
<th>No default value.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Privileged EXEC</th>
</tr>
</thead>
</table>

| Usage | Use this command to display the LLDP MED configuration information for the switch. |
Smart Switches with Optional Remote/Cloud Management

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
```

<table>
<thead>
<tr>
<th>Port</th>
<th>Capabilities</th>
<th>Network Policy</th>
<th>Location</th>
<th>Inventory</th>
<th>PoE PSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>g1</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>g2</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>g3</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>g4</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>g5</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>g6</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>g7</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>g8</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>g9</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>g10</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Port</th>
<th>Device ID</th>
<th>Port ID</th>
<th>SysName</th>
<th>Capabilities</th>
<th>TTL</th>
</tr>
</thead>
<tbody>
<tr>
<td>g1</td>
<td>TREEBASE</td>
<td>g11</td>
<td>TREEBASE</td>
<td>Station Only</td>
<td>33</td>
</tr>
</tbody>
</table>

show lldp statistics

Syntax

show lldp statistics

Parameter

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

<table>
<thead>
<tr>
<th>Port</th>
<th>TX Frames</th>
<th>RX Frames</th>
<th>RX TLVs</th>
<th>RX Ageouts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>Discarded</td>
<td>Errors</td>
</tr>
<tr>
<td>g1</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g3</td>
<td>0</td>
<td>50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>g10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Syntax</th>
<th>interface id</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>id</td>
</tr>
<tr>
<td>Description</td>
<td>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.</td>
</tr>
</tbody>
</table>

| 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

<table>
<thead>
<tr>
<th>Syntax</th>
<th>interface id</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>id</th>
</tr>
</thead>
<tbody>
<tr>
<td>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:</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>----</td>
</tr>
<tr>
<td>MultiGigabitEthernet (or mg): Ports 1-4.</td>
<td></td>
</tr>
<tr>
<td>XMultiGigabitEthernet (or xmg): Ports 5-8.</td>
<td></td>
</tr>
<tr>
<td>XGigabitEthernet (xg): Ports 9 and 10. You can also specify a port range. For example, mg1-4, or xmg 5-8, or xg9,10.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Default</th>
<th>No default value.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Global Configuration</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Usage</th>
<th>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:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch(config-if)#</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example</th>
<th>This example shows how to enter Interface Configuration mode for interface MultiGigabitEthernet 3:</th>
</tr>
</thead>
</table>
| Switch# configure  
Switch(config)# interface MultiGigabitEthernet 3  
Switch(config-if)# |

<table>
<thead>
<tr>
<th>Example</th>
<th>This example shows how to enter Interface Configuration mode for interface xmg7:</th>
</tr>
</thead>
</table>
| Switch# configure  
Switch(config)# interface xmg7  
Switch(config-if)# |
### interface range

<table>
<thead>
<tr>
<th>Syntax</th>
<th>interface range id</th>
</tr>
</thead>
</table>

**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

<table>
<thead>
<tr>
<th>Port</th>
<th>Name</th>
<th>Status</th>
<th>Vlan</th>
<th>Duplex</th>
<th>Speed</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>g1</td>
<td>userport</td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>Copper</td>
</tr>
<tr>
<td>g2</td>
<td>uplink port</td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>Copper</td>
</tr>
</tbody>
</table>

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
<table>
<thead>
<tr>
<th>Port</th>
<th>Name</th>
<th>Status</th>
<th>Vlan</th>
<th>Duplex</th>
<th>Speed</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>g1</td>
<td></td>
<td>connected</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>Copper</td>
</tr>
</tbody>
</table>
```
This example shows how to display the protected port state for interfaces g1 and g2:

```
Switch# show interfaces g1-2 protected
```

<table>
<thead>
<tr>
<th>Port</th>
<th>Protected State</th>
</tr>
</thead>
<tbody>
<tr>
<td>g1</td>
<td>enabled</td>
</tr>
<tr>
<td>g2</td>
<td>enabled</td>
</tr>
</tbody>
</table>

**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 GS752TPPP

**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       g1       connected   1  a-full  100M     Copper
  g2       g2       connected   1  a-full  a-100M   Copper
  g3       g3       notconnect  1  auto   auto     Copper
  g4       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.
Smart Switches with Optional Remote/Cloud Management

Syntax

```plaintext
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:

```plaintext
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:

```plaintext
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 autonegotation on interface g1 and to enable autonegotation 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

<table>
<thead>
<tr>
<th>Port</th>
<th>Temperature</th>
<th>Voltage</th>
<th>Current</th>
<th>Output power</th>
<th>Input power</th>
<th>OE-Present</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[C]</td>
<td>[Volt]</td>
<td>[mA]</td>
<td>[mWatt]</td>
<td>[mWatt]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g1</td>
<td>N/S</td>
<td>N/S</td>
<td>N/S</td>
<td>N/S</td>
<td>N/S</td>
<td>Remove</td>
<td>Loss</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Group ID</th>
<th>Type</th>
<th>Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LACP</td>
<td>Inactive: g1-3</td>
</tr>
<tr>
<td>2</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>------</td>
<td></td>
</tr>
</tbody>
</table>
```

……………
lag type

Syntax

lag type {lacp | static}

Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>lacp</td>
<td>Set the LAG type as LACP</td>
</tr>
<tr>
<td>static</td>
<td>Set the LAG type as static</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Group ID</th>
<th>Type</th>
<th>Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LACP</td>
<td>Inactive: g1-3</td>
</tr>
<tr>
<td>2</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>----</td>
<td></td>
</tr>
</tbody>
</table>
```

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

<table>
<thead>
<tr>
<th>Group ID</th>
<th>Type</th>
<th>Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LACP</td>
<td>Inactive: g1-3</td>
</tr>
<tr>
<td>2</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>……………</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VLAN commands

vlan

Syntax
vlan vlan-list
no vlan vlan-list

Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vlan-list</td>
<td>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.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>VID</th>
<th>VLAN Name</th>
<th>Untagged Ports</th>
<th>Tagged Ports</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>VLAN-one-hundred</td>
<td>---</td>
<td>---</td>
<td>Static</td>
</tr>
</tbody>
</table>

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.
Smart Switches with Optional Remote/Cloud Management

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:

<table>
<thead>
<tr>
<th>Vlan</th>
<th>Name</th>
<th>Egress rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>default</td>
<td>Untagged</td>
</tr>
<tr>
<td>100</td>
<td>VLAN-one-hundred</td>
<td>Tagged</td>
</tr>
<tr>
<td>101</td>
<td>VLAN0101</td>
<td>Tagged</td>
</tr>
<tr>
<td>102</td>
<td>VLAN0102</td>
<td>Tagged</td>
</tr>
<tr>
<td>103</td>
<td>VLAN0103</td>
<td>Tagged</td>
</tr>
<tr>
<td>104</td>
<td>VLAN0104</td>
<td>Tagged</td>
</tr>
<tr>
<td>105</td>
<td>VLAN0105</td>
<td>Tagged</td>
</tr>
</tbody>
</table>

Forbidden VLANs:

<table>
<thead>
<tr>
<th>Vlan</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
Smart Switches with Optional Remote/Cloud Management

<table>
<thead>
<tr>
<th>Mode</th>
<th>Interface Configuration</th>
</tr>
</thead>
</table>

**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:

<table>
<thead>
<tr>
<th>Vlan</th>
<th>Name</th>
<th>Egress rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>default</td>
<td>Untagged</td>
</tr>
<tr>
<td>100</td>
<td>VLAN-one-hundred</td>
<td>Tagged</td>
</tr>
<tr>
<td>101</td>
<td>VLAN0101</td>
<td>Tagged</td>
</tr>
<tr>
<td>102</td>
<td>VLAN0102</td>
<td>Tagged</td>
</tr>
<tr>
<td>103</td>
<td>VLAN0103</td>
<td>Tagged</td>
</tr>
<tr>
<td>104</td>
<td>VLAN0104</td>
<td>Tagged</td>
</tr>
</tbody>
</table>

Forbidden VLANs:

<table>
<thead>
<tr>
<th>Vlan</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>management-vlan</td>
</tr>
</tbody>
</table>
```

**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
### Smart Switches with Optional Remote/Cloud Management

#### 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

<table>
<thead>
<tr>
<th>VID</th>
<th>VLAN Name</th>
<th>Untagged Port</th>
<th>Tagged Port</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>default</td>
<td>g1-28,lag1-4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

---

### 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 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.
Smart Switches with Optional Remote/Cloud Management

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.
Smart Switches with Optional Remote/Cloud Management

<table>
<thead>
<tr>
<th>Mode</th>
<th>Privileged EXEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usage</td>
<td>Use this command to show the MSTP information for a specific MST instance on an interface.</td>
</tr>
<tr>
<td>Example</td>
<td>This example shows how to display MSTP information for MST instance 0 on interface g23:</td>
</tr>
</tbody>
</table>

Switch# show spanning-tree mst 0 interfaces g23

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

<table>
<thead>
<tr>
<th>Port Identifier : 128/23</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Path-Cost : 0</td>
</tr>
<tr>
<td>Internal Path-Cost : 0</td>
</tr>
<tr>
<td>Designated Root Bridge : 32768/00:11:22:33:44:55</td>
</tr>
<tr>
<td>External Root Cost : 0</td>
</tr>
<tr>
<td>Internal Root Cost : 0</td>
</tr>
<tr>
<td>Designated Bridge : 32768/00:11:22:33:44:55</td>
</tr>
<tr>
<td>Internal Port Path Cost : 19</td>
</tr>
<tr>
<td>Port Role : Designated</td>
</tr>
<tr>
<td>Port State : Forwarding</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Port Identifier : 128/23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Path-Cost : 0</td>
</tr>
<tr>
<td>Regional Root Bridge : 32768/00:11:22:33:44:55</td>
</tr>
<tr>
<td>Internal Root Cost : 0</td>
</tr>
<tr>
<td>Designated Bridge : 32768/00:11:22:33:44:55</td>
</tr>
<tr>
<td>Internal Port Path Cost : 19</td>
</tr>
<tr>
<td>Port Role : Designated</td>
</tr>
<tr>
<td>Port State : Forwarding</td>
</tr>
</tbody>
</table>
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
```
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 display 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

<table>
<thead>
<tr>
<th>IP Address</th>
<th>I/F</th>
<th>I/F Status</th>
<th>Type</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>192.168.1.1/24</td>
<td>VLAN 2</td>
<td>UP/DOWN</td>
<td>Static</td>
<td>Valid</td>
</tr>
<tr>
<td>192.168.2.1/24</td>
<td>VLAN 3</td>
<td>UP/DOWN</td>
<td>Static</td>
<td>Valid</td>
</tr>
</tbody>
</table>
Routing table commands

show ip route

This command is supported on the following switch models:
- GS108Tv3 and GS110TPv3
- GS728Tv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

<table>
<thead>
<tr>
<th>Syntax</th>
<th>show ip route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>No default value.</td>
</tr>
</tbody>
</table>
| 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

<table>
<thead>
<tr>
<th>Syntax</th>
<th>clear arp-cache</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>No default value.</td>
</tr>
<tr>
<td>Mode</td>
<td>User EXEC</td>
</tr>
<tr>
<td></td>
<td>Privileged EXEC</td>
</tr>
<tr>
<td>Usage</td>
<td>Use this command to delete all ARP entries on the switch.</td>
</tr>
<tr>
<td>Example</td>
<td>This example shows how to delete all ARP entries on the switch:</td>
</tr>
<tr>
<td></td>
<td>Switch(config)# clear arp-cache</td>
</tr>
</tbody>
</table>

**show arp**

This command is supported on the following switch models:
- GS108Tv3 and GS110TPv3
- GS728TPv2, GS728TPPv2, GS752TPv2, and GS752TPP
- MS510TXM and MS510TXUP

<table>
<thead>
<tr>
<th>Syntax</th>
<th>show arp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>No default value.</td>
</tr>
<tr>
<td>Mode</td>
<td>User EXEC</td>
</tr>
<tr>
<td></td>
<td>Privileged EXEC</td>
</tr>
</tbody>
</table>
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  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no username name</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>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: ! # $ % &amp;（）* + , - / ; &lt; = &gt; @ [ ] ^ _ `{ }</td>
</tr>
<tr>
<td>password</td>
<td>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: ! # $ % &amp;（）* + , - / ; &lt; = &gt; @ [ ] ^ _ `{ }</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Default</th>
<th>User name “admin” with password “password” and privilege level 15.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Global Configuration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Usage</th>
<th>Use the <strong>username</strong> command to add a new user account or change an existing user account. Use the <strong>no username</strong> 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.</th>
</tr>
</thead>
</table>
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+pxgiCTjJFGQg==
 15  | secret | test1    | wTq2zEZRlU5w6EcDR+b6DQ==
 15  | secret | test2    | 9T3V1x9TA0ZkfxZ8Fx+NWA==
 15  | secret | test3    | mCqN/jKs2n9FbPIurDqY7g==
```

**show users**

**Syntax**
show users

**Parameter**

**Default**
No default value.

**Mode**
Privileged EXEC
Smart Switches with Optional Remote/Cloud Management

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

<table>
<thead>
<tr>
<th>Username</th>
<th>Protocol</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin</td>
<td>console</td>
<td>---</td>
</tr>
<tr>
<td>user1</td>
<td>telnet</td>
<td>192.168.0.1</td>
</tr>
<tr>
<td>user2</td>
<td>ssh</td>
<td>192.168.0.1</td>
</tr>
</tbody>
</table>

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
```
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 type.
- 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

<table>
<thead>
<tr>
<th>Port</th>
<th>Broadcast</th>
<th>%</th>
<th>Multicast</th>
<th>%</th>
<th>Unknown-Unicast</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>g1</td>
<td>5.0</td>
<td>Drop</td>
<td>5.0</td>
<td>Drop</td>
<td>(Off)</td>
<td>5.0</td>
</tr>
<tr>
<td>g2</td>
<td>5.0</td>
<td>Drop</td>
<td>5.0</td>
<td>Drop</td>
<td>(Off)</td>
<td>5.0</td>
</tr>
<tr>
<td>g3</td>
<td>5.0</td>
<td>Drop</td>
<td>(Off)</td>
<td>5.0</td>
<td>Drop</td>
<td>(Off)</td>
</tr>
<tr>
<td>g4</td>
<td>5.0</td>
<td>Drop</td>
<td>(Off)</td>
<td>5.0</td>
<td>Drop</td>
<td>(Off)</td>
</tr>
</tbody>
</table>

.............
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

<table>
<thead>
<tr>
<th>Port</th>
<th>Speed</th>
<th>Local pair</th>
<th>Pair length</th>
<th>Pair status</th>
</tr>
</thead>
<tbody>
<tr>
<td>g1</td>
<td>auto</td>
<td>Pair A</td>
<td>0.88</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pair B</td>
<td>0.82</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pair C</td>
<td>0.80</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pair D</td>
<td>0.78</td>
<td>Open</td>
</tr>
<tr>
<td>g2</td>
<td>auto</td>
<td>Pair A</td>
<td>0.81</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pair B</td>
<td>0.81</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pair C</td>
<td>0.77</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pair D</td>
<td>0.81</td>
<td>Open</td>
</tr>
</tbody>
</table>
```
## Logging commands

### clear logging

| Syntax         | clear logging {buffered | file} |
|----------------|----------------------------------|
| Parameter      | buffered                        |
|                | Clear 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. |
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. 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
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

<table>
<thead>
<tr>
<th>Syntax</th>
<th>reboot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>No default value.</td>
</tr>
<tr>
<td>Mode</td>
<td>Privileged EXEC</td>
</tr>
</tbody>
</table>

**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:

```plaintext
Switch# reboot
Are you sure you want to reboot the system? (Y/N)[N]y
Rebooting system ...
```

#### restore-defaults

<table>
<thead>
<tr>
<th>Syntax</th>
<th>restore-defaults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>No default value.</td>
</tr>
<tr>
<td>Mode</td>
<td>Privileged EXEC</td>
</tr>
</tbody>
</table>


### Smart Switches with Optional Remote/Cloud Management

#### 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 {ftp:// | scp:// | usb://} {backup-config | running-config | startup-config}
copy {backup-config | running-config | startup-config} {ftp:// | 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 {ftp:// | scp://}
### Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| **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
**Smart Switches with Optional Remote/Cloud Management**

**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

<table>
<thead>
<tr>
<th>Example</th>
</tr>
</thead>
</table>
| 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/poRS4goK38JD0aJr0.
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
```
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:

Default: The default boot image is image0.
Mode: Global Configuration

Usage: The switch supports 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: 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**

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 display the startup configuration for the switch:

```
Switch# show startup-config
! Model: GS728Tv2
! System Description: NETGEAR 24-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS728Tv2)
!
..............
```

# 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 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] [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`: Sets the IPv6 address to be pinged, which is represented by `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
```