

Interface Configuration Commands

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1 Overview

The information in the overview will help you learn about the various interface types supported by our switch and provide reference configuration information that is appropriate for different interface types.

For a detailed description of the interface commands, please refer to “Interface Configuration Commands”. If you want to view the documentation for other commands that appear in this overview, please refer to other part.

The overview contains general information that can be applied to all interface types. Following are the information:

1.1 Interface Type

Following are the information about the interface type:

Type	Task	Reference
Ethernet interface	Configure the Ethernet interface Configure fast Ethernet Interface Configure gigabit Ethernet interface	“Configure Ethernet Interface”
Logical interface	Loopback interface empty interface VLAN interface SuperVlan Interface	“configure logical interface”. Loopback interface and empty interface only can be configured on the three-layer switch. VLAN and SuperVlan interface only can be configured on the two-layer switch.
	Aggregate interface	“Configure aggregate interface”

Our switches support two types of interfaces: Ethernet interfaces and logical interfaces. The type of Ethernet interface on a device depends on the standard communication interface and the interface card or interface module installed on the switch. A logical interface is an interface without corresponding physical device and is created manually by the user.

The Ethernet interfaces supported by our switches include:

- Ethernet interface
- Fast Ethernet Interface
- Gigabit Ethernet interface

The logical interfaces supported by our switches include:

- Loopback interface
- empty interface
- Aggregate interface
- VLAN interface

1.2 Introduction for Interface Configuration

Following configuration is suitable for all interfaces. In the global configuration mode, follow the steps below to configure the interface:

- Use **interface** to enter the interface configuration mode, then you can configure the interface. These interfaces are used according to the interface number, which is assigned when the installation (factory) or interface card is added to the system. You can use **show interface** to display these interfaces. Each interface supported by the device provides its own status, as shown below:

```
Switch#show interface
```

```
FastEthernet0/1 is down, line protocol is down
```

```
Hardware is Fast Ethernet, Address is 0009.7cf7.7dc1
```

```
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
```

```
reliability 255/255, txload 1/255, rxload 1/255
```

```
Encapsulation ARPA, loopback not set
```

```
Auto-duplex, Auto-speed
```

input flow-control is off, output flow-control is off

ARP type: ARPA, ARP Timeout 04:00:00

Last input never, output 17:52:52, output hang never

Last clearing of "show interface" counters never

Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0

Queueing strategy: fifo

Output queue :0/40 (size/max)

5 minute input rate 0 bits/sec, 0 packets/sec

5 minute output rate 0 bits/sec, 0 packets/sec

1 packets input, 64 bytes, 0 no buffer

Received 0 broadcasts, 0 runts, 0 giants, 0 throttles

0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored

0 watchdog, 0 multicast, 0 pause input

0 input packets with dribble condition detected

1 packets output, 64 bytes, 0 underruns

0 output errors, 0 collisions, 1 interface resets

0 babbles, 0 late collision, 0 deferred

0 lost carrier, 0 no carrier, 0 PAUSE output

0 output buffer failures, 0 output buffers swapped out

Use the following command to configure Fast Gigabit Ethernet Interface g0/1.

interface g 0/1

Note:

It is not necessary to add a blank between the interface type and the interface number. For example, g0 / 1 or g 0/1 can both be accepted by the switch.

- 1) You can configure the interface configuration command for the current interface in the interface configuration mode. The various commands define the protocols and applications that will be executed on the interface. These commands will remain until you exit the interface configuration state or switch to another interface.
- 2) Once the interface is configured, the interface status can be tested by using **show** command listed in the "Monitor and Maintain Interfaces" section.

2 Interface Configuration

2.1 Configure the common attributes for the Interface

Following describes the commands that can be executed on any type of interface to configure the common attributes of the interface. The common attributes that can be configured include: interface description, bandwidth and delay.

2.1.1 Add Description

Adding a description of the interface helps to remember the content attached to the interface. This description is only used as an interface annotation to help identify the purpose of the interface without affecting any function of the interface. This description will appear in the output of the following command: **show running-config** and **show interface**. If you want to add a description to any interface, use the following command in the interface configuration mode.

Command	Description
description <i>string</i>	Add description to currently configured interface.

Please refer to “Example for Interface Description”.

2.1.2 Set the Bandwidth

The upper layer protocol uses the bandwidth information to make operational decisions. In the interface configuration mode, use the following command to set the bandwidth for the interface:

Command	Description
bandwidth <i>kilobps</i>	Set the bandwidth for currently configured interface.

The bandwidth setting is only a routing parameter. It does not affect the actual physical interface communication rate.

2.1.3 Set the Delay

The upper layer protocol uses delay information to make operational decisions. In the interface configuration mode, use the following command to set the delay for the interface:

Command	Description
delay <i>tensofmicroseconds</i>	Set the delay for current configured interface.

The delay setting only set the information parameters; this configuration command cannot adjust the actual delay of an interface.

2.2 Monitor and Maintain the Interface

Here are the tasks to monitor and maintain the interface::

- View interface status
- Initialize and delete interfaces
- Turn off and re-enable the interface

2.2.1 View Interface Status

Our switches can display a variety of commands related to the interface information, including the software and hardware version, interface status. Following are part of the interface monitoring commands. Refer to “Interface Configuration Commands”.

Following are the commands:

Command	Description
show interface [type [slot port]]	Display interface status.
show running-config	Display current configuration.

2.2.2 Initialize and Delete Interfaces

For the logical interface, users can dynamically create and delete the interface. For sub-interfaces and channelized interfaces, it can also be dynamically deleted. Use the following command to initialize and delete the interface in global configuration mode:

Command	Description
no interface type <i>[slot port]</i>	Initialize the and Delete Interfaces

2.2.3 Close and Restart the Interface

An interface can be disabled, and then all functions on the specified interface are enabled. And mark this interface as unavailable interface on all monitoring command displays. This information can be sent to other switches through dynamic routing protocol. Any routing modification will not affect this interface.

Use the following command in the interface configuration mode to close the interface and then restart it:

Command	Description
shutdown	Shutdown the interface.
no shutdown	Restart the interface.

You can use the command **show interface** and **show running-config** to check whether an interface is disabled. In the **show interface** command display, a disabled interface is displayed as "administratively down". Please refer to "Example for Interface Disable" for details.

2.3 Configure the Logical Interface

Following are the description of configuring logical interface:

- Configure aggregate interface
- Configure VLAN interface

2.3.1 Configure Aggregate Interface

The aggregate interface is generated for the bandwidth of a single Ethernet interface. It can be more than the same rate of the full-duplex interface bundled together, thus doubling the bandwidth.

Use the following command to define the aggregate interface.

Command	Description
Interface <i>port-aggregator number</i>	Define the aggregate interface.

S2224D can support aggregation interface. The maximum number of Ethernet interface supported by each aggregation interface is 4. Do not exceed the number.

2.3.2 Configure VLAN interface

The VLAN interface is the routing interface in the switch. The VLAN configuration in the global configuration mode is only used to add a Layer 2 VLAN to the system, and it is not defined if the switch receives the IP address in the VLAN. If there is no VLAN interface, such packets will be discarded.

Define the VLAN interface with the following command:

Command	Description
Interface <i>vlan number</i>	Configure VLAN interface.

2.4 Configure Ethernet Interface

2.4.1 Configure the Cable Detection Function

By default, this feature is enabled, and the gigabit port always turns off the feature

Command	Description
cable-diagnostic	Enable cable detection function
No cable-diagnostic	Disable cable detection function

3 Example for Interface Configuration

3.1 Configure the common attributes of the interface

3.1.1 Example for Interface Description

The following example shows how to add a description of the interface, and the description will appear in the configuration file and interface command display.

```
interface vlan 1
```

```
ip address 192.168.1.23 255.255.255.0
```

3.1.2 Example for Interface Disable

Disable the Ethernet interface in port 1:

```
interface GigaEthernet0/1
```

```
shutdown
```

Restart the interface:

```
interface GigaEthernet0/1
```

```
no shutdown
```