



Using the Command-Line Interface

The Catalyst 2950 switches are supported by Cisco IOS Release 12.1(6)EA2b. This chapter describes how to use the switch command-line interface (CLI) to configure the software features.

For a complete description of the commands that support these features, see [Chapter 2, “Cisco IOS Commands.”](#) For more information about Cisco IOS Release 12.1, refer to the IOS documentation set available from the Cisco.com home page at **Service and Support > Technical Documents**. On the Cisco Product Documentation home page, select **Release 12.1** from the Cisco IOS Software drop-down list.

For task-oriented configuration steps, refer to the *Catalyst 2950 Desktop Switch Software Configuration Guide*.

The switches are preconfigured and begin forwarding packets as soon as they are attached to compatible devices.

By default, all ports belong to virtual LAN (VLAN) 1. Access to the switch itself is also through VLAN 1, which is the default management VLAN. The management VLAN is configurable. You manage the switch by using Telnet, web-based management, and Simple Network Management Protocol (SNMP) through devices connected to ports assigned to the management VLAN.

Type of Memory

The switch Flash memory stores the Cisco IOS software image, the startup configuration file, and helper files.

Platforms

Cisco IOS Release 12.1(6)EA2b runs on a variety of switches. For a complete list, refer to the *Release Notes for the Catalyst 2950 Switch*.

CLI Command Modes

This section describes the CLI command mode structure. Command modes support specific Cisco IOS commands. For example, the **interface** *type_number* command works only when entered in global configuration mode. These are the main command modes:

- User EXEC mode
- Privileged EXEC mode
- VLAN configuration mode
- Global configuration mode
- Interface configuration mode
- Line configuration mode

Table 1-1 lists the command modes, how to access each mode, the prompt you will see in that mode, and how to exit that mode. The prompts listed assume the default name *Switch*.

Table 1-1 Command Modes Summary

| Command Mode | Access Method | Prompt | Exit or Access Next Mode |
|----------------------|--|-----------------|--|
| User EXEC | This is the first level of access. (For the switch) Change terminal settings, perform basic tasks, and list system information. | Switch> | Enter the logout command. To enter privileged EXEC mode, enter the enable command. |
| Privileged EXEC | From user EXEC mode, enter the enable command. | Switch# | To exit to user EXEC mode, enter the disable command. To enter global configuration mode, enter the configure command. |
| VLAN configuration | From privileged EXEC mode, enter the vlan database command. | Switch(vlan)# | To exit to privileged EXEC mode, enter the exit command. |
| Global configuration | From privileged EXEC mode, enter the configure command. | Switch(config)# | To exit to privileged EXEC mode, enter the exit or end command, or press Ctrl-Z . To enter interface configuration mode, enter the interface command. |

Table 1-1 Command Modes Summary (continued)

| Command Mode | Access Method | Prompt | Exit or Access Next Mode |
|-------------------------|--|----------------------|--|
| Interface configuration | From global configuration mode, specify an interface by entering the interface command. | Switch(config-if)# | To exit to privileged EXEC mode, enter the end command, or press Ctrl-Z . To exit to global configuration mode, enter the exit command. To enter subinterface configuration mode, specify a subinterface with the interface command. |
| Line configuration | From global configuration mode, specify a line by entering the line command. | Switch(config-line)# | To exit to global configuration mode, enter the exit command. To return to privileged EXEC mode, enter the end command, or press Ctrl-Z . |

User EXEC Mode

After you access the device, you are automatically in user EXEC command mode. The EXEC commands available at the user level are a subset of those available at the privileged level. In general, use the user EXEC commands to change terminal settings temporarily, to perform basic tests, and to list system information.

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

```
Switch> ?
```

Privileged EXEC Mode

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

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

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

```
Switch#
```

Enter the **enable** command to access privileged EXEC mode:

```
Switch> enable
Switch#
```

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

```
Switch# ?
```

To return to user EXEC mode, enter the **disable** command.

VLAN Configuration Mode

Use the VLAN configuration commands to modify VLAN parameters. Enter the **vlan database** command to access VLAN configuration mode:

```
Switch# vlan database  
Switch(vlan)#
```

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

```
Switch(vlan)# ?
```

To return to privileged EXEC mode, enter the **abort** command to abandon the proposed database. Otherwise, enter **exit** to implement the proposed new VLAN database and to return to privileged EXEC mode.

Global Configuration Mode

Global configuration commands apply to features that affect the device as a whole. Use the **configure** privileged EXEC command to enter global configuration mode. The default is to enter commands from the management console.

When you enter the **configure** command, a message prompts you for the source of the configuration commands:

```
Switch# configure  
Configuring from terminal, memory, or network [terminal]?
```

You can specify either the terminal or nonvolatile RAM (NVRAM) as the source of configuration commands.

This example shows you how to access global configuration mode:

```
Switch# configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.
```

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

```
Switch(config)# ?
```

To exit global configuration command mode and to return to privileged EXEC mode, enter the **end** or **exit** command, or press **Ctrl-Z**.

Interface Configuration Mode

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

Use the **interface** *type_number.subif* command to access interface configuration mode. The new prompt shows interface configuration mode.

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

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

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

To exit interface configuration mode and to return to global configuration mode, enter the **exit** command. To exit interface configuration mode and to return to privileged EXEC mode, enter the **end** command, or press **Ctrl-Z**.

Line Configuration Mode

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

Use the **line vty line_number [ending_line_number]** command to enter line configuration mode. The new prompt indicates line configuration mode.

This example shows how to enter line configuration mode for virtual terminal line 7:

```
Switch(config)# line vty 0 7
```

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

```
Switch(config-line)# ?
```

To exit line configuration mode and to return to global configuration mode, use the **exit** command. To exit line configuration mode and to return to privileged EXEC mode, enter the **end** command, or press **Ctrl-Z**.

Command Summary

[Table 1-2](#) lists and describes commands that have the same function but different syntax in software releases earlier than Release 12.1(6)EA2 and in Release 12.1(6)EA2 or later. It lists the commands supported in releases earlier than Release 12.1(6)EA2, the equivalent commands in Release 12.1(6)EA2 or later, and command descriptions.

If you are running Release 12.1(6)EA2 or later, the switch supports the commands in the left column of [Table 1-2](#) only if they are in a saved configuration file. When you save the switch configuration after modifying it, the commands in [Table 1-2](#) are replaced by equivalent commands supported in Release 12.1(6)EA2 or later.

For information about commands listed in the left column of [Table 1-2](#), refer to the *Catalyst 2950 Desktop Switch Command Reference, Cisco IOS Release 12.0(5.2)WC(1)* (April 2001). You can access this document at this URL:

http://www.cisco.com/univercd/cc/td/doc/product/lan/cat2950/2950_wc/index.htm.

Table 1-2 Command Comparison

| Command in IOS releases earlier than Release 12.1(6)EA2 | Command in Release 12.1(6)EA2 or later | Description |
|---|--|---|
| mac-address-table secure | switchport port-security mac-address | Adds secure addresses to the MAC address table. |
| port group | channel-group | Assigns a port to a Fast EtherChannel or Gigabit EtherChannel port group. |
| port monitor | monitor session | Enables Switch Port Analyzer (SPAN) port monitoring on a port. |
| port protected | switchport protected | Isolates Layer 2 unicast, multicast, and broadcast traffic from other protected ports on the same switch. |
| port security | switchport port-security | Enables port security on a port and restricts the use of the port to a user-defined group of stations. |
| port security action | switchport port-security violation | Specifies the action to take when an address violation occurs on a secure port. |
| port security max-mac-count | switchport port-security maximum | Specifies the maximum number of secure addresses supported by a secure port. |
| port storm-control | storm-control | Enables unicast, multicast, or broadcast storm control on a port, and specifies storm-control parameters on a port. |
| show mac-address-table secure | show port-security | Displays the port security settings for an interface and the secure addresses in the MAC address table. |
| show port group | show etherchannel | Displays EtherChannel information for a channel. |
| show port monitor | show monitor | Displays SPAN session information. |
| show port protected | show interfaces switchport | Displays the port protection settings of a port. |
| show port security | show port-security | Displays the port security settings defined for a port. |
| show port storm-control | show storm-control | Displays the packet-storm control information. |
| spanning-tree rootguard | spanning-tree guard | Enables the root guard feature for all VLANs associated with a port. |
| switchport priority | mls qos cos | Defines the default class of service (CoS) value of a port. |
| switchport priority override | mls qos cos override | Assigns the default CoS value to all incoming packets on a port. |

[Table 1-3](#) lists and describes the commands that are not supported in Release 12.1(6)EA2 or later. These commands are supported only in software releases earlier than Release 12.1(6)EA2. If you are running Release 12.1(6)EA2 or later, the switch supports the commands listed in [Table 1-3](#) only if they are in a saved configuration file.

Table 1-3 *Commands Not Supported in Release 12.1(6)EA2 or Later*

| Command | Description |
|---------------------------------------|---|
| clear ip address | Deletes an IP address for a switch without disabling the IP processing. |
| clear mac-address-table static | Deletes static entries from the MAC address table. |
| management | Shuts down the current management VLAN interface and enables the new management VLAN interface. |
| show mac-address-table self | Displays the addresses added by the switch itself to the MAC address table. |
| spanning-tree protocol | Specifies the Spanning Tree Protocol (STP) to be used for specified spanning-tree instances. In Release 12.1(6)EA2 or later, the switch supports only IEEE Ethernet STP. |

For detailed command syntax and descriptions, see [Chapter 2, “Cisco IOS Commands.”](#) For task-oriented configuration steps, refer to the software configuration guide for this release.

