



## Command-Line Interfaces

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This chapter describes the command-line interfaces (CLIs) you use to configure the Catalyst 4006 switch with Supervisor Engine III.

This chapter consists of the following sections:

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- [Getting a List of IOS Commands and Syntax, page 2-5](#)
- [ROM-Monitor Command-Line Interface, page 2-6](#)



### Note

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For complete syntax and usage information for the commands used in this chapter, refer to the *Command Reference for the Catalyst 4006 Switch with Supervisor Engine III* and the publications at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121cgcr/index.htm>

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## Accessing the Switch CLI

The following sections describe how to access the switch CLI:

- [Accessing the CLI Using the EIA/TIA-232 Console Interface, page 2-1](#)
- [Accessing the CLI through Telnet, page 2-2](#)

## Accessing the CLI Using the EIA/TIA-232 Console Interface



### Note

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EIA/TIA-232 was known as recommended standard 232 (RS-232) before its acceptance as a standard by the Electronic Industries Alliance (EIA) and Telecommunications Industry Association (TIA).

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Perform the initial switch configuration over a connection to the EIA/TIA-232 console interface. Refer to the *Catalyst 4000 Family Module Installation Guide* for console interface cable connection procedures.

To access the switch through the console interface, perform this task:

Task	Command
<b>Step 1</b> At the prompt, press <b>Return</b> .	
<b>Step 2</b> From the user EXEC prompt <code>&gt;</code> , enter <b>enable</b> to change to enable mode (also known as privileged mode or privileged EXEC mode).	Switch> <b>enable</b>
<b>Step 3</b> At the password prompt, enter the system password. The enabled # prompt appears, indicating that you have accessed the CLI in enabled mode.	Password: <i>password</i> Switch#
<b>Step 4</b> Enter the necessary commands to complete tasks.	
<b>Step 5</b> When finished, exit the session.	Switch# <b>quit</b>

After accessing the switch through the EIA/TIA-232 interface, you see this display:

```
Press Return for Console prompt
```

```
Switch> enable
Password:
Switch#
```

## Accessing the CLI through Telnet



### Note

Before you can Telnet to the switch, you must set the IP address for the switch (see the [“Configuring Physical Layer 3 Interfaces”](#) section on page 10-5).

The switch supports up to eight simultaneous Telnet sessions. Telnet sessions disconnect automatically after remaining idle for the period specified with the **exec-timeout** command.

To Telnet to the switch, perform this task:

Task	Command
<b>Step 1</b> From the remote host, enter the <b>telnet</b> command and the name or IP address of the switch you want to access.	<b>telnet</b> { <i>hostname</i>   <i>ip_addr</i> }
<b>Step 2</b> At the prompt, enter the password for the CLI. If no password has been configured, press <b>Return</b> .	Password: <i>password</i> Switch#
<b>Step 3</b> Enter the necessary commands to complete your desired tasks.	
<b>Step 4</b> When finished, exit the Telnet session.	Switch# <b>quit</b>

This example shows how to open a Telnet session to the switch:

```
unix_host% telnet Switch_1
Trying 172.20.52.40...
Connected to 172.20.52.40.
Escape character is '^]'.
User Access Verification

Password:
Switch_1> enable
Password:
Switch_1#
```

## Performing Command Line Processing

Switch commands are not case sensitive. You can abbreviate commands and parameters if the abbreviations contain enough letters to be different from any other currently available commands or parameters. You can scroll through the last 20 commands stored in the history buffer, and enter or edit a command at the prompt. [Table 2-1](#) lists the keyboard shortcuts for entering and editing switch commands.

**Table 2-1 Keyboard Shortcuts**

Keystrokes	Result
Press <b>Ctrl-B</b> or press the left arrow key <sup>1</sup>	Moves the cursor back one character
Press <b>Ctrl-F</b> or press the right arrow key <sup>1</sup>	Moves the cursor forward one character
Press <b>Ctrl-A</b>	Moves the cursor to the beginning of the command line
Press <b>Ctrl-E</b>	Moves the cursor to the end of the command line
Press <b>Esc-B</b>	Moves the cursor back one word
Press <b>Esc-F</b>	Moves the cursor forward one word

1. The arrow keys function only on ANSI-compatible terminals such as VT100s.

## Performing History Substitution

The history buffer stores the last 20 commands you entered. History substitution allows you to access these commands without retyping them, by using special abbreviated commands. [Table 2-2](#) lists the history substitution commands.

**Table 2-2 History Substitution Commands**

Command	Result
<b>Ctrl-P</b> or the up arrow key. <sup>1</sup>	Recalls commands in the history buffer, beginning with the most recent command. Repeat the key sequence to recall older commands successively.
<b>Ctrl-N</b> or the down arrow key. <sup>1</sup>	Returns to more recent commands in the history buffer after recalling commands with Ctrl-P or the up arrow key. Repeat the key sequence to recall successively more recent commands.
Switch# <b>show history</b>	Lists the last several commands you have entered in EXEC mode.

1. The arrow keys function only on ANSI-compatible terminals such as VT100s.

## IOS Command Modes



### Note

For complete information about IOS command modes, refer to the Cisco IOS *Configuration Fundamentals Configuration Guide* and the Cisco IOS *Configuration Fundamentals Command Reference* at <http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121cgcr/index.htm>

The IOS user interface is divided into many different modes. The commands available to you depend on which mode you are currently in. To get a list of the commands in a given mode, type a question mark (?) at the system prompt. See the “[Getting a List of IOS Commands and Syntax](#)” section on page 2-5.

When you start a session on the switch, you begin in user mode, also called user EXEC mode. Only a limited subset of commands are available in EXEC mode. To have access to all commands, you must enter privileged EXEC mode. To access the privileged EXEC mode, you must type in a password. When you are in the privileged EXEC mode, you can type in any EXEC command or access global configuration mode. Most EXEC commands are one-time commands, such as **show** commands, which display the current configuration status, and **clear** commands, which reset counters or interfaces. The EXEC commands are not saved when the switch is rebooted.

The configuration modes allow you to make changes to the running configuration. If you save the configuration, these commands are stored when you reboot the switch. You must start at global configuration mode. From global configuration mode, you can enter interface configuration mode, subinterface configuration mode, and a variety of protocol-specific modes.

ROM-monitor mode is a separate mode used when the switch cannot boot-up properly. For example, the switch might enter ROM-monitor mode if it does not find a valid system image when it is booting, or if its configuration file is corrupted. For more information, see the “[ROM-Monitor Command-Line Interface](#)” section on page 2-6.

Table 2-3 lists and describes frequently used IOS modes.

**Table 2-3** Frequently Used IOS Command Modes

Mode	Description of Use	How to Access	Prompt
User EXEC	Connect to remote devices, change terminal settings on a temporary basis, perform basic tests, and display system information.	Log in.	Switch>
Privileged EXEC (enable)	Set operating parameters. The privileged command set includes the commands in user EXEC mode, as well as the <b>configure</b> command. Use this command to access the other command modes.	From the user EXEC mode, enter the <b>enable</b> command and the enable password (if a password has been configured).	Switch#
Global configuration	Configure features that affect the system as a whole, such as the system time or switch name.	From the privileged EXEC mode, enter the <b>configure terminal</b> command.	Switch(config)#
Interface configuration	Some features are enabled for a particular interface only. Interface commands enable or modify the operation of a Gigabit Ethernet or Fast Ethernet interface.	From global configuration mode, enter the <b>interface</b> <i>type location</i> command.	Switch(config-if)#
Console configuration	From the directly connected console or the virtual terminal used with Telnet, use this configuration mode to configure the console interface.	From global configuration mode, enter the <b>line console 0</b> command.	Switch(config-line)#

The IOS command interpreter, called the EXEC, interprets and runs the commands you enter. You can abbreviate commands and keywords by entering just enough characters to make the command unique from other commands. For example, you can abbreviate the **show** command to **sh** and the **configure terminal** command to **confi t**.

When you type **exit**, the switch backs out one level. To exit configuration mode completely and return to privileged EXEC mode, press **Ctrl-Z**.

## Getting a List of IOS Commands and Syntax

In any command mode, you can get a list of available commands by entering a question mark (?).

```
Switch> ?
```

To obtain a list of commands that begin with a particular character sequence, type in those characters followed by the question mark (?). Do not include a space before the question mark. This form of help is called word help because it completes a word for you. For example, for the **configure** command, enter:

```
Switch# co?
```

To list keywords or arguments, enter a question mark in place of a keyword or argument. Include a space before the question mark. This form of help is called command syntax help because it reminds you which keywords or arguments are applicable based on the command, keywords, and arguments you have already entered.

```
Switch# configure ?
  memory          Configure from NV memory
  network         Configure from a TFTP network host
  overwrite-network Overwrite NV memory from TFTP network host
  terminal        Configure from the terminal
  <cr>
```

To redisplay a command you previously entered, press the up arrow key or **Ctrl-P**. You can continue to press the up arrow key to see the last 20 commands you entered.

**Tip**

If you are having trouble entering a command, check the system prompt, and enter the question mark (?) for a list of available commands. You might be in the wrong command mode or using incorrect syntax.

Type **exit** to return to the previous mode. Press **Ctrl-Z** or enter the **end** command in any mode to immediately return to privileged EXEC mode.

## ROM-Monitor Command-Line Interface

The ROM-monitor is a ROM-based program that is involved at power-up, reset, or when a fatal exception error occurs. The switch enters ROM-monitor mode if the switch does not find a valid software image, if the NVRAM configuration is corrupted, or if the configuration register is set to enter ROM-monitor mode. From the ROM-monitor mode, you can load a software image manually from Flash memory, from a network server file, or from bootflash.

You can also enter ROM-monitor mode by restarting the switch and pressing **Ctrl-C** during the first 5 seconds of startup.

**Note**

**Ctrl-C** is always enabled for 60 seconds after rebooting the switch, even if **Ctrl-C** is configured to be off in the configuration register settings.

When you are in ROM-monitor mode, the prompt changes to rommon 1>. Use the ? command to see the available ROM-monitor commands.

For more information about the ROM-monitor commands, refer to the *Command Reference for the Catalyst 4006 Switch with Supervisor Engine III*.