



Command-Line Interfaces

This chapter describes the CLIs you use to configure the Catalyst 4000 family switches. This chapter includes the following major sections:

- [Accessing the Switch CLI, page 2-1](#)
- [Performing Command-Line Processing, page 2-3](#)
- [Performing History Substitution, page 2-3](#)
- [Understanding IOS Command Modes, page 2-4](#)
- [Getting a List of Commands and Syntax, page 2-5](#)
- [ROMMOM Command-Line Interface, page 2-6](#)



Note

For complete syntax and usage information for the commands used in this chapter, refer to the *Cisco IOS Command Reference for the Catalyst 4000 Family Switch* and related publications at <http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121cgcr/index.htm>

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

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).

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 procedure:

	Task	Command
Step 1	At the prompt, press Return .	
Step 2	From the user EXEC prompt (>), enter enable to change to enable mode (also known as privileged mode or privileged EXEC mode).	Switch> enable
Step 3	At the password prompt, enter the system password. The prompt (#) appears, indicating that you have accessed the CLI in enabled mode.	Password: <i>password</i> Switch#
Step 4	When you are finished executing the task command, exit the session.	Switch# quit

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 18-5).

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

To telnet to the switch, perform this procedure:

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

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 Ctrl-B or press the Left Arrow key ¹	Moves the cursor back one character
Press Ctrl-F or press the Right Arrow key ¹	Moves the cursor forward one character
Press Ctrl-A	Moves the cursor to the beginning of the command line
Press Ctrl-E	Moves the cursor to the end of the command line
Press Esc-B	Moves the cursor back one word
Press Esc-F	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 command lines you entered. History substitution allows you to access these command lines without retyping them. [Table 2-2](#) lists the history substitution commands.

Table 2-2 History Substitution Commands

Command	Result
Ctrl-P or the Up Arrow key ¹	Recalls commands in the history buffer, beginning with the most recent command. Repeat the key sequence to recall older commands successively.
Ctrl-N or the Down Arrow key ¹	Returns to more recent commands in the history buffer after commands have been recalled with Ctrl-P or the Up Arrow key. Repeat the key sequence to recall more recent commands.
Switch# show history	Lists the last several commands you have entered in EXEC mode.

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

Understanding 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 Cisco IOS user interface has many different modes: user EXEC, privileged EXEC (enable), global configuration, interface, subinterface, and protocol-specific. The commands available to you depend on which mode you are in. To get a list of the commands in a given mode, enter a question mark (?) at the system prompt. See the [“Getting a List of Commands and Syntax” section on page 2-5](#) for more information.

When you start a session on the switch, you begin in user mode, also called user EXEC mode. Only a small subset of commands are available in EXEC mode. To have access to all commands, you must enter privileged EXEC mode, also called enable mode. To access the privileged EXEC mode, you must enter a password. When you are in the privileged EXEC mode, you can enter 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 in global configuration mode. From global configuration mode, you can enter interface configuration mode, subinterface configuration mode, and a variety of protocol-specific modes.

You would use a separate mode called ROMMON when the switch cannot boot up properly. For example, the switch might enter ROMMON 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 [“ROMMOM Command-Line Interface” section on page 2-6](#).

[Table 2-3](#) lists and describes frequently used Cisco IOS modes.

Table 2-3 Frequently Used Cisco IOS Command Modes

Mode	What You Use It For	How to Access	Prompt
User EXEC	To connect to remote devices, change terminal settings on a temporary basis, perform basic tests, and display system information.	Log in.	Switch>
Privileged EXEC (enable)	To set operating parameters. The privileged command set includes the commands in user EXEC mode, as well as the configure command. Use the configure command to access the other command modes.	From user EXEC mode, enter the enable command and the enable password (if a password has been configured).	Switch#
Global configuration	To configure features that affect the system as a whole, such as the system time or switch name.	From privileged EXEC mode, enter the configure terminal command.	Switch(config)#

Table 2-3 Frequently Used Cisco IOS Command Modes (continued)

Mode	What You Use It For	How to Access	Prompt
Interface configuration	To enable or modify the operation of a Gigabit Ethernet or Fast Ethernet interface with interface commands.	From global configuration mode, enter the interface <i>type location</i> command.	Switch(config-if)#
Console configuration	To configure the console interface; from the directly connected console or the virtual terminal; used with Telnet.	From global configuration mode, enter the line console 0 command.	Switch(config-line)#

The Cisco 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 **conf 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 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, enter 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.

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.

ROMMON Command-Line Interface

ROMMON is a ROM-based program that is involved at power-up or reset, or when a fatal exception error occurs. The switch enters ROMMON 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 ROMMON mode. From the ROMMON mode, you can load a software image manually from Flash memory, from a network server file, or from bootflash.

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



Note

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

When you enter ROMMON mode, the prompt changes to **rommon 1>**. Use the **?** command to see the available ROMMON commands.

For more information about the ROMMON commands, see *Cisco IOS Command Reference for the Catalyst 4000 Family Switch*.