



Using the Cisco IOS Command-Line Interface

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The Cisco IOS command-line interface (CLI) is the primary user interface used for configuring, monitoring, and maintaining Cisco devices. This user interface allows you to directly and simply execute Cisco IOS commands, whether using a router console or terminal, or using remote access methods.

This chapter describes the basic features of the Cisco IOS CLI and how to use them. Topics covered include an introduction to Cisco IOS command modes, navigation and editing features, help features, and command history features.

Additional user interfaces include Setup mode (used for first-time startup), the Cisco Web Browser, and user menus configured by a system administrator. For information about Setup mode, see *Using Setup Mode to Configure a Cisco Networking Device* and *Using AutoInstall to Remotely Configure Cisco Networking Devices*. For information on issuing commands using the Cisco Web Browser, see “Using the Cisco Web Browser User Interface”. For information on user menus, see “Managing Connections, Menus, and System Banners”.

For a complete description of the user interface commands in this chapter, see the *Cisco IOS Configuration Fundamentals Command Reference*. To locate documentation of other commands that appear in this chapter, use the [Cisco IOS Master Command List, All Releases](#).

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [www.cisco.com/go/featurenavigator](#). An account on Cisco.com is not required.



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Cisco IOS XE CLI Command Modes Overview

To aid in the configuration of Cisco devices, the Cisco IOS XE command-line interface is divided into different command modes. Each command mode has its own set of commands available for the configuration, maintenance, and monitoring of router and network operations. The commands available to you at any given time depend on the mode you are in. Entering a question mark (?) at the system prompt (router prompt) allows you to obtain a list of commands available for each command mode.

The use of specific commands allows you to navigate from one command mode to another. The standard order that a user would access the modes is as follows: user EXEC mode; privileged EXEC mode; global configuration mode; specific configuration modes; configuration submodes; and configuration subsubmodes.

When you start a session on a router, you generally begin in *user EXEC mode*, which is one of two access levels of the EXEC mode. For security purposes, only a limited subset of EXEC commands are available in user EXEC mode. This level of access is reserved for tasks that do not change the configuration of the router, such as determining the router status.

In order to have access to all commands, you must enter *privileged EXEC mode*, which is the second level of access for the EXEC mode. Normally, you must enter a password to enter privileged EXEC mode. In privileged EXEC mode, you can enter any EXEC command, because privileged EXEC mode is a superset of the user EXEC mode commands.

Most EXEC mode commands are one-time commands, such as **show** or **more** commands, which show the current configuration status, and **clear** commands, which clear counters or interfaces. EXEC mode commands are not saved across reboots of the router.

From privileged EXEC mode, you can enter *global configuration mode*. In this mode, you can enter commands that configure general system characteristics. You also can use global configuration mode to enter specific configuration modes. Configuration modes, including global configuration mode, allow you to make changes to the running configuration. If you later save the configuration, these commands are stored across router reboots.

From global configuration mode you can enter a variety of protocol-specific or feature-specific configuration modes. The CLI hierarchy requires that you enter these specific configuration modes only through global configuration mode. As an example, this chapter describes *interface configuration mode*, a commonly used configuration mode.

From configuration modes, you can enter configuration submodes. Configuration submodes are used for the configuration of specific features within the scope of a given configuration mode. As an example, this chapter describes the *subinterface configuration mode*, a submode of the interface configuration mode.

ROM monitor mode is a separate mode used when the router cannot boot properly. If your system (router, switch, or access server) does not find a valid system image to load when it is booting, the system will enter ROM monitor mode. ROM monitor (ROMMON) mode can also be accessed by interrupting the boot sequence during startup.

The following sections contain detailed information on these command modes:

[Cisco IOS XE CLI Command Modes Overview, page 2](#) follows these sections and summarizes the main Cisco IOS XE command modes.

Cisco IOS XE CLI Task List

To familiarize yourself with the features of the Cisco IOS XE CLI, perform any of the tasks described in the following sections:

- [Getting Context-Sensitive Help, page 3](#)
- [Using the no and default Forms of Commands, page 6](#)
- [Using Command History, page 6](#)
- [Using CLI Editing Features and Shortcuts, page 6](#)
- [Searching and Filtering CLI Output, page 11](#)

Getting Context-Sensitive Help

Entering a question mark (?) at the system prompt displays a list of commands available for each command mode. You also can get a list of the arguments and available for any command with the context-sensitive help feature.

To get help specific to a command mode, a command name, a keyword, or an argument, use any of the following commands:

Command	Purpose
<pre>(prompt) # help</pre>	Displays a brief description of the help system.
<pre>(prompt) # abbreviated-command-entry?</pre>	Lists commands in the current mode that begin with a particular character string.
<pre>(prompt) # abbreviated-command-entry <Tab></pre>	Completes a partial command name.
<pre>(prompt) # ?</pre>	Lists all commands available in the command mode.
<pre>(prompt) # command?</pre>	Lists the available syntax options (arguments and) for the command.
<pre>(prompt) # command keyword ?</pre>	Lists the next available syntax option for the command.

Note that the system prompt will vary depending on which configuration mode you are in.

When context-sensitive help is used, the space (or lack of a space) before the question mark (?) is significant. To obtain a list of commands that begin with a particular character sequence, type in those characters followed immediately by the question mark (?). Do not include a space. This form of help is called word help, because it completes a word for you. For more information, see the “Completing a Partial Command Name” section later in this chapter.

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

You can abbreviate commands and to the number of characters that allow a unique abbreviation. For example, you can abbreviate the **configureterminal** command to **configt**. Because the abbreviated form of the command is unique, the router will accept the abbreviated form and execute the command.

Entering the **help** command (available in any command mode) will provide the following description of the help system:

```
Router#
help
Help may be requested at any point in a command by entering
a question mark '?'. If nothing matches, the help list will
be empty and you must back up until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
   command argument (e.g. 'show ?') and describes each possible
   argument.
2. Partial help is provided when an abbreviated argument is entered
   and you want to know what arguments match the input
   (e.g. 'show pr?').
```

As described in the **help** command output, you can use the question mark (?) to complete a partial command name (partial help), or to obtain a list of arguments or that will complete the current command.

The following example illustrates how the context-sensitive help feature enables you to create an access list from configuration mode.

Enter the letters **co** at the system prompt followed by a question mark (?). Do not leave a space between the last letter and the question mark. The system provides the commands that begin with **co**.

```
Router# co?
configure connect copy
```

Enter the **configure** command followed by a space and a question mark to list the for the command and a brief explanation:

```
Router# 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>
```

The <cr> symbol (“cr” stands for carriage return) appears in the list to indicate that one of your options is to press the Return or Enter key to execute the command, without adding any . In this example, the output indicates that your options for the configure command are **configurememory** (configure from NVRAM), **configurenetwork** (configure from a file on the network), **configureoverwrite-network** (configure from a file on the network and replace the file in NVRAM), or **configureterminal** (configure manually from the terminal connection). For most commands, the <cr> symbol is used to indicate that you can execute the command with the syntax you have already entered. However, the configure command is a special case, because the CLI will prompt you for the missing syntax:

```
Router# configure
Configuring from terminal, memory, or network [terminal]? terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
```

The default response for the ? prompt is indicated in the CLI output by a bracketed option at the end of the line. In the preceding example, pressing the Enter (or Return) key is equivalent to typing in the word “terminal.”

Enter the **configureterminal** command to enter global configuration mode:

```
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
```

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