



## CHAPTER 2

# Cisco IOS Software Basics

---

This chapter describes what you need to know about the Cisco IOS software before you configure the router by using the command-line interface (CLI). This chapter includes the following topics:

- [Getting Help](#), this page
- [Understanding Command Modes](#), page 2-2
- [Undoing a Command or Feature](#), page 2-3
- [Saving Configuration Changes](#), page 2-3
- [Where to Go Next](#), page 2-3

Understanding this information will save you time as you begin to use the CLI. If you have never used the Cisco IOS software or if you need a refresher, read this chapter before you proceed to [Chapter 3, “First-Time Configuration.”](#)

If you are already familiar with the Cisco IOS software, proceed to [Chapter 3, “First-Time Configuration.”](#)

## Getting Help

Use the question mark (?) and arrow keys to help you enter commands:

- For a list of available commands, enter a question mark:

```
Router> ?
```

- To complete a command, enter a few known characters followed by a question mark (with no space):

```
Router> s?
```

- For a list of command variables, enter the command followed by a space and a question mark:

```
Router> show ?
```

- To redisplay a command that you previously entered, press the **Up Arrow** key. Continue to press the **Up Arrow** key to see more commands.

# Understanding Command Modes

The Cisco IOS user interface is used in various command modes. Each command mode permits you to configure different components on your router. The commands available at any given time depend on which command mode you are in. Entering a question mark (?) at a prompt displays a list of commands available for that command mode. [Table 2-1](#) lists the most common command modes.

**Table 2-1 Common Command Modes**

Command Mode	Access Method	Router Prompt Displayed	Exit Method
User EXEC	Log in.	Router>	Use the <b>logout</b> command.
Privileged EXEC	From user EXEC mode, enter the <b>enable</b> command.	Router#	To exit to user EXEC mode, use the <b>disable</b> , <b>exit</b> , or <b>logout</b> command.
Global configuration	From the privileged EXEC mode, enter the <b>configure terminal</b> command.	Router (config)#	To exit to privileged EXEC mode, use the <b>exit</b> or <b>end</b> command, or press <b>Ctrl-Z</b> .
Interface configuration	From the global configuration mode, enter the <b>interface type number</b> command, such as <b>interface serial 0/0</b> .	Router (config-if)#	To exit to global configuration mode, use the <b>exit</b> command.  To exit directly to privileged EXEC mode, press <b>Ctrl-Z</b> .



## Timesaver

Each command mode restricts you to a subset of commands. If you have trouble entering a command, check the prompt and enter the question mark (?) to see a list of available commands. You might be in the wrong command mode or be using an incorrect syntax.

In the following example, notice how the prompt changes after each command to indicate a new command mode:

```
Router> enable
Password: <enable password>
Router# configure terminal
Router (config)# interface serial 0/0
Router (config-if)# line 0
Router (config-line)# controller t1 0
Router (config-controller)# exit
Router (config)# exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

The last message is normal and does not indicate an error. Press **Return** to get the Router# prompt.



## Note

You can press **Ctrl-Z** in any mode to immediately return to enable mode (Router#), instead of entering **exit**, which returns you to the previous mode.

## Undoing a Command or Feature

If you want to undo a command that you entered or if you want to disable a feature, enter the keyword **no** before most commands; for example, **no ip routing**.

## Saving Configuration Changes

You must enter the **copy running-config startup-config** command to save your configuration changes to NVRAM, so that the changes are not lost if there is a system reload or power outage. For example:

```
Router# copy running-config startup-config
Building configuration...
```

It might take a few minutes to save the configuration to NVRAM. After the configuration has been saved, the following message appears:

```
[OK]
Router#
```

## Where to Go Next

Now that you know some Cisco IOS software basics, you can begin to configure the router by using the CLI.

Remember the following:

- You can use the question mark (?) and arrow keys to help you enter commands.
- Each command mode restricts you to a set of commands. If you have difficulty entering a command, check the prompt and then enter the question mark (?) to see a list of available commands. You might be in the wrong command mode or be using the incorrect syntax.
- To disable a feature, enter the keyword **no** before the command; for example, **no ip routing**.
- You need to save your configuration changes to NVRAM so that the changes are not lost if there is a system reload or power outage.

Proceed to [Chapter 3, “First-Time Configuration.”](#) for first time configuration. Otherwise, proceed to [Chapter 4, “Configuring the Cisco RAN Service Module with the Command-Line Interface,”](#) to begin configuring the router.

