



## CHAPTER 2

# Cisco IOS Software Basics

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This chapter describes the basics of using the Cisco IOS software. Review this information before you configure the router using the command-line interface (CLI). This chapter includes the following sections:

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For additional information about using the Cisco IOS software, see the [Configuration Fundamentals Configuration Guide, Cisco IOS Release 15.0S](#).

## 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. The following table lists the most 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 incorrect 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

To save your configuration changes to NVRAM, so that the changes are not lost during a system reload or power outage, enter the **copy running-config startup-config** command. 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#
```

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