

# Cisco IOS Software Survival Skills

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This chapter describes what you need to know about the Cisco IOS software (the software that runs the access server) before you begin to configure the access server. This chapter includes:

- Getting help
- Understanding command modes
- Undoing a command or feature
- Saving configuration changes

Understanding these concepts will save you time and help you run your network more efficiently. If you have never used the Cisco IOS software or need a refresher, take a few minutes to read this chapter before proceeding.

If you are already familiar with the Cisco IOS software, proceed to “Configuring the Access Server Manually.”

## Getting Help

You can use the question mark (?) and arrow keys to help you enter commands.

To display a list of available commands in the current mode, enter a question mark:

```
5200> ?
```

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

```
5200> s?
```

To display a list of command variables, enter the command followed by a space and a question mark:

```
5200> show ?
```

To redisplay a command you previously entered, press the up arrow key. You can continue to press the up arrow key for more commands.

## Understanding Command Modes

There are many different command modes that you will need to use to configure the access server. Each command mode restricts you to a subset of commands. If you are having difficulty entering a command, check the prompt and then enter the question mark (?) for a list of available commands. You might be in the wrong command mode or using the wrong syntax.

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

```
5200> enable
5200# configure terminal
5200(config)# interface ethernet 0
5200(config-if)# line 0
5200(config-line)# controller t1 0
5200(config-controller)# exit
5200(config)# exit
5200#
%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 5200# prompt.

**Note** You can press **Ctrl-Z** in any mode to return to enable mode (5200#), instead of entering **exit**, which returns you to the previous mode.

## How to Find Command Options

This section explains how to display options for a command. To display options for a command, enter a **?** at the configuration prompt or after entering part of a command followed by a space. The configuration parser displays options available with the command. For example, if you were in global configuration mode and wanted to see all the keywords and arguments for the command **arap**, you would type **arap ?**.

Table 2-1 shows examples of this function:

Table 2-1      How to Find Command Options

| Command  | Comment   |
|--|---|
| 5200> enable<br>Password: <password><br>5200#  | Enter enable mode.<br>Enter the password.<br>You have entered enable mode when the prompt changes to 5200#.             |
| 5200# config terminal<br>Enter configuration commands, one per line. End with CNTL/Z.<br>5200(config)# | Enter global configuration mode and the prompt changes to 5200(config)#.  |
| 5200(config)# controller t1 ?<br><0-1> Controller unit number<br>5200(config)# controller t1 1         | Specify the T1 controller that you want to configure using the <b>controller T1</b> number global configuration command |

### Table 2-1 How to Find Command Options (Continued)

| Command   | Comment   |
|---|---|
| 5200(config-controller)# ?<br>Controller configuration commands:<br>cablelength Specify the cable length for a DS1 link<br>cas-group Configure the specified timeslots for CAS(Channel Associate Signals)<br>channel-group Specify the timeslots to channel-group mapping for an interface<br>clock Specify the clock source for a DS1 link<br>default Set a command to its defaults<br>description Controller specific description<br>ds0 ds0 commands<br>exit Exit from controller configuration mode<br>fdl Specify the FDL standard for a DS1 data link<br>framing Specify the type of Framing on a DS1 link<br>help Description of the interactive help system<br>linecode Specify the line encoding method for a DS1 link<br>loopback Put the entire T1 line into loopback<br>no Negate a command or set its defaults<br>pri-group Configure the specified timeslots for PRI<br>shutdown Shut down a DS1 link (send Blue Alarm) | Display controller configuration commands.  |
| 5200(config-controller)# <b>cas-group ?</b><br><0-23> Channel number  | Display the options for the cas-group controller configuration command. This command is used to configure the channel-associated signaling on a T1 controller.  |
| 5200(config-controller)# <b>cas-group 1 ?</b><br>timeslots List of timeslots in the cas-group   | Display the only command ( <b>timeslots</b> ) available in <b>cas-group 1</b> .   |
| 5200(config-controller)# <b>cas-group 1 timeslots ?</b><br><1-24> List of timeslots which comprise the cas-group  | Display the range for the timeslot option. Specifies a timeslot range of values from 1 to 24. You can specify timeslot ranges (for example, 1-24), individual timeslots separated by commas (for example 1, 3, 5), or a combination of the two (for example 1-3, 8, 17-24). The 16th time slot is not specified in the command line, because it is reserved for transmitting the channel signaling. |
| 5200(config-controller)# <b>cas-group 1 timeslots 1-24 ?</b><br>service Specify the type of service<br>type Specify the type of signaling   | Display the two commands ( <b>service</b> and <b>type</b> ) available for the timeslots.  |
| 5200(config-controller)# <b>cas-group 1 timeslots 1-24 type ?</b><br>e&m-fgb E & M Type II FGB<br>e&m-fgd E & M Type II FGD<br>e&m-immediate-start E & M Immediate Start<br>fxs-ground-start FXS Ground Start<br>fxs-loop-start FXS Loop Start<br>sas-ground-start SAS Ground Start<br>sas-loop-start SAS Loop Start  | List supported signaling types.   |

**Table 2-1      How to Find Command Options (Continued)**

| Command  | Comment   |
|--|---|
| 5200(config-controller)# <b>cas-group 1 timeslots 1-24</b><br><b>type e&amp;m-fgb ?</b><br>dtmf      DTMF tone signaling<br>mf        MF tone signaling<br>service   Specify the type of service<br><cr> | Display the types of channel-associated signaling available for the e&m-fgb type. |
| 5200(config-controller)# <b>cas-group 1 timeslots 1-24</b><br><b>type e&amp;m-fgb dtmf ?</b><br>dnis      DNIS addr info provisioned<br>service   Specify the type of service<br><cr>                    | Display the options supported for the DTMF tone signaling option.                 |

## Undoing a Command or Feature

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

## Saving Configuration Changes

You need to enter the **copy running-config startup-config** command to save your configuration changes to NVRAM (nonvolatile random-access memory) so that they will not be lost if there is a system reload or power outage. For example:

```
5200# copy running-config startup-config
Building configuration...
```

It might take a minute or two to save the configuration to NVRAM. After the configuration has been saved, the following appears:

```
[OK]
5200#
```

## Where to Go Next

Now that you have learned some Cisco IOS software basics, you can begin to configure the access server. Remember that:

- 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 are having difficulty entering a command, check the prompt and then enter the question mark (?) for a list of available commands. You might be in the wrong command mode or using the wrong syntax.
- If you want 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 they will not be lost if there is a system reload or power outage.

Proceed to, “Configuring the Access Server Manually,” to manually configure the access server for the first time or to modify an existing configuration.