Using Command-Line Interface

Created: January 28, 2014, OL-31200-01

This chapter provides information for understanding the Cisco ASR 901S router using the command-line interface (CLI). This chapter includes the following sections:

For an overview of the Cisco ASR 901S router, refer to the *Cisco ASR 901S Series Aggregation Services Router Software Configuration Guide*.

Getting Help

To obtain a list of commands that are available for each command mode, enter a question mark (**?**) at the system prompt. You also can obtain a list of any command's associated keywords and arguments with the context-sensitive help feature.

Table 1-1 lists commands you can enter to get help that is specific to a command mode, a command, a keyword, or an argument.

Table 1-1 Getting Help

Command	Purpose
*abbreviated-command-entry***?**	Obtain a list of commands that begin with a particular character string. (Do not leave a space between the command and question mark.)
abbreviated-command-entry<**Tab**>	Complete a partial command name.
?	List all commands available for a particular command mode.
command **?**	List a command's associated keywords. Leave a space between the command and question mark.
command keyword **?**	List a keyword's associated arguments. Leave a space between the keyword and question mark.

How to Find Command Options

This section provides an example of how to display syntax for a command. The syntax can consist of optional or required keywords. To display keywords for a command, enter a question mark (**?**) at the configuration prompt or after entering part of a command followed by a space. The Cisco ASR 901S router software displays a list of available keywords along with a brief description of the keywords. For example, if you are in global configuration mode and want to see all the keywords for the **cem** command, you enter **cem ?**.

Table 1-2 shows examples of how you can use the question mark (**?**) to assist you in entering commands and also guides you through entering the following command:

- **interface gigabitethernet 0/1**

Table 1-2 How to Find Command Options

Command	Comment

`Router> enable`
`Password: <password>`
`Router#`
	Enter the **enable** command and password to access privileged EXEC commands.
	You are in privileged EXEC mode when the prompt changes to `Router#`.

`Router# configure terminal`
`Enter configuration commands, one per line. End with CNTL/Z.`
`Router(config)#`
	Enter global configuration mode.
	You are in global configuration mode when the prompt changes to `Router(config)#`.

Table 1-2 How to Find Command Options (continued)

Command	Comment

`Router(config)# interface gigabitethernet ?`
`  <1-9>  GigabitEthernet interface number`
`Router(config)# interface gigabitethernet 0/1`
`Router(config-if)#`
	Enter interface configuration mode by specifying the Gigabit Ethernet interface that you want to configure using the **interface gigabitethernet** global configuration command.
	Enter a **?** to display what you must enter next on the command line. In this example, you must enter an interface number from 1 to 9 in the format *module-number*/*port-number*.
	You are in interface configuration mode when the prompt changes to `Router(config-if)#`.

`Router(config-if)#?`
`Interface configuration commands:`
`  access-expression  Build a bridge boolean access expression`
`  arp  Set arp type (arpa, probe, snap) or timeout`
`  backup  Modify backup parameters`
`  bandwidth  Set bandwidth informational parameter`
`  bgp-policy  Apply policy propogated by bgp community string`
`  bridge-group  Transparent bridging interface parameters`
`  carrier-delay  Specify delay for interface transitions`
`  cdp  CDP interface subcommands`
`  channel-group  Etherchannel/port bundling configuration`
`  clns  CLNS interface subcommands`
`  cmns  OSI CMNS`
`  custom-queue-list  Assign a custom queue list to an interface`
`  decnet  Interface DECnet config commands`
`  default  Set a command to its defaults`
`  delay  Specify interface throughput delay`
`  description  Interface specific description`
`  dlsw  DLSw interface subcommands`
`  dspu  Down Stream PU`
`  exit  Exit from interface configuration mode`
`  fair-queue  Enable Fair Queuing on an Interface`
`  flowcontrol  Configure flow operation.`
`  fras  DLC Switch Interface Command`
`  help  Description of the interactive help system`
`  hold-queue  Set hold queue depth`
`  ip  Interface Internet Protocol config commands`
`  ipx  Novell/IPX interface subcommands`
`  isis  IS-IS commands`
`  iso-igrp  ISO-IGRP interface subcommands`
`.`
`.`
`.`
`Router(config-if)#`
	Enter a **?** to display a list of all the interface configuration commands available for the Gigabit Ethernet interface.

Understanding Command Modes

The Cisco ASR 901S router Cisco IOS user interface is divided into many different modes. The commands that are available to you depend on which mode you are currently in. You can obtain a list of commands that are available for each command mode by entering a question mark (**?**) at the system prompt.

When you start a session on the Cisco ASR 901S router, you begin in user mode, often called EXEC mode. Only a limited subset of the commands are available in EXEC mode. In order to have access to all commands, you must enter privileged EXEC mode. Normally, you must enter a password to enter privileged EXEC mode. From privileged EXEC mode, you can enter any EXEC command or enter global configuration mode. Most EXEC commands are one-time commands, such as **show** commands, which show the current status of a given item, and **clear** commands, which clear counters or interfaces. The EXEC commands are not saved across reboots of the Cisco ASR 901S router.

The configuration modes allow you to make changes to the running configuration. If you later save the configuration, these commands are stored across Cisco ASR 901S router reboots. In order to get to the various configuration modes, you must start at global configuration mode where you can enter interface configuration mode, subinterface configuration mode, and a variety of protocol-specific modes.

ROM-monitor mode is a separate mode that is used when the Cisco ASR 901S router cannot boot properly. If your Cisco ASR 901S router or access server does not find a valid system image when it is booting, or if its configuration file is corrupted at startup, the system might enter ROM-monitor mode.

Table 1-3 provides a summary of the main command modes.

Table 1-3 Summary of Main Command Modes

Command Mode	Access Method	Prompt	Exit Method
User EXEC	Log in.	`Router>`	Use the **logout** command.
Privileged EXEC	From user EXEC mode, enter the **enable** EXEC command.	`Router#`	To exit to user EXEC mode, enter the **disable** command. To enter global configuration mode, enter the **configure terminal** privileged EXEC command.
Global configuration	From privileged EXEC mode, enter the **configure terminal** privileged EXEC command.	`Router(config)#`	To exit to privileged EXEC mode, enter the **exit** or **end** command or press **Ctrl-Z**. To enter interface configuration mode, enter an **interface** configuration command.
Interface configuration	From global configuration mode, enter by specifying an interface with an **interface** command.	`Router(config-if)#`	To exit to global configuration mode, enter the **exit** command. To exit to privileged EXEC mode, enter the **exit** command or press **Ctrl-Z**. To enter subinterface configuration mode, specify a subinterface with the **interface** command.

For more information on command modes, refer to the "Using the Command Line Interface" chapter of the *Configuration Fundamentals Configuration Guide*.

Using the No and Default Forms of Commands

Almost every configuration command has a **no** form. In general, enter the **no** form to disable a function. Use the command without the keyword **no** to reenable a disabled function or to enable a function that is disabled by default. For example, IP routing is enabled by default. To disable IP routing, specify the **no ip routing** command and specify **ip routing** to reenable it. This publication provides the complete syntax for the configuration commands and describes what the **no** form of a command does.

Configuration commands can have a **default** form. The **default** form of a command returns the command setting to its default. Most commands are disabled by default, so the **default** form is the same as the **no** form. However, some commands are enabled by default and have arguments that are set to certain default values. In these cases, the **default** form of the command enables the command and sets arguments to their default values. This publication describes what the **default** form of a command does if the command is not the same as the **no** form.

Saving Configuration Changes

To save your configuration changes to your startup configuration so that they will not be lost if there is a system reload or power outage, enter the following command:

```
Router# copy system:running-config nvram:startup-config
Building configuration...
```

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

```
[OK]
Router#
```