Finding Command Options

This section provides an example of how to display syntax for a command. The syntax can consist of optional or required keywords and arguments. To display keywords and arguments for a command, enter a question mark (**?**) at the configuration prompt or after entering a part of a command followed by a space.

The Cisco IOS XE software displays a list and brief description of the available keywords and arguments. For example, if you were in the global configuration mode and you want to see all the keywords or arguments for the **arap** command, you would type **arap ?**.

The <cr> symbol in the command help output stands for "carriage return." On older keyboards, the carriage return key is the Return key. On most modern keyboards, the carriage return key is the Enter key. The <cr> symbol at the end of the command help output indicates that you have the option to press **Enter** to complete the command and that the arguments and keywords in the list preceding the <cr> symbol are optional. The <cr> symbol by itself indicates that no more arguments or keywords are available and that you must press **Enter** to complete the command.

The following examples show how you can use the question mark (**?**) to assist you in entering commands.

Table 1: Finding Command Options

Command	Comment
| ```
Router> enable
Password: <password>
Router#
``` | Enter the **enable** command and password to access the privileged EXEC commands. You are in the privileged EXEC mode when the prompt changes to a "# " from the "> ". For example, Router> to Router# . |
| ```
Router#
configure terminal
Enter configuration commands, one per
line. End with CNTL/Z.
Router(config)#
``` | Enter the **configure terminal** privileged EXEC command to enter the global configuration mode. You are in the global configuration mode when the prompt changes to Router(config)# . |

Command	Comment
```Router(config)# interface GigabitEthernet ? <0-6> GigabitEthernet interface number Router(config)# interface GigabitEthernet 1 Router(config-if)#```	Enter the interface configuration mode by specifying the serial Gigabit Ethernet interface that you want to configure using the **interface GigabitEthernet** *number* global configuration command. Enter **?** to display what you must enter next on the command line. When the system displays the <cr> symbol, you can press Enter to complete the command. You are in the interface configuration mode when the prompt changes to Router(config-if)# . **Note** Cisco Catalyst 8000V supports only Gigabit Ethernet interfaces.

Command	Comment
```Router(config-if)# ? Interface configuration commands: . . . ip Interface Internet Protocol config commands keepalive Enable keepalive lan-name LAN Name command llc2 LLC2 Interface Subcommands load-interval Specify interval for load calculation for an interface locaddr-priority Assign a priority group logging Configure logging for interface loopback Configure internal loopback on an interface mac-address Manually set interface MAC address mls mls router sub/interface commands mpoa MPOA interface configuration commands mtu Set the interface Maximum Transmission Unit (MTU) netbios Use a defined NETBIOS access list or enable name-caching no Negate a command or set its defaults nrzi-encoding Enable use of NRZI encoding ntp Configure NTP . . . Router(config-if)#```	Enter **?** to display a list of all the interface configuration commands available for the Gigabit Ethernet interface. This example shows only some of the available interface configuration commands.

Command	Comment
``Router(config-if)# ip ?
Interface IP configuration subcommands:
access-group   Specify access control for
packets
accounting   Enable IP accounting on this
interface
address   Set the IP address of an
interface
authentication   authentication subcommands
bandwidth-percent   Set EIGRP bandwidth limit
bgp   BGP interface
commands..<snipped for brevity>
.
.
.
Router(config-if)# ip```	Enter the command that you want to configure for the interface. This example uses the **ip** command. Enter **?** to display what you must enter next on the command line. This example shows only some of the available interface IP configuration commands.
``Router(config-if)# ip address ?
A.B.C.D   IP address
dhcp   IP Address negotiated via DHCP
pool
IP Address autoconfigured from a local DHCP pool
Router(config-if)# ip address```	Enter the command that you want to configure for the interface. This example uses the **ip address** command. Enter **?** to display what you must enter next on the command line. In this example, you must enter an IP address or the **negotiated** keyword. A carriage return (<cr>) is not displayed; therefore, you must enter additional keywords or arguments to complete the command.
``Router(config-if)# ip address 172.16.0.1 ?
A.B.C.D   IP subnet mask
Router(config-if)# ip address 172.16.0.1```	Enter the keyword or the argument that you want to use. This example uses the 172.16.0.1 IP address. Enter **?** to display what you must enter next on the command line. In this example, you must enter an IP subnet mask. A <cr> is not displayed; therefore, you must enter additional keywords or arguments to complete the command.

Command	Comment
``Router(config-if)# ip address 172.16.0.1
255.255.255.0 ?
secondary   Make this IP address a
secondary address
<cr>
Router(config-if)# ip address 172.16.0.1
255.255.255.0```	Enter the IP subnet mask. This example uses the 255.255.255.0 IP subnet mask. Enter **?** to display what you must enter next on the command line. In this example, you can enter the **secondary** keyword, or you can press **Enter**. A <cr> is displayed; you can press **Enter** to complete the command, or you can enter another keyword.
``Router(config-if)# ip address 172.16.0.1
255.255.255.0
Router(config-if)#```	In this example, **Enter** is pressed to complete the command.

Almost every configuration command has a **no** form. In general, use the **no** form to disable a function. Use the command without the **no** keyword to re-enable 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, use the **noip routing** command. To re-enable IP routing, use the **ip routing** command once again.

The Cisco IOS XE software command reference publications provide the complete syntax for the configuration commands and describe what the **no** form of a command does.

Many CLI commands also have a **default** form. By issuing the command **default** *command-name*, you can configure the command to its default setting. The Cisco IOS XE software command reference publications describe the function of the **default** form of the command when the **default** form performs a different function than the plain and **no** forms of the command.

To see what default commands are available on your system, enter **default ?** in the appropriate command mode.

Use the **copy running-config startup-config** command to save your configuration changes to the startup configuration so that the changes are not lost if the software reloads or a power outage occurs. For example:

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

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

```
[OK]
Router#
```

This task saves the configuration to NVRAM.

On the Cisco Catalyst 8000V instance, the startup configuration file is stored in the NVRAM partition. As a matter of routine maintenance on any Cisco router, users should backup the startup configuration file by copying the startup configuration file from the NVRAM to one of the router's other file systems and in a network server. Backing up the startup configuration file provides an easy method of recovering the startup configuration file in the event the startup configuration file in the NVRAM becomes unusable for any reason.

Use the **copy** command to backup startup configuration files. The following examples show the startup configuration file in NVRAM being backed up:

Example 1: Copying a Startup Configuration File to Bootflash

```
Router# dir bootflash:
Directory of bootflash:/
   11      drwx    16384      Jan 24 2012 04:53:55 -05:00     lost+found
   12      -rw-    289243620 Jan 24 2012 04:54:55 -05:00
   308257  drwx    4096      Jan 24 2012 04:57:06 -05:00    core
   876097  drwx    4096      Jan 24 2012 04:57:07 -05:00    .prst_sync
   63277  drwx   4096      Jan 24 2012 04:57:10 -05:00 .rollback_timer   13
      -rw-      0      Jan 24 2012 04:57:19 -05:00     tracelogs.
csr1000v-adventerprisek9.2012-01-23_12.39.SSA.bin
Router# copy nvram:startup-config bootflash:
Destination filename [startup-config]?
3517 bytes copied in 0.647 secs (5436 bytes/sec)
Directory of bootflash:/
   11      drwx    16384      Jan 24 2012 04:53:55 -05:00     lost+found
   12      -rw-    289243620 Jan 24 2012 04:54:55 -05:00
   308257  drwx    4096      Jan 24 2012 04:57:06 -05:00    core
   876097  drwx    4096      Jan 24 2012 04:57:07 -05:00    .prst_sync
   632737 drwx   4096      Jan 24 2012 04:57:10 -05:00 .rollback_timer   13
      -rw-      0      Jan 24 2012 04:57:19 -05:00     tracelogs.
```

```
csr1000v-adventerprisek9.2012-01-23_12.39.SSA.bin
  14 -rw-   7516      Jul 2 2012 15:01:39 -07:00     startup-config
```

Example 2: Copying a Startup Configuration File to a TFTP Server

```
Router# copy bootflash:startup-config tftp:
Address or name of remote host []? 172.17.16.81
Destination filename [pe24_asr-1002-confg]? /auto/tftp-users/user/startup-config
!!
3517 bytes copied in 0.122 secs (28828 bytes/sec)
```

For detailed information on managing configuration files, see the *Managing Configuration Files* section in the *Configuration Fundamentals Configuration Guide*.

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NVRAM File Security

Cisco Catalyst 8000V allows you to encrypt some of the disk partitions internal to the VM to provide extra security around sensitive data that may be stored on the routers. For example, information in the NVRAM is encrypted so that it is not visible to administrative entities with access to the physical hard disk upon which Cisco Catalyst 8000V is stored.

You can search and filter the output of **show** and **more** commands. This functionality is useful if you need to sort through large amounts of output or if you want to exclude output that you need not see.

To use this functionality, enter a **show** or **more** command followed by the "pipe" character (|); one of the keywords **begin**, **include**, or **exclude**; and a regular expression on which you want to search or filter (the expression is case sensitive):

show *command* { **append** | | **begin** | | **exclude** | | **exclude** | | **include** | | **redirect** | | **section** | | **tee** } *regular-expression*

show *command* | {**append** | **begin** | **exclude** | **include** | **redirect** | **section** | **tee**} *regular-expression*

The output matches certain lines of information in the configuration file.

To power off a Cisco Catalyst 8000V instance, you must power off the VM upon which the router is installed. For information about powering off the VM, see your VM vendor documentation.