CHAPTER 2

# Privileged EXEC Commands

This chapter contains all the Privileged EXEC commands used to administer the router. The Cisco 1020 does not have an unprivileged EXEC mode. The commands are presented in alphabetical order.

# attach async

This Privileged EXEC command provides direct access to the modem attached to the async interface for purposes of configuration or testing.

**attach async** *port*

## Syntax Description

| | |
|---|---|
| *port* | Specifies the async port to attach to, either 1 or 2. |

## Command Mode

Privileged EXEC

## Usage Guidelines

This command is useful for configuring or testing modems or debugging chat scripts.

## Related Commands

**chat-script**
**clear interface**
**modem-def**
**modem-type**

# clear interface

To reset the hardware logic on an interface, use the **clear interface** privileged EXEC command.

**clear interface** *type number*

## Syntax Description

*type* Specifies the interface type; it is one of the keywords listed in Table 2-1.

*number* Specifies the port.

**Table 2-1 Clear Interface Type Keywords**

| Keyword | Interface Type |
|---|---|
| **async** | Async interface |
| **ethernet** | Ethernet interface |

## Command Mode

Privileged EXEC

## Usage Guidelines

Use **clear interface async** *number* after changing its configuration, to have the new configuration take effect.

## Example

The following example resets the interface logic on interface async 1:

```
clear interface async 1
```

# clear startup-config

This command erases the configuration information stored in nonvolatile memory.

**clear startup-config**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Usage Guidelines

Using this command followed by rebooting the router will erase all configuration information.

## Related Commands

**write network**
**configure network**

# configure

To enter global configuration mode, use the **configure** privileged EXEC command.

**configure** [**terminal** | **network**]

## Syntax Description

**terminal** Executes configuration commands from the terminal.

**network** Executes the configuration commands stored in a file on a server.

## Default

**terminal**

## Command Mode

Privileged EXEC

## Usage Guidelines

If you do not specify **terminal** or **network**, the communication server defaults to terminal. After you enter the **configure** command, the system prompt changes from `cs-name#` to `cs-name(config)#`, indicating that you are in global configuration mode. To leave global configuration mode and return to the privileged EXEC prompt, press **Ctrl-Z**.

## Examples

In the following example, the communication server is configured from the terminal:

```
cs# configure

Enter configuration commands, one per line. End with CNTL/Z.
```

In the following example, the communication server is configured from the file *tokyo-confg* at IP address 131.108.2.155:

```
cs1# configure network

IP address of remote host? 131.108.2.155
Name of configuration file? tokyo-confg
```

## Related Commands

**show configuration**
**write terminal**

# copy flash tftp

To copy a system image from Flash memory to a network server using TFTP, use the **copy flash tftp** privileged EXEC command.

**copy flash tftp**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Usage Guidelines

The copy of the system image can serve as a backup copy and also can be used to verify that the copy in Flash is the same as on the original file on disk.

## Example

The following example illustrates how to copy a system image from Flash memory to a network server using TFTP:

```
Router# copy flash tftp
Remote host? jade
Name of configuration file to write? cs1020-1.1
Requesting tftp of cs1020-1.1 to host jade (192.168.1.70)
Sending csOS ..............................
Sending msgOSM ........tftp complete
```

## Related Commands

**copy tftp flash**

# copy tftp flash

To copy a system image into Flash memory using TFTP, use the **copy tftp flash** privileged EXEC command.

**copy tftp flash**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Usage Guidelines

The communication server prompts for the address of the network server and TFTP filename. The entire copying process takes several minutes and will differ from network to network.

**Caution** If you have a bad image in Flash memory and try to boot from Flash, the communication server will attempt to boot from the net using RARP and TFTP.

## Example

```
Router# copy tftp flash
Remote host? jade
Name of configuration file to read? cs1020-1.1
Requesting tftp of cs1020-1.1 from host jade (192.168.1.70)
Initializing File System
!
!   CS1020 Operating System Upgrade - Release 1.1
!
Downloading file csOS ................................. 240356 bytes
!
!   CS1020 System Messages File
!
Downloading file msgOSM ........ 38847 bytes
!
! Predefined Modem initialization strings
!
tftp complete
```

## Related Commands

**copy flash tftp**

# debug ip packet

Use the **debug ip packet** privileged EXEC command to display general IP debugging information. The **no** form of this command disables debugging output.

**debug ip packet** *access-list-number*
**no debug ip packet**

## Syntax Description

| | |
|---|---|
| *access-list-number* | IP access list number that you can specify. If the datagram is not permitted by that access list, the related debugging output is suppressed. |

## Command Mode

Privileged EXEC

## Usage Guidelines

If a communication session is closing when it should not be, an end-to-end connection problem can be the cause. The debug ip packet command is useful for analyzing the messages traveling between the local and remote hosts.

IP debugging information includes packets received, generated, and forwarded. ICMP and UDP packets generated on the router are not displayed.

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**Note** Because the debug ip packet command generates a significant amount of output, use it only when traffic on the IP network is low so other users on the system will not be adversely affected.

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# debug ipx packet

Use the debug ipx packet privileged EXEC command to display information IPX packets received, transmitted, and forwarded. The no form of this command disables debugging output.

**debug ipx packet** *access-list-number*
**no debug ipx packet**

## Syntax Description

| | |
|---|---|
| *access-list-number* | IPX access list number that you can specify. If the datagram is not permitted by that access list, the related debugging output is suppressed. |

## Command Mode

Privileged EXEC

## Usage Guidelines

This command is useful for learning whether IPX packets are traveling over a router.

# debug ppp

To debug PPP, use the **debug ppp** privileged EXEC command. To turn off the debugging function, use the **undebug** command.

**debug ppp negotiation**
**undebug ppp**

## Syntax Description

**negotiation** Debugs the PPP protocol negotiation process.

## Default

Disabled

## Command Mode

Privileged EXEC

# dial

This command causes the router to dial out to a site specified by the **site** command as manual dial.

**dial** *site* [**view**]

## Syntax Description

| | |
|---|---|
| *site* | the name of a site specified by the site command as manual. |
| **view** | show the dial out as it happens, for debugging purposes. |

## Command Mode

Privileged EXEC

## Usage Guidelines

This command is mostly used for testing new sites before changing them to on-demand or continuous. The site entry must be specified as manual to be used with the dial command.

## Related Commands

**debug ppp**
**site**

# exit

To exit any command mode or close an active terminal session and terminate the privileged EXEC, use the **exit** command at the system prompt.

**exit**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Available in all command modes

## Usage Guidelines

When you enter the **exit** command at the privileged EXEC levels, the privileged EXEC mode is ended. Use the **exit** command at the configuration level to return to privileged EXEC mode. Use the **exit** command in interface and site modes to return to global configuration mode. You can also press Ctrl-Z from any configuration mode to return to privileged EXEC mode.

## Example

The following example shows how to exit an active session.

```
Router# exit
```

## Related Commands

**logout**

# logout

To close an active terminal session and terminate the privileged EXEC, enter the **logout** privileged EXEC command at the system prompt.

**logout**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Usage Guidelines

This command has the same function as the **exit** privileged EXEC command.

## Example

The following example shows how to exit an active session:

```
logout
```

## Related Commands

**exit**

# ping

To check host reachability and network connectivity, use the **ping** privileged EXEC command.

**ping** *[address]*

## Syntax Description

| | |
|---|---|
| *address* | IP address or hostname of system to ping. |

## Command Mode

Privileged EXEC

## Usage Guidelines

The **ping** (packet internet groper) command sends up to three ICMP Echo Request datagrams to verify connectivity.

If the system cannot map an address for a host name, it will return an error message.

To abort a **ping** session, type **ping** with no argument.

# reload

To reload the operating system, use the **reload** privileged EXEC command.

**reload**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Usage Guidelines

The **reload** command reboots the system. The **reload** command is used after configuration information is entered into a file and saved into NVRAM.

## Example

The following example illustrates how to enter the **reload** command at the privileged EXEC prompt:

```
Router# reload
```

## Related Commands

**write memory**

# show access-lists

To display the contents of all current access lists, use the **show access-lists** privileged EXEC command.

**show access-lists** *[access-list-number]*

## Syntax Description

| | |
|---|---|
| *access-list-number* | (optional) Access list to display. |

## Command Mode

Privileged EXEC

## Usage Guidelines

For information on how to configure access lists, refer to the chapter "Configuring IP" of the *Access and Communication Servers Configuration Guide*.

## Related Commands

**access-list**

# show arp

Use the **show arp** privileged EXEC command to display the entries in the ARP table for the router.

**show arp**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

# show hardware

Use the **show hardware** privileged EXEC command display the configuration of the system hardware, the software version and the names and sources of configuration files.

**show hardware**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Sample Display

The following is sample output from the **show hardware** command from a Cisco 1020:

```
Router #> show hardware
Access Server Software (Cisco 1020), Version 1.1
Compiled Wed 21-Dec-94 23:59

Router uptime is 2 minutes

Cisco 1020 (386SE-25) processor with 1024K bytes of memory.
1 Ethernet/IEEE 802.3 interface
2 async interfaces.
128K bytes of non-volatile configuration memory.
Serial Number 85900001
```

Table 2-2 describes significant fields shown in the display.

**Table 2-2 Show Hardware Field Descriptions**

| Field | Description |
|---|---|
| Version 1.1 | Always specify the complete version number when reporting a possible software problem. In the example output, the version number is 1.1. |
| Router uptime is | The amount of time the system has been up and running. |
| Cisco 1020 | The remaining output shows the hardware configuration. |

The output of the **show hardware** privileged EXEC command can also provide certain messages. If such error messages appear, report the complete text of this message to your technical support specialist.

# show hosts

Use the **show hosts** privileged EXEC command to display the static list of host names and addresses.

**show hosts**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

# show interfaces

Use the **show interfaces** privileged EXEC command to display information on interfaces.

**show interfaces** [*interface-type interface-number*]

## Syntax Description

| | |
|---|---|
| *interface-type* | Type of interface to be shown. See Table 2-3. |
| *interface-number* | Port number to be shown. On the Cisco 1020 the port number of the interface can be 0, 1, or 2, depending on the type of interface. See Table 2-3. |

**Table 2-3 Interface Type Keywords**

| Keyword | Interface Type | Interface Numbers |
|---|---|---|
| **ethernet** | Ethernet IEEE 802.3 interface. | 0 |
| **async** | Asynchronous serial port. | 1, 2 |

## Command Mode

Privileged EXEC

## Related Commands

**interface**

# show interfaces brief

Use the **show interfaces brief** privileged EXEC command to display information on all active interfaces.

**show interfaces brief**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Sample Display

The following is sample output from the **show interfaces brief** command:

```
Router# show interfaces brief
ether0: flags=1016<IP_UP,IPX_UP,BROADCAST>
        inet 192.168.1.1 netmask ffffff00 broadcast 192.168.1.255
        ipxnet 000000F3 ipxframe ETHERNET_802.2 mtu 1500
ptp2: flags=10BD<IP_UP,IPX_UP,POINT_TO_POINT,COMPRESS>
        dest 192.168.200.1 netmask ffffff00 ipxnet 000000F2 mtu 1500
```

Table 2-4 describes the fields shown in the display.

**Table 2-4 Show Interfaces Brief Field Descriptions**

| Field | Description |
|---|---|
| IP_UP | The interface is up and running the IP protocol. |
| IP_DOWN | IP is not in use. |
| IPX_UP | The interface is up and running the IPX protocol. |
| IPX_DOWN | IPX is not in use. |
| BROADCAST | The network is a broadcast network (Ethernet). |
| POINT_TO_POINT | The network is a point to point connection (Async). |
| SUSPENDED | This on-demand interface is available for use but does not have an active connection to the remote site. |
| LISTEN | RIP packets can be received but not sent. |
| PRIVATE | No routing information will be received or transmitted. |
| RIPSEND | RIP packets are sent but not received.<br>If none of the above 3 flags are present, (LISTEN, PRIVATE, RIPSEND) RIP packets can both be sent and received. |
| inet | The IP address of this interface. |
| dest | The destination IP address if it is a point to point connection. |
| netmask | The netmask for "inet" or "dest." |
| broadcast | The broadcast address if this is an ethernet interface. |

| Field | Description |
|---|---|
| mtu | The maximum transmission unit for the interface. |
| ipxnet | The IPX network number for the interface. |
| ipxframe | The IPX frame type for the interface. |

# show ip route

Use the **show ip route** privileged EXEC command to display the current state of the routing table.

**show ip route**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Sample Display

The following is sample output from the **show ip route** command:

```
Router# show ip route
Destination            Netmask          Gateway             Flag Met  Interface
--------------------  ---------------  ------------------- ---- ---  ---------
0.0.0.0                0.0.0.0          192.168.200.1       NS     1  ptp2
192.168.1.0            255.255.255.0    192.168.1.1         NL     1  ether0
192.168.200.1          255.255.255.0    192.168.200.1       HL     1  ptp2
```

Table 2-5 describes the fields shown in the display.

**Table 2-5 Show IP Route Field Descriptions**

| Field | Description |
|---|---|
| Destination | The remote host or network. |
| Netmask | The mask applied to an address when comparing it to this destination. |
| Gateway | The next hop towards the destination. |
| Flag | Locally defined:<br>"H" - A host route.<br>"N" - A network or subnet route.<br>"S" - A static route.<br>"L" - A route to a directly attached network or host.<br>"D" - A dynamic route, learned via RIP.<br>"C" - A route which has recently changed but not propagated via RIP yet.<br>"O" - An obsolete route scheduled for deletion. |
| Met | The hop count to the destination, from 1 to 15. |
| Interface | Which network interface to use. On-Demand interfaces are numbered starting at ptp3, up to ptp98. |

## Related Commands

**default routing**
**ip route**
**routing rip**

# show ipx route

To display the contents of the IPX routing table, use the **show ipx route** privileged EXEC command.

**show ipx route**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Sample Display

The following is sample output from the **show ipx route** command:

```
Router# show ipx route
Network   Gateway               Flag Met Ticks Interface
--------  -------------------- ---- --- ----- ---------
000000F3  000000F3:00000CC05036 NL     1     1 ether0
000000F2  000000F2:00000CC05036 NL     1     1 ptp2
000000F1  000000F2:00000C0A2E9A ND     2    20 ptp2
```

Table 2-6 describes the fields shown in the display.

**Table 2-6 Show IPX Route Field Descriptions**

| Field | Description |
|---|---|
| Network | Identifies the remote network. |
| Gateway | The next hop towards the destination. |
| Flag | Locally defined:<br>"N" - A network or subnet route.<br>"S" - A static route.<br>"L" - A route to a directly attached network or host.<br>"D" - A dynamic route, learned via RIP.<br>"C" - A route which has recently changed but not propagated via RIP yet.<br>"O" - An obsolete route scheduled for deletion. |
| Met | The distance metric to the destination, from 1 to 15. |
| Ticks | The distance tick metric to the destination, from 1 to 65535. |
| Interface | Identifies which network interface to use. On-Demand interfaces are numbered starting at ptp3, up to ptp98. |

## Related Commands

**ipx route**
**routing rip**

# show ipx servers

To list the IPX servers discovered through SAP advertisements, use the **show ipx servers** Privileged EXEC command.

**show ipx servers**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Sample Display

The following is sample output from the **show ipx servers** command:

```
Router# show ipx server

Server                   Svc  Network  Host         Sock Hops Interface
------------------------ ---- -------------------------- ---- ---------
0800090DF6C383C2NPI0DF6C  30C 000000F3:0800090DF6C3:400C    1 ether0
NOVELL                    107 00001701:000000000001:8104    2 ptp2
NOVELL                      4 00001701:000000000001:0451    2 ptp2
pr1                        5F2 000000F3:00000CC05036:066B    0 Internal
```

Table 2-7 describes the fields shown in the display.

**Table 2-7 Show IPX Servers Field Descriptions**

| Field | Description |
|---|---|
| Server | Name of the server. |
| Svc | Service being advertised. |
| Network | Network the host providing the service is on. |
| Host | Host providing the service. |
| Sock | Socket service is provided on. |
| Hops | Distance Metric to server. |
| Interface | Interface to use to reach server. |

# show memory

Use the **show memory** privileged EXEC command to show statistics about the router's memory.

**show memory**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

# show modem

This command displays the initialization information for the specified modem, or the list of known modems if no argument is specified.

**show modem** [*modem*]

## Syntax Description

| | |
|---|---|
| *modem* | Short name for the modem as defined by **modem-def** command. |

## Command Mode

Privileged EXEC

## Related Commands

**modem-def**
**modem-type**

# show site

This command displays the settings for the specified site. Passwords are not displayed.

**show site** *site*

## Syntax Description

| | |
|---|---|
| *site* | The name of a site defined by the **site** command. |

## Command Mode

Privileged EXEC

## Related Commands

**show sites**
**site**

# show sites

This command displays the list of configured sites.

**show sites**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Related Commands

**show site**
**site**

# show tcp

Use the **show tcp** privileged EXEC command to display the status of TCP connections.

**show tcp**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

# show users

Use the **show users** privileged EXEC command to display information about the active ports of the router. The information displayed includes the line number, connection name, and idle time.

**show users**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

# show version

Use the **show version** privileged EXEC command display the configuration of the system hardware, the software version and the names and sources of configuration files.

**show version**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Sample Display

The following is sample output from the **show version** command from a Cisco 1020:

```
Router #> show version
Access Server Software (Cisco 1020), Version 1.1
Compiled Wed 21-Dec-94 23:59

Router uptime is 2 minutes

Cisco 1020 (386SE-25) processor with 1024K bytes of memory.
1 Ethernet/IEEE 802.3 interface
2 async interfaces.
128K bytes of non-volatile configuration memory.
Serial Number 85900001
```

Table 2-8 describes significant fields shown in the display.

**Table 2-8 Show Version Field Descriptions**

| Field | Description |
|---|---|
| Version 1.1 | Always specify the complete version number when reporting a possible software problem. In the example output, the version number is 1.1. |
| Router uptime is | The amount of time the system has been up and running. |
| Cisco 1020 | The remaining output shows the hardware configuration. |

The output of the **show version** privileged EXEC command can also provide certain messages. If such error messages appear, report the complete text of this message to your technical support specialist.

# systat

To display information about the active ports of the router, use the **systat** privileged EXEC command.

**systat**

## Syntax Description

This command takes no arguments or keywords.

## Command Mode

Privileged EXEC

## Usage Guidelines

This command is a synonym for the **show users** command.

# telnet

To start a Telnet connection, enter the **telnet** privileged EXEC command.

**telnet** *host* [*port*]

## Syntax Description

| | |
|---|---|
| *host* | A host name or an Internet address. |
| *port* | (Optional) Decimal TCP port number; the default is the Telnet server port (decimal 23) on the host. |

## Command Mode

Privileged EXEC

# terminal monitor

To set the ability to display **debug** command output and system error messages to the current terminal, use the **terminal monitor** privileged EXEC command. Use the **terminal no monitor** command to disable this ability.

**terminal monitor**
**terminal no monitor**

## Syntax Description

This command has no arguments or keywords.

## Default

Disabled

## Command Mode

Privileged EXEC

## Example

The following example illustrates how to enable the system debugging messages on the local terminal screen:

```
terminal monitor
```

# trace

Use the **trace** Privileged EXEC command to discover the IP routes the communication server's packets take when traveling to their destination.

**trace** *[destination]*

## Syntax Description

*destination* (Optional) Destination address or host name on the command line.

## Command Mode

Privileged EXEC

## Usage Guidelines

The **trace** command works by taking advantage of the error messages generated by routers when a datagram exceeds its time-to-live (TTL) value.

The **trace** command starts by sending probe UDP datagrams with a TTL value of one. This causes the first communication server to discard the probe datagram and send back an error message. The **trace** command sends several probes at each TTL level.

The **trace** command sends out one probe at a time. Each outgoing packet may result in one or two error messages. A *time exceeded* error message indicates that an intermediate communication server has seen and discarded the probe. A *destination unreachable* error message indicates that the destination node has received the probe and discarded it because it could not deliver the packet.

The **trace** command terminates when the destination responds, when the maximum TTL is exceeded, or when the user interrupts the trace by typing **trace** with no arguments.

## Common Trace Problems

Due to bugs in the IP implementation of various hosts and routers, the IP **trace** command might behave in odd ways.

Not all destinations will respond correctly to a probe message by sending back an *ICMP port unreachable* message. A long sequence of TTL levels with only asterisks, terminating only when the maximum TTL has been reached, might indicate this problem.

There is a known problem with the way some hosts handle an *ICMP TTL exceeded* message. Some hosts generate an *ICMP* message but they reuse the TTL of the incoming packet. Because this is zero, the ICMP packets do not make it back. When you trace the path to such a host, you might see a set of TTL values with asterisks (*). Eventually the TTL gets high enough that the *ICMP* message can get back. For example, if the host is six hops away, **trace** will time out on responses 6 through 11.

# write network

To copy the current configuration information to a network server, use the **write network** privileged EXEC command.

**write network**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Usage Guidelines

This command copies the current configuration to a server host on the network. You are prompted for a destination host and filename.

## Example

The following example illustrates how to begin the prompts for writing configuration information to a network host:

```
Router# write network
Remote host? 131.108.1.111
Name of configuration file to write? Router-confg
Writing Router-confg !! [OK]
Router#
```

# write terminal

To display the current configuration information on the terminal, use the **write terminal** privileged EXEC command.

**write terminal**

## Syntax Description

This command has no arguments or keywords.

## Command Mode

Privileged EXEC

## Example

The following example illustrates how to display the current configuration information:

```
write terminal
```

## Related Commands

**configure**