Command Reference

This chapter describes the Cisco IOS commands that are supported by the Cisco 6200 advanced digital subscriber line access multiplexer (DSLAM). The commands and keywords described in this chapter are routinely used to configure, monitor, and manage the Cisco 6200. Commands and keywords that are not supported or typically used are not described. For more information on Cisco IOS commands, refer to the Cisco IOS Command Reference guides.

You must be in the correct mode to use a command. For information on how to enter the different modes, refer to Chapter 3, "Using the Cisco IOS Command Line Interface." The primary command modes used in the Cisco 6200 are listed in Table 5-1.

Table 5-1   Cisco IOS Command Modes

Prompt	Command Mode
c6200>	User EXEC
c6200#	Privileged EXEC
c6200(config)#	Global configuration
c6200(config-if)#	Interface configuration

5.1 Commonly Used Commands

This section documents the commands and command arguments that are typically used to configure and monitor the Cisco 6200 DSLAM. For brief descriptions of other commands available on the Cisco 6200, see Section 5.2, "Other Commands."

5.1.1   alarmcutoff

To turn off audible alarms generated by the Cisco 6200, use the **alarmcutoff** command.

   c6200# **alarmcutoff**

Command Mode
Privileged EXEC

Usage Guidelines

The Cisco 6200 alarms inform you of problems with the temperature, fans, clock, or data transmission, as well as other problems. You can view the alarm status by using the **show dsl alarms** command or the **show dsl interface** command. (For more information on alarms, see Chapter 1, "Hardware Description.")

Alarms are also reported through an external chassis alarm interface. You can use this interface to set up remote signals that indicate alarms audibly, visibly, or both. (Other types of alarms, such as CLI and SNMP, are not affected by the **alarmcutoff** command.)

Example

The command in the following example turns off audible alarms:

```
c6200# alarmcutoff
```

5.1.2 c6200 card

To provision a slot to accept either an NTC or an SLC, use the **c6200 card** command.

c6200(config)# **c6200 card** *slot card-type*

Syntax Description

slot	1 to 14
	Slot 1 is for the NTC; slot 2 is for the MPC; slots 5 to 14 are for SLCs. Do not use slots 3 and 4.
card-type	ntc1-oc3-mm (for multimode) ntc1-oc3-si (for single mode) slc1-8-cap slc1-8-dmt

Note Slots 3 and 4 are disabled in this release of the Cisco 6200 system software.

Command Mode

Global configuration

Usage Guidelines

Use of this command is not required; the system provisions slots automatically when cards are inserted. If you use the **c6200 card** command to provision the slots in a chassis, the system generates an alarm when the wrong kind of card is inserted in a slot or when a slot is left empty.

You cannot provision or preconfigure an MPC.

Example

In the following example, slot 5 is configured to support an SLC DMT8.

```
c6200(config)# c6200 card 5 slc1-8-dmt
```

5.1.3   clear counters

To reset traffic statistics displayed by **show interface** commands, use the **clear counters** command.

c6200# **clear counters [***type***] [***slot/port***]**

Syntax Description

type	(Optional) Interface type. Allowed values are DSL, ATM, and Ethernet.
slot	(Optional) Slot number of card.
port	(Optional) Port number on card.

Command Mode
Privileged EXEC

Example
The following example shows how to reset all counters for the **show interface** command to 0:

```
c6200# clear counters
Clear "show interface" counters on all interfaces [confirm]
c6200#
```

5.1.4   config-register

To change the command register value, use the **config-register** command.

c6200(config)# **config-register** *value*

Syntax Description

value	Hexadecimal or decimal value that represents the 16-bit configuration register value that you want to use the next time the router is restarted. The value range is from 0x0 to 0xFFFF (0 to 65535 in decimal).

Default
The default configuration register value for the Cisco 6200 is either 0x102 or 0x2102.

Command Mode
Global configuration

Usage Guidelines
This command is commonly used as part of the password recovery procedure.

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

The following example shows how to set the configuration register to 0x102:

```
c6200(config)# config-register 0x102
c6200(config)#
```

5.1.5 configure

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

c6200> **configure {terminal | memory | network | overwrite-network}**

Syntax Description

terminal	Executes configuration commands from the terminal.
memory	Executes the commands stored in NVRAM.
network	Executes the commands from a TFTP network host.
overwrite-network	Overwrites NVRAM configuration from TFTP network host.

Command Mode
Privileged EXEC

Usage Guidelines
You must be in global configuration mode to enter configuration commands.

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, the system is set to use configuration commands from the terminal:

```
cc6200# config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
c6200(config)#
```

The following example shows the **configure terminal** command in an abbreviated form:

```
c6200# conf t
Enter configuration commands, one per line.  End with CNTL/Z.
c6200(config)#
```

5.1.6   copy

To copy any file from a source to a destination, use the **copy** command.

> c6200# **copy {source-file | bootflash: | flash | rcp | running-config | slot0: | slot1: |**
> **startup-config | tftp} {dest-file | bootflash: | flash | rcp | running-config | slot0: | slot1: |**
> **startup-config | tftp}**

Syntax Description

source-file	Source file name.
dest-file	Destination file name.
bootflash:	Copy from or to boot Flash.
flash	Copy from or to system Flash.
rcp	Copy from or to an rcp server. You will be prompted for the server's name or IP address, and, if necessary, for a file name.
running-config	Copy from or to current system configuration.
slot0:	Copy from or to PCMCIA slot 0 in the MPC.
slot1:	Copy from or to PCMCIA slot 1 in the MPC.
startup-config	Copy from or to startup configuration.
tftp	Copy from or to a TFTP server. You will be prompted for the server's name or IP address, and, if necessary, for a file name.

Command Mode

Privileged EXEC

Usage Guidelines

Command keywords that end with a colon (bootflash:, slot0:, slot1:) must be followed by a source or destination file name.

On the MPC, slot 0 is the left PCMCIA slot; slot 1 is the right PCMCIA slot.

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In this example, the system configuration currently running is copied into a file named "myconfig" on a tftp server named "myserver":

```
c6200# copy running-config tftp
Remote host [myserver]?
Name of configuration file to write [myconfig]?
Write file delete on host 3.0.3.1? [confirm]
        Building configuration...
```

This example shows how to copy the running configuration to the startup configuration (stored in NVRAM on the MPC card):

```
c6200# copy running-config startup-config
c6200#
```

This example shows how to copy the file myconfig from the PCMCIA Flash memory card in slot 0 to the file myconfig2 on the card in slot 1:

```
c6200# copy slot0:myconfig slot1:myconfig2
18241024 bytes available on device slot1, proceed? [confirm]
c6200#
```

5.1.7 disable

To exit privileged EXEC mode and return to user EXEC mode, enter the **disable** command.

c6200# **disable**

Command Mode

Privileged EXEC

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

The example below shows how to go from privileged EXEC to user EXEC mode:

```
c6200# disable
c6200>
```

5.1.8 dsl bitrate

To specify the transmission rate for traffic between the customer premises equipment (CPE) and the central office (CO), use the **dsl bitrate** command. Downstream goes from CO to CPE; upstream goes to CPE from CO.

c6200(config-if)# **dsl bitrate downstream** *value* **upstream** *value*

Syntax Description

downstream   Indicates data traveling from the Cisco 6200 to the CPE.

upstream   Indicates data traveling from the CPE to the Cisco 6200.

value   **For SLC 8CAPs:**

Downstream bit rates in kilobits/second: 640, 960, 1280, 1600, 1920, 2240, 2560, 2688, 3200, 4480, 5120, 6272, 7168.

If the downstream value is over 2688, the upstream value is restricted to 408, 680, 952, or 1088.

Upstream bit rates in kilobits/second: auto, 91, 272, 408, 544, 680, 816, 952, 1088.

For SLC 8DMTs:

Downstream bit rates in kilobits/second: auto; 32 kbps to 8.032 Mbps in increments of 32 kb. (auto, 32, 64, 96, 128, 160, 192, 224, 256, 288, 320, 352, 384, 416, 448, 480, 512, 544, 576, 608, 640, 672, 704, 736, 768, 800, 832, 864, 896, 928, 960, 992, 1024, 1056, 1088, 1120, 1152, 1184, 1216, 1248, 1280, 1312, 1344, 1376, 1408, 1440, 1472, 1504, 1536, 1568, 1600, 1632, 1664, 1696, 1728, 1760, 1792, 1824, 1856, 1888, 1920, 1952, 1984, 2016, 2048, 2080, 2112, 2144, 2176, 2208, 2240, 2272, 2304, 2336, 2368, 2400, 2432, 2464, 2496, 2528, 2560, 2592, 2624, 2656, 2688, 2720, 2752, 2784, 2816, 2848, 2880, 2912, 2944, 2976, 3008, 3040, 3072, 3104, 3136, 3168, 3200, 3232, 3264, 3296, 3328, 3360, 3392, 3424, 3456, 3488, 3520, 3552, 3584, 3616, 3648, 3680, 3712, 3744, 3776, 3808, 3840, 3872, 3904, 3936, 3968, 4000, 4032, 4064, 4096, 4128, 4160, 4192, 4224, 4256, 4288, 4320, 4352, 4384, 4416, 4448, 4480, 4512, 4544, 4576, 4608, 4640, 4672, 4704, 4736, 4768, 4800, 4832, 4864, 4896, 4928, 4960, 4992, 5024, 5056, 5088, 5120, 5152, 5184, 5216, 5248, 5280, 5312, 5344, 5376, 5408, 5440, 5472, 5504, 5536, 5568, 5600, 5632, 5664, 5696, 5728, 5760, 5792, 5824, 5856, 5888, 5920, 5952, 5984, 6016, 6048, 6080, 6112, 6144, 6176, 6208, 6240, 6272, 6304, 6336, 6368, 6400, 6432, 6464, 6496, 6528, 6560, 6592, 6624, 6656, 6688, 6720, 6752, 6784, 6816, 6848, 6880, 6912, 6944, 6976, 7008, 7040, 7072, 7104, 7136, 7168, 7200, 7232, 7264, 7296, 7328, 7360, 7392, 7424, 7456, 7488, 7520, 7552, 7584, 7616, 7648, 7680, 7712, 7744, 7776, 7808, 7840, 7872, 7904, 7936, 7968, 8000, 8032)

Upstream bit rates in kilobits/second: auto; 32 kbps to 864 kbps in increments of 32 kb. (auto, 32, 64, 96, 128, 160, 192, 224, 256, 288, 320, 352, 384, 416, 448, 480, 512, 544, 576, 608, 640, 672, 704, 736, 768, 800, 832, 864)

Defaults

For SLC 8CAP: 640 kbps downstream and 91 kbps upstream

For SLC 8DMT: 640 kbps downstream and 128 kbps upstream

Command Mode

Interface configuration

Usage Guidelines

The system generates a minor alarm if you configure an explicit bit rate and the modems are not able to train at that rate. If you set the bit rate to auto, the modems train at the highest supportable rate.

In general, the highest bit rates are not attainable at longer loop lengths.

On the SLC 8DMT, if you enter an invalid bit rate, the system rounds down to the nearest valid bit rate. For example, if you enter a downstream bit rate of 7000, the system sets the bit rate to 6976 kbps.

Example

In this example, the DSL bit rate is set to 2688 kbps downstream and 544 kbps upstream:

```
c6200(config-if)# dsl bitrate downstream 2688 upstream 544
```

5.1.9   dsl check-bytes

Specifies the number of check bytes per symbol (DSL frame) used by the forward error correction (FEC) feature. Using more check bytes improves error correction, but also increases overhead, which lowers usable bandwidth.

c6200(config-if)# **dsl check-bytes downstream** *value* **upstream** *value*
c6200(config-if)# **no dsl check-bytes**

Syntax Description

downstream	Indicates data traveling from the Cisco 6200 to the CPE.
upstream	Indicates data traveling from the CPE to the Cisco 6200.
value	0, 2, 4, 6, 8, 10, 12, 14, 16 (Enter **no dsl check-bytes** to use auto mode.)

Defaults

The default setting is 16 check bytes per symbol in both directions.

Command Mode

Interface configuration

Usage Guidelines

You can set auto mode using the command **no dsl check-bytes**. In auto mode, the line card determines the best setting based on the line rate.

Cisco recommends that you leave check-bytes set to its default, 16, or to auto mode.

This command is available on DMT interfaces only.

Example

In this example, check bytes per symbol are set to 6 downstream and 10 upstream:

```
c6200(config-if)# dsl check-bytes downstream 6 upstream 10
```

5.1.10   dsl interleaving

Turns off (or turns on) the interleaving feature that mixes bytes of data from different frames on the line. When interleaving is on, error correction is more effective for protecting against impulse (bursty) noise on the line. The drawback to interleaving: it can add significant delay at the sending side. The amount of delay added is equivalent to the interleaving delay value that you set by means of the command **dsl int-delay**, described below.

c6200(config-if)# **dsl interleaving {off | on}**

Default

By default, interleaving is turned on.

Command Mode

Interface configuration

Usage Guidelines

When you turn interleaving off, data still uses the interleaving path, but delay is set to 0. Cisco recommends that you leave interleaving on.

This command is available on DMT interfaces only.

Example

In this example, interleaving is turned on:

```
c6200(config-if)# dsl interleaving on
```

5.1.11   dsl int-delay

Sets delay values, in msec, for the interleaving feature (see also the **dsl interleaving** command, above). If bursty or impulse noise is a concern, set interleaving delay to a value greater than the longest expected duration of the noise. If delay is a concern, set interleaving delay as low as possible.

c6200(config-if)# **dsl int-delay downstream** *value* **upstream** *value*

Syntax Description

downstream	Indicates data traveling from the Cisco 6200 to the CPE.
upstream	Indicates data traveling from the CPE to the Cisco 6200.
value	0, 1, 2, 4, 8, 16

Defaults

The default setting is 16 msecs of delay in both directions.

Command Mode

Interface configuration

Usage Guidelines

Cisco recommends that you leave interleaving delay set to its default values (16 in both directions).

This command is available on DMT interfaces only.

Example

In this example, interleaving delay is set to 16 msecs in both directions:

```
c6200(config-if)# dsl int-delay downstream 16 upstream 16
```

5.1.12 dsl lbo

This command has been changed to dsl local-tx-power (see below). See also dsl remote-tx-power on page 5-14.

5.1.13 dsl local-tx-power

To adjust the power of the signal transmitted from the Cisco 6200 to the CPE downstream, use the **dsl local-tx-power** command. (To adjust power in the other direction, see dsl remote-tx-power on page 5-14.)

To avoid crosstalk, use the lowest power possible to achieve the desired bit rate. The default value is full power; the other settings cause the Cisco 6200 interface to transmit at 3, 6, 9, 12, and 15 dB below full power.

```
c6200(config-if)# dsl local-tx-power value
```

Syntax Description

value	Enter one of the following power values:
	FULL—Transmits at the highest power the interface is capable of
	minus_3db—Set transmit power to –3 dB
	minus_6db—Set transmit power to –6 dB
	minus_9db—Set transmit power to –9 dB
	minus_12db—Set transmit power to –12 dB
	minus_15db—Set transmit power to –15 dB

Default

The default power transmit level is full power.

Command Mode

Interface configuration

Usage Guidelines

The local transmit power command is used to balance line power levels between full power, which may cause crosstalk over bundled lines, and lowest power (full power minus 15 dB), which may have signal-to-noise problems over long distances. You should consider reducing power on short, high-quality subscriber lines if they are causing interference on other subscriber lines.

This command is available on CAP interfaces only.

Example

In the following example, the power value is set to –3 dB:

```
c6200(config-if)# dsl local-tx-power minus_3db
```

5.1.14   dsl loopback

Runs a dsl-line or a local loopback test on a DMT interface. Both options are passive loopbacks. (For information on looping CAP interfaces, see the command loopback on page 5-23.)

To display test results, enter the command **show dsl interface dsl** *slot/port*.

c6200(config-if)# **dsl loopback {dsl-line | local}**
c6200(config-if)# **no dsl loopback**

Syntax Description

dsl-line	Allows the CPE to test the transmission of data from the CPE, through the modem on the SLC, and back to the CPE. This is a "full" loopback that loops all ATM cells, idle and nonidle, back to the ADSL line. You must issue commands on the CPE to run the test.
local	Allows an external device to test transmission of data from the trunk port, across the backplane, and back to the trunk port. If you set up this loopback and then send ATM cells into the trunk port with the correct network-side VPI/VCI combination for the DMT-8 port that is looped back, the data will be looped back towards (and out of) the trunk port.

Command Mode

Interface configuration

Usage Guidelines

This command configures the Cisco 6200 hardware for a loopback test. External test equipment is required to send the data through a loop and verify that it is looped back correctly.

The port remains in loopback mode until you enter the **no dsl loopback** command.

This command is available for DMT interfaces only.

Example

In the following example, a dsl-line loopback test is initiated:

```
c6200(config-if)# dsl loopback dsl-line
```

5.1.15 dsl LOSconfig

Controls the issuance of a minor alarm upon loss of signal (LOS), loss of frame (LOF), and loss of cell delineation (LOCD). By default, LOS, LOF and LOCD do cause minor alarms; enter **dsl losconfig on** to disable the alarm.

c6200(config-if)# **dsl LOSconfig {off | on}**

Default

By default, LOSconfig is turned off (that is, LOS, LOF and LOCD do cause minor alarms).

Command Mode

Interface configuration

Usage Guidelines

This command is available on DMT interfaces only.

Example

In this example, minor alarms are enabled for LOS, LOF and LOCD:

```
c6200(config-if)# dsl LOSconfig off
```

5.1.16 dsl margin

Allows you to adjust the margin added to the signal-to-noise ratio (SNR) to which the line trains. A higher margin results in fewer errors on the line; a lower margin results in longer reach and tends to increase the bit rate.

c6200(config-if)# **dsl margin downstream** *value* **upstream** *value*

Syntax Description

downstream	Indicates data traveling from the Cisco 6200 to the CPE.
upstream	Indicates data traveling from the CPE to the Cisco 6200.

value   0 to 127

Defaults
The default setting is 6 dB in both directions.

Command Mode
Interface configuration

Usage Guidelines
If the line does not train, try reducing the margin. (This effect varies with loop length.)

This command is available on DMT interfaces only.

Example
In this example, margin is set to 9 dB downstream and 3 dB upstream:

```
c6200(config-if)# dsl margin downstream 9 upstream 3
```

5.1.17   dsl power_boost

Increases the power, in dB, of the signal that the Cisco 6200 sends downstream. Increasing the power improves the reach on the line, but can also cause cross-talk— resulting in higher error rates or failure to train.

```
c6200(config-if)# dsl power_boost value
```

Syntax Description

value   0 to 9

Defaults
The default setting is 0 dB.

Command Mode
Interface configuration

Usage Guidelines
Cisco recommends against changing the power_boost value. If you do change it, we recommend that you set power_boost to a value no higher than 2 dB. Performance for settings above 2 dB varies with loop conditions.

This command is available on DMT interfaces only.

Example

In this example, power_boost is set to 1 dB:

```
c6200(config-if)# dsl power_boost 1
```

5.1.18   dsl quick-training

Turns on (or off) a faster training algorithm that may limit interoperabililty. When quick training is on, the system ignores the options set with the commands dsl symbols-codeword on page 5-15 and dsl check-bytes on page 5-8.

c6200(config-if)# **dsl quick-training {off | on}**

Default

By default, quick training is turned off.

Command Mode

Interface configuration

Usage Guidelines

This command is available on DMT interfaces only.

Example

In this example, quick training is turned on:

```
c6200(config-if)# dsl quick-training on
```

5.1.19   dsl remote-tx-power

To adjust the power of the signal transmitted from the CPE to the Cisco 6200 upstream, use the **dsl remote-tx-power** command. (To adjust power in the other direction, see dsl local-tx-power on page 5-10.)

To avoid crosstalk, use the lowest power possible to achieve the desired bit rate. The default value is full power; the other settings cause the CPE to transmit at 3, 6, 9, 12, and 15 dB below full power.

c6200(config-if)# **dsl remote-tx-power** *value*

Syntax Description

value   Enter one of the following power values:

FULL—Transmits at the highest power the interface
is capable of

minus_3db—Set transmit power to –3 dB

minus_6db—Set transmit power to –6 dB

minus_9db—Set transmit power to –9 dB

minus_12db—Set transmit power to –12 dB

minus_15db—Set transmit power to –15 dB

Default

The default power transmit level is full power.

Command Mode

Interface configuration

Usage Guidelines

The local transmit power command is used to balance line power levels between full power, which
may cause crosstalk over bundled lines, and lowest power (full power minus 15 dB), which may have
signal-to-noise problems over long distances. You should consider reducing power on short,
high-quality subscriber lines if they are causing interference on other subscriber lines.

This command is available on CAP interfaces only.

Example

In the following example, the power value is set to –3 dB:

```
c6200(config-if)# dsl remote-tx-power minus_3db
```

5.1.20 dsl symbols-codeword

Specifies the number of symbols (DSL frames) per FEC codeword. You can set auto mode using the
command **no dsl symbols-codeword**. In auto mode, the SLC determines the best setting based on
the line rate. Auto mode is applied to the line in both directions; you cannot use auto mode in one
direction and an explicit value in the other direction. Auto mode is the default setting.

```
c6200(config-if)# dsl symbols-codeword downstream value upstream value
c6200(config-if)# no dsl symbols-codeword
```

Syntax Description

downstream	Indicates data traveling from the Cisco 6200 to the CPE.
upstream	Indicates data traveling from the CPE to the Cisco 6200.
value	1, 2, 4, 8, 16 (Enter **no dsl symbols-codeword** to use auto mode.)

Defaults

The default setting is auto in both directions.

Command Mode

Interface configuration

Usage Guidelines

Cisco recommends that you leave symbols per codeword set to auto mode, its default. If you choose not to use auto mode, set the number of symbols per codeword so that the FEC codeword does not exceed the maximum size of 255 bytes. The total number of bytes in an FEC codeword includes user data bytes (which depend upon rate) plus check-bytes. (You can set check-bytes using the **dsl check-bytes** command, described above.)

For a check-bytes setting of 16 bytes per codeword, use these guidelines to select a symbols-codeword value that is appropriate to the bit rate on the line:

- 16 for rates between 32 and 352 kbps

- 8 for rates between 384 and 800 kbps

- 4 for rates between 832 and 1728 kbps

- 2 for rates between 1760 and 3584 kbps

- 1 for rates between 3616 and 8032 kbps

For lower check-bytes settings, you can use higher symbols-codeword values at some bit rates.

This command is available on DMT interfaces only.

Example

In this example, symbols per codeword is set to 4 downstream and 2 upstream:

```
c6200(config-if)# dsl symbols-codeword downstream 4 upstream 2
```

5.1.21 dsl subscribername

To assign a subscriber name, use the **dsl subscribername** command. To return all configuration settings for a particular card/port to default values, use the **no dsl subscribername** command.

```
c6200(config-if)# dsl subscribername name
c6200(config-if)# no dsl subscribername name
```

Syntax Description

name	Assign a subscriber name.

Default

When you are configuring a port as administratively up by means of the **no shutdown** command, the system chooses a default subscriber name in the form port-type slot/port—for example, "DSL 5/2."

Command Mode

Interface configuration

Example

In this example, the interface being configured is assigned the name boston:

```
c6200(config-if)# dsl subscribername boston
c6200(config-if)#
```

5.1.22   dsl-ucode-load

Loads microcode into modems (ports) on the SLC module. See Chapter 4, Configuration Procedures, for details.

```
c6200(config-if)# dsl-ucode-load filename slot port
c6200(config-if)#
```

Syntax Description

filename	The name of the microcode file.
slot	5 to 14 (the slot in which the target SLC resides)
port	0 to 7 (the port at which the target modem resides) or all (all ports on the card)

Command Mode

Privileged EXEC

Example

In this example, a file called newcode.bin is loaded from PCMCIA slot 0 to all the modems in the SLC in slot 5:

```
c6200(config-if)# dsl-ucode-load slot0:newcode.bin 5 all
c6200(config-if)#
```

5.1.23 enable

To enter privileged EXEC mode, use the **enable** command.

>   c6200> **enable**

Command Mode
User EXEC

Usage Guidelines
Because many of the privileged commands set operating parameters, privileged access should be password-protected to prevent unauthorized use. If an enable password has not been set, enable mode can be accessed only from the router console.

For more information on this command, see the *Configuration Fundamentals Command Reference* guide and the *Security Command Reference* guide for Cisco IOS Release 11.3.

Example
In this example, you enter privileged EXEC mode. The password does not display.

```
c6200> enable
Password:
c6200#
```

5.1.24 enable password

To set a local password to control access to privileged EXEC mode and other modes, use the **enable password** command. Use the **no** form of this command to remove the password requirement.

>   c6200(config)# **enable password** *password*
>   c6200(config)# **no enable** *password*

Syntax Description

password	Specifies a password that users type to enter privileged EXEC mode. The password is case sensitive and can contain from 1 to 25 uppercase and lowercase alphanumeric characters. Spaces can be used; leading spaces are ignored; trailing spaces are recognized. The first character must be a letter, not a number.

Command Mode
Global configuration

Usage Guidelines
For more information on this command, see the *Security Command Reference* guide for Cisco IOS Release 11.3.

Example

This example shows how to create a password called boston:

```
c6200-is-password(config)# enable password boston
c6200-is-password(config)#
```

5.1.25   enable secret

To specify an additional layer of security beyond what the **enable password** command offers, use the **enable secret** command. Use the **no** form of this command to turn off the enable secret function.

c6200(config)# **enable secret** *password*
c6200(config)# **no enable secret** *password*

Syntax Description

password	Specifies a password that users type to enter privileged EXEC mode. The password is case sensitive and can contain from 1 to 25 uppercase and lowercase alphanumeric characters. Spaces can be used; leading spaces are ignored; trailing spaces are recognized. The first character must be a letter, not a number.

Command Mode

Global configuration

Usage Guidelines

This password should be different from the password created with the **enable password** command.

This password is displayed in the running configuration as an encrypted string.

For more information on this command, see the *Security Command Reference* guide for Cisco IOS Release 11.3.

Example

This example shows how to create a password called cambridge:

```
c6200(config)# enable secret cambridge
c6200(config)#
```

5.1.26   end

To exit configuration mode or any of the configuration submodes, use the **end** command.

c6200(config)# **end**

Command Mode

Global configuration

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In this example, the end command takes you from interface configuration mode to privileged EXEC mode:

```
c6200(config-if)# end
c6200#
```

5.1.27 exit

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

c6200(config)# **exit**

Command Mode

Global configuration

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In this example, you exit from the configuration mode to the privileged EXEC mode, and then terminate the Telnet session, bypassing user EXEC mode:

```
c6200(config)# exit
c6200# exit
<Your 'TELNET' connection has terminated>
```

5.1.28 help

To display a brief description of the help system, enter the **help** command.

c6200> **help**

Command Mode

User EXEC

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, the output generated by the **help** command is abbreviated:

```
c6200# help
Help may be requested at any point in a command by entering
a question mark '?'.  If nothing matches, the help list will
...
```

5.1.29 hostname

To specify or modify the host name for a Cisco 6200, use the **hostname** command.

c6200(config)# **hostname** *name*

Syntax Description

name   New host name for the Cisco 6200.

Default

The default hostname is *router*.

Command Mode

Global configuration

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In this example, the Cisco 6200 is assigned the name c6200_boston:

```
c6200(config)# hostname c6200_boston
c6200_boston(config)#
```

5.1.30 interface

To enter interface configuration mode, use the **interface** command.

c6200(config)# **interface** *protocol slot/port*

Syntax Description

protocol	Enter ATM, DSL, or Ethernet.
slot	Slot number of card.
port	Port number on card.

Command Mode

Global configuration

Example

To enter interface configuration mode for port 0 of an NTC card in slot 1, do the following:

```
c6200(config)# interface atm 1/0
c6200(config-if)#
```

To enter interface configuration mode for port 2 of an SLC card in slot 8, do the following:

```
c6200(config)# interface dsl 8/2
c6200(config-if)#
```

5.1.31   linetest

To test the CAP or DMT hardware and the line quality (CAP only), use the **linetest** command. To view the test results, use the **show dsl interface** command. If the bit error rate is less than 10^{-7}, the hardware and line pass the test.

c6200# **linetest dsl** *slot/port* **{abort | caphardware [duration** *value*] **[berr** *value*] | **dmtlocaltest | linequality [duration** *value*] **[berr** *value*] | **clear}**

Syntax Description

slot	Slot number of card.
port	Port number of card.
abort	Cancel the line test that is in progress.
caphardware	Test the CAP hardware internally. (This does not put a signal on the DSL line.)
clear	Clear any previous test results.
berr *value*	Bit errors. Enter a value between 1 and 10 for bit errors. The default is 10^{-7}. For example, a value of 7 represents 10^{-7} or 1 error for every 10,000,000 bits of traffic.
duration *value*	Enter a value between 1 and 60 representing minutes.
dmtlocaltest	Test the DMT hardware internally. (This does not put a signal on the DSL line.)
linequality	For CAP only, test the line quality by sending a BERR pattern on the DSL line. The CPE sends a BERR pattern back.

Command Mode
Privileged EXEC

Usage Guidelines
To view the test results, use the **show dsl interface** command. If the bit error rate is less than 10^{-7}, the hardware and line pass the test. The default value for passing the test, 10^{-7} bit errors, is an industry standard.

In order to run the line quality test, your Cisco 6200 must be trained to a Cisco 675 CPE that has software version 1.4.2 (or later) installed.

Example
Use the following command to conduct a 10-minute line test on port 3 of card 5:

```
c6200# linetest dsl 5/3 dmtlocaltest duration 10
c6200#
```

5.1.32 loopback

To run a loopback data transmission test between the Cisco 6200 backplane and the local CAP interface, use the **loopback** command. (For information on looping DMT interfaces, see the command dsl loopback on page 5-11.)

To display test results, enter the command **show dsl interface dsl** *slot/port*.

```
c6200(config-if)# loopback
c6200(config-if)# no loopback
```

Command Mode

Interface configuration

Usage Guidelines

This command configures the Cisco 6200 hardware for a loopback test. External test equipment is required to send the data through a loop and verify that it is looped back correctly.

The port remains in loopback mode until you enter the **no loopback** command.

Example

The following example initiates a loopback test for port 2 of card 8:

```
c6200(config)# int dsl 8/2
c6200(config-if)# loopback
c6200(config-if)
```

5.1.33   reload

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

c6200# **reload** [*text*] | [**in** [*hh***:**]*mm* [*text*]] | [**at** *hh***:***mm* [*month day | day month*] [**text**]] | [**cancel**]

Syntax Description

text	(Optional) Reason for the reload, 1 to 255 characters long.
in [*hh*:]*mm*	(Optional) Schedule a reload of the software to take effect in the specified minutes or hours and minutes. The reload must take place within approximately 24 days.
at [*hh*:]*mm*	(Optional) Schedule a reload of the software to take place at the specified time (using a 24-hour clock). If you specify the month and day, the reload is scheduled to take place at the specified time and date. If you do not specify the month and day, the reload takes place at the specified time on the current day (if the specified time is later than the current time), or on the next day (if the specified time is earlier than the current time). Specifying 00:00 schedules the reload for midnight. The reload must take place within approximately 24 days.
month	(Optional) Name of the month, any number of characters in a unique string.
day	(Optional) Number of the day in the range 1 to 31.
cancel	(Optional) Cancel a scheduled reload.

Command Mode

Privileged EXEC

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, the **reload** command is executed:

```
c6200# reload
System configuration has been modified. Save? [yes/no]: y
Proceed with reload? [confirm]
```

5.1.34   setup

To enter the setup dialog, use the **setup** command. Use the setup dialog to enter basic configuration data such as passwords and IP addresses. For a full discussion of the **setup** command, see "Initial Configuration" in Chapter 2, "Installing the Cisco 6200."

Command Mode

Privileged EXEC

5.1.35   show dsl alarms

To display the alarm status on the Cisco 6200, use the **show dsl alarms** command.

c6200> **show dsl alarms [***slot***]**

Syntax Description

slot   (Optional) Specify a slot number between 1 and 14.

Command Mode

User EXEC

Usage Guidelines

The command reports the alarm status: ok, minor, major, or critical. Also, you can use this command to determine if any preconfigured cards are not physically installed, in which case the command gives an alarm status of "Major Not Present." (See example.) For information on what to do about alarms, see Chapter 7, "Troubleshooting."

Example

In this example, the status of the DSL alarms is displayed:

```
c6200# show dsl alarms
System     : Status:  Minor
Slot    1 : Status:  Ok
Slot    2 : Status:  Ok
Slot    3 : Status:  Ok
Slot    4 : Status:  Ok
Slot    5 : Status:  Ok
Slot    6 : Status:  Ok
Slot    7 : Status:  Ok
Slot    8 : Status:  Ok
Slot    9 : Status:  Ok
Slot    10: Status:  Major Not_Present
Slot    11: Status:  Ok
Slot    12: Status:  Ok
Slot    13: Status:  Ok
Slot    14: Status:  Ok
Temperature: Status:  Ok
Fans       : Status:  Ok
HBus Clock : Status:  Ok
c6200#
```

5.1.36   show dsl interface

To get detailed information about a specific interface, including the results of the latest line test, use the **show dsl interface** command.

c6200> **show dsl interface** *type slot/port*

Syntax Description

type	(Optional) Interface type. Allowed values are DSL and ATM.
slot	Slot number of card.
port	Port number of card.

Command Mode
User EXEC

Usage Guidelines

ATM is valid only for slot/port 1/0. DSL is valid for slots 5 through 14.

Use **show dsl interface** command to view the status or results of a line test and to get information on port status, alarms, LIMO version, configured and actual transmission rates, and transmission errors.

Examples

In the following example, the ATM interface for slot 1/0 is displayed:

```
c6200# show dsl interface atm 1/0
Port Status:
    admin:       UP, oper:       UP
    Loopback: Terminal OFF, Facility OFF
    Clocking: Line, Scrambling: ON
Alarms:
    Status:   Ok
    Current:  NONE
LIMO Version:
    major: 0, minor: 4, path: 1, bootcode 73
Statistics:
    tx_cells = 171809905, rx_cells: 233574140
HEC Errors: 6
IPC Errors: 0
c6200#
```

In this example, information on the DSL interface for slot 5/2 is displayed. This is a DMT port.

```
6200# show dsl interface dsl 5/2
Port Status:
   Subscriber Name:Minesh, Loopback:NONE
   Test Status:CLEAR,   Test Type:NONE
   Line Status:TRAINED
   IOS           admin:    UP, oper:      UP
   Last Change:00 days, 00 hrs, 00 min, 02 sec No. of changes:34
   Modem Microcode Version:21200001

Configured:
    Interleaving:   Enabled
    Quick Training: ON
    LOSConfig:      OFF
    Bitrate:   downstream:   Auto,     upstream:    Auto
    Margin:    downstream:   5 db,     upstream: 123 db
    Power Boost:             4 db

Actual:
    Bitrate:   downstream: 6304/kbs,   upstream:   384/kbs
    Margin:     downstream:   5 db,    upstream:   11 db
    Attenuation:downstream:  30 db,    upstream:   20 db
    Power Boost:             0 db

Alarms:
   status:                 Ok

Statistics:
   Near End Counters:
     HEC errors:530992, ULIC FIFO resets:4, Cell Drop Secs:0
     los events:96, lof events:2, errored seconds:29606
     corrected blocks:16908588, uncorrected blocks:45829731
   Far End Counters:
     los events:96, lof events:2, errored seconds:21035
     corrected blocks:9851406, uncorrected blocks:158966754
   Total Cells:
     downstream:3832071,   upstream:1714214
```

In the following example, information on the DSL interface for slot 5/1 is displayed. This is a CAP port. The fourth line shows that a CAP hardware line test is currently underway.

```
6200# show dsl interface dsl 5/1
Port Status:
   Subscriber Name: DSL5/1, Loopback: NONE
   TestMode CAPHARDWARE (Completes in 04:41) threshold: 1/10**7
   IOS         admin:     UP, oper:    DOWN
   Last Change: 00 days, 00 hrs, 00 min, 19 sec
Configured Bitrate:
   downstream:  7168/kbs: baud  952, constellation: 256U
   upstream  :  1088/kbs: baud  136, constellation: 256U
Actual Bitrate:
   downstream:     0/kbs:
   upstream  :     0/kbs:
Signal-to-Noise-Ratios (SNR):
   co,     dataMode: 58.0 db,    startup: 44.6 db,    margin: 20.9 db
   cpe,    dataMode:  0.0 db,    startup: 34.3 db,    margin: -31.3 db
   co,     transmitPower: 16 db, receiverGain 24 (gain1 2048, gain2 242)
   cpe,    transmitPower:  0 db, receiverGain  0
Alarms:
   status:  Minor
   cell delineation: TRUE
Statistics:
   cpe keepalives: 0
   total cells:            upstream: 378699  , downstream: 917504
   VPI,VCI (0 ,33) cells:  upstream: 52218   , downstream: 851968
HEC errors: 94, ULIC FIFO resets: 0, Cell Drop Secs: 0
corrected bytes: 0, uncorrected bytes 0
c6200#
```

5.1.37 show dsl status

To display a list of ports on each SLC in the Cisco 6200 and the status of each port, use the **show dsl status** command.

c6200> **show dsl status**

Command Mode
User EXEC

Usage Guidelines
Use this command to determine the type of SLC (CAP or DMT) installed in each slot in the chassis, and the administrative (configured) and operational (actual) status of each port. Nothing is displayed for slots that are empty and unprovisioned.

Example

In this example, the status of the cards in slots 5, 8 and 10 is displayed:

```
c6200# show dsl status
NAME                    CARDTYPE                ADMIN-STATE OPER-STATE
----                    --------                ----------- ----------
DSL5/0                  slc1-8-cap                      UP         UP
DSL5/1                  slc1-8-cap                      UP         UP
DSL5/2                  slc1-8-cap                      UP         UP
DSL5/3                  slc1-8-cap                      UP         UP
DSL5/4                  slc1-8-cap                    DOWN       DOWN
DSL5/5                  slc1-8-cap                      UP         UP
DSL5/6                  slc1-8-cap                      UP         UP
DSL5/7                  slc1-8-cap                      UP         UP
DSL8/0                  slc1-8-dmt                      UP         UP
DSL8/1                  slc1-8-dmt                      UP         UP
DSL8/2                  slc1-8-dmt                      UP         UP
DSL8/3                  slc1-8-dmt                      UP         UP
DSL8/4                  slc1-8-dmt                      UP         UP
DSL8/5                  slc1-8-dmt                      UP         UP
DSL8/6                  slc1-8-dmt                      UP         UP
DSL8/7                  slc1-8-dmt                      UP         UP
DSL10/0                 slc1-8-cap                      UP         UP
DSL10/1                 slc1-8-cap                      UP         UP
DSL10/2                 slc1-8-cap                      UP         UP
DSL10/3                 slc1-8-cap                      UP         UP
DSL10/4                 slc1-8-cap                      UP         UP
DSL10/5                 slc1-8-cap                      UP         UP
DSL10/6                 slc1-8-cap                    DOWN       DOWN
DSL10/7                 slc1-8-cap                    DOWN       DOWN

c6200#
```

5.1.38 show dsl vcmap

To find out the virtual channel identifier (VCI) that is being used by the Cisco 6200 for upstream and downstream information, use the **show dsl vcmap** command.

> c6200> **show dsl vcmap [[interface** *type slot/port*] | [**slot** *slot*] | [**vc** *vc*]]

Syntax Description.

type	Interface type. Allowed values are DSL and ATM. ATM is valid only for slot/port 1/0.
slot	Slot number of card.
port	Port number of card.
vc	The incoming VCI, with a value in the range 33 to 63.

If you do not use the keywords, the system generates a list of all VCIs for all cards and ports.

Command Mode
User EXEC

Usage Guidelines

The **show dsl vcmap** command translates the incoming DSL VCI from the CPE to the outgoing ATM VCI.

Example

In the following example, the system displays the VCI for a DSL interface for slot 5, port 2:

```
c6200# show dsl vcmap interface dsl 5/2 33
ATM1/0: vpi 0, vci 130
```

In the following example, the system displays the VCI for an ATM interface for slot 1, port 0:

```
c6200# show dsl vcmap interface atm 1/0 168
dsl10/0: vpi 0, vci 33
```

In the following example, the system displays the VCIs for all DSL ports in slot 5:

```
c6200# show dsl vcmap interface slot 5
(slot/port)
VC..( 5/0)..( 5/1)..( 5/2)..( 5/3)..( 5/4)..( 5/5)..( 5/6)..( 5/7)
----------------------------------------------------------------
33.....128.....129.....130.....131.....132.....133.....134.....135
34.....256.....257.....258.....259.....260.....261.....262.....263
35.....384.....385.....386.....387.....388.....389.....390.....391
36.....512.....513.....514.....515.....516.....517.....518.....519
37.....640.....641.....642.....643.....644.....645.....646.....647
```

5.1.39 show environment

Use the **show environment** command to display temperature, voltage, and chassis status information.

c6200# **show environment** [all | table]

Syntax Description

all	(Optional) Lists temperature readings, fan status, and chassis status.
table	(Optional) Displays the temperature and voltage thresholds and lists the ranges of environmental measurements that are within the specified ranges.

Command Mode

User EXEC

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, current environmental information is displayed.

```
6200# show environment all
Temperature readings:
        inlet temp.  measured at 25C/77F
        outlet temp. measured at 36C/96F
Fans:
        Fan 1 is on.
        Fan 2 is on.
        Fan 3 is on.
        Fan 4 is on.
        Fan 5 is on.
        Fan 6 is on.
        Fan 7 is on.
        Fan 8 is on.
Chassis Status:
        H-bus Clock is normal.
```

In the following example, the temperature threshold ranges are displayed:

```
6200# show environment table
Sample Point.....HighWarning....HighCritical
inlet temp........40C/104F.......50C/122F
outlet temp.......55C/131F.......65C/149F
6200#
```

5.1.40   show history

To list the commands you have entered in the current EXEC session, use the **show history** EXEC command.

c6200> **show history**

Default

The default number of commands shown is 10.

Command Mode

User EXEC

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, the last several commands entered at the c6200 prompt are displayed:

```
c6200> show history
  show dsl interface dsl 8/2
  show dsl vcmap interface DSL 8/2 33
  show env all
  show env table
  show history
c6200>
```

5.1.41 show interfaces

For general information about interface status and configuration, use the **show interfaces** command. Also see the **show dsl interface** command and the **clear counters** command.

> c6200> **show interfaces [***type***] [***slot/port***]**

Syntax Description

type (Optional) Interface type. Allowed interface types are DSL, ATM, and Ethernet.

slot Slot number of card.

port Port number of card.

Command Mode

User EXEC

Example

The **show interfaces** command provides information about traffic—packet input and output, byte input and output, and so on. In the following example, the system displays the interface information for port 2 on the DSL card in slot 5:

```
c6200# show int dsl 5/2
DSL5/2 is up, line protocol is up
  Hardware is slc1-8-cap
  MTU 53 bytes, BW 10000000 Kbit, DLY 0 usec, rely 255/255, load 1/255
  Encapsulation UNKNOWN, loopback not set
  Last input 00:00:00, output 00:00:00, output hang never
  Last clearing of "show interface" counters 23:56:57
  Queueing strategy: fifo
  Output queue 0/0, 0 drops; input queue 0/75, 0 drops
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     45056 packets input, 2387968 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
c6200#
```

5.1.42   show ipc

To get information derived from communication between the MPC, NTC, and SLC cards, use the
show ipc command.

> c6200> **show ipc {nodes | ports | queue | status}**

Syntax Description

nodes	List cards that are physically installed in the slots and communicating with the MPC.
ports	Show local IPC ports.
queue	Show the IPC retransmission queue.
status	Show status of MPC.

Command Mode

User EXEC

Usage Guidelines

This command is used primarily for troubleshooting.

Example

The following example shows that cards are installed in slots 1 and 5:

```
c6200> show ipc nodes
ID......Type...............Name......................Last..Last
.....................................................Sent..Heard
10000...Local......IPC Master...........................0......0
60000...UDP........DMS IPC card slot 1...................3......3
70000...UDP........DMS IPC card slot 5...................3......3
```

The following example shows typical output from the **show ipc status** command:

```
c6200> show ipc status
IPC System Status:
This processor is the IPC master server.
91197 messages in, 45654 out, 7654 delivered to local port,
45582 acknowledgments received, 45610 sent,
0 NACKS received, 0 sent,
0 messages dropped, 0 no local port,
0 missing callback or queue, 7 duplicate ACKs, 58 retries,
0 message timeouts.
0 ipc_output failures, 0 mtu failures,
0 msg alloc failed, 0 emer msg alloc failed, 7 no origs for RPC replies
0 no hwd, 0 failed opens
```

5.1.43   show logging

Use the **show logging** command to display the system log.

  c6200> **show logging**

Command Mode
User EXEC

Usage Guidelines
For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example
The following shows part of the output from the **show logging** command:

```
c6200> show logging
Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
    Console logging: level debugging, 13 messages logged
    Monitor logging: level debugging, 0 messages logged
    Trap logging: level informational, 17 message lines logged
    Buffer logging: level debugging, 13 messages logged

Log Buffer (8192 bytes):
%SYS-5-CONFIG_I: Configured from memory by console
%SYS-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) C6200 Software (C6200-DCM-M), Experimental Version 11.3(19980608:14211]
Copyright (c) 1986-1998 by cisco Systems, Inc.
Compiled Mon 08-Jun-98 10:21 by chrel
%LINEPROTO-5-UPDOWN: Line protocol on Interface ATM0/0, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/0, changed state to up
...
```

5.1.44   show running-config

To display the configuration information currently running on the terminal, use the **show running-config** command.

Command Mode
User EXEC

Usage Guidelines
This command replaces the **write terminal** command.

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example
See example under the **show startup-config** command.

5.1.45   show startup-config

To display the contents of NVRAM or to show the configuration file pointed to by the
CONFIG_FILE environment variable, use the **show startup-config** command.

Command Mode

User EXEC

Usage Guidelines

This command replaces the **show configuration** command.

For more information on this command, see the *Configuration Fundamentals Command Reference*
guide for Cisco IOS Release 11.3.

Example

This example shows abbreviated output generated by the **show startup-config** or **show
running-config** command:

```
c6200# show startup-config
Using 840 out of 129016 bytes
!
version 11.3
no service pad
no service udp-small-servers
no service tcp-small-servers
!
hostname 6200
!
c6200 card 1 ntc1-oc3-si
c6200 card 9 slc1-8-cap
no aaa per-user
enable password boston
!
no ip routing
!
interface ATM0/0
 no ip address
 no ip route-cache
 shutdown
!
interface Ethernet0/0
 ip address 172.27.52.150 255.255.255.0
 no ip route-cache
!
interface Ethernet0/1
 ip address 10.0.0.255 255.0.0.0
 no ip route-cache
!
line con 0
line aux 0
line vty 0 4
 password lab
 login
!
end
```

5.1.46 show version

To display the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images, use the **show version** command.

Command Mode

User EXEC

Usage Guidelines

This command provides information about the Cisco 6200, including information about the current system software, active interfaces, and boot and configuration files.

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

The following is typical output from the **show version** command:

```
c6200> show version
Cisco Internetwork Operating System Software
IOS (tm) C6200 Software (C6200-DCM-M), Version 11.3(19980608:14211]
Copyright (c) 1986-1998 by cisco Systems, Inc.
Compiled Mon 08-Jun-98 10:21 by chrel
Image text-base: 0x80008280, data-base: 0x802CA000
ROM: System Bootstrap, Version 11.2(19980406:202730)
c6200 uptime is 1 hour, 9 minutes
System restarted by reload
System image file is "slot0:c6200-dcm-mz.0607", booted via slot0
cisco 6200 (MPC) processor with 11264K/5120K bytes of memory.
R4640 processor, Implementation 34, Revision 1.0
2 Ethernet/IEEE 802.3 interface(s)
8 Digital Subscriber Port interface(s)
2 ATM network interface(s)
129016 bytes of non-volatile configuration memory.
16384K bytes of Flash PCMCIA card at slot 0 (Sector size 128K).
8192K bytes of Flash internal SIMM (Sector size 256K).
Configuration register is 0x2102
c6200>
```

5.1.47 shutdown

Use the **shutdown** command to shut down a physical interface.

c6200(config-if)# **shutdown**
c6200(config-if)# **no shutdown**

Command Mode

Interface configuration

Usage Guidelines

The mode in which the command is issued determines which entity is affected.

Example

In the following example, interface configuration mode is selected for slot 8, port 2 and the **shutdown** command is executed.

```
c6200(config)# int dsl 8/2
c6200(config-if)# shutdown
c6200(config-if)#
```

5.1.48   snmp-server chassis-id

To provide a text string in which you can specify the chassis ID number for the Cisco 6200, use the **snmp-server chassis-id** command. Use the **no** form of this command to restore the default value, if any.

c6200(config)# **snmp-server chassis-id** *text*
c6200(config)# **no snmp-server chassis-id**

Syntax Description

text   Message specifying the chassis serial number of the Cisco 6200
                                system.

Command Mode

Global configuration

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, 1234 is specified as the server chassis identification number:

```
c6200(config)# snmp-server chassis-id 1234
c6200(config)#
```

5.1.49   snmp-server community

To create a community string to permit access to the SNMP protocol, use the **snmp-server community** command. The **no** form of this command removes the specified community string.

In order to use the Cisco 6200 Manager, you need a valid read-write community string for each Cisco 6200 DSLAM being managed. There is no default community.

c6200(config)# **snmp-server community** *string* [view *view-name*] [ro | rw] [*number*]
c6200(config)# **no snmp-server community** *string*

Syntax Description

string	Community string that acts like a password and permits access to the SNMP protocol.
view *view-name*	(Optional) Name of a previously defined view. The view defines the objects available to the community.
ro	(Optional) Specifies read-only access for this community. Authorized management stations can retrieve MIB objects only.
rw	(Optional) Specifies read-write access for this community. Authorized management stations can retrieve and modify MIB objects.
number	(Optional) Integer from 1 to 99 that specifies an access list with IP addresses that are allowed to use the community string to gain access to the SNMP agent.

Command Mode

Global configuration

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, the word public is specified as the server community name:

```
c6200(config)# snmp-server community public
c6200(config)#
```

5.1.50   snmp-server contact

Use the **snmp-server contact** command to set the system contact (sysContact) string, which you can use to provide a name and contact information for the person or group responsible for the Cisco 6200 system. Use the **no** form to remove the system contact information.

    c6200(config)# **snmp-server contact** *text*
    c6200(config)# **no snmp-server contact**

Syntax Description

text   String that identifies the person or group to contact about the
                                      system and tells how to reach them.

Command Mode
Global configuration

Usage Guidelines
For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example
In the following example, the name Jane Jones is specified as the server contact name:

```
c6200(config)# snmp-server contact Jane_Jones
c6200(config)#
```

5.1.51   snmp-server location

To set the system location string, use the **snmp-server location** command. Use the **no** form of this command to remove the location string.

    c6200(config)# **snmp-server location** *text*
    c6200(config)# **no snmp-server location**

Syntax Description

text   String that describes the location of the Cisco 6200 system.

Command Mode
Global configuration

Usage Guidelines
For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, austin is specified as the server location name:

```
c6200(config)#snmp-server location austin
c6200(config)#
```

5.1.52   telnet

To log in to a host that supports Telnet, use the **telnet** command.

c6200> **telnet** *address*

Syntax Description

address   IP address or host name of a remote system.

Command Mode

User EXEC

Usage Guidelines

For more information on this command, see the *Security Command Reference* guide for Cisco IOS
Release 11.3.

Example

In the following example, login is to the IP address 172.27.31.25:

```
c6200> telnet 172.27.31.25
c6200>#
```

5.1.53   terminal history

Use the **terminal history** command to enable the command history feature for the current terminal
session or to change the size of the command history buffer for the current terminal session. To
disable the command history feature or reset the command history buffer to its default size, use the
no form of this command.

c6200> **terminal history [size** *number-of-lines***]**
c6200> **terminal no history [size]**

Syntax Description

size   (Optional) Sets command history buffer size.

number-of-lines   (Optional) Specifies the number of command lines that the system
                          will record in its history buffer. The range is 0 to 256 lines.

Default

The default value is ten command lines.

Command Mode

User EXEC

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, the device id instructed to maintain up to 20 command lines in its history buffer:

```
c6200> terminal history size 20
c6200>
```

5.1.54   terminal monitor

Use the **terminal monitor** command to display system error messages for the current terminal and session from a network management station. Use the **no** form of this command to stop displaying error messages.

c6200> **terminal monitor**
c6200> **no terminal monitor**

Command Mode

User EXEC

Default

The system console has terminal monitoring enabled.

Usage Guidelines

For more information on this command, see the *Configuration Fundamentals Command Reference* guide for Cisco IOS Release 11.3.

Example

In the following example, the terminal monitor has been turned on:

```
c6200# terminal monitor
c6200#conf
Configuring from terminal, memory, or network [terminal]?
%LINK-5-CHANGED: Interface DSL9/5, changed state to administratively down
Enter configuration commands, one per line.  End with CNTL/Z.
c6200(config)#
%LINK-5-CHANGED: Interface DSL9/4, changed state to administratively down
c6200(config)#
%LINK-5-CHANGED: Interface DSL9/3, changed state to administratively down
%LINK-5-CHANGED: Interface DSL9/0, changed state to administratively down
%LINK-5-CHANGED: Interface DSL9/2, changed state to administratively down
%SYS-5-CONFIG_I: Configured from console by console
%SYS-5-CONFIG_I: Configured from console by console
```

5.2   Other Commands

This section contains brief descriptions and usage examples for all Cisco 6200 IOS commands that are not described in Section 5.1, "Commonly Used Commands." Arguments and keywords are not listed. To get brief descriptions of the arguments and keywords that the command accepts, type *command-name* **?** at the Cisco IOS prompt.

For more information on these commands, refer to the Cisco IOS documentation. This information is available from the Cisco Connection Documentation CD, the Cisco IOS manuals, or Cisco's Web site—www.cisco.com.

Command	Description	Command Usage and Purposes
User EXEC mode—c6200>		
<1-99>	Session number to resume	Navigate between Telnet or other sessions at a Network Management Station (NMS).
access-enable	Create a temporary Access-List entry.	Restrict access to Cisco 6200.
cd	Change current device.	Change to another directory.
clear	Reset functions.	Clear counters in the show interface command; clear traffic on a line; clear logging.
connect	Open a terminal connection.	Telnet to a device.
dir	List files on given device.	List the files on a Flash card.
disconnect	Terminate an existing network connection.	
lock	Lock the terminal.	Not used.
login	Log in as a particular user.	
logout	Exit from user EXEC mode.	
name-connection	Name an existing network connection.	
ping	Send echo messages.	Send echo message out Ethernet port.
pwd	Display current device.	See which card you are on.
resume	Resume an active network connection.	Not used.
show	Show running system information.	For detailed descriptions of many show commands, see the previous section "Commonly Used Commands."
systat	Display information about terminal lines.	Not used.
traceroute	Trace route to destination.	Determine the route that data from the Ethernet port travels.
tunnel	Open a tunnel connection.	Not used.
where	List active connections.	Not used.
Privileged EXEC mode—c6200#		
<1-99>	Session number to resume.	
access-enable	Create a temporary Access-List entry.	Restrict access to Cisco 6200.
access-template	Create a temporary Access-List entry.	Customize a temporary Access-List entry.

Command	Description	Command Usage and Purposes
cd	Change current device.	Change to another directory.
clear	Reset functions.	Clear counters in the show interface command; clear traffic on a line; clear logging.
clock	Manage the system clock.	Set the date/time on the Cisco 6200 chassis.
debug	Debugging functions. (See also **undebug** command.)	
delete	Delete a file.	
dir	List files on a given device.	List the files on a Flash card.
disconnect	Terminate an existing network connection.	
elog	Event-logging control commands.	Not used.
erase	Erase Flash or configuration memory.	
format	Format a device.	Format boot Flash or PCMCIA card.
lock	Lock the terminal.	Not used.
login	Log in as a particular user.	
logout	Exit from EXEC mode.	
name-connection	Name an existing network connection.	
no	Negates a command or sets its defaults.	
ping	Send echo messages.	Send echo message out Ethernet port.
pwd	Display current device.	Find out which card you are on.
reload	Halt and perform a cold restart.	
resume	Resume an active network connection.	
rsh	Execute a remote command.	
send	Send a message to other TTY lines.	Send a message out the Ethernet port (for example, through Telnet).
show	Show running system information.	For detailed descriptions of many show commands, see the section "Commonly Used Commands."
squeeze	Permanently delete Flash files.	Permanently erase a file from a Flash card to free up space for a new image.
systat	Display information about terminal lines.	Find out the IP addresses of users logged in to the device.
test	Test subsystems, memory, and interfaces.	
traceroute	Trace route to destination.	Determine the route that data from the Ethernet port travels.
tunnel	Open a tunnel connection.	Not used.
undebug	Disable debugging functions.	
undelete	Undelete a file.	
verify	Verify checksum of a Flash file.	
where	List active connections.	Not used.

Command	Description	Command Usage and Purposes
write	Write running configuration to memory, network, or terminal.	

Global Configuration Mode—c6200(config)#

Command	Description	Command Usage and Purposes
aaa	Authentication, authorization, and accounting.	Not used.
access-list	Add an access list entry.	
alias	Create command alias.	Not used.
arp	Set a static ARP entry.	Map Mac address to IP address.
async-bootp	Modify system bootp parameters.	Not used.
banner	Define a login banner.	Create an information text block that is displayed during the login process.
boot	Modify system boot parameters.	
buffers	Adjust system buffer pool parameters.	Not used.
clock	Configure time-of-day clock.	Set the time and date on the Cisco 6200 chassis.
controller	Configure a specific controller.	Not used.
default	Set a command to its defaults.	
default-value	Sets default character-bit values.	Not used.
downward-compatible-config	Generate a configuration compatible with older versions of Cisco IOS software.	Not used.
exception	Exception handling.	Not used.
interface	Select an interface to configure.	Also see the section "Commonly Used Commands."
ip	Global IP configuration subcommands.	Configure the Ethernet ports, including the addresses of the Cisco 6200 backplane slots
ipc	Configure interprocess communication system.	Not used.
line	Configure a terminal line.	
logging	Modify message-logging facilities.	Store or delete the log.
map-class	Configure static map class.	
map-list	Configure static map list.	
no	Negate a command or set its defaults.	
ntp	Configure NTP.	Synchronize clocking on multiple devices.
priority-list	Build a priority list.	Prioritize users listed in access lists.
privilege	Set command privilege parameters.	Used for restricting access to commands.
queue-list	Build a custom queue list.	Not used.
rif	Source-route RIF cache.	Not used.
scheduler	Set scheduler parameters.	Not used.

Command	Description	Command Usage and Purposes
service	Modify use of network-based services.	
snmp-server	Modify SNMP parameters.	For detailed descriptions of many of the SNMP server commands, see the section "Commonly Used Commands."
sntp	Configure SNTP.	Not used.
tftp-server	Provide TFTP service for netload requests.	
username	Establish user name authentication.	Assign a user name that is displayed in the configuration files.

Interface Configuration Mode—c6200(config-if)#

Command	Description	Command Usage and Purposes
arp	Set ARP type (arpa, probe, snap) or timeout.	Not used.
bandwidth	Set bandwidth parameter.	Not used.
carrier-delay	Specify delay for interface transitions.	Not used.
custom-queue-list	Assign a custom queue list to an interface.	Not used.
default	Set a command to its defaults.	
delay	Specify interface throughput delay.	Not used.
description	Provide interface-specific description.	Add information about the interface to appear in the configuration files.
fair-queue	Enable fair queuing on an interface.	Not used.
hold-queue	Set hold queue depth.	Not used.
load-interval	Specify interval for load calculation for an interface.	Not used.
logging	Configure logging for interface.	
mtu	Set the interface maximum transmission unit (MTU) value.	Not used.
multiring	Enable RIF usage for a routable protocol.	Not used.
no	Negate a command or set its defaults.	
ntp	Configure NTP.	Synchronize timing on multiple devices.
priority-group	Assign a priority group to an interface.	Not used.
random-detect	Enable random early detection (RED) on an interface.	Not used.
snmp	Modify SNMP interface parameters.	
timeout	Define timeout values for this interface.	Not used.
traffic-shape	Enable traffic shaping on an interface or subinterface.	Not used.
transmit-interface	Assign a transmit interface to a receive-only interface.	Not used.
tx-queue-limit	Configure card level transmit queue limit.	Not used.