# Configuring the Access Server for the First Time

This chapter provides a product overview and describes how to power on the access server to configure it using the prompt-driven setup script.

The following sections are included:

- Cisco AS5200 Overview
- Using the Setup Script
- Where to Go Next

If you prefer to configure the access server manually, proceed to the next chapter "Cisco IOS Software Survival Skills" to familiarize yourself with the command line interface and then proceed to the following chapter, "Configuring the Access Server Manually" for step-by-step instructions.

**Note** This document assumes you have already connected the cables to the access server in accordance with the instructions and procedures provided in the quick reference guide or hardware installation guide.

## Cisco AS5200 Overview

The Cisco AS5200 universal access server is a versatile data communications platform that provides the functions of an access server, a router, and digital modems in a single modular chassis. The Cisco AS5200 is intended for Internet service providers (ISPs), telecommunications carriers, and other providers that offer managed Internet connections, and also small- to medium-size sites that provide both digital and analog access to users on an enterprise network.

The Cisco AS5200 receives and routes both analog and digital calls on the same chassis simultaneously. By doing so, it provides you with a clear, simple, and easy migration path from today's predominantly analog dial-in services to tomorrow's digital dial-in services. The access server enables dial-in clients to make remote asynchronous and ISDN connections to the access server.

To configure remote services, you must configure three interrelated interfaces on the access server. The loopback interface makes the network appear as if the dial-in users exist on one Ethernet segment. The loopback interface has the following four types of neighboring interfaces used for dial-in operations: ISDN interface, dialer interface, group asynchronous interface, and asynchronous interface. Figure 1-1 shows an internal view of the components used to process incoming ISDN and analog calls on an access server.



Figure 1-1 Internal View of Access Server Call Processing Components

All dial-in users exist on one dial-in subnet. Remote asynchronous users dial in through the group asynchronous interface to the access server. Remote ISDN users dial in through the ISDN dialer interface to the access server. Figure 1-2 shows an external view of how remote users dial in to the access server.



#### Figure 1-2 External View of Access Server Call Processing Component

## Using the Setup Script

The setup script has been updated in Cisco IOS Release 11.3(2)T to reflect the options available for CAS options. In addition, once you select the number of controllers to be used for ISDN PRI, the system automatically configures all the selected controllers for ISDN PRI.

**Note** Instructions for running the setup script for systems containing Cisco IOS Release 11.2 software are contained in Appendix C, "Using the Setup Script on Cisco IOS Release 11.2."

## **Getting Started**

Before you turn on the access server and begin to use the setup script in the System Configuration dialog, make sure you have already connected the cables to the access server and configured your PC terminal emulation program for 9600 baud, 8 data bits, no parity, and 2 stop bits. All configuration will be performed from your PC terminal emulation program window.

The prompts and resulting messages vary depending on your responses. For most configurations, you can press **Return** to accept the default entries displayed in square ([]) brackets.

**Note** Information that you enter is in this **boldface** font. Also note that if you make a mistake during the configuration, you can exit and run the System Configuration dialog again. Press **Ctrl-c**, and then type **setup** at the enable prompt (5200#).

To use the setup script take the following steps:

**Step 1** Power ON the access server. The power switch is on the rear panel, at the upper right corner near the power cord.

Description

#### Figure 1-3 Power Switch Location

Messages will begin to appear in your terminal emulation program window.

**Caution** Do not press any keys on the keyboard until the messages stop. Any keys pressed during this time will be interpreted as the first command typed when the messages stop, which might cause you to power cycle the access server and start over. It will take a few minutes for the messages to stop.

The messages look similar to the following:

**Note** The displayed messages depend on the Cisco IOS software release and feature set you selected. The screen displays in this section are for reference only and might not exactly reflect the messages on your console.

System Bootstrap, Version 11.3(2)T, RELEASED SOFTWARE Copyright (c) 1994-1998 by cisco Systems, Inc. AS5200 processor with 16384 Kbytes of main memory program load complete, entry point: 0x3000060, size: 0x23d454

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> cisco Systems, Inc. 170 West Tasman Drive San Jose, California 95134-1706

Cisco Internetwork Operating System Software IOS (tm) 5200 Software (C5200-JS-L), Version 11.3(2)T, RELEASE SOFTWARE (fcl)

```
Copyright (c) 1986-1998 by cisco Systems, Inc.
Compiled Wed 11-Feb-98 22:25 by ppalleti
Image text-base: 0x2204097C, data-base: 0x00005000
cisco AS5200 (68030) processor (revision B) with 16384K/4096K bytes of memory.
Processor board ID 04277316
Bridging software.
SuperLAT software copyright 1990 by Meridian Technology Corp).
X.25 software, Version 2.0, NET2, BFE and GOSIP compliant.
TN3270 Emulation software.
Primary Rate ISDN software, Version 1.0.
Mother board with terminator card.
1 Ethernet/IEEE 802.3 interface(s)
2 Serial network interface(s)
24 terminal line(s)
2 Channelized T1/PRI port(s)
128K bytes of non-volatile configuration memory.
8192K bytes of processor board System flash (Read ONLY)
8192K bytes of processor board Boot flash (Read/Write)
Notice: NVRAM invalid, possibly due to write erase.
--- System Configuration Dialog ---
```

```
At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '[]'.
```

## **Step 2** When the following message appears, press **Return** to accept the default entry (**yes**) in square brackets:

Would you like to enter the initial configuration dialog? [yes]:

#### **Step 3** When the following message appears, press **Return** to see the current interface summary:

First, would you like to see the current interface summary? [yes]:

Any interface listed with OK? value "NO" does not have a valid configuration

Interface	IP-Address	OK?	Method	Status	Protocol
Ethernet0	unassigned	NO	unset	up	up
Serial0	unassigned	NO	unset	down	down
Serial1	unassigned	NO	unset	down	down

**Step 4** Enter a host name for the access server:

Configuring global parameters:

Enter host name [Router]: 5200

**Step 5** Enter an enable secret password. This password is encrypted (more secure) and cannot be seen when viewing the configuration:

The enable secret is a one-way cryptographic secret used instead of the enable password when it exists.

Enter enable secret: lab

**Step 6** Enter an enable password. This password is *not* encrypted (less secure) and can be seen when viewing the configuration:

The enable password is used when there is no enable secret and when using older software and some boot images.

Enter enable password: guessme

**Step 7** Enter the virtual terminal password, which is used for remote console access:

Enter virtual terminal password: guessagain

**Step 8** Respond to the following prompts as appropriate for your network:

```
Configure SNMP Network Management? [yes]:

Community string [public]:

Configure LAT? [no]:

Configure AppleTalk? [no]: yes

Multizone networks? [no]: yes

Configure DECnet? [no]:

Configure IP? [yes]:

Configure IGRP routing? [yes]:

Your IGRP autonomous system number [1]: 15

Configure CLNS? [no]:

Configure IPX? [no]: yes

Configure Vines? [no]:

Configure XNS? [no]:

Configure Apollo? [no]:

Configure bridging? [no]:
```

**Step 9** Configure the asynchronous serial lines for the integrated modems or terminal adapters on the modules installed in the access server:

Configure Async lines? [yes]: Async line speed [115200]:

**Note** We recommend that you do not change this speed for modems. However, for V.110 terminal adapters, we recommend that the speed not go above 19200.

Will you be using the modems for inbound dialing? [yes]: Would you like to configure group async interface? [yes]:

**Note** If your asynchronous interfaces will be using the same basic configuration parameters, we recommend that you group them so that they can be configured as a group. Otherwise, you will need to configure each interface separately.

Configure for Dynamic IP addresses? [no]: Configure for TCP header compression? [yes]: Configure for routing updates on async links? [no]:

Note Make sure the starting and ending addresses of the IP pool are in the same subnet.

Enter the starting address of IP local pool? [X.X.X.X]: 172.20.30.40 Enter the ending address of IP local pool? [X.X.X.X]: 172.20.30.88 **Note** During this next example we create a user called test. This is just to demonstrate how to create a user. You can substitute any other name you want instead of test.

```
What is the username of the test user? [user]: test
   What is the password of the test user? [passwd]:
   Will you be using the modems for outbound dialing? [no]:
   Configure for Async IPX? [yes]: no
   Configure for Appletalk Remote Access (ARA)? [no]: yes
   AppleTalk Network for ARAP clients [1]:
    Zone name for ARAP clients [ARA Dialins]:
   Allow ARAP "Guest" logins? [yes/no]: yes
```

#### **Step 10** Configure the Ethernet 0 interface:

Configuring interface parameters:

```
Configuring interface Ethernet0:
  Is this interface in use? [yes]:
  Configure IP on this interface? [yes]:
  IP address for this interface: 172.21.40.10
  Number of bits in subnet field [0]: 8
  Class B network is 172.21.0.0, 8 subnet bits; mask is /24
  Configure AppleTalk on this interface? [no]: yes
  Extended AppleTalk network? [no]:
  AppleTalk network number [0]: 10
  AppleTalk zone name [myzone]: etherzone
  Configure IPX on this interface? [no]: yes
   IPX network number [1]:
```

#### **Step 11** Configure the Serial 0 interface:

Configuring interface Serial0: Is this interface in use? [yes]: Configure IP on this interface? [yes]: Configure IP unnumbered on this interface? [no]: IP address for this interface: 172.22.50.10 Number of bits in subnet field [0]: 8 Class B network is 172.22.0.0, 8 subnet bits; mask is /24 Configure AppleTalk on this interface? [no]: yes Extended AppleTalk network? [yes]: no AppleTalk network number [2]: 11 AppleTalk zone name [myzone]: serialzone Configure IPX on this interface? [no]: yes IPX network number [2]:

#### **Step 12** Configure the Serial 1 interface:

Configuring interface Serial1:
 Is this interface in use? [yes]:
 Configure IP on this interface? [yes]:
 Configure IP unnumbered on this interface? [no]:
 IP address for this interface: 172.23.60.10
 Number of bits in subnet field [0]: 8
 Class B network is 172.23.0.0, 8 subnet bits; mask is /24
 Configure AppleTalk on this interface? [no]:
 Configure IPX on this interface? [no]:
 IPX network number [3]:

**Note** If your access server is using a T1/PRI card, continue with the section "Continuing the Setup Script for T1/PRI Cards" and if your access server is using a E1/PRI card, continue with the section "Continuing the Setup Script for E1/PRI Cards".

### Continuing the Setup Script for T1/PRI Cards

This section continues the setup script for T1/PRI cards.

**Step 1** Enter the letter corresponding to the ISDN switch type that matches your telco switch type:

```
Do you want to configure ISDN switch type? [yes]:

The following ISDN switch types are available:

[a] primary-4ess

[b] primary-5ess

[c] primary-dms100

[d] primary-net5

[e] primary-ntt

[f] primary-ts014

Enter the switch type [b]:
```

Encer one switcen cype (s)

#### **Step 2** Enter **yes** to allow users to dial in via ISDN or analog modems:

Next, you will be prompted to configure controllers. These controllers enable users to dial in via ISDN or analog modems.

Do you intend to allow users to dial in? [yes]:

There are 2 controllers on this access server. If you want to use the full capacity of the access server configure all controllers.

Controller T1 0,1,..etc in software corresponds to Port 0,1,..etc on the back of the access server.

PRI configuration can be configured to controllers all at once based on your PRI controllers selection. Where as CAS configuration will be configured individually for each controller.

#### **Step 3** Enter the number of controllers you will be using for the PRI configuration:

Enter # of controllers, you will be using for PRI configuration [4]:

Configuring controller parameters:

Configuring controller T1 0: Configuring PRI on this controller.

Configuring controller T1 1: Configuring PRI on this controller.

**Step 4** Set the CAS configuration options for the first controller you are configuring. First, press Enter to set robbed-bit signaling on the controller:

Configuring controller T1 2: Will you be using CT1 (robbed bit signaling) on this controller? [yes]:

#### **Step 5** Enter your telco framing type:

The following framing types are available: esf | sf Enter the framing type [esf]: **Step 6** Enter your telco line code type:

The following linecode types are available: ami | b8zs Enter the line code type [b8zs]:

**Step 7** Enter the letter corresponding to the signaling type to support modem pooling over the T1 lines:

The following line signaling types are available: [a] e&m-fgb [b] e&m-fgd [c] e&m-immediate-start [d] fxs-ground-start [e] fxs-loop-start [f] sas-ground-start [g] sas-loop-start Enter the line signaling type [a]:

**Step 8** Enter the tone signaling type:

**Step 9** Enter yes to configure digital number identification service (DNIS) over T1 lines:

Do you want to provision DNIS address information? [yes]:

**Step 10** Set the CAS configuration options for the next controller you are configuring. Repeat Steps 5 to 9 to configure the options:

Configuring controller T1 1: Will you be using CT1 (robbed bit signaling) on this controller? [yes]:

The following framing types are available: esf | sf Enter the framing type [esf]:

The following linecode types are available: ami | b8zs

Enter the line code type [b8zs]:

The following line signaling types are available:

- [a] e&m-fgb
- [b] e&m-fgd
- [c] e&m-immediate-start
- [d] fxs-ground-start
- [e] fxs-loop-start
- [f] sas-ground-start
- [g] sas-loop-start
- Enter the line signaling type [a]:

After you complete the configuration script, messages similar to the following appear:

```
Current configuration:

!

version 11.3

no service password-encryption

!

hostname Router

!

enable secret 5 $1$BzCj$3WnJoC.GO0SmB2U7Bd.Kb1

enable password b

!
```

```
no ip routing
isdn switch-type primary-5ess
1
1
controller T1 0
framing esf
 clock source line internal
linecode b8zs
pri-group timeslots 1-24
1
controller T1 1
framing esf
clock source internal
 linecode b8zs
cas-group 0 timeslots 1-24 type e&m-fgd
interface Ethernet0
no ip address
no ip route-cache
shutdown
1
interface Serial0:23
ip unnumbered Ethernet0
encapsulation ppp
no ip mroute-cache
dialer-group 1
isdn incoming-voice modem
peer default ip address pool setup_pool
ppp authentication chap pap
ppp multilink
1
interface Serial1:23
ip unnumbered Ethernet0
encapsulation ppp
no ip mroute-cache
dialer-group 1
isdn incoming-voice modem
peer default ip address pool setup_pool
ppp authentication chap pap
ppp multilink
!
interface FastEthernet0
no ip address
no ip route-cache
shutdown
1
ip classless
access-list 101 permit ip any any
dialer-list 1 protocol ip list 101
line con 0
logging synchronous
line 1 48
line aux 0
line vty 0 4
password b
login
1
scheduler interval 1000
end
```

#### Step 11 Enter yes to save the configuration, or enter no to erase it:

Use this configuration? [yes/no]: **yes** Building configuration...

Use the enabled mode 'configure' command to modify this configuration. Press RETURN to get started! %LINK-3-UPDOWN: Interface Ethernet0, changed state to up %LINK-3-UPDOWN: Interface Serial0, changed state to down %LINK-3-UPDOWN: Interface Serial1, changed state to down <Additional messages omitted.> Step 12 When the messages stop displaying on your screen, press Return to get the following prompt:

5200> %AT-6-ONLYROUTER: Ethernet0: AppleTalk port enabled; no neighbors found

**Note** If you see this message, it means that no other AppleTalk routers were found on the network attached to the port.

- **Step 13** The 5200> prompt indicates that you are now at the command-line interface (CLI) and you have just completed the basic access server configuration. However, this is not a complete configuration. At this point you have two options:
  - Run the setup script in the System Configuration dialog again and create another configuration. Enter the following commands to repeat the setup script:

5200> enable Password: <password> 5200# setup

 Modify the existing configuration or configure additional features with the CLI as described in the Cisco IOS software configuration guide and command reference publications.

### Continuing the Setup Script for E1/PRI Cards

This section continues the setup script for E1/PRI cards for WAN access.

**Step 1** Enter the letter corresponding to the ISDN switch type that matches your telco switch type:

```
Do you want to configure ISDN switch type? [yes]:
The following ISDN switch types are available:
    [a] primary-4ess
    [b] primary-5ess
    [c] primary-dms100
    [d] primary-net5
    [e] primary-ntt
    [f] primary-ts014
Enter the switch type [d]:
```

**Step 2** Enter **yes** to allow users to dial in via ISDN or analog modems:

Next, you will be prompted to configure controllers. These controllers enable users to dial in via ISDN or analog modems.

Do you intend to allow users to dial in? [yes]:

There are 2 controllers on this access server. If you want to use the full capacity of the access server configure all controllers.

Controller E1 0,1,..etc in software corresponds to Port 0,1,..etc on the back of the access server.

PRI configuration can be configured to controllers all at once based on your PRI controllers selection. Where as CAS configuration will be configured individually for each controller.

#### **Step 3** Enter the number of controllers you will be using for the PRI configuration:

Enter # of controllers, you will be using for PRI configuration [4]:

Configuring controller parameters:

Configuring controller E1 0: Is this controller in use? [yes]: Will you be using PRI on this controller? [yes]: Would you like to enable multilink PPP? [yes]:

## **Step 4** Set the CAS configuration options for first controller you are configuring. First, enter **yes** to set channel-associated signaling on the controller:

Configuring controller E1 0: Is this controller in use? [yes]: Will you be using PRI on this controller? [yes]:no Will you be using CE1 (channel associated signaling) on this controller? [yes]:

#### **Step 5** Enter your telco framing type:

The following framing types are available: no-crc4 | crc4 Enter the framing type [crc4]:

#### **Step 6** Enter your telco line code type:

The following linecode types are available: ami | hdb3 Enter the line code type [hdb3]:

## **Step 7** Enter the letter corresponding to the signaling type to support modem pooling over the E1 lines:

The following line signaling types are available: [a] e&m-fgb [b] e&m-fgd [c] e&m-immediate-start [d] fxs-ground-start [e] fxs-loop-start [f] sas-ground-start [g] sas-loop-start [h] r2-analog [i] r2-digital [j] r2-pulse [k] p7

Enter the line signaling type [i]:

#### **Step 8** Enter the letter corresponding to the tone signaling type:

The following tone signaling types are available:

- [a] dtmf
  - [b] r2-compelled
- [c] r2-non-compelled
- [d] r2-semi-compelled
- Enter the tone signaling type [b]:

**Step 9** Press Enter to provision ANI address information over E1 lines:

Do you want to provision ANI address information? [yes]:

**Step 10** Enter the number corresponding to the country for which you are configuring R2 signaling:

R2 signaling is available for the following countries: [0] itu

- [1] argentina
- [2] australia
- [3] brazil
- [4] china
  [5] columbia
- [6] costarica
- [7] easteurope
- [8] ecuador itu
- [9] ecuador lme
- [10] greece
- [11] guatemala
- [12] hongkong-china
- [13] indonesia
- [14] israel
- [15] korea
- [16] malaysia
- [17] newzealand
- [18] paraguay
- [19] peru
- [20] philippines
- [21] singapore
- [22] saudiarabia
- [23] southafrica-panaftel
- [24] telmex
- [25] telnor
- [26] thailand
- [27] uruguay
- [28] venezuela
- [29] vietnam

Enter the country name [0]:

**Step 11** Set the CAS configuration options for the next controller you are configuring. Repeat Steps 4 to 10 to configure the options:

Configuring controller E1 1: Will you be using CE1 (channel associated signaling) on this controller? [yes]: The following framing types are available: no-crc4 | crc4 Enter the framing type [crc4]: The following linecode types are available: ami | hdb3 Enter the line code type [hdb3]: The following line signaling types are available: [a] e&m-fgb [b] e&m-fgd [c] e&m-immediate-start [d] fxs-ground-start [e] fxs-loop-start [f] sas-ground-start [g] sas-loop-start [h] r2-analog [i] r2-digital

```
[j] r2-pulse
              [k] p7
 Enter the line signaling type [i]:
 The following tone signaling types are available:
               [a] dtmf
               [b] r2-compelled
               [c] r2-non-compelled
               [d] r2-semi-compelled
 Enter the tone signaling type [b]:
 Do you want to provision ANI address information? [yes]:
 R2 signaling is available for the following countries:
        [0] itu
          [1] argentina
          [2] australia
          [3] brazil
          [4] china
          [5] columbia
          [6] costarica
          [7] easteurope
        [8] ecuador itu
        [9] ecuador lme
          [10] greece
          [11] guatemala
          [12] hongkong-china
          [13] indonesia
          [14] israel
          [15] korea
          [16] malaysia
          [17] newzealand
          [18] paraguay
          [19] peru
          [20] philippines
          [21] singapore
          [22] saudiarabia
          [23] southafrica-panaftel
          [24] telmex
          [25] telnor
          [26] thailand
          [27] uruguay
          [28] venezuela
       [29] vietnam
Enter the country name [0]:
After you complete the configuration script, messages similar to the following appear:
5200# wr t
Building configuration...
Current configuration:
version 11.3
```

1

1

! !

hostname Router

enable password b

no ip routing

no service password-encryption

isdn switch-type primary-net5

enable secret 5 \$1\$R20d\$Yh/ulcqh63haVfbmHI0r.0

```
controller E1 0
              clock source line primary
              pri-group timeslots 1-31
             1
             controller E1 1
              clock source line secondary
              cas-group 0 timeslots 1-15,17-31 type r2-digital r2-compelled ani
              cas-custom 0
             1
            interface Ethernet0
              no ip address
              no ip route-cache
              shutdown
             1
            interface Serial0:15
              ip unnumbered Ethernet0
              encapsulation ppp
              no ip mroute-cache
              dialer-group 1
              isdn incoming-voice modem
              peer default ip address pool setup_pool
              ppp authentication chap pap
              ppp multilink
             1
             interface FastEthernet0
              no ip address
              no ip route-cache
             shutdown
             ip classless
             access-list 101 permit ip any any
             dialer-list 1 protocol ip list 101
             line con 0
              logging synchronous
             line 1 96
             line aux 0
             line vty 0 4
             password b
             login
             !
          scheduler interval 1000
          end
Step 12 Enter yes to save the configuration, or enter no to erase it:
         Use this configuration? [yes/no]: yes
         Building configuration...
         Use the enabled mode 'configure' command to modify this configuration.
         Press RETURN to get started!
         %LINK-3-UPDOWN: Interface Ethernet0, changed state to up
         %LINK-3-UPDOWN: Interface Serial0, changed state to down
         %LINK-3-UPDOWN: Interface Serial1, changed state to down
         <Additional messages omitted.>
```

**Step 13** When the messages stop displaying on your screen, press **Return** to get the following prompt:

5200> %AT-6-ONLYROUTER: Ethernet0: AppleTalk port enabled; no neighbors found **Note** If you see this message, it means that no other AppleTalk routers were found on the network attached to the port.

- **Step 14** The 5200> prompt indicates that you are now at the command-line interface (CLI) and you have just completed the basic access server configuration. However, this is not a complete configuration. At this point you have two options:
  - Run the setup script in the System Configuration dialog again and create another configuration. Enter the following commands to repeat the setup script:

5200> enable Password: <password> 5200# setup

 Modify the existing configuration or configure additional features with the CLI as described in the Cisco IOS software configuration guide and command reference publications.

### Where to Go Next

The access server now has a basic configuration for ISDN or channelized T1 or E1 (depending on your responses to the prompts). The access server should be able to accept incoming calls. However, this is *not* a complete access server configuration. For more advanced configuration topics, proceed to:

- The following chapter, "Cisco IOS Software Survival Skills," to learn how to use the command line interface to configure additional features.
- The Cisco IOS software configuration guide and command reference publications for more advanced configuration topics. These publications are available on the Documentation CD-ROM that came with your access server, on the World Wide Web from Cisco's home page, or you can order printed copies.

If you have questions or need assistance, see the next section, "Cisco Connection Online."

### **Cisco Connection Online**

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

• WWW: http://www.cisco.com

- WWW: http://www-europe.cisco.com
- WWW: http://www-china.cisco.com
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

**Note** If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

## CD-ROM/WWW Feedback

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at http://www.cisco.com, http://www-europe.cisco.com.

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## **Getting More Information**

For additional information, refer to the following resources:

- The Cisco Information Packet publication that shipped with your access server
- The documentation CD-ROM that shipped with your access server