

Cisco DialOut Utility User Guide

Software Release 2.0
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Cisco DialOut Utility User Guide

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C O N T E N T S

About This Guide ix

Major Sections of This Guide ix

User Guide Conventions x

For More Information xi

Chapter 1 Introduction to Cisco DialOut Utility 1-1

Overview of Cisco DialOut Utility Operation 1-1

Features 1-2

New Features in this Release 1-2

Compliance 1-3

System Requirements 1-3

Hardware Requirements 1-3

Software Requirements 1-4

Sample Network Configuration 1-5

Chapter 2 Installing and Preconfiguring Cisco DialOut Utility 2-1

Installation and Configuration Summary 2-1

Before Installing the Cisco DialOut Utility 2-2

Installing the Cisco DialOut Utility 2-3

Testing the Com Port 2-13

Security Window 2-14

Selecting and Configuring the Modem 2-15

Adding and Configuring Your Applications 2-17

Adding Com Ports (Optional) 2-17

Uninstalling the Cisco DialOut Utility 2-18

Chapter 3	Using Cisco DialOut Utility	3-1
	Login Dialog Box	3-2
	Cisco DialOut Utility Front Panel	3-3
	Com Port	3-4
	LEDs	3-4
	LED Colors	3-5
	More Functions Window	3-6
	Configure Ports	3-8
	Add Port	3-9
	Remove Port	3-10
	Save User Information in Memory	3-11
	Modem Sounds	3-11
	Test Port	3-12
	Statistics Window	3-14
	Test All Com Ports	3-16
	Disconnect Current Session	3-18
Chapter 4	Troubleshooting Information	4-1
	Obtaining Service and Support	4-1
	Troubleshooting Checklist	4-1
	Clearing Potential Line Problems	4-3
	Suggested Trace Tools	4-4
	Symptoms	4-4
	Before You Contact Support	4-5
Appendix A	System Messages	A-1
	System Messages and Recommended Actions	A-1
Appendix B	Changes to Windows Files and Registry Entries	B-1
	Windows Registry Entries	B-1
	Additional Registry Entries for Windows NT	B-2
	Filenames and Purposes	B-3

Appendix C	Sample NAS Configurations for Cisco DialOut Utility	C-1
	Sample Configuration File for Cisco AS2509-2512 Series Access Servers	C-2
	Sample Configuration File for a Cisco AS2509 Access Server with Local AAA Security	C-4
	Sample Configuration File for Cisco AS5xxx Series Access Servers	C-7
	Sample Configuration File for a Cisco AS5xxx Series Access Server with AAA Security	C-10
	CiscoSecure ACS User Profile Example	C-14
Appendix D	Information for the System Administrator	D-1
	Notes for Tested Applications	D-1
	Cisco DialOut Utility Automated Installation Process	D-1
	Command-Line Options for Windows 95 and Windows 98	D-3
	Execute Options One Time	D-3
	Execute Options at Startup	D-3
	Command-Line Options for Windows NT	D-4
	Sending Faxes with Multiple Pages	D-5
	Adding Com Ports	D-5
	Dial-Up Networking Using a NAS on a Different Segment	D-6
	Troubleshooting for the System Administrator	D-6
	Troubleshooting Checklist	D-7
	Clearing Potential Line Problems	D-8
	Connection Problems	D-8

Index

About This Guide

This section contains information about the *Cisco DialOut Utility User Guide*, including document organization and conventions, and where to find more information.

This guide is intended for the person installing, configuring, and using Release 2.0 of the Cisco DialOut Utility. You should be familiar with the Microsoft Windows operating system that you will be using. If you are the system administrator, you should also be familiar with WAN, server, and router planning, implementation, and administration.

Major Sections of This Guide

Table 1 provides a brief description of each chapter in this guide.

Table 1 Major Sections of This Guide

Chapter Title	Topics Covered
About This Guide	The audience, organization, and conventions of this book
Introduction to Cisco DialOut Utility	An overview of Cisco DialOut Utility—Its features, system requirements, and specifications
Installing and Preconfiguring Cisco DialOut Utility	Installing, configuring, and uninstalling Cisco DialOut Utility
Using Cisco DialOut Utility	Using and reconfiguring Cisco DialOut Utility
Troubleshooting Information	Troubleshooting Cisco DialOut Utility, including timesaving tips and resources for service and support
System Messages	Explanations of the system messages
Changes to Windows Files and Registry Entries	Additional information you might need, including the names of the files installed by Cisco DialOut Utility and changes to the Windows Registry

User Guide Conventions

Table 1 Major Sections of This Guide (Continued)

Chapter Title	Topics Covered
Sample NAS Configurations for Cisco DialOut Utility	Sample network access server (NAS) configurations
Information for the System Administrator	Troubleshooting information for the system administrator

User Guide Conventions

Table 2 describes the format conventions used in this guide.

Table 2 User Guide Conventions

Convention	Description
boldface font	Commands and keywords.
<i>italic font</i>	Command input that is supplied by you.
[]	Keywords or arguments that appear within square brackets are optional.
{ x x x }	A choice of keywords (represented by x) appears in braces separated by vertical bars. You must select one.
^ or Ctrl	Represent the key labeled <i>Control</i> . For example, when you read ^d or <i>Ctrl-d</i> , you should hold down the Control key while you press the d key.
screen font	Examples of information displayed on the screen.
boldface screen font	Examples of information that you must enter.
< >	Nonprinting characters, such as passwords, appear in angled brackets.
[]	Default responses to system prompts appear in square brackets.
Note	Means reader take note. Notes contain helpful suggestions or references to additional information and material.
 Timesaver	This symbol means <i>the described action saves time</i> . You can save time by performing the action described in the paragraph.
 Caution	This symbol means <i>reader be careful</i> . In this situation, you might do something that could result in equipment damage or loss of data.

For More Information

You will need your Microsoft Windows documentation.

Your Cisco DialOut Utility includes two quick reference cards to help you quickly install and configure the software. The quick reference cards are located in the Documentation directory of your Cisco DialOut Utility CD-ROM. You can also refer to the Cisco DialOut Utility online help system.

Note Be sure to read the README.DOC file, Release Notes, and Cisco DialOut Utility Compatibility Matrix for information that becomes available after this user guide is released. The README.DOC file is located in the Documentation directory of your Cisco DialOut Utility CD-ROM. The Release Notes and the Cisco DialOut Utility Compatibility Matrix are accessible from the Cisco DialOut Utility Planner page of Cisco Connection Online at <http://www.cisco.com>.

If you are the system administrator, you will need the documentation for your Cisco NAS and the Cisco IOS software documentation, including the *Telnet Extensions for Dialout* supplement.

You might also want to refer to the Cisco *Internetworking Terms and Acronyms* guide.

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-china.cisco.com>, or <http://www-europe.cisco.com>.

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For More Information

Introduction to Cisco DialOut Utility

Cisco DialOut Utility, Release 2.0, is a software utility that allows you to send faxes or use communication software from any workstation connected to a NAS. The Cisco DialOut Utility adds one or more virtual communication (com) ports to your Microsoft Windows workstation. These com ports are used to represent com ports on the NAS. Individual workstations do not require modems, offering substantial savings in a large network and increased savings as the network grows.

The Cisco DialOut Utility is designed to run on Windows 95, Windows 98, and Windows NT. The Setup program detects the operating system on which it is being used and installs the appropriate files.

Overview of Cisco DialOut Utility Operation

The Cisco DialOut Utility software converts com port calls from the fax or Internet communications package into network calls that are sent to the NAS.

For example, when a user presses a key in a communications package such as HyperTerminal, the communications package sends the character to the Cisco DialOut Utility driver module:

- Windows 95 and Windows 98—DOUTDRV.VXD
- Windows NT—DOUTDRV.SYS

The Cisco DialOut Utility driver module is a special version of the standard serial device driver.

The Cisco DialOut Utility lets you configure and monitor the com ports. The utility runs minimized in the active icon area of the taskbar at the bottom of the screen. To maximize the utility, double-click the icon.

Features

The Cisco DialOut Utility consists of the network interface program, a standard Windows program that connects the driver layer to the network via TCP/IP; and one of the following modules, depending on the version of Windows you are using:

- Windows 95 and Windows 98—A module at the driver layer that loads as an additional com port VXD
- Windows NT—A module at the driver layer that loads as an additional com port driver

All modules are in the Windows virtual memory space, and all network layer resources are released when the program is shut down by the user. Because the Cisco DialOut Utility does not terminate and stay resident, no memory below 640K is needed.

New Features in this Release

New features in Release 2.0 of the Cisco DialOut Utility include support for:

- Windows 98
- Additional Cisco access servers, including the Cisco AS5300 and Cisco AS5800 series

Note For a complete list of supported features and platforms, see the README.DOC file or the Cisco DialOut Utility Compatibility Matrix. The README.DOC file is located in the Documentation directory of your Cisco DialOut Utility CD-ROM. The matrix is available on Cisco Connection Online at <http://www.cisco.com>.

- MICA modems
- Modem sound simulation
- Hands-off installation for system administrators
- Password caching
- Dynamic routing table creation
- Test all ports option for startup

Additionally, the meanings of the LED colors and sequences have changed.

Compliance

The Cisco DialOut Utility complies to the protocols defined in RFC 2217, *Telnet Com Port Control Option*. This RFC is available from the Internet Engineering Task Force (IETF).

Cisco DialOut Utility is Year 2000 compliant, but the applications with which it is used must also be compliant.

System Requirements

The Cisco DialOut Utility requires the hardware and software specified in the following sections.

Hardware Requirements

The Cisco DialOut Utility requires the following hardware:

- 80486 or higher processor
- Approximately 20K of RAM
- Approximately 2 MB of hard disk space
- CD-ROM drive, 2X or better (not needed if you download the software from Cisco Connection Online)

See your Windows and application documentation for any additional requirements.

Software Requirements

The Cisco DialOut Utility requires the following software:

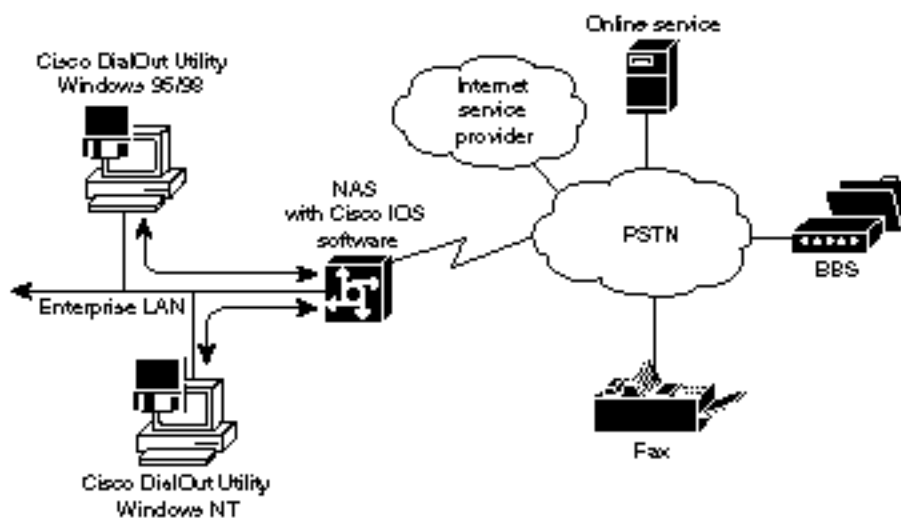
- One of the following Microsoft Windows operating systems:
 - Windows 95
 - Windows 98
 - Windows NT 4.0
- The TCP/IP network protocol drivers—Cisco DialOut Utility has been successfully tested with Microsoft's TCP/IP stack.
- If you are using Cisco DialOut Utility for dial-up, you need communication software.
- If you are using Cisco DialOut Utility for faxing, you need fax software that supports Class 2 faxing.
- The access control server must be running a compatible release of Cisco IOS software. See the README.DOC file for information on compatible releases.

Note There are additional requirements for the NAS through which you will be dialing. See the appendix "Sample NAS Configurations for Cisco DialOut Utility" and the README.DOC file for more information.

Sample Network Configuration

Figure 1-1 shows an example of a typical network configuration for the Cisco DialOut Utility. In this example, the Cisco DialOut Utility is installed on two workstations attached to a Cisco NAS.

Figure 1-1 Sample Network Configuration for Cisco DialOut Utility



Sample Network Configuration

Installing and Preconfiguring Cisco DialOut Utility

This chapter provides specific information on installing and preconfiguring the Cisco DialOut Utility, Release 2.0, software. Instructions are also provided to uninstall the software.

Installation and Configuration Summary

This section contains an overview of the general steps to install and configure the Cisco DialOut Utility.

- 1** Install and configure the NAS. See the appendix “Sample NAS Configurations for Cisco DialOut Utility.”
- 2** Install and configure a modem in the NAS. See the section “Selecting and Configuring the Modem” and your modem manufacturer’s documentation.
- 3** Run the Windows Telnet utility to make sure you can connect to the network access server (NAS) before you install the Cisco DialOut Utility. See the section “Before Installing the Cisco DialOut Utility.”
- 4** Run SETUP.EXE. See the section “Installing the Cisco DialOut Utility.”
- 5** In Windows, configure a modem for the virtual com port that was selected during Cisco DialOut Utility installation. See the section “Selecting and Configuring the Modem” and your Windows documentation.
- 6** Configure your fax or communications application software to use the virtual com port that was selected during Cisco DialOut Utility installation. See the README.DOC file and your software manufacturer’s documentation for more information.

Before Installing the Cisco DialOut Utility

Before you install the Cisco DialOut Utility, run the Windows Telnet utility to make sure you can connect to the NAS. Follow these steps:

- Step 1** Make sure the NAS is connected and operating correctly.
- Step 2** From the Windows desktop, click **Start**.
- Step 3** Click **Run>Telnet>Connect>Remote System**.
- Step 4** Select or enter the following information:
 - **Host Name:** *IP address of the NAS* (for example, 10.1.0.0)
 - **Port:** **6001** (or the designated port ID you will use)
 - **Term Type:** **VT100**
- Step 5** Click **Connect**. The Telnet window opens.
- Step 6** (Optional) If your NAS is configured for security, you are prompted to log in with your regular username and password.
- Step 7** Enter **at**. The server should respond **OK**.
- Step 8** Enter **atz**. The server should respond **OK**.
- Step 9** Follow the escape commands on the display.
- Step 10** From the **Connect** menu, select **Disconnect**.

If you are unable to connect, check that the network is operating correctly and try again.

Installing the Cisco DialOut Utility

To install the Cisco DialOut Utility, follow these steps:

Note The Cisco DialOut Utility software must be installed on the workstation on which it will be used.

- Step 1** Close any other programs that are running.
- Step 2** Insert the Cisco DialOut Utility CD-ROM in the CD-ROM drive.
- Step 3** If the Microsoft Autodetect feature is operating properly, SETUP.EXE will autostart. Otherwise, from the **Start** menu, select **Run**, then browse to or enter:

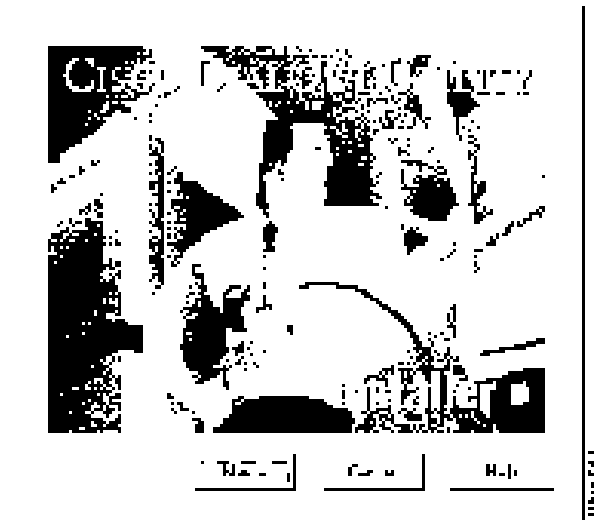
d:\setup.exe

where d is the letter of the CD-ROM drive.

You can also run SETUP.EXE from a network drive. If you are installing Cisco DialOut Utility from a network drive, select the letter of the network drive and the name of the directory in which the SETUP.EXE program is located.

Step 4 Click **OK**. The Setup window opens. See Figure 2-1.

Figure 2-1 Setup Window



Step 5 Click **Next** to continue the setup process. Click **Cancel** to exit SETUP.EXE without installing the software. Click **Help** at any time for more information on the SETUP.EXE program.

If you clicked **Next**, the Analyzing Environment window opens and SETUP.EXE analyzes the current Windows environment and the location of a number of needed resources. The display is updated as each action is performed. If the SETUP.EXE program detects an error, a message is displayed and the process stops. See the “Troubleshooting Information” chapter for an explanation of common error messages and their resolutions.

(Optional) If the Cisco DialOut Utility is already installed, the Update Options window opens. See Figure 2-2.

Figure 2-2 Update Options Window



- Step 6** (Optional) Click the appropriate box to select one of the following options:
- **Retain Com Port Definitions No More Questions**—Retain the existing com port definitions and proceed with file installation (for example, if you are updating from a previous version of Cisco DialOut Utility)
 - **Retain Com Port Definitions Ask Normal Questions**—Retain the existing com port definitions but change your answers to the other prompts (for example, to select a new path)
 - **Ignore Previous Definitions Ask Normal Questions**—Reset the com port definitions and reinstall the files

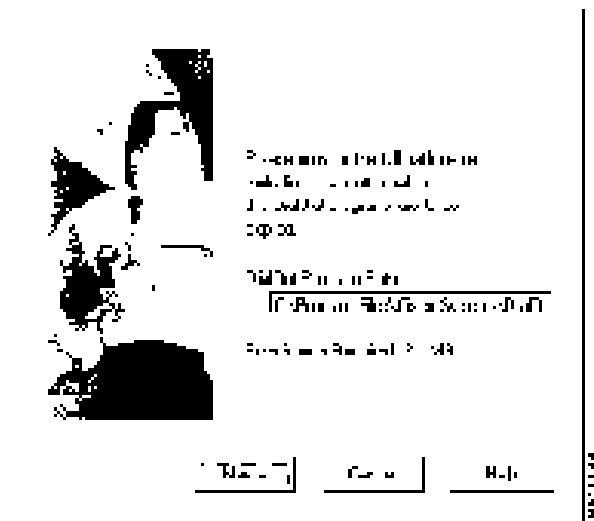
Installing the Cisco DialOut Utility

To stop the setup process before any modifications are made to the workstation, click **Cancel**. To proceed with the setup process, click **Next**.

Note If you selected **Retain Com Port Definitions No More Questions**, skip to Step 13.

The Program Path window opens. See Figure 2-3.

Figure 2-3 Program Path Window



Step 7 Enter the full path for the directory in which to place the Cisco DialOut Utility files. The directory does not need to exist; SETUP.EXE creates one if necessary. You can select the default directory or enter one of your own. The default directory depends on the version and language of Windows that you are using and the drive on which Windows is installed.

Note The following default examples assume that you have installed Windows on the C drive. If you have Windows installed on a different drive, the Cisco DialOut Utility will be installed on that drive.

For the English language version of Windows, the default is one of the following:

- **c:\program files\cisco systems\dialout.w95** (Windows 95/98)
- **c:\program files\cisco systems\dialout.wnt** (Windows NT)

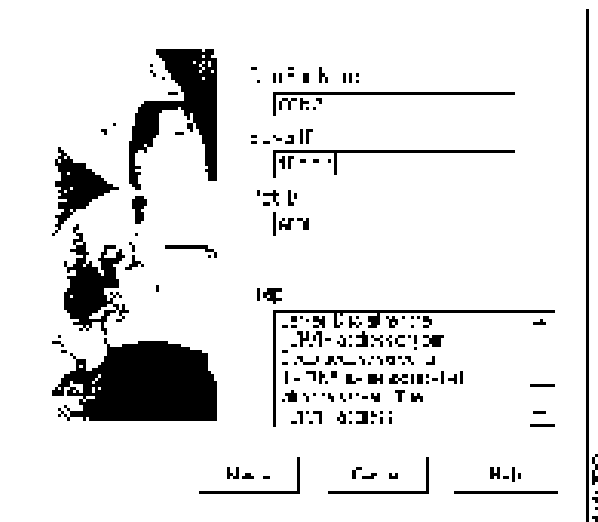
If you use a directory name other than the default, you must specify the full path exactly, including the drive letter and any parent directories; for example:

c:\program files\cisco systems\dialout

Note Do not use network drives or universal naming code (UNC) paths.

- Step 8** To stop the setup process before any modifications are made to the workstation, click **Cancel**. To proceed with the setup process, click **Next**. The Add Com Port window opens. See Figure 2-4.

Figure 2-4 Add Com Port Window



- Step 9** Enter the information for three fields:
- **Com Port Name**—Either COM1, COM2, COM3, or COM4. SETUP.EXE automatically selects the name of the next available com port. If necessary, you can change this setting now or after the Cisco DialOut Utility is installed. You can use any name your application allows; however, we recommend you use COM1, COM2, COM3, or COM4.
 - **Server ID**—TCP/IP address of the Cisco NAS through which you will dial out, or a DNS name associated with the server.

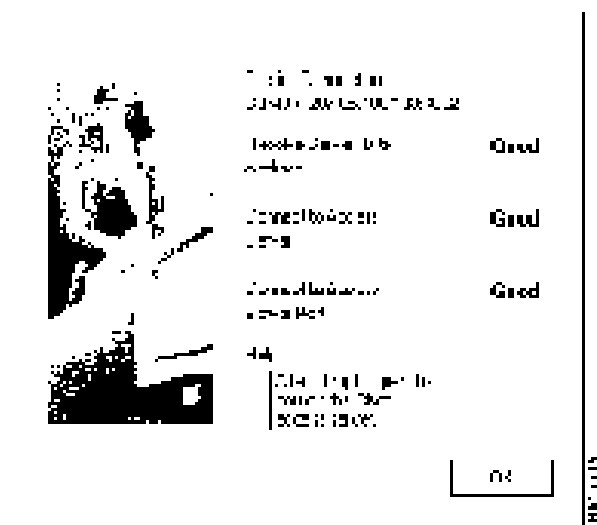
Note Check with your system administrator for the TCP/IP address or DNS name of the NAS on your network.

- **Port ID**—Represents the modem on the NAS. Normally this number will be 6001, 6002, and so on; or 7001, 7002, and so on.

To stop the definition of this com port and start over, click **Cancel**.

When you have entered the information for all three fields, click **Next**. The Cisco DialOut Utility tests the information you entered. See Figure 2-5.

Figure 2-5 Test Connection Window

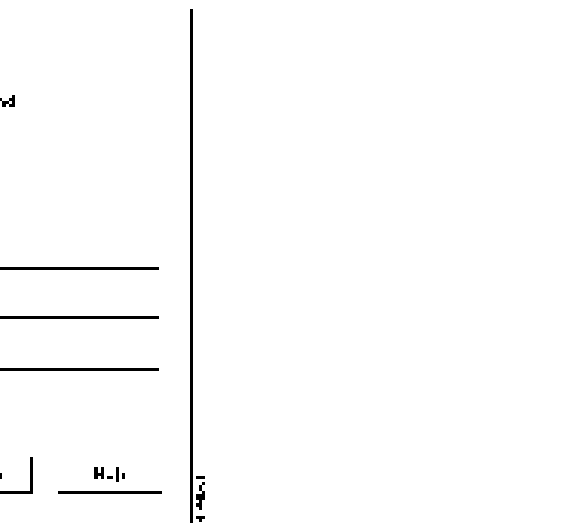


If a test is successful, Cisco DialOut Utility displays **Good** next to the item. If a test is unsuccessful, Cisco DialOut Utility displays **Error** next to the item. Check the information in the Help window for information on resolving any problems.

- Step 10** If the test was unsuccessful, you can either click **Return to Previous Screen** to enter the correct information or **Go ahead and Copy Files** to continue with the installation. If you click **Go ahead and Copy Files**, you will need to enter the correct information later after the Cisco DialOut Utility is installed. See the section “Configure Ports” in the chapter “Using Cisco DialOut Utility.” If you have a previous installation of Cisco DialOut Utility, the Uninstall window opens and the previously installed files are deleted.

ete, click **OK**. The Use Sounds window opens. See

OW



check box to allow the Cisco DialOut Utility to simulate ringing out or faxing. Because the sounds are generated on the computer on which you are using the utility must have a sound card installed and working correctly, and the sound must be

installed whether or not you select Use Sounds.
 (default sound files.) This allows you to enable sounds
 use the installation CD-ROM if you change your mind
 want to change the default sounds. To change the
 wav files you want to use into the directory in which
 alOut Utility and enter the name(s) of the wave file(s)
 applicable dialog box in the Sounds window.

The default sound files are:

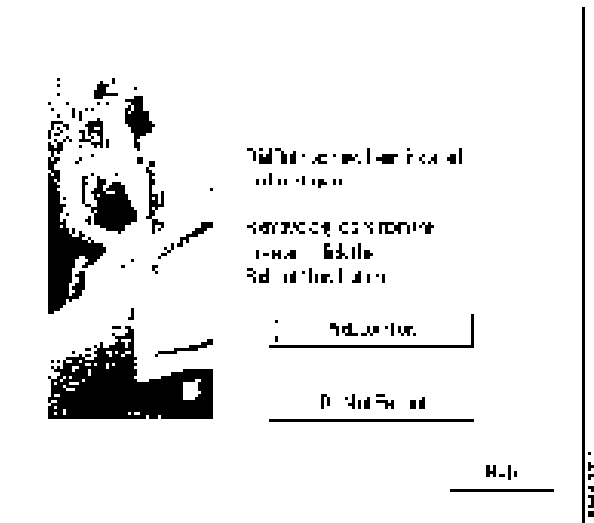
- **Opening Server Sound**—doutopen.wav
- **Dial Tone Sound**—doutdt.wav
- **Ringing Sound**—doutring.wav
- **Connected Sound**—doutconn.wav
- **Line Busy Sound**—doutbusy.wav
- **No Dial Tone Sound**—doutnodt.wav
- **No Answer Sound**—doutnoan.wav

Step 13 Click **Next**. SETUP.EXE copies the Cisco DialOut Utility software files from the distribution CD-ROM to the hard disk of the workstation. As each file is copied, the filename and destination are displayed in the Copying Files window. After all files have been copied to the hard disk, the Windows Registry is modified. See Appendix B, “Changes to Windows Files and Registry Entries” for details. You are then asked if you want to view the README.DOC file.

Note The README.DOC file contains important information about the Cisco DialOut Utility, including information on using Cisco DialOut Utility with specific communication applications, sample configurations for the access server, information on the various servers and Cisco IOS images with which Cisco DialOut Utility is compatible, and information that becomes available after this user guide is released. We highly recommend that you read it.

If you click **Yes**, the README.DOC file will open and remain open until you close the file. The Completed window opens. See Figure 2-7.

Figure 2-7 Completed Window



Step 14 To finish the setup process, click **Reboot Now**. To exit the setup program without restarting Windows, click **Do Not Reboot**.

Note If you choose not to restart at this time, installation will not be complete. You will still need to configure your com port, modem, and applications.

If you selected **Reboot Now**, the Setup restart window opens. See Figure 2-8.

1. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

2. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

3. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

4. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

5. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

6. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

7. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

8. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

9. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

10. Which of the following is the correct way to write the number 1000?

 a. 1,000

 b. 1000

 c. 1,000.00

 d. 1000.00

Note If you click **Cancel**, you will need to restart the system and continue with configuration manually.

After the system reboots, the Test Connection window opens, and SETUP.EXE tests the com ports. If a port test is successful, SETUP.EXE displays the following message:

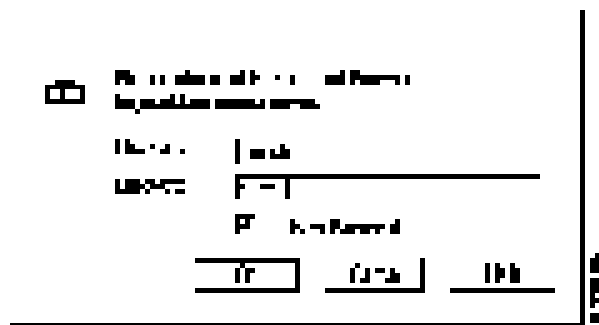
where x is the number of the com port.

Installing and Preconfiguring Cisco DialOut Utility 2-13

Security Window

(Optional) If your NAS is configured for authentication, authorization, and accounting (AAA) security, the Security window opens. See Figure 2-9.

Figure 2-9 Security Window



Enter your username and password and click **OK**.

(Optional) You can allow the Cisco DialOut Utility to remember your password so that you do not need to enter it every time you need to access the NAS. To allow this, click the **Save Password** check box.

Note Allowing the password to be saved results in a less secure system.

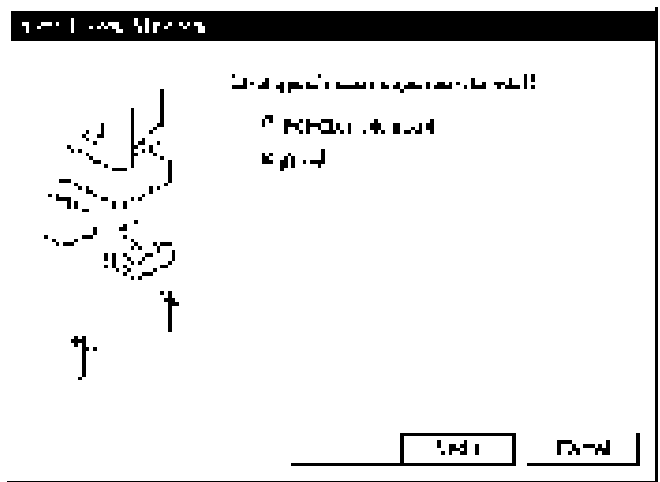
If your NAS is not configured for security but you have saved your user information and password, a message displays letting you know that your NAS is not configured for security. This has no effect on the utility. Click **OK** to acknowledge the message.

Selecting and Configuring the Modem

You must select a modem for the com port selected during installation. After the system has restarted, the Windows Modem Wizard opens so you can add a new modem definition. Follow these steps:

- Step 1** Use the automatic detect facility to identify the type of modem on the port. See your Windows documentation for more information.
- Step 2** (Optional) If you are installing Cisco DialOut Utility on a laptop, the Install New Modem window opens. See Figure 2-10.

Figure 2-10 Install New Modem Window

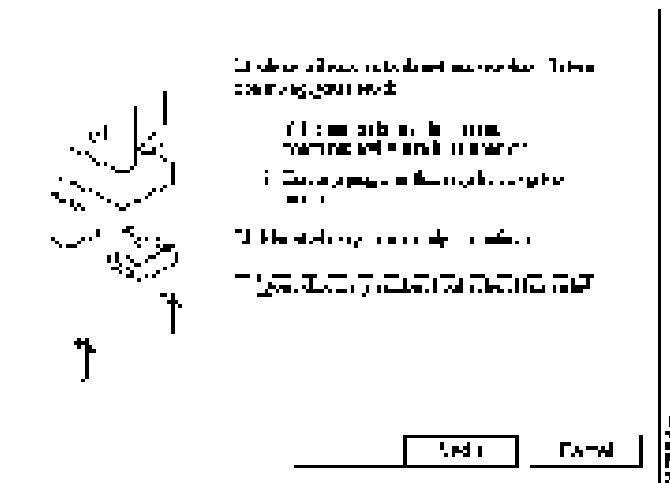


- Step 3** Click **Other**.

Note Always click **Other**, even if you have a PCMCIA modem card.

Step 4 Click **Next**. The Modem Selection window opens. See Figure 2-11.

Figure 2-11 Modem Selection Window



Step 5 Let the software automatically detect your modem. The software looks for a modem on all ports. If the automatic detect facility selects **standard modem**, change it to match the modem that is actually installed on your NAS. Contact your modem manufacturer to make sure you have the most current version of modem software installed. Click **Next**.

(Optional) If you are using a Cisco AS5xxx series access server, click **Have Disk**, insert the DialOut Utility CD-ROM, and click the applicable modem for your system. Check with your system administrator if you are unsure which modem to select.

Note You must add the modem separately for each port you just created during the Cisco DialOut Utility installation, even if the modems are the same type for each port.

See the README.DOC file for additional information.

- Step 6** Enable hardware flow control for the modem. Click **Start>Settings>Control Panel**. Double-click **Modems**. Click the **Connection** tab. Click **Advanced**. Check the **Use Flow Control** check box and the **Hardware (RTS/CTS)** button. Click **OK** until you return to the Modem Selection window.



Caution Do not run the diagnostics in the Modem Properties window for the Cisco DialOut Utility com port. Running the diagnostics will cause the com port to hang. If your com port hangs, you will need to reboot the PC. If the port still hangs, remove the com port and add it again. See the “Remove Port” and “Add Port” sections in the “Using Cisco DialOut Utility” chapter.

- Step 7** Click **OK**. Windows restarts automatically.

Adding and Configuring Your Applications

After you have finished installing the Cisco DialOut Utility software and selected and configured your modem, click **Start>Control Panel>Add/Remove Programs** to configure your fax or communication software to use the com port that SETUP.EXE selected during installation. See your software manufacturer’s documentation and the README.DOC file for instructions on configuring selected applications.

When you have finished adding and configuring your application, restart Windows.

Adding Com Ports (Optional)

To add more com ports on which to use the Cisco DialOut Utility, follow the instructions in the section “Add Port” in the chapter “Using Cisco DialOut Utility.”

Note After you have finished adding com ports, you must follow the instructions in the sections “Selecting and Configuring the Modem” and “Adding and Configuring Your Applications.”

Uninstalling the Cisco DialOut Utility

The uninstall process removes the Cisco DialOut Utility files and Windows Registry entries. To uninstall the software, follow these steps:

- Step 1** From the Windows desktop, click **Start>Control Panel>Add/Remove Programs**.
- Step 2** In the Install/Uninstall tab, click **Cisco DialOut Windows xx**, where xx is the version of Windows, either 95, 98, or NT.
- Step 3** Click **Add/Remove**. The **Uninstall** window opens and welcomes you to the removal process. It also provides you with an opportunity to exit UNINSTAL.EXE if it was started accidentally.
- Step 4** If you do not want to remove the Cisco DialOut Utility, click **Cancel**. To continue the removal process, click **Next**. A dialog box opens asking for confirmation.
- Step 5** Click **Yes** to proceed with the uninstall process or **No** to stop the process. The Uninstall window opens and the files are deleted from your workstation's hard disk. As each file is removed, the filename is displayed. After all of the files have been removed, all resource pointers that were added to the workstation are removed from the Windows Registry.

Note The UNINSTAL.EXE program itself and the Cisco DialOut Utility directory cannot be removed automatically because it is not possible for a running program to delete itself. To remove the program and directory, you must delete them manually after the uninstall process is complete. Follow the instructions in your Microsoft Windows documentation.

When removal is complete, the Completed window opens.

- Step 6** Click **Finish**. A dialog box opens asking if you want to reboot.
- Step 7** Click **Yes** to reboot or **No** to exit the removal process without rebooting. If you reboot, Cisco DialOut Utility is removed from the hard disk immediately. If you do not reboot now, Cisco DialOut Utility is removed from the hard disk the next time you reboot.

Using Cisco DialOut Utility

The Cisco DialOut Utility, Release 2.0, starts up automatically when you start Windows. It normally runs a test and then minimizes itself.

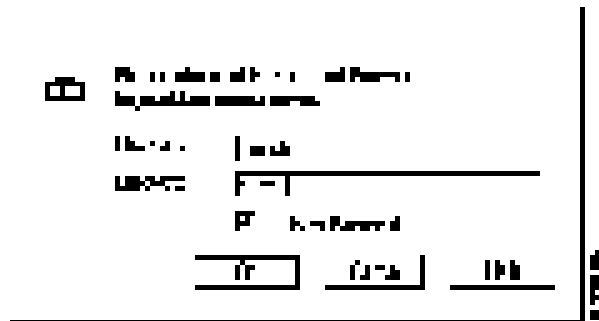
When the Cisco DialOut Utility is minimized, an icon appears in the Active Icon tray on the Windows desktop. The icon has two lights that flash red and green as data packets are sent and received. Note that the Cisco DialOut Utility lights and the lights on the Microsoft Dial-Up Networking icon next to it do not flash in unison.

Note If you remove the Cisco DialOut Utility from the Startup group, you will need to start it manually before you start your fax or communications applications. The utility must be running, either maximized or minimized, for the virtual ports to be available. We recommend that you minimize the Cisco DialOut Utility, rather than exit it. If you exit, you will need to restart the Cisco DialOut Utility on the workstation before you can send a fax or use your communications application. If you must exit the Cisco DialOut Utility, click **File** then **Exit**.

Login Dialog Box

When Cisco DialOut Utility starts, if the optional user security is enabled, the Secure Login dialog box opens. See Figure 3-1. If user security is not enabled, this dialog box will not open.

Figure 3-1 Secure Login Dialog Box



Follow these steps:

- Step 1** Your workstation login name is provided in the username field. If the name you use to log in to your workstation differs from the name you use to log in to the NAS, enter your NAS login name.
- Step 2** Enter your NAS password. The Cisco DialOut Utility cannot gain access to your password, so you need to enter it yourself. As you enter your password, asterisks (*) display so that your password is protected, but the data is received by Cisco DialOut Utility correctly.
- Step 3** (Optional) You can allow the Cisco DialOut Utility to remember your password so that you do not need to enter it every time you need to access the NAS. To allow this, click the **Save Password** check box.

Note Allowing the password to be saved results in a less secure system.

- Step 4** Click **OK** when finished. The username and password are sent to the NAS. If the password is entered incorrectly, or if you click **Cancel**, the Cisco DialOut Utility displays an error message.

If your NAS is not configured for security but you have saved your user information and password, a message displays letting you know that your NAS is not configured for security. This has no effect on the utility. Click **OK** to acknowledge the message.

To cancel the login, click **Cancel**. If you cancel, the Cisco DialOut Utility marks the session as a failure.

Cisco DialOut Utility Front Panel

The Cisco DialOut Utility Front Panel window is designed to look like a modem, with a few additions. Use the front panel to access the following menu items:

- **Com port**—Displays and allows you to change the current com port
- **LEDs**—Shows the status of four common communication parameters
- **More >**—Allows you to reconfigure ports, view status and statistics for the port that is currently selected, test the operation of all com ports, and disconnect the current communication session



Caution To close the Cisco DialOut Utility under normal circumstances, from the front panel, click **File** then **Exit**. The **Disconnect Current Session** button is an emergency option that is equivalent to an abrupt **End Task** or pressing **Ctrl+Alt+Del** and might cause the com port to hang. Use this button for troubleshooting purposes only.

To open the Cisco DialOut Utility Front Panel, follow these steps:

- Step 1** Double-click the minimized icon. The Cisco DialOut Utility window opens.
- Step 2** (Optional) To display the hidden File Help toolbar, click the right mouse button, then select **DialOut Menu**. This allows you to use Cisco DialOut Utility without a mouse. See Figure 3-2.

Figure 3-2 Cisco DialOut Utility Front Panel



To access online help for the Cisco DialOut Utility, click **Help**.

Note We recommend that you minimize the Cisco DialOut Utility rather than exit it. If you exit, you will need to restart the Cisco DialOut Utility or the workstation before you can send a fax or use your communications application. If you must exit the Cisco DialOut Utility, click **File** then **Exit**.

Com Port

The com port drop-down menu displays and allows you to change the com port that is being monitored by the lights and the status button. To select a different com port, click the down arrow to the right of the field and highlight the com port to monitor.

For instructions on adding or removing com ports, see the section “Add Port” or the section “Remove Port” in this chapter.

LEDs

These LEDs are similar to those found on a modem. The front-panel LEDs show the status of four common communication parameters:

- **CD** (carrier detect)—Indicates the current state of the connection with the NAS. The icons simulate LEDs.
- **Tx** (transmit)—Indicates data has been transmitted to the NAS.
- **Rx** (receive)—Indicates data has been received from the NAS.
- **ER** (error)—Indicates an error has been detected in the session with the NAS.

LED Colors

The colors of each of the four LEDs have the meanings listed below:

- **CD**

- **Gray**—The com port is not in use by an application.
- **Red**—The com port is in use by an application. There is a session between the client and the access server, but there is no remote session. This is similar to the CD light on a modem being turned off.
- **Green**—The com port is in use by an application. There is a session between the client and the access server and there is a remote session. This is equivalent to the CD light on a modem being turned on.

- **Tx**

- **Gray**—The com port is not in use by an application.
- **Red**—The com port is in use by an application, but there is no data being transmitted at this time.
- **Green**—The com port is in use by an application and data is being transmitted.

Note You might not see the Tx light change from green to red. This is due to the speed at which the transmission to the NAS occurs.

- **Rx**

- **Gray**—The com port is not in use by an application.
- **Red**—The com port is in use by an application, but no data is being received.
- **Green**—The com port is in use by an application and data is being received.

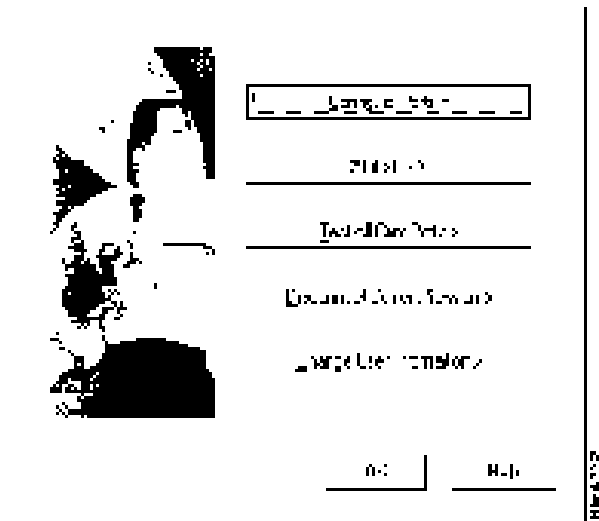
Note You might not see the Rx LED change from green to red. This is due to the speed at which the data in the Cisco DialOut Utility is being read by the communications application.

- **ER**
 - **Gray**—The com port is not in use by an application.
 - **Red**—The com port is in use by an application and an error has been detected on the session between the Cisco DialOut Utility client and the access server. Check the More\Statistics window for Last Error information.
 - **Green**—The com port is in session with a NAS and no errors have been detected.

More Functions Window

From the front panel window, click **More >** to open the More Functions window. See Figure 3-3.

Figure 3-3 Cisco DialOut Utility More Functions Window



From the More Functions window, you can perform the following tasks:

- **Configure Ports**—Add, remove, and configure com ports
- **Statistics**—View status and statistics for the port that is currently selected
- **Test All Com Ports**—Tests the operation and status of all com ports
- **Disconnect Current Session**—Disconnects the current communication session



Caution To close the Cisco DialOut Utility under normal circumstances, from the front panel, click **File** then **Exit**. The **Disconnect Current Session** button is an emergency option that is equivalent to an abrupt **End Task** or pressing **Ctrl+Alt+Del** and might cause the com port to hang. Use this button for troubleshooting purposes only.

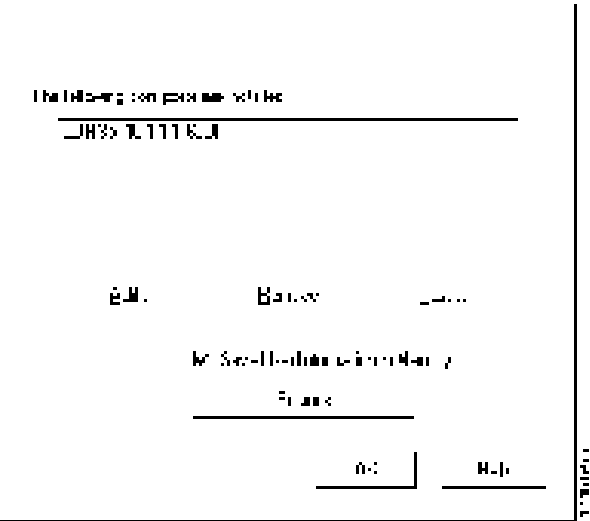
- **Change User Information**—Allows you to change your NAS username and password. The change applies to the current session only and will not change this information on the NAS.

Configure Ports

To add or remove com ports, follow these steps:

Step 1 Click **Configure Ports**. The Configure Ports window opens. See Figure 3-4.

Figure 3-4 Configure Ports Window

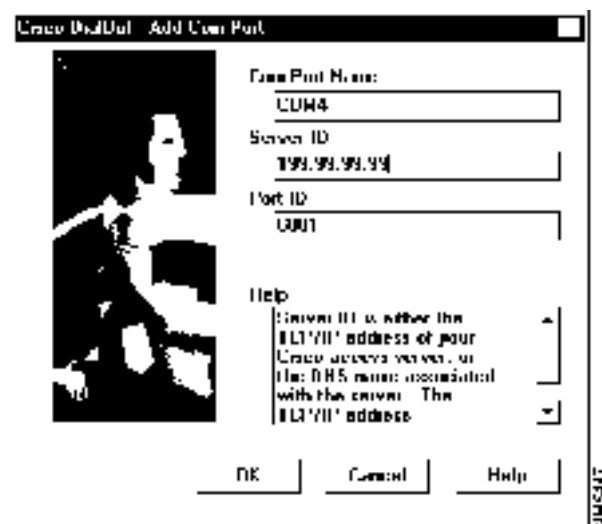


Add Port

To add a com port, follow these steps:

Step 1 Click **Add Port**. The Add Com Port window opens. See Figure 3-5.

Figure 3-5 Add Com Port Window



- Step 2** Enter the **Com Port Name**, either COM1, COM2, COM3, or COM4. SETUP.EXE has already automatically selected the name of the next available com port. If necessary, you can change this setting now or after the Cisco DialOut Utility is installed. You can use any name your application allows; however, we recommend you use COM1, COM2, COM3, or COM4.
- Step 3** Enter the **Server ID**, either the TCP/IP address of the Cisco NAS through which you will dial out, or a DNS name associated with the server.

Note Check with your system administrator for the TCP/IP address or DNS name of the NAS on your network.

Step 4 Enter the **Port ID**—Represents the modem on the NAS. Normally this number will be 6001, 6002, and so on; or 7001, 7002, and so on. See your system administrator for the number to use. To stop the definition of this com port and start again, click **Cancel**.

Step 5 After all fields have been defined, click **OK**.

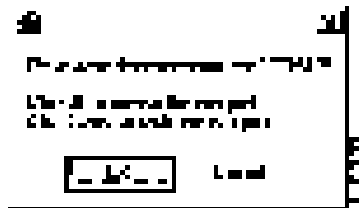
Note After you have finished adding com ports, you must follow the instructions in the sections “Selecting and Configuring the Modem” and “Adding and Configuring Your Applications.”

Remove Port

Follow these steps to remove a com port from the Cisco DialOut Utility:

Step 1 Highlight the name of the com port you want to remove and click **Remove**. The Remove Com Port window opens and displays the name of the port you selected. See Figure 3-6.

Figure 3-6 Remove Com Port Window



Step 2 Click **OK** to confirm removal or click **Cancel** to keep the port.

Step 3 To make the change effective, you will be prompted to reboot the PC at the appropriate time. See the README.DOC file for additional information.

Save User Information in Memory

If **Save User Information in Memory** is enabled, Cisco DialOut Utility asks for a username and password at startup. The initial value (enabled or disabled) is detected when the com port is added. Change this field only if there has been a change in the security configuration on the NAS.

Modem Sounds

To enable or change the simulated modem sounds, follow these steps:

Step 1 In the Windows Explorer, copy the .wav files you want to use into the directory in which you installed the Cisco DialOut Utility.

Note Because the sounds are generated using .wav files, the computer on which you are using the utility must have a multimedia package installed and working correctly, and the sound must be turned on.

Step 2 From the Cisco DialOut Utility Front Panel, click **More>**.

Step 3 Click **Configure Ports**.

Step 4 Click **Sounds**.

Step 5 Enter the name(s) of the wave file(s) you want to change in the applicable dialog box in the Sounds window. The default sound files are:

- **Opening Server Sound**—DOUTOPEN.WAV
- **Dial Tone Sound**—DOUTDT.WAV
- **Ringing Sound**—DOUTRING.WAV
- **Connected Sound**—DOUTCONN.WAV
- **Line Busy Sound**—DOUTBUSY.WAV
- **No Dial Tone Sound**—DOUTNODT.WAV
- **No Answer Sound**—DOUTNOAN.WAV

Step 6 After all fields have been reconfigured, click **OK**.

Test Port

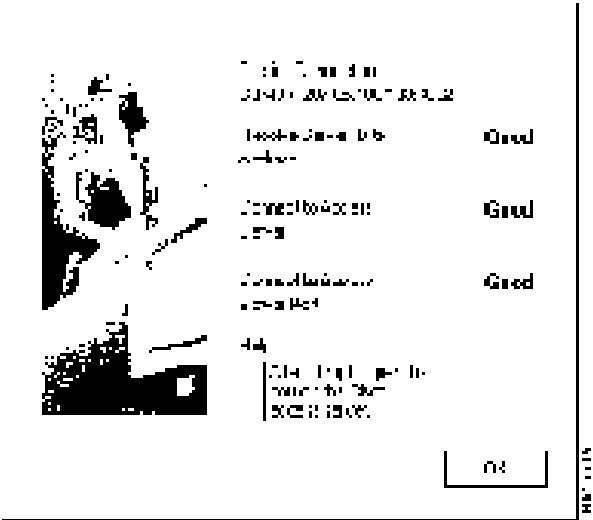
To test an individual com port, follow these steps:

Step 1 With the port name highlighted, click **Test**. The Test Connection window opens and the com port is tested for the following items:

- **Resolve Server ID to Address**—Converts the server address to an IP address or DNS name
- **Connect to Access Server**—Attempts to connect to the maintenance port on the NAS
- **Connect to Access Server Port**—Connects to the server and port ID you entered during configuration

During the test, Cisco DialOut Utility displays **Testing** next to the item being tested. If the tests are successful, the Test Connection window will display **Good** next to each item. See Figure 3-7.

Figure 3-7 Test Connection Window



If a test is unsuccessful, Cisco DialOut Utility displays **Error** next to the item. Check the Help window for information on resolving any problems.

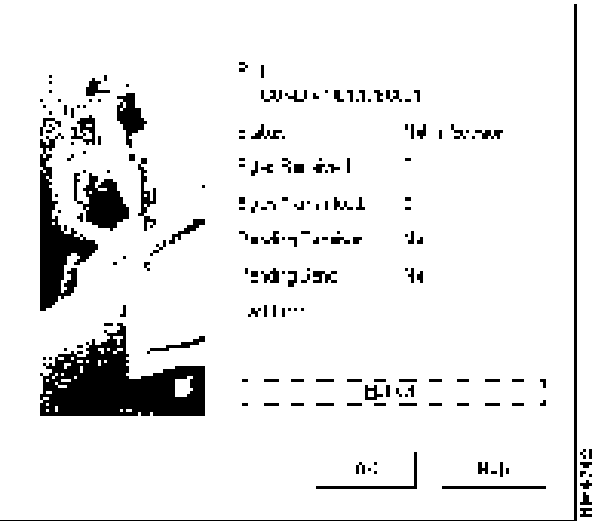
Step 2 When all tests are complete, click **OK** to return to the More Functions window.

Statistics Window

The Cisco DialOut Utility Statistics window displays the statistics of the selected com port. The data presented is a snapshot of information that can be used to monitor the connection with the NAS as well as provide information for troubleshooting.

- Step 1** From the Cisco DialOut Front Panel, click **More**.
- Step 2** Click **Statistics**. The Statistics window opens. See Figure 3-8.

Figure 3-8 Statistics Window



- Step 3** Click **Refresh** to refresh the values in the Statistics window. The window is updated to the current values. However, clicking **Refresh** does not reset the values. You can use the **Refresh** feature to indicate progress of transmission or download (receiving).

Note The Statistics Window does not dynamically update.

The Statistics window displays the following items:

- **Port**—IP address of the NAS to which this com port is assigned.
- **Status**—Status of the com port as listed below:
 - **Not In Session**—Currently not connected to a NAS.
 - **In Session**—Currently in session with a NAS.
- **Bytes Received**—Number of bytes received from the NAS. This number might differ from a counter reported by a communications package. The difference is the number of bytes in the Cisco DialOut Utility buffer that have not been received by the package. The counter is a 32-bit value and can count to over 4 billion bytes.
- **Bytes Transmitted**—Number of bytes transmitted to the NAS. The number might differ from a counter reported by a communications package. The difference is the number of bytes in the Cisco DialOut Utility buffer that have not been transmitted yet. Additionally, bytes transmitted via the transmit immediate facility are not counted, because they are usually control characters. The counter is a 32-bit value and can count to over 4 billion bytes.
- **Pending Receive**—When there is a command waiting to receive data from the NAS, the value of Pending Receive is **Yes**. When there is no receive command waiting, the value is **No**. Under normal operations, the only time this value is **No** is when the receive buffer is full while the communications package is reading data from the buffer but the minimum receive size value prevents another receive command from being issued.

- **Pending Send**—When there is a command in the process of sending data, the value of Pending Send is **Yes**. When there is no **Send** command in process, the value is **No**. This value will normally be **No**. The period of time needed to transmit information is usually very short. If a single send command takes more than a fraction of a second, there might be a network or network card problem.
- **Last Error**—If an error has occurred, this item will show a number that indicates where the error occurred, along with an explanation of the error. This might indicate a license violation.
- **Telephone Number**—The telephone number to which you are connected. This information appears after you have dialed.

Step 4 Click **OK** to return to the front panel.

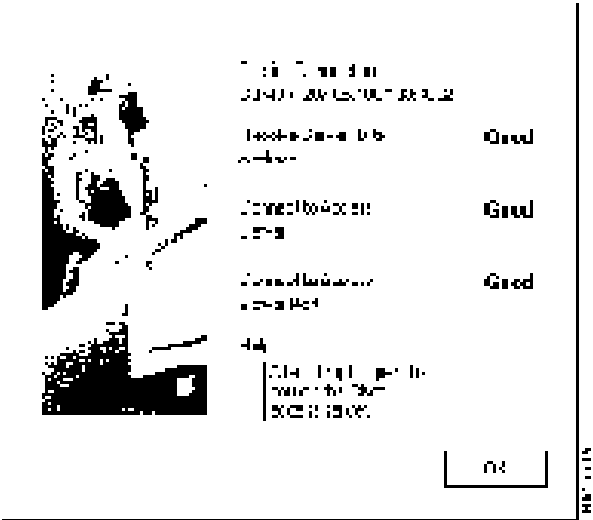
Test All Com Ports

To test operation of all com ports, follow these steps:

- Step 1** Click **Test All Com Ports**. The Test Connection window opens and the com ports are tested for the following items:
- **Resolve Server ID to Address**—Converts the server address to an IP address
 - **Connect to Access Server**—Attempts to connect to the maintenance port on the NAS
 - **Connect to Access Server Port**—Connects to the server and port ID you entered during configuration

During the test, Cisco DialOut Utility displays **Testing** next to the item being tested. If the tests are successful, the Test Connection window will display **Good** next to each item. See Figure 3-9.

Figure 3-9 Test Connection Window



If a test is unsuccessful, Cisco DialOut Utility displays **Error** next to the item. For information on resolving any problems, check the Help window, the README.DOC file, the “Troubleshooting Information” chapter, or the “Information for the System Administrator” appendix.

Step 2 When all tests are complete, click **OK** to return to the More Functions window.

Disconnect Current Session

In the unlikely event your application hangs, you might need to terminate the session. From the More Functions window, click **Disconnect Current Session**.



Caution To close the Cisco DialOut Utility under normal circumstances, from the front panel, click **File** then **Exit**. The **Disconnect Current Session** button is an emergency option that is equivalent to an abrupt **End Task** or pressing **Ctrl+Alt+Del** and might cause the com port to hang. Use this button for troubleshooting purposes only.

Troubleshooting Information

Obtaining Service and Support

For information about obtaining technical assistance with your Cisco DialOut Utility, Release 2.0, refer to the section “Service and Support” in the publication *Cisco Information Packet* that shipped with your product.

Troubleshooting Checklist

If your Cisco DialOut Utility is not operating properly, check the following items:

- See the README.DOC file for specific information about configuring and using third-party applications and other troubleshooting information.
- Make sure that you rebooted the PC after installation.
- Make sure that the modem is configured properly.
- Make sure that the modem is capable of and configured for Class 2 faxing.
- Make sure that the fax or communications application is configured properly for Class 2.
- Make sure that the device with which you are attempting to communicate is operating properly.
- Make sure that you are dialing the correct telephone number.
- Make sure that your password is correct.

Troubleshooting Checklist

- Run the Cisco DialOut Utility and watch the LEDs and their colors carefully. The actions of the lights provide useful information about the activities of the Cisco DialOut Utility. See the “LEDs” section in the “Using Cisco DialOut Utility” chapter for a list of the LED colors and explanations of their meanings.
- Test the com port on the NAS terminal to make sure that the port is not open.
- Make sure that the serial cables are connected and the modem power is on.
- Make sure that new workstations have been configured with Terminal before using a package that does not allow the user to see the commands being issued.
- Make sure that you are using one of the TCP/IP stacks that have been tested with Cisco DialOut Utility.
- Most symptoms are due to incorrect configurations and hardware setup. Before calling for support, check NAS configurations, all PC NICs, NAS cables, and modems. Make sure that the carrier lines are connected and on.
- Check that your NAS is reachable using the ping test. Make sure that your NAS has the correct Cisco IOS software image for the Cisco DialOut Utility. See the README.DOC file for more information.
- If you experience connection problems with the Cisco DialOut Utility running, test the com ports. See the section “Test Port” in the chapter “Using Cisco DialOut Utility” for instructions. If the test passes but you still experience problems, reboot your PC.
- Some PC systems, modems, and carrier lines require two attempts before an application can make a good connection. This can be caused by timing delays from noise on the line or by application and PC timing sensitivity.
- Make sure that there is no com port mismatch due to multiple modems from the same manufacturer.
- Port contention can also be an issue; for example, problems might occur if you have 10 people using the Cisco DialOut Utility on only 4 ports. Just as with telephone lines, if a port is in use, it is unavailable.
- If you experience consistent busy conditions, consider segmenting your high-priority users from your incidental users by assigning the high-priority users to dedicated ports instead of to a rotary group. You might also need to add modem cards into your NAS to increase port density. You might also need to order additional analog lines to support your call volume.

Note Excessive propagation delays over low-speed or noisy lines can affect the timing of Microsoft's fax and dial-up networking and can cause the connection to fail.

Clearing Potential Line Problems

To clear any potential line problems, follow these steps:

Step 1 Enter:

clear line x

x indicates the line currently in use.

Step 2 Turn the modem off and on.

Step 3 To determine if a line is hung, enter:

s lin (show line)

or

s usr (show users)

Step 4 If you experience a hanging line and you are using a Cisco AS2509 or Cisco AS2511, turn the modem off and on to purge the modem settings.

Symptoms

Suggested Trace Tools

Most issues encountered will either be PC-specific or network-related. To obtain network specific trace files, follow these suggestions:

- For any suspected network issues, use a protocol analyzer to monitor the network. A protocol analyzer is an excellent way to investigate potential Ethernet problems, such as runaway NIC cards jabbering on the wire, excessive collisions, excessive runt packets (fragmented IP/frames), or upper-layer protocol issues.
- If your NAS is a Cisco AS5xxx series access server, use its debug utility for Telnet, modem, modem Call Switch Module (csm), modem capabilities (cap), and Point-to-Point Protocol (PPP)-negotiated packets.

Symptoms

The following is a list of situations you might encounter when using the Cisco DialOut Utility. Your situation might not exactly match those listed, but there might be one that is close that might provide additional insight into the problem.

Symptom Com port hangs.

Possible Cause The Windows diagnostics in the Modem Properties window were run on the com port.

Recommended Action Reboot the PC. If the port still hangs, remove the com port and add it again. See the “Remove Port” and “Add Port” sections in the “Using Cisco DialOut Utility” chapter.

Symptom Error Code 2: File Not Found

Possible Cause Your setup CD-ROM is corrupt.

Recommended Action Contact your Cisco representative to get a new CD-ROM.

Symptom Error code 69x (Windows NT).

Possible Cause The modem type is incorrect.

Recommended Action Add the correct modem. Additionally, add the modem to the remote access server (RAS).

Symptom Error code greater than 10000.

Possible Cause These error codes are generated by Microsoft Winsock.

Recommended Action See your Winsock documentation.

Symptom No dial tone when dialing.

Possible Cause There is a problem with the NAS's connection to the carrier or telephone system.

Recommended Action If you get a NO DIALTONE or CONNECTION FAILED message, refer to the appendix "System Messages."

Symptom Security failure message.

Possible Cause The username or password is incorrect, or there is a problem with the AAA service.

Recommended Action Re-enter the username and password. Make sure that the NAS is working properly, or contact your service provider.

Before You Contact Support

If you have checked all the above items and still need to contact support, make sure that you have taken the following steps:

- Write down your hardware platform, operating system version, type of TCP/IP protocol stack you are using, version of Cisco DialOut Utility you are using, the name of the fax or communications application you are using, and a short description of the symptoms.
- Provide the support personnel with a copy of your SETUP.LOG file.

Before You Contact Support

- Do not remove the Cisco DialOut Utility software. Cisco support engineers might ask if you can duplicate the problem. If you remove the software, you will have to reinstall it. This will delay resolution of the problem.
- Try to determine if there is a simple way to reproduce the problem. To help narrow the focus of the support call, write down the name of the communications package you are running and the activities you were performing.
- Be as precise as possible. Know what operating system and communications package you are using, what activities you are attempting, and so on.
- If the system worked one day but does not work the next, make sure that nothing else in the environment has changed.

System Messages

This appendix describes system messages generated by the Cisco DialOut Utility, Release 2.0, what they mean, and what to do when they occur.

System Messages and Recommended Actions

Error Message CONNECTION FAILED

Explanation There is a problem with the telephone system, or the called telephone line is busy, or you need to dial 9 or another digit before the number to dial out of a PBX.

Recommended Action Make sure the telephone system is working. Make sure you dialed the correct number to place a call outside the PBX.

Error Message Host Not Found On Network

Explanation This message is reported in the Cisco DialOut Utility Status Panel when the Cisco DialOut Utility cannot connect to the NAS. The IP address might be incorrect, or the name resolution service on your network cannot resolve the name provided to an IP address, or the port ID is incorrect.

Recommended Action Verify the IP address and the name provided to the IP address. Verify the port ID.

System Messages and Recommended Actions

Error Message No Access Server Found On Network

Explanation Cisco DialOut Utility was never able to contact the NAS. This could indicate a problem with the NAS (not turned on, not on a reachable segment) or with the workstation (wrong IP address, network connection not plugged in, hub power supply failure).

Recommended Action Be sure the NAS and network connection are operating properly and the IP address is correct.

Error Message NO DIALTONE

Explanation The port on the NAS is not connected to the telephone system, or its connection is not working.

Recommended Action Make sure there is a good connection from the NAS to the telephone system.

Error Message No Servers defined for this port. Do you wish to define Servers now?

Explanation This message is displayed during installation or when you have added a port but have not defined the name of the server to which it will connect.

Recommended Action Enter the name of the server in the Server dialog box. If you do not know the name of the server, contact your system administrator.

Error Message Session Closed By Access Server

Explanation During the process of clearing security or banners, the socket to the NAS was disconnected from the NAS side. The most likely cause is a problem with the NAS or the network.

Recommended Action Make sure the NAS and network connection are operating properly.

Error Message Timeout Error To Access Server

Explanation During the open/security challenge, the modem challenge response was not received in 30 seconds from the last challenge sent. This is an indication that the port might be hung on the NAS.

Recommended Action Make sure the timeouts are set correctly and the NAS is configured properly.

Error Message Unable to negotiate network protocol

Explanation After it completes the security/modem challenge routine, the Cisco DialOut Utility attempts to force the NAS to use the features of the RFC. If the Cisco DialOut Utility's request for RFC 2217 is rejected by the NAS, this message is displayed and the session is terminated.

Recommended Action Make sure the NAS complies with RFC 2217.

Error Message Unable To Pass Security Check

Explanation Cisco DialOut Utility received a challenge but did not clear the check. Either the user provided wrong user information or the Cisco DialOut Utility was unable to get the information from the utility layer.

Recommended Action Enter the username and password again. Make sure the information on the NAS is correct.

System Messages and Recommended Actions

Changes to Windows Files and Registry Entries

This appendix includes information on the changes that Cisco DialOut Utility, Release 2.0, makes to your Windows files, as well as a list of the filenames and an explanation of each file's purpose.

Windows Registry Entries

When you run SETUP.EXE, the Cisco DialOut Utility revises the statements in the Windows registry or adds the statements described in this section. The following statements appear in the Windows registries in the following path to the Cisco DialOut Utility support modules:

```
HKEY_LOCAL_MACHINE
hardware
  devicemap
  serialcomm
  DialOut-portname (portname is the name of the virtual com port)
SOFTWARE
  Cisco Systems, Inc.
  DialOut
    DLLs
    Port IDs
    Ports
      Value Id is the internal name of the module. The first line is
      the path to the module. The second line is the entry point into
      the module.
      PortIds associate a port name with an internal port ID. Port List
      of the virtual com ports.Value Id is the internal name of the
      port. The first line is the IO Manager name of the port. The
      second line is network driver parameters. The third line is local
      com port parameters.
```

Additional Registry Entries for Windows NT

In addition to the entries noted in the section “Windows Registry Entries,” the following statements appear in the Windows NT Registry:

```
SYSTEM
  CurrentControlSet
  Services
  EventLog
  System
    DOUTDrv Pointer to Event Log message DLL
    DOUTWnt Pointer to Event Log message DLL
    DOUTDrv
      (Root)
        Parameters needed by the operating system to load the device
        driver layer.
        Parameters list of virtual com ports. Value Id is the IO Manager
        name of the port (with xx appended to the front of the name). The
        first line is the internal name of the port.
    DOUTWnt
      (Root)
        Used to start the helper service.
```

Filename and Purposes

Table B-1 lists the files that the Cisco DialOut Utility places in the directory you specify during setup. Not all files are installed on all Windows platforms, and the setup files are present on the Cisco DialOut Utility installation CD-ROM but are not installed on the hard disk.

Table B-1 **Filename and Purposes**

Filename	Purpose
SETUP.EXE	Used to install or reinstall the Cisco DialOut Utility ¹
SETUP.WNT	Installation instructions and information for Windows NT ¹
SETUP.W95	Installation instructions and information for Windows 95 and Windows 98 ¹
SETUP.HLP	Help file for the Setup program ¹
DOUTUTL.EXE	Cisco DialOut Utility program
DOUTUTL.HLP	Help file for the Cisco DialOut Utility program
DOUTWNT.EXE	Main helper layer module for Windows NT
DOUTWMG.DLL	Event messages for the helper layer for Windows NT
DRV2TLN.DLL	Network helper layer module to interface to the Cisco DialOut Utility
DOUTALL.DLL	Helper layer module that contains common functions used by other Helper layer modules
DOUTDRV.SYS	Cisco DialOut Utility driver for Windows NT
UNINSTAL.EXE	Removes the Cisco DialOut Utility system from the workstation
DOUTLCL.DLL	Helper layer module that contains additional common functions
DOUTDRV.VXD	Cisco DialOut driver for Windows 95 and Windows 98
DOUTTLN.DLL	Telnet interface logic
MNPIISP.INF	Modem INF file for Microcom modem—Allows your system to recognize Microcom modems installed on your NAS
MDCSMICA.INF	Modem INF file for MICA modem—Allows your PC to recognize MICA modems installed on your NAS

Filename and Purposes

Table B-1 **Filenames and Purposes (Continued)**

Filename	Purpose
README.DOC	Important information and last minute updates
TRCDUMP.EXE	Program to convert trace files to text format
DOUTOPEN.WAV	Sound played when opening the session with the access server
DOUTDT.WAV	Sound played when dial tone is detected
DOUTRING.WAV	Sound played when ringing through to remote modem is detected
DOUTCONN.WAV	Sound played when remote modem connection is detected
DOUTBUSY.WAV	Sound played when line busy condition is detected
DOUTNODT.WAV	Sound played when no dial tone is detected
DOUTNOAN.WAV	Sound played when no answer is detected
DOUTDTx.WAV	x = 0-9. Dialing tones played during dialing
DOUTSTAR.WAV	Dialing tone played to represent the start key (*)
DOUTPOND.WAV	Dialing tone played to represent the pound key (#)

1 File is on installation CD-ROM but is not installed on hard disk.

Sample NAS Configurations for Cisco DialOut Utility

This appendix contains sample configurations for the NAS you will be using with the Cisco DialOut Utility, Release 2.0. The Cisco DialOut Utility can be used with any NAS that supports Class 2 faxing.

For more information on setting up and configuring your NAS, see the documentation for your NAS and the *Telnet Extensions for Dialout* supplement to your Cisco IOS documentation.

Note If the Cisco IOS image on your NAS does not support the Cisco DialOut Utility, the utility will display a message stating that your Cisco IOS image does not support RFC 2217. See the README.DOC file for information on which Cisco IOS images contain this support.

Sample Configuration File for Cisco AS2509-2512 Series Access Servers

Following is a sample configuration file for a Cisco AS2509, Cisco AS2510, Cisco AS2511, or Cisco AS2512 access server that you can use with Cisco DialOut Utility. Edit the example to reflect your own configuration.

```
!  
version 11.3  
service timestamps debug datetime msec localtime  
no service udp-small-servers  
service tcp-small-servers  
!  
hostname 2500-DialOut  
!  
enable secret 5 $1$W63K$8ZhlhHUG6hx4U3U2KFPyW0  
enable password abc  
!  
ip domain-name cisco.com  
ip name-server 10.0.0.0  
ip address-pool local  
!  
interface Ethernet0  
ip address 10.0.0.1 255.255.255.0  
no ip mroute-cache  
no ip route-cache  
no lat enabled  
no mop enabled  
!  
interface Serial0  
no ip address  
no ip mroute-cache  
no ip route-cache  
shutdown  
!  
interface Serial1  
no ip address  
no ip mroute-cache  
no ip route-cache  
shutdown  
!  
interface Group-Async1  
ip unnumbered Ethernet0  
no ip mroute-cache
```

Sample Configuration File for Cisco AS2509-2512 Series Access Servers

```
encapsulation ppp
no ip route-cache
async default routing
async dynamic address
async mode interactive
peer default ip address pool local
dialer in-band
no cdp enable
ppp authentication chap
group-range 1 8
!
interface Dialer0
no ip address
no ip mroute-cache
no ip route-cache
no cdp enable
!
router eigrp 109
network 10.2.0.0
no auto-summary
!
ip local pool local 10.1.1.1 10.1.1.5
ip default-gateway 10.1.1.2
no ip classless
ip route 10.2.2.2 255.255.255.224 10.1.1.1
ip route 10.3.3.3 255.255.255.224 10.4.4.4
!
line con 0
exec-timeout 0 0
line 1 8
refuse-message ^C [!NMM!] No Modems Available ^C
modem InOut
rotary 1
transport preferred telnet
transport input all
rxspeed 115200
txspeed 115200
flowcontrol hardware
line aux 0
line vty 0 4
password abc
login
!
end
```

Sample Configuration File for a Cisco AS2509 Access Server with Local AAA Security

Following is a sample configuration file for a Cisco AS2509 access server using authentication, authorization, and accounting (AAA) that you can use with the Cisco DialOut Utility. Edit the example to reflect your own configuration.

```
version 11.3
service timestamps debug datetime msec localtime; Helpful for accurate
debug based on timestamps
no service udp-small-servers
service tcp-small-servers
!
hostname 2500-DialOut
!
aaa new-model
aaa authentication local-override
aaa authentication login dialout local
aaa authentication enable default enable
aaa authentication ppp dialup local
aaa authorization reverse-access none
enable password cisco
!
username admin password 7 02050D480809
username dialout password 7 110A1016141D4B4C44
ip address-pool localpool
!
interface Ethernet0
 ip address 10.1.1.40 255.255.255.0
 no ip mroute-cache
 no ip route-cache
 no lat enabled
 no mop enabled
!
interface Serial0
 no ip address
 no ip mroute-cache
 shutdown
!
interface Serial1
 no ip address
 shutdown
```

Sample Configuration File for a Cisco AS2509 Access Server with Local AAA Security

```
!  
interface Dialer0  
  no ip address  
  no ip mroute-cache  
  no ip route-cache  
  no cdp enable  
!  
interface Group-Async1  
  ip unnumbered Ethernet0  
  no ip mroute-cache  
  encapsulation ppp  
  no ip route-cache  
  async default routing  
  async dynamic address  
  async mode interactive  
  peer default ip address pool local  
  dialer in-band  
  no cdp enable  
  ppp authentication chap  
  group-range 1 8  
!  
interface Dialer0  
  no ip address  
  no ip mroute-cache  
  no ip route-cache  
  no cdp enable  
!  
router rip  
  network 10.0.0.0  
!  
ip local pool localpool 10.1.1.50 10.1.1.60  
no ip classless  
!  
line 1 4  
  login authentication dialout  
  refuse-message ^C [!NMM!] No Modems Available ^C  
  modem InOut  
  rotary 1  
  transport preferred telnet  
  transport input all  
  rxspeed 115200  
  txspeed 115200  
  flowcontrol hardware  
!  
line 5 8
```

Sample Configuration File for a Cisco AS2509 Access Server with Local AAA Security

```
login authentication dialout
no exec
refuse-message ^CCC [!NMM!] No modems available ^C
modem InOut
rotary 1
transport preferred telnet
transport input all
rxspeed 38400
txspeed 38400
flowcontrol hardware
line aux 0
line vty 0 4
password cisco
login authentication dialout
!
end
```

Sample Configuration File for Cisco AS5xxx Series Access Servers

Following is a sample configuration file for a Cisco AS5xxx series access server that you can use with Cisco DialOut Utility. See the README.DOC file or CCO for specific information on which platforms and Cisco IOS versions are supported. Edit the example to reflect your own configuration.

```
version 11.3
service timestamps debug datetime msec localtime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname 5XXX-1
!
enable password cisco
!
username root password 7 123456789012
username cisco password 7 223456789012
modem startup-test
no ip domain-lookup
isdn switch-type primary-5ess
!
controller T1 0
framing esf
clock source line primary
linecode b8zs
pri-group timeslots 1-24
!
controller T1 1
shutdown
framing esf
clock source line secondary
linecode b8zs
pri-group timeslots 1-24
!
interface Ethernet0
ip address 10.1.1.1 255.255.255.0
no ip route-cache
no ip mroute-cache
no lat enabled
```

Sample Configuration File for Cisco AS5xxx Series Access Servers

```
!  
interface Serial0  
  no ip address  
  no ip route-cache  
  no ip mroute-cache  
  shutdown  
  no fair-queue  
!  
interface Serial1  
  no ip address  
  no ip route-cache  
  no ip mroute-cache  
  shutdown  
!  
interface Serial0:23  
  ip address 10.15.2.80 255.255.255.0  
  encapsulation ppp  
  no ip route-cache  
  no ip mroute-cache  
  no keepalive  
  dialer idle-timeout 400  
  dialer map ip 10.15.2.60 6661210  
  dialer-group 1  
  isdn incoming-voice modem  
  peer default ip address pool setup_pool  
  no fair-queue  
  no cdp enable  
  ppp authentication chap  
  ppp multilink  
!  
interface Serial1:23  
  no ip address  
  no ip route-cache  
  no ip mroute-cache  
  shutdown  
!  
interface Group-Async1  
  ip unnumbered Ethernet0  
  encapsulation ppp  
  no ip route-cache  
  no ip mroute-cache  
  async dynamic address  
  async dynamic routing  
  async mode interactive  
  peer default ip address pool setup_pool
```

Sample Configuration File for Cisco AS5xxx Series Access Servers

```
ppp authentication chap pap
group-range 1 48
!
interface Dialer0
no ip address
no ip route-cache
no ip mroute-cache
dialer-group 1
!
ip local pool setup_pool 10.1.1.2 10.1.1.4
ip classless
dialer-list 1 protocol ip permit
!
line con 0
exec-timeout 0 0
password cisco
logging synchronous
line 1 48
refuse-message ^C [!NMM!] No Modems Available ^C
exec-timeout 0 0
autoselect during-login
autoselect ppp
modem InOut
transport preferred telnet
transport input all
line aux 0
line vty 0 4
exec-timeout 0 0
password cisco
line vty 5 6
password cisco
!
scheduler interval 1000
end
```

Sample Configuration File for a Cisco AS5xxx Series Access Server with AAA Security

Following is a sample configuration file for Cisco AS5xxx series access servers that you can use with the Cisco DialOut Utility. See the README.DOC file or CCO for specific information on which platforms and Cisco IOS versions are supported. Edit the example to reflect your own configuration.

```
version 11.3
service timestamps debug datetime msec localtime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname 5XXX-1
!
aaa new-model
aaa authentication login default tacacs+
aaa authentication login noaaa local
aaa authentication login logintac tacacs+
aaa authentication ppp ppptac tacacs+
aaa authentication ppp paplocal local
aaa authorization exec tacacs+
aaa authorization network tacacs+
aaa authorization reverse-access tacacs+
aaa accounting exec start-stop tacacs+
aaa accounting network start-stop tacacs+
aaa accounting update newinfo
enable password cisco
!
username root password 7 123456789012
username cisco password 7 223456789012
modem startup-test
no ip domain-lookup
isdn switch-type primary-5ess
!
controller T1 0
framing esf
clock source line primary
linecode b8zs
pri-group timeslots 1-24
```

Sample Configuration File for a Cisco AS5xxx Series Access Server with AAA Security

```
!  
controller T1 1  
  shutdown  
  framing esf  
  clock source line secondary  
  linecode b8zs  
  pri-group timeslots 1-24  
!  
interface Ethernet0  
  ip address 10.1.1.1 255.255.255.0  
  no ip route-cache  
  no ip mroute-cache  
  no lat enabled  
!  
interface Serial0  
  no ip address  
  no ip route-cache  
  no ip mroute-cache  
  shutdown  
  no fair-queue  
!  
interface Serial1  
  no ip address  
  no ip route-cache  
  no ip mroute-cache  
  shutdown  
!  
interface Serial0:23  
  ip address 10.15.2.80 255.255.255.0  
  encapsulation ppp  
  no ip route-cache  
  no ip mroute-cache  
  no keepalive  
  dialer idle-timeout 400  
  dialer map ip 10.15.2.60 6661210  
  dialer-group 1  
  isdn incoming-voice modem  
  peer default ip address pool setup_pool  
  no fair-queue  
  no cdp enable  
  ppp authentication chap ppptac  
  ppp multilink
```

Sample Configuration File for a Cisco AS5xxx Series Access Server with AAA Security

```
!  
interface Serial1:23  
  no ip address  
  no ip route-cache  
  no ip mroute-cache  
  shutdown  
!  
interface Group-Async1  
  ip unnumbered Ethernet0  
  encapsulation ppp  
  no ip route-cache  
  no ip mroute-cache  
  async dynamic address  
  async dynamic routing  
  async mode interactive  
  peer default ip address pool setup_pool  
  ppp authentication chap pap paplocal  
  group-range 1 48  
!  
interface Dialer0  
  no ip address  
  no ip route-cache  
  no ip mroute-cache  
  dialer-group 1  
!  
ip local pool setup_pool 10.1.1.2 10.1.1.4  
ip classless  
dialer-list 1 protocol ip permit  
!  
tacacs-server host 10.4.1.10  
tacacs-server timeout 20  
tacacs-server key nas1  
!  
line con 0  
  exec-timeout 0 0  
  password cisco  
  logging synchronous  
  login authentication noaaa  
line 1 48  
  refuse-message ^C [!NMM!] No Modems Available ^C  
  exec-timeout 0 0  
  autoselect during-login  
  autoselect ppp  
  modem InOut  
  transport preferred telnet
```

Sample Configuration File for a Cisco AS5xxx Series Access Server with AAA Security

```
transport input all
line aux 0
line vty 0 4
  exec-timeout 0 0
  password cisco
  login authentication logintac
line vty 5 6
  password cisco
!
scheduler interval 1000
end
```

CiscoSecure ACS User Profile Example

In order to use the **aaa authorization reverse access** command with CiscoSecure ACS for UNIX, the profile for the Cisco DialOut Utility user must contain the following lines. The lines must be entered exactly as shown.

Note This example is for TACACS+ only.

```
{
{
profile_cycle=10
profile_id=19
member=Telnet_Users
password=chap "*****"
password=clear "cisco"
service = raccess {
set port#3 = 5XXX-1/tty1
}
}
```

For additional information, including information for CiscoSecure ACS for Windows NT users, see the README.DOC file and your CiscoSecure documentation.

Information for the System Administrator

This appendix contains information for the system administrator.

Notes for Tested Applications

Cisco Systems does not claim any responsibility for the functionality of individual communication software packages; however, as a courtesy to our customers, the README.DOC file provided with the Cisco DialOut Utility, Release 2.0, contains information on necessary configuration changes for some applications.

Cisco DialOut Utility Automated Installation Process

You can automate the installation process to make it easier to install the Cisco DialOut Utility via an automated installation system such as Microsoft's System Management Services or if the same Cisco DialOut Utility configuration is being installed on a large number of workstations. Follow these steps:

- Step 1** Copy the entire directory \Dialout from the CD-ROM to your hard disk.
- Step 2** Using any ASCII text editor, point to the \Dialout directory on your hard disk. Browse to the SETUP.W95 (for Windows 95) or SETUP.WNT (for Windows NT) file and open it.
- Step 3** Using the text editor, locate and change the entry:
Automated = No
to
Automated = Yes

Cisco DialOut Utility Automated Installation Process

Step 4 If the Cisco DialOut Utility installation files are to be stored in a new location, locate the program path and modify the path in the SETUP.EXE file. The default path is one of the following:

- **Windows 95**—C:\Program Files\Cisco Systems\Dialogout.W95
- **Windows NT**—C:\Program Files\Cisco Systems\Dialogout.WNT

If the **Path** option is left blank (unchanged) and the **Retain** value is set to **Yes**, SETUP.EXE uses the program path that was defined during the last installation or upgrade. If the **Path** option is not blank, the new installation uses the modified path, regardless of the **Retain** value.

Step 5 Locate the com port you want to update. Use the text editor to change the following entry in the SETUP.EXE file:

Com3=Server, Port

to the information for your new NAS and port; for example:

Com3=10.1.1.3, 6023

Step 6 Save the modified SETUP.W95 or SETUP.WNT file as ASCII (DOS) text and notify users of the location of the newly modified SETUP.EXE.

Note Do not modify any other values.

Step 7 Run the SETUP.EXE program. There are two options for running SETUP.EXE.

- Make all the previously discussed modifications to the SETUP.W95 or SETUP.WNT file and run SETUP.EXE as usual.
- or
- Make all the previously discussed modifications to a copy of the SETUP.W95 or SETUP.WNT file that you have given a different name. Run SETUP.EXE with the name of the new SETUP.EXE file in the command line. For example:

setup mysetup.inf

Command-Line Options for Windows 95 and Windows 98

The Cisco DialOut Utility includes two command-line options that you can use with Windows 95 and Windows 98.

Execute Options One Time

To use the options on a one-time basis, at the MS-DOS prompt, change to the directory in which your Cisco DialOut Utility files are installed and enter:

doututl /[a or p]

/a—Always Test. Test all ports as during the first time logic, but without launching the Modem Wizard.

/p—No popups. No error or message popups will appear on the screen.

Execute Options at Startup

To execute these options every time the Cisco DialOut Utility is started, follow these steps:

- Step 1** From the Windows desktop, click **Start>Settings>Taskbar**.
- Step 2** Click the **Start Menu Programs** tab.
- Step 3** Click **Advanced**.
- Step 4** Click **Programs>Startup**.
- Step 5** Right-click **Cisco DialOut**.
- Step 6** Click **Properties**.
- Step 7** Click the **Shortcut** tab.

Command-Line Options for Windows NT

Step 8 In the **Target** dialog box, enter the switch you want to use at the end of the following command line:

`C:\Program Files\CISCO SYSTEMS\DIALOUT.W95\DOUTUTL.EXE`

Available switches are:

/a—Always test. Test all ports upon as during the first time logic, but without launching the Modem Wizard.

/d—Generates a log file, `C:\DIALOUT.LOG`.

/p—No popups. No error or message popups will appear on the screen.

Note This switch might interfere with your automated scripts.

/t—Generates a trace file, `C:\DIALOUT.TRC`.

Step 9 Click **OK**. To have the switches take effect immediately, restart Windows.

Command-Line Options for Windows NT

The Cisco DialOut Utility includes two command-line options that you can use with Windows NT. Change to the directory in which your Cisco DialOut Utility files are installed and enter:

net start doutwnt */[t or d]*

t—Start a trace file. A trace file is a list, similar to a debug file, of every event that has occurred while you were running the utility.

d—Start a debug log. The debug log has very detailed event information in hexadecimal code.



Caution Do not use the debug option unless you are instructed by Cisco TAC to do so.

Sending Faxes with Multiple Pages

Under the test conditions within our laboratory, we have been successful at transmitting multiple fax pages, using simulated and public switched networks. However, your conditions might limit the number of fax pages that can be successfully transmitted. See the README.DOC file for more information on the effects of combined conditions on multiple faxes.

Adding Com Ports

These steps are required only if you will have more than one Cisco DialOut Utility com port:

- Step 1** After initial installation, click the Cisco DialOut Utility icon from the desktop's background (normally positioned at the lower right of your screen) and bring the Cisco DialOut Utility to the desktop.
- Step 2** Click **More**.
- Step 3** Click **Configure Ports** to pull down the existing port details.
- Step 4** Click **Add** and follow the steps in the chapter "Installing and Preconfiguring Cisco DialOut Utility."
- Step 5** When you have finished adding your new com port options, restart Windows so that the system will recognize them.
- Step 6** After you restart Windows, install or run your communications application.
- Step 7** Remember to reassign your communication application to use the newly added com port and modem, or it will default to the original com port. You might need to restart Windows after you install or reconfigure an application. If you are not sure you are entering the correct com port when configuring your application, launch the Cisco DialOut Utility by double-clicking the minimized DialOut icon and pointing to the com port list. Cisco DialOut Utility displays, for example, Com 3 or Com 4. You are now ready to use communication applications with the new com port.

Dial-Up Networking Using a NAS on a Different Segment

Note Beginning with Release 2.0 of the Cisco DialOut Utility, this procedure is automatic. The information in this section is needed only if the automatic system does not work.

If your NAS is not on the same network segment as your Cisco DialOut Utility and you are using Microsoft dial-up networking (PPP), follow these steps to manually add the route to the remote NAS' network.

Step 1 Click **Start>Programs>MS-DOS Prompt**.

Step 2 Enter:

route add *IP address of the access server* **mask** *IP address of the default gateway*

For example:

route add 10.10.2.0 mask 255.255.255.255 10.10.3.0

Note If you do not enter this information, Cisco DialOut Utility will return an Error 10054 (Connect - Reset).

Step 3 Exit DOS and make your dial-up networking connection as usual.

Troubleshooting for the System Administrator

This section contains troubleshooting information for the System Administrator. It assumes that you have thorough knowledge of Microsoft Windows, the NAS, and dial-up networking and that you have already tried the steps listed in the "Troubleshooting Information" chapter.

Troubleshooting Checklist

The following list presents potential symptoms that might occur and probable solutions while using Cisco DialOut Utility:

- Most issues that have been experienced are due to improper configuration and hardware setup. If you are experiencing difficulties, check NAS configurations, network interface cards (NICs), NAS cables, and modems. Make sure carrier lines are connected and on before requesting additional assistance.
- Use the ping test to make sure your NAS is reachable.
- Make sure your NAS has the correct Cisco IOS software image for the Cisco DialOut Utility. (See the README.DOC file for the correct image to select.)
- Port contention can be an issue if, for example, you have only 4 ports with modems to handle 10 people trying to use the Cisco DialOut Utility software. Just as with telephone lines, if the line is in use, that port is unavailable.
- Some computer systems, modems, and carrier lines might require 2 tries before an application can make a good connection. This can be caused by timing delays from noise on the line or by application and PC timing sensitivity.
- Adding multiple modems from the same manufacturer of the same model might cause a com port mismatch. This is a Microsoft issue and can occur without the presence of the Cisco DialOut Utility. Enter **show line** or **show users** to determine if a line is hung. If you experience a hanging line and you are using a Cisco AS2509 or Cisco AS2511, turn the modem off and on to purge the modem settings. **Clear line** will almost always clear the trouble. See the section “Clearing Potential Line Problems” for instructions.
- Excessive propagation delay over low-speed lines or lines with excessive noise can negatively affect the timing of Microsoft’s fax and dial-up networking and can cause the connection to fail.

Clearing Potential Line Problems

To clear any potential line problems, do not reload the NAS; instead, follow these steps:

Step 1 Enter:

```
clear line x
```

where x represents the line under use.

Step 2 Turn the modem off and on.

Connection Problems

If you experience connection problems while the Cisco DialOut Utility is running, follow these steps:

Step 1 Double-click the Cisco DialOut Utility icon in the status area to bring up the front panel.

Step 2 Click **More**.

Step 3 Click **Test All Com Ports**. If the test fails, follow the directions on the screen. If the test passes but you still experience problems, reboot the computer. If the test fails, note the results and check NAS configurations, NICs, NAS cables, and modems. Make sure carrier lines are connected and on.

A

- aaa authorization reverse access C-14
- AAA security C-4
- about this guide ix
- accounting C-4
- Add Com Port window 2-8, 3-9
- Add Port 3-9
- adding and configuring applications 2-17
- adding com ports 2-17, D-5
- address, TCP/IP 3-9
- Always Test D-3
- applications D-1
- audience ix
- authentication C-4
- authorization C-4
- Automated D-1
- automated installation D-1

B

- before contacting support 4-5
- busy conditions 4-2
- Bytes Received 3-15
- Bytes Transmitted 3-15

C

- Carrier Detect 3-5
- CD LED 3-5
- changing port parameters 3-8
- checklist 4-1
- Cisco 2509-2512 C-2
- Cisco AS2509 with local security C-4
- Cisco AS5200 C-7, C-10
- Cisco IOS C-1

- Cisco IOS software 1-4
- CiscoSecure C-14
- Class 2 faxing 1-4, C-1
- clear line 4-3, D-7, D-8
- clearing potential line problems D-8
- com port 3-3
- com port hangs 2-17, 4-4
- com port mismatch D-7
- Com Port Name 2-8, 3-9
- com port selector 3-4
- com port, adding D-5
- com ports, adding 2-17
- command-line options D-3, D-4
- communication software packages D-1
- Completed window 2-11
- compliance 1-3
- configuration sample, network 1-5
- Configure Ports window 3-8
- configuring fax or communication software 2-17
- configuring ports 3-8
- Connect to Access Server 3-12, 3-16
- Connect to Access Server Port 3-12, 3-16
- Connected Sound 3-12
- connection failed A-1
- connection problems 4-2, D-8
- consistent busy conditions 4-2
- contention D-7
- copying files 2-11

D

- debug 4-4, D-4
- default directory 2-6
- default path 2-6
- delay D-7
- deleting 2-18
- diagnostics 2-17, 4-4

- Dial Tone Sound 3-12
- dialup networking using a NAS on a different segment D-6
- directory 2-6
- Disconnect Current Session 3-18
- DNS name 2-8, 3-9
- Do Not Reboot 2-12
- document organization ix
- documentation CD-ROM xi
- DOUTALL.DLL B-3
- DOUTBUSY.WAV 3-12, B-4
- DOUTCONN.WAV B-4
- DOUTCONN.WAV 3-12
- DOUTDRV.SYS 1-1, B-3
- DOUTDRV.VXD 1-1, B-3
- DOUTDT.WAV 3-12, B-4
- DOUTDTx.WAV B-4
- DOUTLCL.DLL B-3
- DOUTNOAN.WAV 3-12, B-4
- DOUTNODT.WAV 3-12, B-4
- DOUTOPEN.WAV 3-12
- DOUTPOND.WAV B-4
- DOUTRING.WAV 3-12, B-4
- DOUTSTAR.WAV B-4
- DOUTTLN.DLL B-3
- DOUTUTL.EXE B-3
- DOUTUTL.HLP B-3
- DOUTWMG.DLL B-3
- DOUTWNT.EXE B-3
- driver, serial device 1-1
- drivers, network protocol 1-4
- DRV2TLN.DLL B-3

E

- ER LED 3-6
- Error 2-9, 3-13, 3-17
- error 3-4
- error 10054 (Connect - Reset) D-6

- Error Code 2
 - File Not Found 4-4
- Error code 69x (Windows NT) 4-5
- Error code greater than 1000 4-5
- error LED 3-6
- error messages A-1
- example network configuration 1-5

F

- faxes with multiple pages D-5
- features 1-2
- filenames B-3
- flow control 2-17
- front panel 3-3

G

- Good 2-9, 3-17
- gray LED 3-5, 3-6
- green LED 3-5, 3-6

H

- hanging line D-7
- hardware flow control 2-17
- hardware requirements 1-3
- host name 2-8
- host not found on network A-1
- HyperTerminal 1-1

I

- IETF 1-3
- In Session 3-15
- information for the System Administrator D-1
- installation 2-1
- IOS C-1
- IP address 3-15
- IP network protocol driver 1-4

L

- laptop 2-15
- Last Error 3-16
- LEDs 3-3, 3-4
- Line Busy Sound 3-12
- line noise D-7
- line problems D-8
- list of files B-3
- login 3-2
- low-speed lines D-7

M

- mask D-6
- maximizing the Cisco DialOut Utility 1-1
- MDCSMICA.INF B-3
- messages A-1
- Microsoft Windows architecture 1-3
- MNPIISP.INF B-3
- modem diagnostics 4-4
- modem properties 2-17, 4-4
- modem selection for Cisco AS5200 access server 2-16
- Modem Selection window 2-16
- modem sounds 3-11
- Modem Wizard 2-15
- More button 3-3

- More Functions window 3-6
- more information xi
- more than one com port D-5

N

- name, com port 3-9
- NAS configurations C-1
- NAS IP network address D-6
- network configuration sample 1-5
- network drives 2-7
- network protocol A-3
- network segment D-6
- new com port D-5
- NICs D-8
- no access server found on network A-2
- No Answer Sound 3-12
- No Dial Tone Sound 3-12
- no dial tone when dialing 4-5
- no dialtone A-2
- no popups D-3
- no servers defined for this port A-2
- noise D-7
- Not In Session 3-15

O

- online help xi
- Opening Server Sound 3-12
- overview 1-1

P

- password 4-1, A-3
- path 2-6, D-2
- Pending Receive 3-15

- Pending Send 3-16
- ping D-7
- ping test 4-2
- popups D-3
- Port 3-15
- port 2-8
- port contention 4-2, D-7
- port hangs 2-17, 4-4
- Port ID 2-9, 3-10
- port name 3-9
- PPP D-6
- propagation delay D-7
- propagation delays 4-3
- properties 2-17
- protocol analyzer 4-4

Q

- quick reference cards xi

R

- README.DOC xi, 4-1, B-4, D-1
- Reboot Now 2-12
- receive 3-15
- receive LED 3-5
- received 3-15
- red LED 3-5, 3-6
- Refresh 3-15
- Registry entries B-1
- Release Notes xi
- Remove Com Port 3-10
- remove completed 2-18
- Remove Port 3-10
- removing 2-18
- requirements 1-3
- Resolve Server ID to Address 3-12, 3-16
- Retain D-2

- RFC 2217 1-3
- Ringing Sound 3-12
- route add D-6
- Rx LED 3-5

S

- sample configuration file C-2, C-4, C-7, C-10
- sample configuration file for a Cisco 2509 C-10
- sample network configuration 1-5
- Save User Information in Memory 3-11
- security 3-3, A-3, C-4
- security failure message 4-5
- segment, network D-6
- selecting and configuring the modem 2-15
- send 3-16
- sending faxes with multiple pages D-5
- Server ID 2-8, 3-9
- service and support 4-1
- session closed by access server A-2
- SETUP D-2
- Setup window 2-12
- SETUP.EXE B-3
- SETUP.HLP B-3
- SETUP.LOG 4-5
- SETUP.W95 B-3
- SETUP.WNT B-3
- show line 4-3, D-7
- show users D-7
- software requirements 1-4
- sounds 3-11
- standard modem 2-16
- Statistics window 3-14, 3-15
- Status 3-15
- symptoms 4-4
- System Administrator D-1
- system messages A-1
- system requirements 1-3

T

- taskbar 1-1
- TCP/IP 1-2
- TCP/IP address 2-8, 3-9
- TCP/IP network protocol drivers 1-4
- TCP/IP protocol stack 4-5
- Telephone Number 3-16
- Telnet Extensions for Dialout C-1
- Terminal 4-2
- terminate and stay resident 1-2
- Test 3-12
- Test All Com Ports 3-16, D-8
- Test Connection window 2-9, 2-10, 3-13
- tested applications D-1
- Testing 3-17
- timeout error to access server A-3
- timing 4-2, D-7
- topics covered ix
- trace D-4
- trace tools 4-4
- transmit LED 3-5
- transmitted 3-15
- TRCDUMP.EXE B-4
- troubleshooting 4-1
- troubleshooting checklist 4-1
- troubleshooting checklist, system administrator D-7
- troubleshooting hints 4-5
- Tx LED 3-5

U

- unable to negotiate network protocol A-3
- unable to pass security check A-3
- UNC 2-7
- UNINSTAL.EXE B-3
- uninstalling 2-18
- universal naming code 2-7
- user profile for CiscoSecure C-14

W

- WAV files 3-11
- Windows diagnostics 4-4
- Windows operating systems 1-4
- Windows Registry entries B-1
- Wizard, Modem 2-15

Y

- Year 2000 compliance 1-3

