

NetDoubler™

Version 1.5.1

Installation and User's Manual

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San Jose, CA 95131-1601

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1

Introduction

What's in This Chapter

This chapter describes NetDoubler; the hardware and software requirements for NetDoubler; what types of server platforms NetDoubler is compatible with, and the meanings of the terms “server” and “client.”

Introducing NetDoubler

Thank you for purchasing NetDoubler for Macintosh computers, a network-acceleration utility for Ethernet, Fast Ethernet, FDDI, ATM, and certain wide area networks (WANs).

Designed for Apple Macintosh and Macintosh-compatible¹ power users, NetDoubler increases productivity by providing up to nine times greater performance when transferring files across a network with a Macintosh computer. An ideal enhancement to bandwidth-intensive desktop applications, NetDoubler transparently accelerates network access within all programs and is easy to install and manage.

Features

- ❑ Accelerates file transfers across standard Ethernet, Fast Ethernet, ATM, FDDI, and certain WANs. (NetDoubler is not designed for LocalTalk networks.)
- ❑ Operates free on certain Asanté Ethernet/Fast Ethernet cards and other NetDoubler-enabled configurations.
- ❑ Provides acceleration rates up to nine times faster than Ethernet when copying 1MB or larger files to a network server (using FDDI and MacBench 3.0).
- ❑ Provides transfer rates up to six times faster for large file opens and saves to/from a server on a Fast Ethernet system.

1. Throughout this manual the term “Macintosh” refers to both Apple Macintosh and Macintosh-compatible computers.

- ❑ Provides acceleration rates up to four times faster when copying files using desktop drag-and-drop on a Fast Ethernet network.
- ❑ Works with all Macintosh applications¹, not just a limited few.
- ❑ Accelerates transfers of files larger than 256K. Large 10MB+ files are fully accelerated across a network.
- ❑ Does not interfere with file transfers to/from workstations or servers that do not have NetDoubler installed.

Servers and Clients

NetDoubler is a family of software designed to accelerate file transfers between a Macintosh client and an AppleTalk services server. The term “AppleTalk services server” encompasses other Macintoshes running Personal File Sharing, a Macintosh Workgroup server running AppleShare server software, a Windows NT server running services for Macintosh, or a UNIX server running AppleTalk services software from IPT, Xinet, or Helios. In each instance, NetDoubler must be installed on the client and the appropriate NetDoubler software must be installed on the server.

- ❑ The term “client” refers to the Macintosh computer from which a file transfer, open, or save across the network is initiated.
- ❑ The term “server” refers to the computer being accessed by the client across the network.
- ❑ If someone on the network mounts your hard disk using Personal File Sharing and copies a file to or from your hard disk, during that file transfer your computer is considered a server and their computer is the client.

NetDoubler for Macintosh must be installed on every client where network acceleration is needed. NetDoubler must also be installed on the Macintosh server if you wish to see acceleration when transferring files to or from that server. Table 1 shows which versions of NetDoubler you must use on your server.

1. NetDoubler does not accelerate the few applications that do not use the AppleTalk File protocol. See Chapter 4 for more details.

Table 1: NetDoubler Versions for Servers

Vendor	Server Platforms Supported	Server Software	NetDoubler Software on Server
Helios	Data General, Hewlett-Packard, Digital Equipment, IBM, Motorola, SGI, Sun, Apple Network Server	EtherShare and EtherShare OPI	NetDoubler for EtherShare
Xinet	SGI, Sun	K-AShare and FullPress OPI	NetDoubler for K-AShare
IPT	Apple Network Server, Sun, IBM	uShare and CanOPI	NetDoubler for uShare
Asanté	Pentium/Pentium Pro/Pentium II CPU	Microsoft NT Server 3.51 or 4.0	NetDoubler NT (Pentium)
Asanté	DEC Alpha CPU	Microsoft NT Server 3.51 or 4.0	NetDoubler NT (DEC Alpha)
Asanté	Power Macintosh	AppleShare 4.2.2/ IP 5.0	NetDoubler for Macintosh
Asanté	Macintosh, Power Macintosh	Personal File Sharing	NetDoubler for Macintosh

NetDoubler-equipped computers can still interface with non-NetDoubler-equipped computers, but without acceleration.

The same software is normally installed on both Macintosh servers and clients. However, a separate serial number is needed for each computer, whether it is a server or a client. The only exceptions are computers that have NetDoubler-enabled network cards.

NetDoubler-Enabled Adapters

Normally, you need a serial number to activate NetDoubler on a client or Macintosh server. A serial number is included on the registration card in a retail-purchased box of NetDoubler.

However, as part of agreements between Asanté, UMAX, Power Computing, and Apple, special versions of NetDoubler have been created to work for free, without a serial number, with certain combinations of networking cards and computers. These configurations are referred to as NetDoubler-enabled. Special versions of NetDoubler, identified by a suffix letter, contain the code necessary to detect the built-in networking adapters on these NetDoubler-enabled computers.

Suffix	Use on:
A	PowerBooks, G3 and 3400, built-in Ethernet only
D	Demo version (any Mac or Mac-compatible)
P	Power Computing Corp. built-in Ethernet
U	UMAX Computer Corp. built-in Ethernet and S-100
(No letter)	Standard version for any Mac (with an ND serial number); or any Mac free with any Asanté 10/100 NetDoubler Edition PCI card, Asante 10/100 Nubus card, Asanté NIC-PCI card, or Asanté 10NIC-PCI card.

Table 2 on the next page lists the configurations that do and do not need serial numbers for NetDoubler, as well as the recommended versions of NetDoubler. Configurations that work for free are “NetDoubler-enabled.”

Table 2: NetDoubler-Enabled Configurations

Use this card	...on this computer	w/ ND version	...and NetDoubler
Built-in 10Mbps	Apple Macintosh and Mac-compatibles (except UMAX and Power Computing)	1.5	Needs serial number
Built-in 10Mbps	Power Computing PCI Mac-compatibles	1.5P	Free
Built-in 10Mbps	UMAX Supermac PCI Mac-compatibles	1.5U	Free
Built-in Mini-PCI™ Ethernet/ Modem	Apple PowerBook 3400 & PowerBook G3	1.5A	Free
Asanté Fast 10/100 PCI NetDoubler Ed. adapter	Apple Macintosh and all Mac-compatibles	1.5	Free
Asanté Fast 10/100 PCI Macintosh Ed. Adapter	Apple Macintosh and all Mac-compatibles	1.5	Needs serial number
Asanté Fast 10/100 Nubus Adapter	Apple Macintosh and all Mac-compatibles	1.5	Free
Asanté 10NIC-PCI and NIC-PCI	Apple Macintosh and all Mac-compatibles	1.5	Free
SuperMac E-100 100BASE-T card	UMAX SuperMac PCI Mac-compatibles	1.5U	Free
Third-party networking card	Power Computing PCI Mac-compatibles	1.5	Needs serial number
Third-party networking card	UMAX SuperMac PCI Mac-compatibles	1.5	Needs serial number

During startup, NetDoubler scans for the adapter card currently in use. If it determines that a NetDoubler-enabled configuration exists, NetDoubler activates without asking for a serial number (see “After Installing NetDoubler” on page 2-6).

If you need a different version of NetDoubler, you may download it free from Asanté’s Web site, www.asante.com, or FTP site, <ftp.asante.com>.

Do All of My Macs Need NetDoubler?

NetDoubler does not need to be installed on all Macintosh computers in a network. It does need to be installed on Macintosh clients or servers on which you want to accelerate file transfers.

For example, in Figure 1-1, file transfers between Clients #1, #2, #3, #4, and the server will be accelerated. However, Client #5 will not have acceleration when accessing the server or any of the other clients because NetDoubler is not installed. Similarly, none of the clients will have acceleration when transferring files to or from Client #5.

Both ends of any connection must have NetDoubler installed in order to have acceleration.

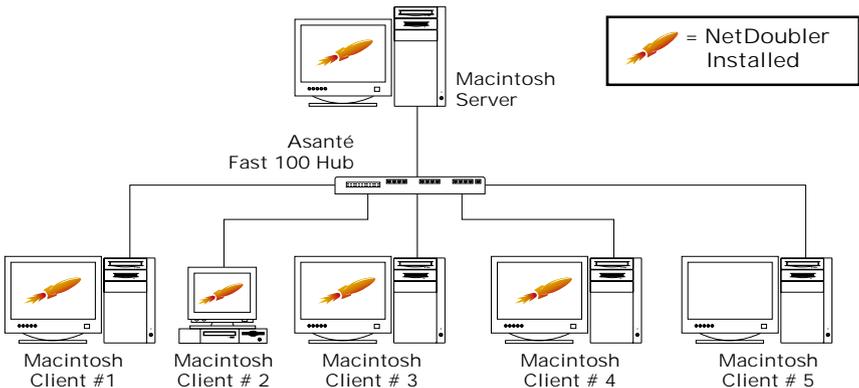


Figure 1-1 NetDoubler installation scenario

Do I Need to Buy More Copies of NetDoubler?

It depends:

No – if you are using a NetDoubler-enabled configuration (see page 1-4). You can use the same diskette to install NetDoubler on all Mac computers.

Yes – if you want to install NetDoubler on computers that do not meet the above qualifications. You must purchase a separate copy of NetDoubler for each computer. NetDoubler is sold in packages of 1, 2, 5, and 20 user versions.

Hardware Requirements

- Any 68030 or 68040 Macintosh or PowerPC™ Macintosh computer that supports Open Transport
- 3.5MB RAM on an AppleShare server, 1MB or 3.5MB RAM (depending on configuration) on the client
- Dedicated AppleShare servers; minimum of 24MB installed RAM
- Clients; minimum of 8MB installed RAM (12MB recommended for improved performance)
- 190K disk space
- Built-in 10Mbps Ethernet or any brand adapter card for 10Mbps Ethernet, 100Mbps Fast Ethernet, FDDI, or ATM
- For WANs — a router running the bridging function (e.g., WANs using ISDN or T-1 lines with routers to connect two Ethernet networks)
- For network routers, bridges, WANs and adapters — simultaneous support of AppleTalk Transport Protocol, TCP/IP, and Open Transport (typical on almost every Macintosh network) required

Software Requirements

- System 7.5.3 and Open Transport 1.1 (or later) for PCI and Nubus Macintosh computers
- Operating System 8.0 and 8.1 Supported

Dedicated AppleShare Server Requirements

- Dedicated AppleShare servers must be PowerPC Macintosh-compatible computers
- AppleShare version 4.2.2 or newer

UNIX Servers Providing AppleShare Services

- ❑ **Some UNIX platforms can run software that turns them into high-performance AppleShare servers (e.g., IPT's uShare, Xinet's K-AShare, and Helios's EtherShare); special versions of NetDoubler are available to install on these servers**

Windows NT Servers

- ❑ **Windows NT servers should use NetDoubler for NT servers, which is available separately from Asanté**

MS-DOS, Windows, Windows 95, and Windows NT Clients

- ❑ **These client platforms are not currently supported**

2

Installation

What's in This Chapter

This chapter describes how to prepare your Macintosh for the installation of NetDoubler, what protocols are and how to select them, and how to configure your AppleTalk and TCP/IP control panels. It also describes user and group information for AppleShare servers.

Before You Start

- ❑ **Do not lose your NetDoubler serial number(s)!**
If you purchased NetDoubler separately, you received a warranty registration card containing one or more serial numbers (depending on the number of licensed users). Write the serial number(s) on the inside front cover of the NetDoubler manual for reference. Complete and mail the appropriate half of the warranty registration card and keep the other half in a safe place.

You must have:

- ❑ System 7.5.3 or higher installed on your Macintosh
- ❑ OpenTransport version 1.1 or later
- ❑ An operational network and an AppleTalk Services server

Installation Overview

The installation of NetDoubler consists of the following procedures:

- ❑ Configuring your AppleTalk control panel (page 2-2)
- ❑ Configuring your TCP/IP control panel (page 2-2)
- ❑ Installing NetDoubler from the diskette (page 2-2)
- ❑ Running NetDoubler either automatically with NetDoubler-enabled network adapters or by entering the NetDoubler serial number with other network adapters (page 2-6)
- ❑ Configuring users and groups information (only if you're installing NetDoubler on an AppleShare server) (page 2-9)

Configuring Your AppleTalk and TCP/IP Control Panels

- ❑ Macintosh computers normally communicate with one another by using the ATP¹ protocol. NetDoubler uses as many as three protocols: ATP, ADSP,² and TCP/IP.³ The first two are mandatory; the third is optional but provides the best performance.
- ❑ As a minimum, you must ensure that your AppleTalk control panel is properly configured so you can use the ATP and ADSP protocols. If you are currently using your network, you have already configured the AppleTalk control panel and can skip this step.
- ❑ If you also configure the TCP/IP control panel, you can set NetDoubler to use the TCP/IP protocol and obtain even more acceleration. This is optional; if you do not configure TCP/IP, NetDoubler will remain in ADSP mode, providing about two-thirds as much acceleration as TCP/IP.
- ❑ Both control panels should be set to the same network interface device you are using (for example, Ethernet Slot A1).
- ❑ If you have not previously configured your AppleTalk or TCP/IP control panels, see Appendix A for instructions. After configuring the AppleTalk and/or TCP/IP control panels, return to this page to continue the installation.

Installing NetDoubler

- ❑ If you have just changed your AppleTalk or TCP/IP control panels, restart your Macintosh before installing NetDoubler.
- ❑ Before installing NetDoubler on a Macintosh AppleShare server or Workgroup server, make sure your AppleShare server software is not running.
- ❑ If you're installing NetDoubler on a client Mac, turn Personal File Sharing off.

1. ATP (AppleTalk Transaction Protocol)—The standard method used to communicate among Macintosh computers and printers across a network. It's easy to use, but not as fast as ADSP or TCP/IP.

2. ADSP (Apple Data Stream Protocol)—A different AppleTalk protocol for quickly moving large amounts of data across an EtherTalk network. No additional configuration is required.

3. TCP/IP (Transmission Control Protocol/Internet Protocol)—A fast way of moving data (faster than ADSP) across an Ethernet network. Special configuration is required. See Appendix A for details.

To install NetDoubler:

- 1** Insert the NetDoubler installation diskette into your Macintosh.
- 2** Double-click the **NetDoubler Installer** icon. The NetDoubler splash screen appears.
- 3** Click **Continue**. The Install Quick Start dialog box appears as shown in Figure 2-1.

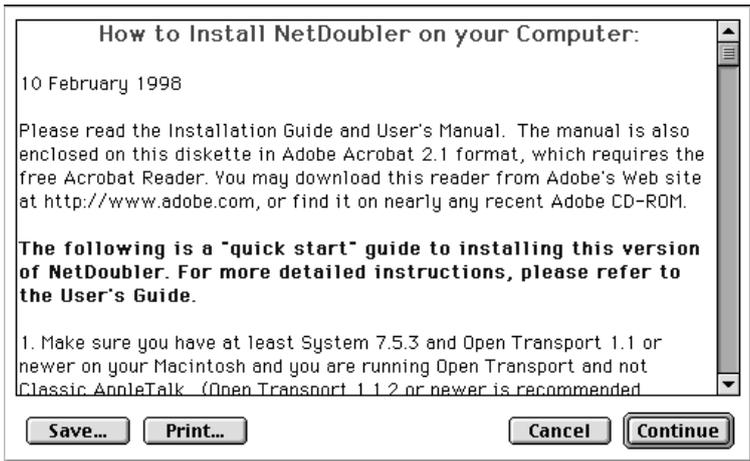


Figure 2-1 Install Quick Start dialog box

- 4 Click **Continue**. The following installation dialog box appears.

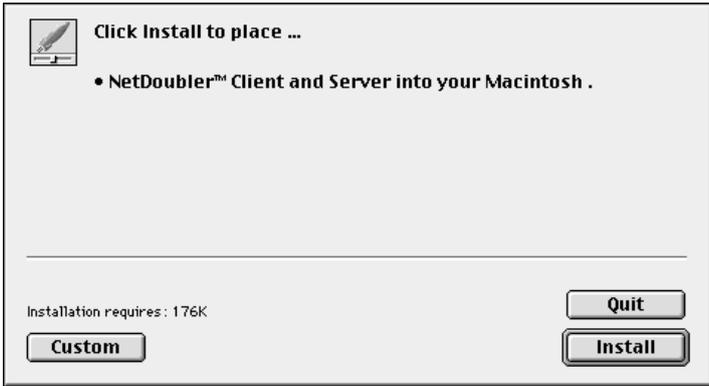


Figure 2-2 NetDoubler Client and Server Installation dialog box

- 5 Select a choice of installation — **Install** or **Custom**. The default is **Install**.

Install

- Click **Install** to install both the ~NetDoubler control panel¹ and NetDoubler Server Module on your Macintosh. This option requires a total of 3.5MB of RAM.
- Select this option if you are installing NetDoubler on a dedicated AppleShare server.
- Select this option if you are installing NetDoubler on a client running personal file sharing and want other users to be able to copy files from the client using NetDoubler acceleration.

1. This is often referred to as the Client Module.

Custom

- To select this option, click **Custom**. The Installation dialog box appears with **NetDoubler (Control Panel for Client)** selected as shown in Figure 2-3.

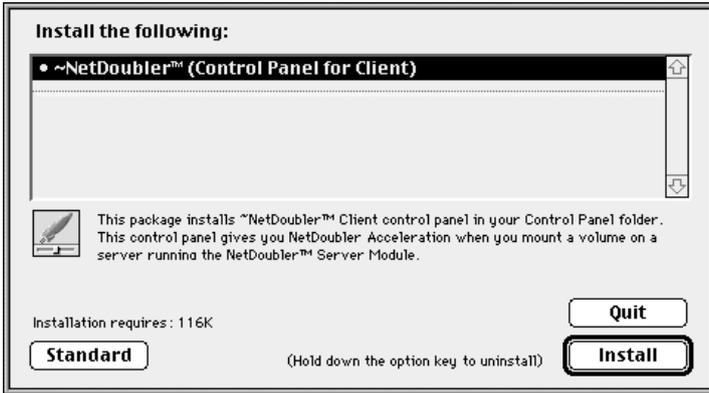


Figure 2-3 Custom Installation dialog box

- △ **Note:** If you want to return to the default install without performing a custom install, click **Standard**.
 - Click **Install**. This installs only the ~NetDoubler control panel. This option uses only 1MB of RAM, instead of approximately 3.5MB as a default installation does.
 - Select this option only if you are installing NetDoubler on a client. This client has acceleration when mounting other computers that have a NetDoubler Server Module installed. However, other users who mount this client's hard disk will not have NetDoubler acceleration.
- 6 The following message appears.

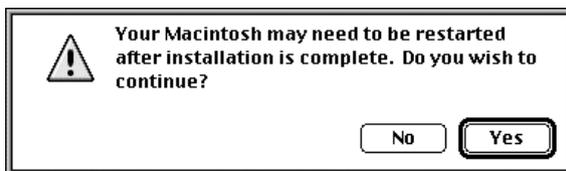


Figure 2-4 Restart message box

- 7 Click **Yes** to continue. The selected files are then installed. Note that the installer may state that it has installed up to four files. This is an anomaly of the installer and should be ignored. The following message appears.



Figure 2-5 Installation successful dialog box

- 8 Click **Restart** to activate NetDoubler. During startup, the ~NetDoubler control panel icon temporarily appears at the bottom of your screen, and the computer may pause for up to ten seconds while NetDoubler initializes Open Transport. The Desktop will then appear. If you installed the NetDoubler Server Module, it will start up by itself a few seconds after the Desktop appears.

After Installing NetDoubler

If you are using a NetDoubler-enabled card on your computer:

- NetDoubler is automatically enabled and running on your computer. You may now go directly to Chapter 3 for information on controlling NetDoubler.
- You can check to ensure that NetDoubler has recognized your NetDoubler-enabled adapter (page 1-4) by going to the ~NetDoubler control panel and clicking More.... This brings up the NetDoubler Information Window, where you see the word **None** in the Serial Number information line. In the example shown in Figure 2-7 on page 2-8, the computer is using an Asanté Fast NuBus card.

If you are using a network adapter other than the above (such as built-in Ethernet):

- Enter the serial number that came with your copy of NetDoubler (see “Entering the Serial Number” on page page 2-9). It is located on the NetDoubler warranty registration card.

If you are not connected to a network or are connected to LocalTalk through the printer port or modem port:

- ❑ NetDoubler is temporarily deactivated. To reactivate it, select **Built-In Ethernet** or a network card in the AppleTalk control panel and restart.

If you are not sure what type of network adapter you have installed:

- ❑ Open the ~NetDoubler control panel (in the Apple Menu, Control Panels).
- ❑ If a button labeled **More...** is displayed on the control panel (see Figure 2-6), NetDoubler has recognized that you are using a NetDoubler-enabled adapter. NetDoubler is automatically enabled; no serial number is needed.
- ❑ If a button labeled **Serial No.** is displayed, you are using another type of network adapter and need to enter the serial number that came with your copy of NetDoubler. Follow the instructions on page 2-9.

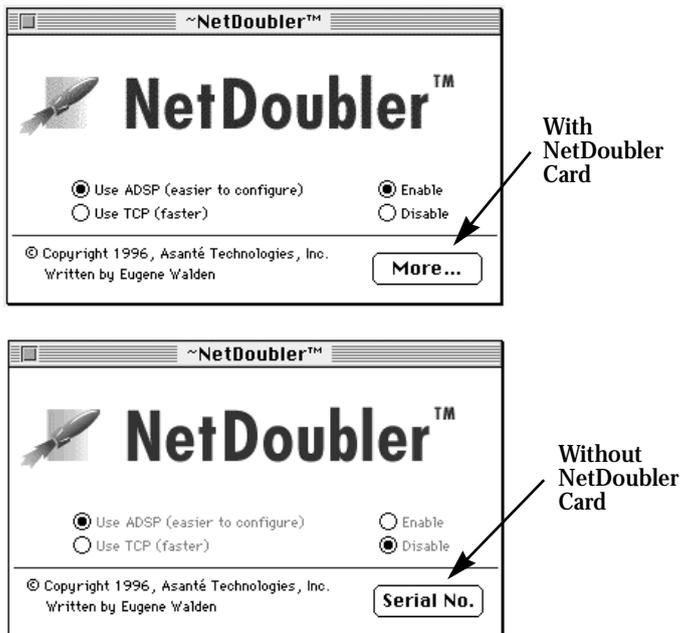


Figure 2-6 NetDoubler with and without a NetDoubler-enabled card installed

NetDoubler Information Window

If you have a NetDoubler-enabled adapter card installed and in use, click **More...** on the ~NetDoubler control panel to open the NetDoubler information window.

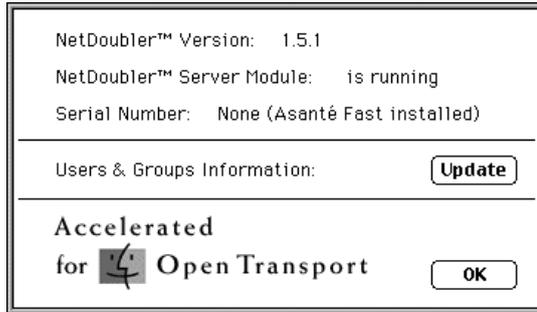


Figure 2-7 NetDoubler Information window

The NetDoubler information window displays the following information:

- ❑ **NetDoubler Version** — Current version of ~NetDoubler control panel installed on the Macintosh.
- ❑ **NetDoubler Server Module** — Status of the NetDoubler Server Module on your computer (running/not running).
- ❑ **Serial Number** — This normally displays the 20-character NetDoubler serial number if one was previously entered. However, if you installed and selected a NetDoubler-enabled adapter, **None** is displayed, along with the NetDoubler-enabled configuration detected. Possible displays are:
 - ndbl1a2b3c4d5e6f7890 i.e., a NetDoubler serial number
 - None (Asanté Fast Ethernet installed)
 - None (Umax bundle)
 - None (PowerBook bundle)
 - None (Power Computing bundle)
 - Demo Demo Demo
- ❑ **Users and Groups Information** — This button should only be used on an AppleShare Server. See page page 2-9 for more information.

Entering the NetDoubler Serial Number

- 1 Open the **~NetDoubler** control panel (from the **Apple Menu, Control Panels**). It is usually at the bottom of the **Control Panels** menu.
- 2 Click **Serial No.** The following window appears.

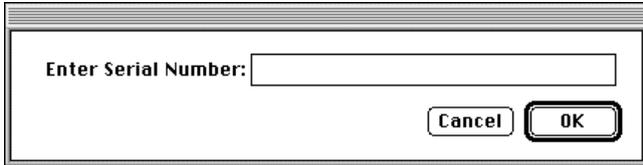


Figure 2-8 Enter Serial Number window

- 3 Type the serial number that came with your copy of NetDoubler (located on the warranty registration card). The first four characters are the lowercase letters **ndbl**. The remaining characters are a mixture of numbers and letters, **a** through **f**.
- 4 Click **OK**.
If you have entered an incorrect serial number you are prompted to reenter the number. If the number is correct, NetDoubler prompts you to restart your computer.
- 5 Click **OK**.
- 6 Restart your computer.

If you need to change the serial number later, refer to page 1-6 for instructions.

Users and Groups Information

- ▲ Follow these steps only if you are installing NetDoubler on an AppleShare server or running an international version of the Mac OS. You only have to perform this task once.
- 1 Open the **~NetDoubler** control panel.
 - 2 Click **More....** or **Serial No.**
 - 3 Click **Update**.
The standard Macintosh Open dialog box appears.

- 4 Locate the **Users & Groups** data file and click **Open**. (This file is usually located in your server's Preferences folder, in the System Folder.)
- 5 Enter your AppleShare administrator's password if prompted.
- 6 Click **OK**.
- 7 Close all dialog boxes.

Updates to NetDoubler

Any maintenance updates to NetDoubler are posted on Asanté's World Wide Web site (see Appendix B).

When running the installer on a newer version, all of your current settings and serial numbers are preserved and the older version of NetDoubler is removed.

To Remove NetDoubler

Perform the following procedure if you wish to remove NetDoubler from your system.

- Δ *Note:* This removes the ~NetDoubler control panel whether it is located in the Control Panels folder or the Disabled Control Panels folder, and it removes the NetDoubler Server Module from the Startup Items folder and the Disabled Startup Items folder. This feature prevents the user from accidentally running two different versions of NetDoubler.

To remove NetDoubler:

- 1 Insert the NetDoubler installation diskette into your Macintosh.
- 2 Double-click the **NetDoubler Installer** icon. The NetDoubler splash screen appears.
- 3 Click **Continue**. The **Install Quick Start** dialog box appears as shown in Figure 2-9.

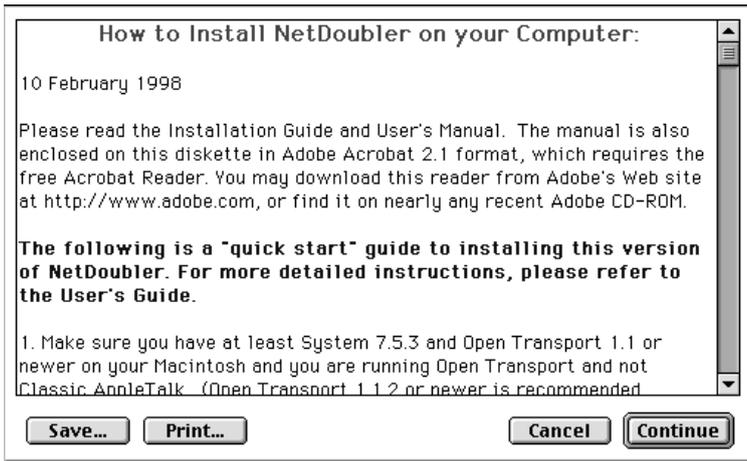


Figure 2-9 Install Quick Start dialog box

4 Click Continue. The following installation dialog appears.

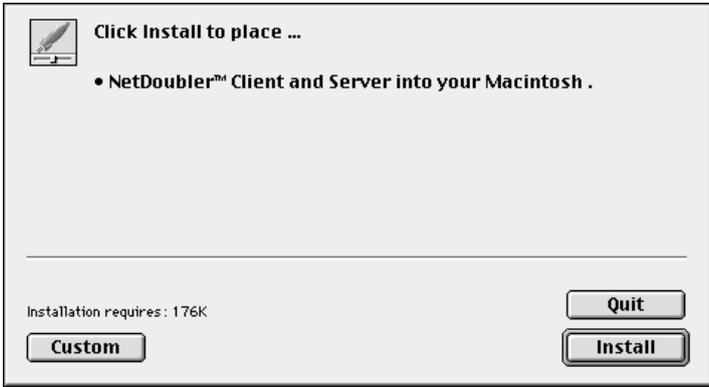


Figure 2-10 NetDoubler Client and Server Installation dialog box

5 Click Custom. The Install dialog appears with NetDoubler (Control Panel for Client) selected as shown in Figure 2-11.

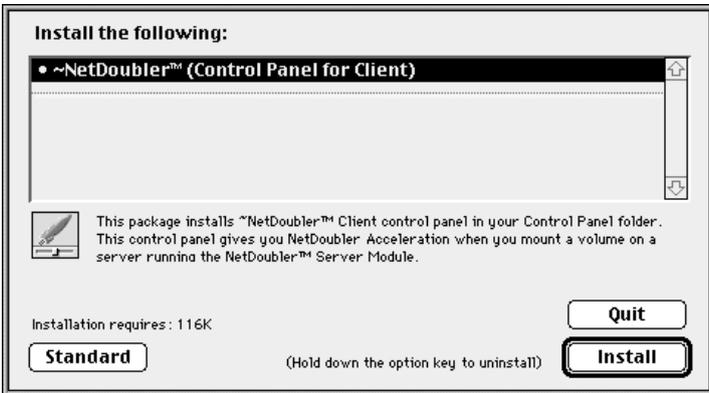


Figure 2-11 Install Control Panel for Client dialog box

- 6 Hold down the **Command** and **Option** keys. The dialog box will change to the **Uninstall** dialog box as shown in Figure 2-12.

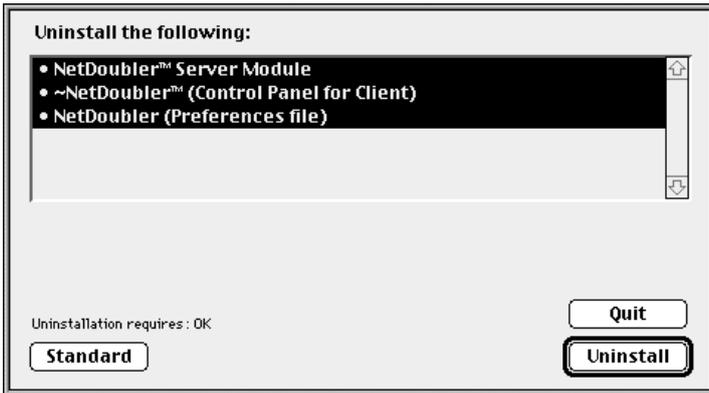


Figure 2-12 Uninstall dialog box

- 7 Continue to hold these two keys down while you select the files you want to remove.
- 8 Continue to hold these two keys down while you click **Uninstall**.
- 9 You may now release the **Command** and **Option** keys. The following message appears.



Figure 2-13 Removal of items message box

- 10 Click **OK** to continue. The uninstall program removes the file(s) and the following message appears.



Figure 2-14 Uninstallation successful message box

- 11 Click **Restart** to complete the removal of NetDoubler.

3

Using NetDoubler

What's in this Chapter

This chapter describes the difference between NetDoubler's client and server modules; how to tell if NetDoubler is running on your computer; how to turn NetDoubler on and off, and how to use the NetDoubler control panel.

Client and Server Modules

NetDoubler consists of a client module and a server module.

Client Module

- ❑ This is a simple NetDoubler control panel that is automatically placed in your system's Control Panels folder upon installation.
- ❑ Use this control panel to turn NetDoubler on or off, or to switch between protocols at any time (except during a file transfer). There is no need to restart your system or close the control panel; the changes are immediate.

Server Module

- ❑ This is a background application that is automatically placed in your system's Startup Items folder upon installation.



Figure 3-1 Client module and server module icons

- △ **Note:** In this manual, the term “client” refers to the computer at which you are working. The term “server” refers to the computer you are accessing over the network. Its icon appears on your desktop. See Chapter 1 for more information.

NetDoubler Acceleration Symbol

After proper setup, NetDoubler runs automatically. When NetDoubler is running during a file transfer on your Macintosh, the NetDoubler acceleration symbol flashes in the upper left corner of the screen next to the Apple menu, as shown in Figure 3-2.



Figure 3-2 NetDoubler acceleration symbol

- △ *Note:* The NetDoubler acceleration symbol appears only on the client's Macintosh during a file transfer, and only if NetDoubler is enabled on the client's control panel *and* the NetDoubler server module is running on the server Macintosh.

Turning NetDoubler On or Off

Client Procedures

When you enable or disable NetDoubler with the control panel, you are only turning the client module on or off, you are not affecting your own server module, or the server's server module (which, if installed, is always running).

- 1** Open the NetDoubler control panel.
- 2** Select **Enable** to turn NetDoubler, **Disable** to turn it off.
- 3** Close the control panel. There is no need to restart your system after these changes.

Server Procedures

Whenever you start up your Macintosh, the NetDoubler server module (if installed) automatically starts and runs in the background. The server module requires the presence of the ~NetDoubler control panel to properly activate.

To disable NetDoubler on a Macintosh server, the NetDoubler server module needs to be removed from the system's Startup Items folder.

- 1** Open the Startup Items folder (in the System Folder).
- 2** Remove the NetDoubler Server Utility from the folder and place it on your desktop.
- 3** Restart your system.

Switching Between Protocols

NetDoubler can use either Apple Data Stream Protocol (ADSP) or Transmission Control Protocol/Internet Protocol (TCP/IP), as shown in Figure 3-3.

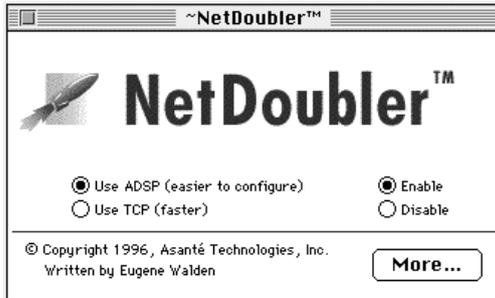


Figure 3-3 NetDoubler control panel

ADSP

When using ADSP, no special configuration is needed on your Macintosh. However, ADSP is slower than TCP/IP. The ADSP mode works on all Macintosh networks that support AppleTalk (including Apple's Internet Router software).

- 1** Open the NetDoubler control panel.
- 2** Select Use ADSP (easier to configure).
- 3** Close the control panel. There is no need to restart your system.

TCP/IP

If TCP/IP has not been configured on your system, the Use TCP button is grayed out and cannot be selected (see Appendix A for instructions on configuring the TCP/IP control panel). You should use the TCP/IP setting because it provides maximum performance; however, some network routers do not support TCP/IP (in this case, use the ADSP option).

- 1** Open the NetDoubler control panel.
- 2** Select TCP/IP.
- 3** Close the control panel. There is no need to restart your system.

4

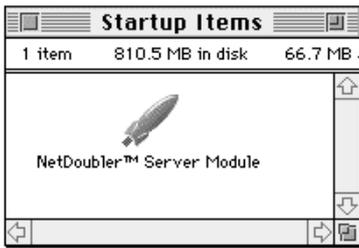
Troubleshooting

Acceleration Problems

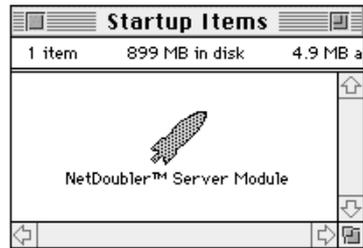
If you are using NetDoubler and do not have acceleration, check to see if these conditions are present.

- ✓ The NetDoubler acceleration symbol is not appearing.
This symbol (see page 3-2) should appear during file transfers when NetDoubler is enabled. If it does not, it is remotely possible that your NetDoubler preferences file has been corrupted by an earlier system crash. You can try deleting the NetDoubler Preferences file, found in the Preferences Folder in the System Folder, but first write down your serial number, which is stored in the Preferences file. You can find your NetDoubler serial number by clicking More... in the NetDoubler control panel (see page 3-3). When you have written down your serial number and deleted the Preferences file, restart your Mac, and, if necessary, reenter your serial number. This symptom will also occur if you are moving an application across the network (See "Application resources are not accelerated" on page 4-4).
- ✓ The NetDoubler Control Panel is turned off
Open the NetDoubler control panel on your Macintosh (in the Apple Menu – Control Panels) and make sure Enable is selected.

- ✓ The Server Module is not running
On the server Macintosh, open the NetDoubler control panel and make sure **Enable** is selected. Click **More...** The dialog box should read: **NetDoubler Server Module is running**. If it does not, you need to manually start the server as follows:
 - Double-click the **NetDoubler Server Module** icon (located in the **Startup items** folder in the **System Folder** on the server Macintosh). After a few seconds the **NetDoubler Server Module** is ready to use.



Server Module is not running



Server Module is running

Figure 4-1 NetDoubler Server Module icon

If you are running a UNIX or Windows NT server, the server should be running the appropriate version of NetDoubler services.

- ✓ You have cross-mounted volumes.
You may have cross-mounted volumes with another Macintosh. This is the condition when Client A mounts Client B's volume (hard disk) while Client B mounts Client A's volume. Due to a current limitation in the Macintosh operating system, NetDoubler cannot support cross-mounting. Both computers must unmount the other's volume in order for NetDoubler acceleration to reactivate, then one user may remount the other's volume if desired.
- ✓ Your operating system is not properly installed.
Your Control Panels folder should include the following items: AppleTalk, TCP/IP, and NetDoubler. If your Macintosh is acting as a server by using Personal File Sharing, you also need File Sharing Monitor, Sharing Setup, and Users and Groups.

- ✓ You are running Classic AppleTalk.
You should not have a control panel named MacTCP or Network on your Macintosh. If you do, you are not running Open Transport. Open the folder labeled **Apple Extras** and double-click the application **AppleTalk Network Selector**. Click **Use Open Transport Networking**, then quit the application and restart your computer. Recheck your AppleTalk and TCP/IP control panels.

- ✓ The AppleTalk or TCP/IP control panel is not properly configured.

This problem often causes NetDoubler to erroneously ask for a serial number. Ensure that your AppleTalk control panel is set to your installed networking card via the pull-down menu. If you only have built-in Ethernet, that option should be selected. After changing this setting, restart your Macintosh. Recheck your TCP/IP control panel to make sure it is also set properly. Recheck your NetDoubler control panel to make sure NetDoubler is enabled.

- ✓ Open Transport is improperly installed.
The following Open Transport files should be in your system's Extensions folder:

Open Tpt AppleTalk Library
Open Tpt Internet Library
Open Transport Library
OpenTptAppleTalkLib
OpenTptInternetLib

All of these files must be versions 1.1 or later. Systems 7.5.3 through 7.6.1 work better with Open Transport 1.1.2 than with previous versions of Open Transport. Mac OS 8 should be used with Open Transport 1.2. If any of the above files are missing or are older versions, reinstall Open Transport. Refer to page 4-5 for additional guidance.

- ✓ Open Transport is incompatible.
If you are having performance problems with certain applications that use PPP, SLIP or AOL Link, you must upgrade to the most recent versions of these drivers.

A few applications (such as Retrospect Remote and FileMaker Pro) bypass Apple's Finder operations and the AppleTalk File Protocol; they do not need AppleShare to reach files and volumes across a network. As a result, NetDoubler cannot accelerate their network access.

However, NetDoubler *can* accelerate the standard Retrospect (not Remote) application if you write a Retrospect script to mount the distant volume on the desktop and then back it up as if it were a local volume. Likewise, Filemaker Pro users can instead use the Open command to mount files on a distant volume if that volume is first mounted on the desktop. Large files are then accelerated.

- ✓ The NetDoubler icon is crossed out during startup. If you selected the modem port or printer port on the AppleTalk control panel, NetDoubler will be temporarily disabled at startup. Ensure that your network card of choice is selected and saved on the AppleTalk control panel, then restart.
- ✓ Your Macintosh operating system is damaged. Some instances of unusual behavior have been found to be caused by a corrupted operating system. This corruption often remains even after you have installed a new operating system. The best cure is to do a “clean install” of the operating system. On System 7.5.3 and 7.5.5 this means running Apple’s Installer program for the Mac OS, but just before clicking Install, press Command-Shift-K. This causes a new dialog box to appear. Select the Clean Install option, and continue with the installation. With System 7.6 or later, you can select the Clean Install option in the opening installation dialog box. This places a completely new, clean System Folder on your hard disk and also renames your current system folder to Old System Folder or Previous System Folder. Use the new System Folder when you restart your computer.
- ✓ Your AppleShare Prep file is damaged. On your Mac client, go to the Preferences folder in the System folder, and drag the AppleShare Prep file to the desktop. Restart your computer. You will need to reset your default Chooser settings.
- ✓ Application resources are not accelerated. Macintosh files are made up of data and resource forks. Work files that are created by an application are nearly pure data forks. NetDoubler accelerates the transmission of data forks across the network. The application itself, however, is made up of nearly 100% resource forks. NetDoubler is not designed to accelerate resource forks, so when dragging a large application from the server to the client, for example, you will see no acceleration.

Error Messages and Solutions

Enter your AppleShare Administrator's Password.

You probably have installed NetDoubler on an AppleShare server or are using an international version of the Mac OS. NetDoubler is having trouble locating your AppleShare User and Groups file. You need to help NetDoubler locate this file so it can store this location in its NetDoubler Preferences file. Follow the instructions in Users and Groups Information (page 2-9).

Your copy of NetDoubler has expired. Please get an update.
You probably have a demo or beta version of NetDoubler. Contact Asanté Technical Support (see Appendix B) to get an updated demo version.

NetDoubler couldn't be enabled because Open Transport is missing.

You should be running Open Transport 1.1 or later, not Classic AppleTalk. See "You are Running Classic AppleTalk" (page 4-3).

NetDoubler couldn't open ADSP. Check your configuration in the control panel.

Verify that your AppleTalk connection is set to the proper card in your AppleTalk control panel. Then check to see that your network is properly operating with NetDoubler disabled in the control panel.

NetDoubler cannot use TCP/IP. Check your TCP/IP configuration.

You may be accessing a server through a bridge or router that does not support TCP/IP. If you want to use TCP/IP, open the TCP/IP control panel and ensure that TCP/IP is configured with the proper network interface. Also ensure that the IP address configuration is valid. Once you have reconfigured your TCP/IP address, restart your Macintosh.

Try using a shareware program such as MacTCP Ping to *ping* the server running NetDoubler. This will test if TCP/IP packets can travel between the server and client. Consult Appendix A or your network administrator for more information.

If you do not want to use TCP/IP, fix this error by opening the NetDoubler control panel and changing the protocol to ADSP.

It is recommended that you install Open Transport 1.1 or later. You have an earlier version installed.

See “**Software Minimum Requirements**” (page 1-7).

The serial number for NetDoubler is missing or invalid.

This message appears if:

- 1** You do not have a NetDoubler-enabled adapter (see page 1-4) installed on your Macintosh (or you have not restarted your Mac after resetting the AppleTalk control panel to the NetDoubler-enabled adapter card).
- 2** You have not entered a serial number for a non-NetDoubler-enabled adapter. Open the **NetDoubler Control Panel** and click **Serial No.** Enter the serial number that came with your copy of NetDoubler (located on either half of the warranty registration card), then restart.

The Macintosh named “ X ” is using the same NetDoubler serial number that you are using. NetDoubler will be disabled on this machine.

This occurs when someone on your network is running a duplicate of the software with your NetDoubler serial number. Every Macintosh not using a NetDoubler-enabled adapter card must have a separate, unique serial number for NetDoubler. The error message should indicate which Macintosh has the same NetDoubler serial number as your Macintosh. Enter a different serial number on one of these Macintosh computers. New serial numbers can be obtained by purchasing additional copies of NetDoubler. To enter a different serial number, drag the NetDoubler Preferences document on one of the Macintosh computers (located in the System Folder’s Preferences folder) into the trash, then restart that computer. Once you restart, open the NetDoubler Control Panel and click Serial No. Enter a different serial number for this computer.

The IP address for this server doesn't appear to be reachable. Check the IP address in your TCP/IP control panel and in the server's control panel.

This means your Macintosh cannot communicate with the server across TCP/IP. There are three possible problems: (1) Your Macintosh computer's IP address is incorrect; (2) Your Macintosh computer's TCP/IP control panel is configured for a different network than your server's; or (3) Your Macintosh computer's TCP/IP gateway (router) information is not set correctly.

When NetDoubler encounters this scenario, it automatically switches to ADSP. If you want to use TCP/IP, reconfigure your IP addresses and verify that the two Macintosh computers can communicate via TCP/IP (using a utility such as MacTCP Ping.)

Once you have verified that you can communicate between the two Macintosh computers using TCP/IP, restart both machines and try again.

You have changed the AppleTalk connection. NetDoubler will be disabled until you restart.

If you switch to the printer port or modem port using the AppleTalk control panel, you will get this message. On a Macintosh running only the NetDoubler Client Module, you can switch back to an Ethernet or faster network and NetDoubler will automatically reconfigure itself within 60 seconds (typically 10 seconds). If you are running the Server Module, you need to restart your Macintosh for NetDoubler enable itself.

You have changed the TCP connection. NetDoubler will use ADSP until you restart.

If you change your TCP/IP control panel to a nonfunctional setting, NetDoubler will automatically switch to ADSP mode. On a Macintosh running only the NetDoubler Client Module, reconfiguring the TCP/IP control panel to a proper setting often allows NetDoubler to reactivate TCP. Wait approximately 30 seconds, then open the NetDoubler control panel. If the Use TCP button is available, NetDoubler has reactivated TCP. On a server you must restart your Macintosh if you change TCP settings.

A

Configuring the AppleTalk and TCP/IP Control Panels

Configuring the AppleTalk Control Panel

To configure the AppleTalk control panel:

- 1** Open the Apple menu.
- 2** Select **AppleTalk** from the Control Panels menu.
The AppleTalk control panel appears, as shown in Figure A-1.

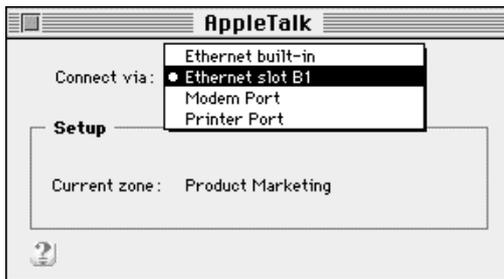


Figure A-1 AppleTalk control panel

- 3 Open the pull-down menu next to **Connect via:** and select the network card you have installed in your computer.¹ (The name of your card slot may differ from the name in Figure A-1.)
- 4 After a few seconds your computer will either: (1) Display the zone you are currently in, (2) State that there are no zones, or (3) State that there is an error (typically caused by not already having an active network plugged into your Macintosh).
- 5 Close the control panel and click **Save** when prompted.

Configuring the TCP/IP Control Panel

- ▲ Before attempting the following TCP/IP configuration, consult your network administrator. These directions are for networks that are not already configured for TCP/IP. If your TCP/IP control panel is already properly configured, do not make any changes to it and skip these instructions.

- 1 Open the **Apple Menu**.
- 2 Select **TCP/IP** from the **Control Panels** menu.
The TCP/IP control panel appears, as shown below.

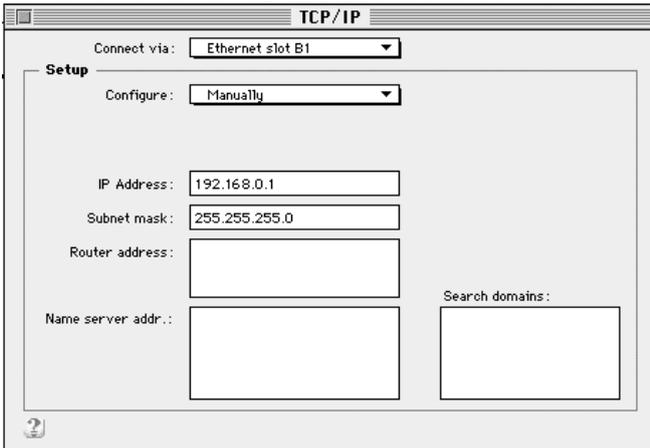


Figure A-2 TCP/IP control panel

1. If you have installed a network card in your computer, it will appear in the menu as Ethernet Slot XX, where XX is A1, B1, or some other slot where your card resides. If you are using the Ethernet built into your computer's motherboard, select **Ethernet built-in**. If your computer has no built-in ethernet and you are using a network card, select "Ethernet."

- 3** Open the pull-down menu next to **Connect via:** and select the same network interface that you chose on the Apple-Talk control panel.
- 4** Set the **Configure:** menu to **Manually**.
- 5** Type **192.168.0.1** for the IP address of the first Macintosh. For each subsequent Macintosh, increase the last digit of the IP address by one (e.g., the second Macintosh would be 192.168.0.2). The last digit can be as high as 253.
- 6** Type **255.255.255.0** in the **Subnet mask** text box.
- 7** Close the TCP/IP control panel and click **Save** when prompted.
- 8** Restart your Macintosh.
- 9** Do the same with the other Macs running NetDoubler.
- 10** If you have UNIX or Windows NT-based servers running NetDoubler, ensure that they are also properly set up for TCP/IP.

B

Technical Support

To contact Asanté Technical Support:

Telephone	(800) 622-7464
	(801) 566-8991
Fax	(801) 566-3787
Bulletin Board Service (BBS)	(408) 432-1416
FTP Archive	ftp.asante.com
Internet Mail	support@asante.com
World Wide Web Site	http://www.asante.com

Technical Support Hours:

6:00 a.m. to 5:00 p.m. Pacific time, Monday - Friday.

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