

About This Guide



This guide tells you how to configure your Workgroup Server, use software programs, use its built-in CD-ROM drive and optional tape-backup unit, and troubleshoot hardware and software problems. For information about your server's hardware, see the setup guide that came with your server.

About your Workgroup Server and Power Macintosh software

Your Workgroup Server is powered by the PowerPC™ microprocessor (or “chip”). This microprocessor was designed by Apple Computer, Inc., Motorola, Inc., and IBM Corporation. The PowerPC microprocessor uses Reduced Instruction Set Computer (RISC) technology to deliver very high performance at the lowest possible cost. The PowerPC RISC microprocessor represents the state of the art in microprocessor design.

Your Workgroup Server will run almost all of your existing Macintosh software, but for best performance and greatest speed, look for software programs designed especially for Power Macintosh computers.

Who should read this guide

This guide is intended for the person who administers the server on a day-to-day basis. You should be familiar with basic Macintosh terms, concepts, and techniques. If you're new to the Macintosh environment, see Appendix A, “Getting Help,” after you turn on your server system. You also need to know some details of your existing network to choose the appropriate procedures for connecting the server to your network.

What this guide contains

Here's a brief summary of what you'll find in this guide:

- Chapter 1, "Configuring Your Server," describes how to set the system time and date, how to choose a printer, how to configure your monitor, and how to configure the Energy Saver control panel so that your server restarts automatically after a power failure.
- Chapter 2, "Configuring Your Network Connection," explains when you need to configure your network connection and how to do it. This chapter also describes Open Transport and the features of the AppleTalk and TCP/IP control panels.
- Chapter 3, "Using Application Software," discusses running Power Macintosh software and server application programs.
- Chapter 4, "Managing Hard Disks," describes routine maintenance procedures associated with hard disk drives. This chapter also explains how to reinstall system software.
- Chapter 5, "Using the CD-ROM Drive," explains how to use the built-in CD-ROM drive.
- Chapter 6, "Using a DAT Drive and Tape Cassettes," explains the use of the optional DAT drive and describes the types of tape cassettes that are appropriate for use with the drive.
- Chapter 7, "Troubleshooting," helps you solve problems with the server.
- Appendix A, "Getting Help," describes how to use the various kinds of on-screen help available in the Guide menu.
- Appendix B, "Special Keys on Your Keyboard," describes the use of key combinations as shortcuts for menu commands and alternatives to using the mouse.
- Appendix C, "Obtaining Updated Apple Software," explains how to obtain software updates from a variety of online services.

How to use this guide

If you are new to Macintosh: Refer to Appendix A, “Getting Help,” to learn how to use the features of Mac OS and application programs.

Configure your server’s system software. See Chapter 1, “Configuring Your Server,” for information about how to configure your server’s system software for optimal performance.

If necessary, configure your server’s network connection. Your server automatically uses the built-in Ethernet port for AppleTalk connections. See Chapter 2, “Configuring Your Network Connection,” for information about how to configure your server to use a different port for AppleTalk or how to configure your server’s TCP/IP network connections.

Learn about application software. See Chapter 3, “Using Application Software,” for information about Power Macintosh programs and the shared libraries that they use and for information about running older Macintosh programs. See Appendix C for information about obtaining updates for Apple software products.

Learn about hard disk management. See Chapter 4, “Managing Hard Disks,” for information about initializing hard disks and installing system software.

Familiarize yourself with the server’s built-in CD-ROM drive and optional DAT drive. See Chapter 5, “Using the CD-ROM Drive,” and Chapter 6, “Using a DAT Drive and Tape Cassettes.”

Review troubleshooting techniques. See Chapter 7, “Troubleshooting,” for steps you can take to prevent the occurrence of problems and for solutions when problems occur.

For on-screen help and information

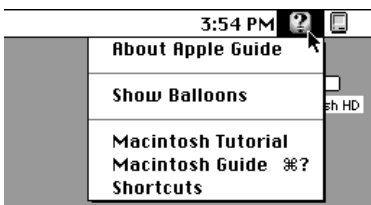
There are several valuable sources of help and information that you can view directly on your server's monitor screen, as described in this section.

Workgroup Server Read Me

It's important that you read the Workgroup Server Read Me file, which contains late-breaking information about your server. This file is located on the server's hard disk and on the *Workgroup Server Software* CD-ROM disc. You may want to print this file for future reference.

The Guide menu

Starting with Mac OS version 7.5, you have instant access to new kinds of help when using your system and application programs. You can see your options in the Guide (⌘) menu in the upper-right corner of the screen.



You'll find the instructions available in Macintosh Guide particularly useful when you have questions or encounter problems with your system software. For more details on the types of on-screen help available, refer to Appendix A, "Getting Help," and explore your options in the Guide menu.

Workgroup Server Electronic Library

For your convenience, electronic versions of your server's documentation are provided on your server's hard disk and on the *Workgroup Server Software* CD-ROM disc. You'll find these documents in a folder called the WS Electronic Library. You'll find on-screen help available in the document.

The WS Electronic Library folder contains electronic versions of the following documents:

- this book, the *Administrator's Guide*, in an Adobe™ Acrobat file that has been specially formatted for easy on-screen readability
- other user's guides for software that may have come with your server

Other reference material

In addition to this guide, you may need to consult the following sources of information.

- For information about your server's hardware setup and capabilities, see the setup guide that came with your server.
- For late-breaking information about your server and system software, see the Workgroup Server Read Me file, located on the server's hard disk and on the *Workgroup Server Software* CD-ROM disc.
- For information about server application programs included with your Workgroup Server, such as Apple RAID Software and Retrospect Remote, refer to the documentation for those programs included in the server accessory kit.
- A number of network services, such as AppleShare, AppleSearch, and Apple Remote Access, may be included with your server or can be installed on your server. Refer to the documentation included with those services for installation and operation information.
- If you purchased an Apple Internet Server, see the setup booklet included in the Apple Internet Server Solution for the World Wide Web package.
- If you need a better understanding of how to configure your network, the following books from Apple Computer, published by Addison Wesley, are available at computer bookstores:

Understanding Computer Networks gives an overview of networking basics.

Planning and Managing AppleTalk Networks provides in-depth information on setting up, maintaining, and troubleshooting AppleTalk networks.

Where to find answers

When you have questions about using your server, there are several places you can look for answers.



In this book

Use this book to help you set up your server and learn about it, or to find solutions to problems with your equipment.



In the setup guide

Use this book to help you set up and expand your server system, and to connect it to a network. Also use this book to check your server's technical specifications.



Workgroup Server Read Me

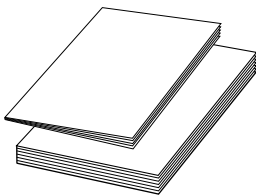
In the Read Me files

Your Workgroup Server's startup disk and the *Workgroup Server Software* CD-ROM disc contain several SimpleText documents that are known as Read Me files. Read Me files contain important information about your server and its software that may not be included in the setup guide or the administrator's guide.



In the Guide menu

The Guide menu (marked with the h icon) is your main source of information about the Mac OS. To learn how to get different kinds of help from the Guide menu, see Appendix A in this book.



In other manuals

For answers to questions about other equipment or about application programs you have purchased, see the manuals that came with the equipment or programs.



About Apple Extras

In the About Apple Extras file

The Apple Extras folder on your startup disk contains a SimpleText document called About Apple Extras with important information about some of the application programs included with your server. Read Me files can also be found inside application folders.



From Apple's customer support hotline

If you can't find an answer in any of the materials provided, call the customer support hotline. (See the information about technical support in the Apple Resource Guide that came with your server.)



On Apple's online support pages

Apple provides a number of online resources that can give you helpful information. See Appendix C for a listing of these resources.

1 Configuring Your Server

This chapter tells you how to configure your server's software so you can take advantage of your server's hardware and software features. Most of the configuration tasks are optional, but some of them allow the server to deliver the highest performance. The tasks are:

- configuring the system time and date (*required*)
- installing device drivers (*required only if you have installed an expansion card or attached to your server a non-Apple hard disk drive or a SCSI device other than a hard disk drive*)
- choosing a printer (*optional*)
- configuring your monitor (*optional*)
- choosing sound devices (*optional*)
- configuring the Energy Saver control panel (*optional*)

Note: This chapter assumes that a keyboard, monitor, and mouse are connected to your server and that your server is turned on. If you need to connect these devices or if you don't know how to turn the server on, see the setup guide that came with your server.

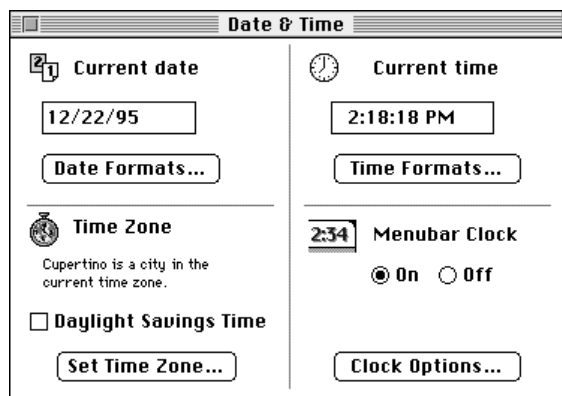
Configuring the system time and date

It's important that you set the current time and date for your server so that the system can correctly log system events and record file activity. You set the time and date in the Date & Time control panel.

To set the system date and time:

1 Open the Date & Time control panel.

The Date & Time control panel is in the Control Panels submenu in the Apple () menu.



2 To set the current date, click each number in the “Current date” box and type the number you want to set for the month, day, or year. Or, click the arrows that appear until the number you want to set is displayed.

Changes take effect immediately.

3 To display the date in a different format, click the Date Formats button.

A dialog box appears that allows you to select from a variety of date formats. The new format takes effect when you click OK.

4 To set the time zone, click the Set Time Zone button.

A dialog box appears that allows you to select a city and country that represents your time zone. The time zone you select takes effect immediately.

5 If daylight savings time is in effect in your time zone, click the Daylight Savings Time box so that an “X” appears.

- 6 To set the current time, click each number in the “Current time” box and type the number you want to set for the hour, month, or second. Or, click the arrows that appear until the number you want to set is displayed.**

Changes take effect immediately.

- 7 To display the time in a different format, click the Time Formats button.**

A dialog box appears that allows you to select from a variety of time formats including a 12-hour or a 24-hour clock. The new format takes effect when you click OK.

- 8 To display the time in the menu bar, make sure that the On button in the Menubar Clock section of the Date & Time window is selected. Or, click the Off button to turn off this feature.**

Your changes take effect the next time you restart the server.

- 9 To customize the way that time is displayed in the menu bar, click the Clock Options button.**

A dialog box appears that allows you to customize the way the time is displayed in the menu bar. You can also configure the server to sound a chime at regular intervals.

- 10 Close the Date & Time control panel.**

Installing device drivers

Your Workgroup Server comes with three expansion slots in which you can install Peripheral Component Interconnect (PCI) cards. PCI cards allow you to expand the capability of your Workgroup Server, for example, by generating additional SCSI buses or by providing additional network interfaces. You can also attach additional SCSI devices to your Workgroup Server’s internal/external SCSI bus. With the exception of Apple hard disks, you need to install a device driver for any PCI cards or SCSI devices that you add to your Workgroup Server.

A device driver is software that lets the server communicate with a card or a SCSI device. The device driver is usually on a floppy disk that comes with the card or device. To install a device driver, see the documentation that came with the card or device.

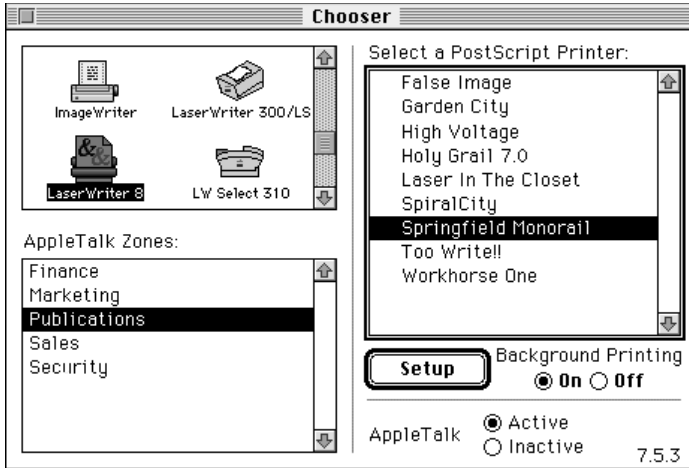
Choosing a printer

You use the Chooser to indicate the port (printer port or modem port) you used to connect your printer, or to select a printer on the network.

To choose a printer:

1 Open the Chooser.

The Chooser is in the Apple (🍏) menu.



- 2 In the upper- left corner of the Chooser window, click the icon for the type of printer you want to use.
- 3 If zones appear in the AppleTalk Zones list, click the zone in which the printer resides.
- 4 In the list on the right side of the Chooser window, click the name of the printer you want to use.
- 5 Close the Chooser.

Your changes take effect immediately.

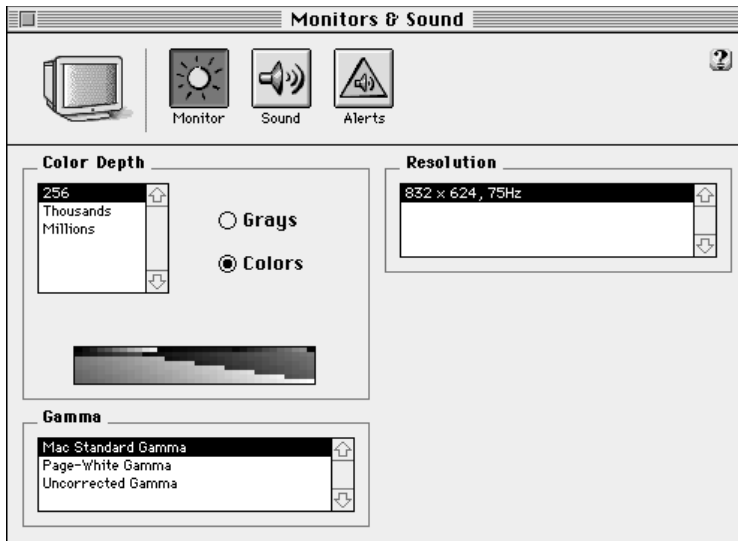
Configuring your monitor

This section tells you how use the Monitors & Sound control panel to configure your server's monitor.

Follow these steps to configure your server's monitor:

1 Open the Monitors & Sound control panel.

The Monitors & Sound control panel is in the Control Panels submenu in the Apple () menu.



2 If you have a color monitor, click 256 in the Color Depth list.

Your server performs best when the smallest number of colors is selected.

3 Click an item in the Gamma list to adjust the intensity and luminance of your monitor's screen.

4 Close the Monitors & Sound control panel.

Choosing sound devices and alert sounds

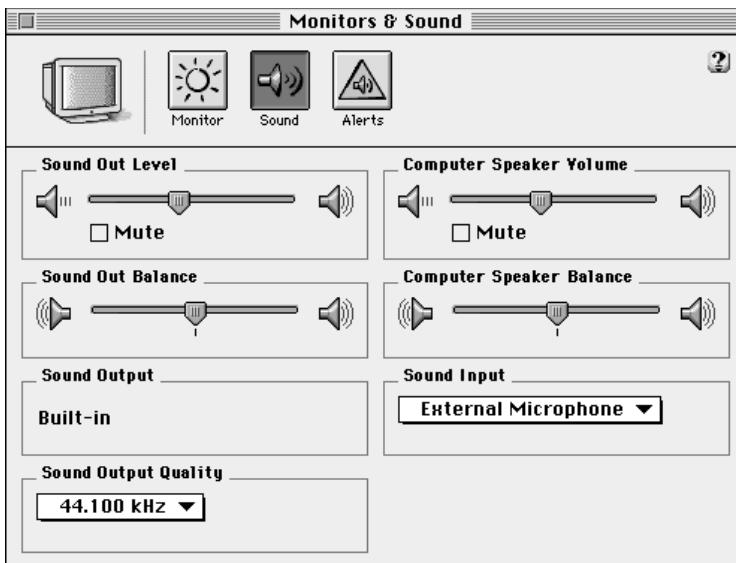
This section tells you how to use the Monitors & Sound control panel to choose your server's sound input and output devices and to configure the system alert sound and its volume.

Follow these steps to choose the sound input and output devices for your server and to configure the system alert sound:

- 1 If you want to use an external device for sound input, connect it to the sound input port, as described in the setup guide that came with your server.**
- 2 Open the Monitors & Sound control panel.**
The Monitors & Sound control panel is in the Control Panels submenu in the Apple () menu.
- 3 At the top of the Monitors & Sound control panel, click the Sound button.**



The following dialog box appears:



- 4 **Use the sliders to adjust sound output level, sound output balance, computer speaker volume, and computer speaker balance.**
- 5 **To change the selected sound input device, click an item in the Sound Input pop-up menu.**

To use a microphone connected to the sound input port for spoken commands, select the External Microphone.

The server records sounds in the same way as other Macintosh models: in 16-bit mono sound, at a sample rate of 44.100 kilohertz (kHz). This makes the sounds you record compatible with all Macintosh computers. For instructions on recording a sound, see the “Sound” topic of Macintosh Guide, available in the Guide (🔍) menu.

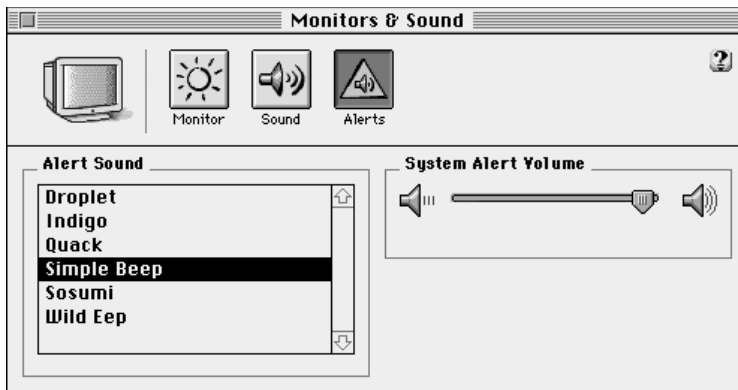
- 6 **If you want to use an external device for sound output, connect it to the sound output port, as described in the setup guide that came with your server.**

About the sample rate: Most of the time, you will not need to change the sample rate. You should change the sample rate only if the sound you wish to play was recorded at a sample rate different from the current setting. (The available rates are 11.025 kHz, 22.050 kHz, and 44.100 kHz.) For instance, if you play a QuickTime movie containing sound recorded at 44.100 kHz, set the sample rate in the Sound Output Quality pop-up menu to 44.100 kHz to hear the full quality of the sound. Increasing the sample rate slows performance.

- Do not set the sample rate higher than the sample rate of the sound you are playing because this slows your server’s performance without improving sound quality.
- Do not change the sample rate for sound coming from a device connected to the sound input port.

If you use a program that provides sound recording in mono format, you can use its mono setting.

- 7 To configure the sound that occurs when an alert box appears on the screen, click the Alerts button.



- 8 Click an item in the Alert Sound list to select a sound.
- 9 Use the slider to adjust the volume of alert sounds.
- 10 Close the Monitors & Sound control panel.
Your changes take effect immediately.

Configuring the Energy Saver control panel

Your Workgroup Server comes with the Energy Saver control panel, which provides a variety of energy-saving features. Because most servers run continuously, energy-saving features are turned off when you first start up your Workgroup Server. You may want to use the Energy Saver control panel to configure the server to

- restart automatically after a power failure
- dim the monitor when it has not been used for several minutes

WARNING It is possible to configure the Energy Saver control panel so that the server shuts down when it's inactive for a short period of time or so that it enters a reduced power mode (called *sleep mode*) when it's inactive. Both behaviors are undesirable for servers. To avoid accidentally configuring these behaviors, follow the instructions in this section carefully.

To configure the Energy Saver control panel to dim the monitor or to cause the server to restart automatically after a power failure:

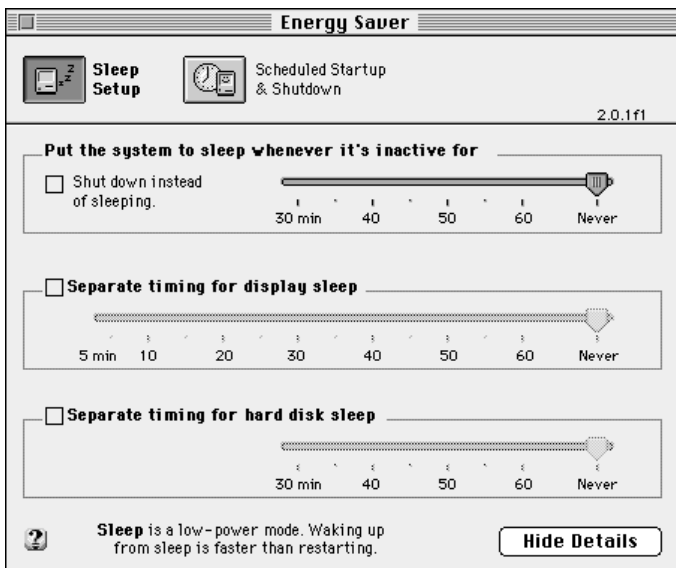
1 Open the Energy Saver control panel.

The Energy Saver control panel is in the Control Panels submenu in the Apple () menu.

An abbreviated form of the control panel appears.

2 In the Energy Saver control panel, click the Show Details button.

The full Energy Saver control panel appears.



- 3 To dim the monitor when the keyboard is inactive for a period of time, click the “Separate timing for display sleep” box so that an “X” appears. If you configure the Energy Saver control panel to dim the monitor, you don’t need to use a screen saver. Complicated screen savers require a considerable amount of processing power, thereby reducing server performance.
- 4 Adjust the slider for the “Separate timing for display sleep” control to the desired number of minutes.
- 5 If you want to configure the server so that it restarts automatically after a power failure, choose **Server Settings** from the **Preferences** menu. The following dialog box appears:



- 6 Click the box labeled “Restart automatically after a power failure” so that an “X” appears.
- 7 Make sure that an “X” appears in the “Never put the hard disk to sleep” box. If the hard disk is put into sleep mode, the server cannot perform optimally.
- 8 Click **OK**.
- 9 Make certain that the slider for the box labeled “Put the system to sleep whenever it’s inactive for” is set to “Never.”

WARNING The slider for the box labeled “Put the system to sleep whenever it’s inactive for” should always be “Never.” If this control is set to any other value, the server will shut down or sleep when it is inactive for the specified period of time and will not be available for use by clients.

- 10 **Close the Energy Saver control panel.** Your changes take effect immediately.

2 Configuring Your Network Connection

Your Workgroup Server is preconfigured to connect to an AppleTalk network through its built-in Ethernet interface. In addition, your server automatically senses the type of connector (10BASE-T or AAUI) that connects to the network. Because of the way your server is preconfigured, most network administrators do not need to perform any additional network configuration tasks.

You need to read this chapter if you want to

- configure your server to use LocalTalk over one of the server's serial ports
- configure AppleTalk to use a network interface other than the built-in Ethernet network interface
- configure your server to use the Transmission Control Protocol/Internet Protocol (TCP/IP)

Otherwise, you can proceed to Chapter 3.

About Open Transport

Your Workgroup Server comes with Open Transport preinstalled. Open Transport is new networking and communications software for the Mac OS that supports industry standards. Open Transport allows your server to run AppleTalk applications over more than one network segment at the same time.

Open Transport includes separate control panels for AppleTalk and TCP/IP. You use the AppleTalk control panel to configure your connection to an AppleTalk network. You use the TCP/IP control panel to configure your connection to a TCP/IP network, an industry-standard protocol that allows computers of different types to communicate with each other. The AppleTalk control panel and the TCP/IP control panel replace the Network control panel and the MacTCP control panel, respectively, which were part of previous versions of Mac OS.

Both the AppleTalk control panel and the TCP/IP control panel have modes that limit the information that is displayed. The modes are “Basic,” “Advanced,” and “Administration.” The procedures in this chapter require you to use Administration mode so that you can see all of the information that can be configured in each control panel.

About the default port

Before Open Transport became available, AppleTalk applications could only work with one network interface at a time. With Open Transport, new AppleTalk applications that have been written for Open Transport can work simultaneously with more than one network interface (a technique known as *multihoming*). (The version of Open Transport that comes with your server supports multihoming for AppleTalk, but not for TCP/IP.)

Your Workgroup Server comes with several network interfaces: the built-in Ethernet interface, the modem port, and the printer port. You can also install additional network interface cards.

All TCP/IP applications and those AppleTalk applications that are not able to use multihoming use the network interface that is configured as the default port. When you first start up the Workgroup Server, the built-in Ethernet interface is the default port.

The AppleTalk control panel sets the default port for AppleTalk applications, and the TCP/IP control panel sets the default port for TCP/IP applications. (Note that the default port for AppleTalk and TCP/IP can be different.) In both control panels, the “Connect via” pop-up menu sets the default port.

Whenever you want a non-multihoming networking application to work with a network interface other than the current default port, you need to make that network interface the default port. Both the AppleTalk and the TCP/IP control panels allow you to save and restore configurations (including the setting of the default port), which makes it easy to change and restore specific settings. For information about saving and restoring configurations, see “Working With Network Configurations” later in this chapter.

Configuring your AppleTalk network connection

When you first start up the server, its AppleTalk network connection is through the built-in Ethernet interface. If you want to change the default port for AppleTalk, use the AppleTalk control panel.

If your server connects to a network segment for which only one AppleTalk zone has been assigned, the AppleTalk control panel automatically selects that zone for you. (An AppleTalk zone is a logical grouping of nodes on a network segment.) If more than one AppleTalk zone is available on the network segment to which your server is connected, you can use the AppleTalk control panel to assign your server to an AppleTalk zone.

To use the AppleTalk control panel:

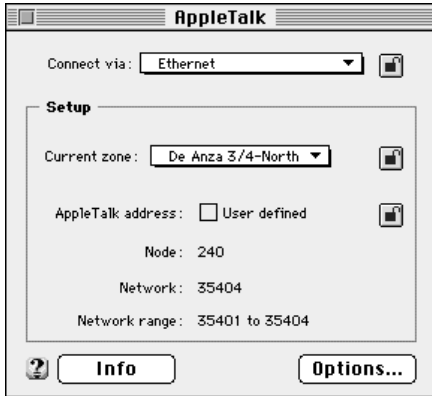
- 1 Open the AppleTalk control panel.**

The AppleTalk control panel is in the Control Panels submenu in the Apple () menu.

The AppleTalk control panel opens.

2 Choose User Mode from the Edit menu and click the Administration button. Then click OK.

In Administration mode, the AppleTalk control panel looks like this:

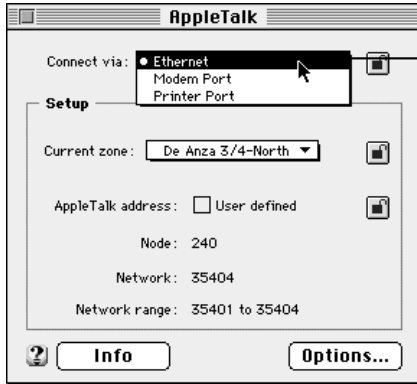


In Administration mode, you can do the following:

- Lock certain settings by clicking the lock icon so that only a user with access to Administration mode can change them.
- Click the Options button to turn AppleTalk on and off. (For information, see “Turning Networking On and Off” later in this chapter.)
- Set a password for Administration mode. (For information, see “Setting a Password” later in this chapter.)

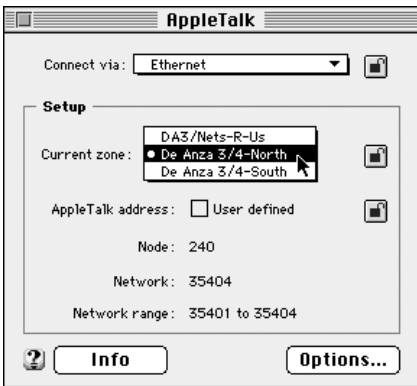
For information about the other user modes, see “User Modes” later in this chapter.

- 3 To change the default port, choose a new port from the “Connect via” pop-up menu.**



You can connect to an AppleTalk network through the printer port, the modem port, the built-in Ethernet interface, or any additional network interface cards installed in your server.

- 4 To choose the zone you want, choose a new zone from the “Current zone” pop-up menu (if available).**



- 5 Close the AppleTalk control panel.**
- 6 If you have made configuration changes, an alert box asks if you want to save changes. Click the Save button.**

If you have changed the default port, the alert box also tells you that the change will interrupt any AppleTalk services that are established. Your changes are saved as the default configuration and take effect immediately.

Configuring your TCP/IP network connection

You use the TCP/IP control panel to specify the default port for TCP/IP as well as other information that TCP/IP requires. In particular, your server must have an Internet Protocol (IP) address. It may also need a subnet mask number, depending on the way TCP/IP is implemented on your network.

IMPORTANT If you have an Apple Internet Server, refer to the *Getting Started* booklet that came in your Apple Internet Server Solution package for details about configuring your TCP/IP connection.

You can enter this information manually, or you can use a server on your network to provide this information automatically. The types of servers that can configure TCP/IP automatically are BootP (for Boot Protocol), RARP (for Reverse Address Resolution Protocol), DHCP (for Dynamic Host Configuration Protocol), and MacIP (for Macintosh Internet Protocol) servers.

Note: MacIP is both a type of server and a protocol for sending Internet-type packets of information over an AppleTalk network.

RARP and MacIP servers can provide an IP address only for your server. DHCP and BootP servers can provide an IP address for your server as well as the IP address of name servers that are present in your network.

To use the TCP/IP control panel:

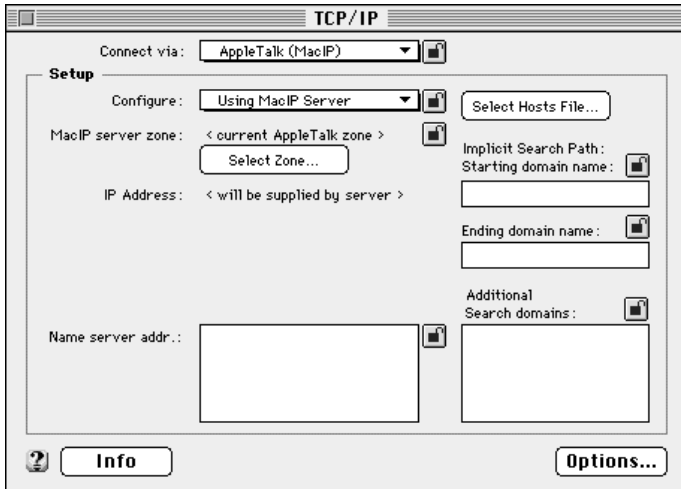
1 Open the TCP/IP control panel.

The TCP/IP control panel is in the Control Panels submenu in the Apple () menu.

The TCP/IP control panel appears.

2 Choose User Mode from the Edit menu, and click the Administration button. Then click OK.

In Administration mode, the TCP/IP control panel looks like this:



If your network has a BootP, DHCP, RARP, or MaciP server, continue to the next section, “Configuring via a Server.” If you are configuring the TCP/IP control panel manually, see “Configuring TCP/IP Manually” later in this chapter.

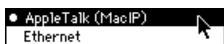
Configuring via a server

The procedure for using a server varies depending on whether the server that you are going to use is a BootP, DHCP, RARP, or MaciP server. If you are going to use a BootP, DHCP, or RARP server, see “Configuring via a BootP, DHCP, or RARP Server” later in this chapter.

Configuring via a MaciP server

To configure TCP/IP using a MaciP server:

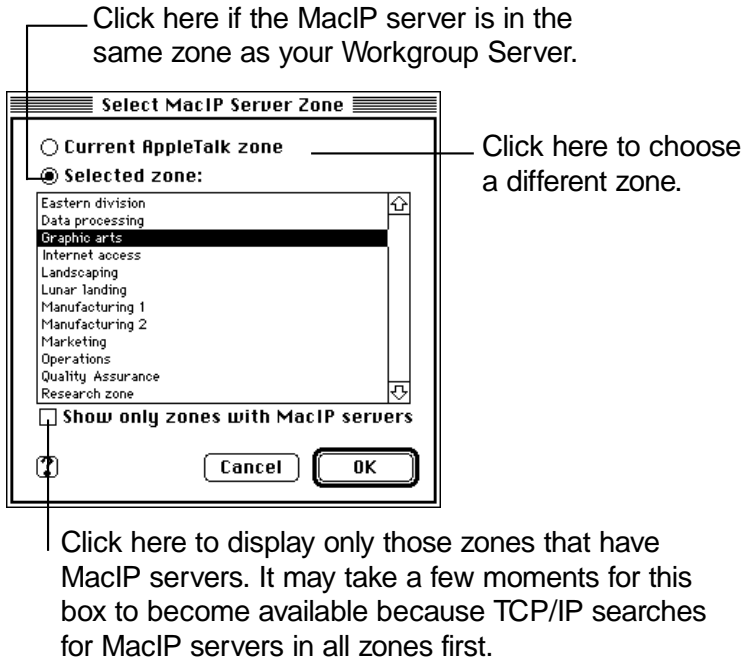
- 1 Choose **AppleTalk (MaciP)** from the “Connect via” pop-up menu.



- 2 Choose “Using MaciP Server” from the Configure pop-up menu.



- 3 If you want to specify a MacIP server in a particular zone, click **Select Zone** to choose the zone of the MacIP server you want to use. Otherwise, go to step 6.
- 4 In the dialog box that appears, choose the zone in which your MacIP server is located.



- 5 Click **OK** to close the dialog box.
- 6 Close the **TCP/IP control panel**.

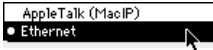
Your TCP/IP configuration information is obtained from the MacIP server the next time you open a networking connection (for example, by opening a networking application, such as Netscape, Eudora, or NCSA Telnet).

If, after configuring your TCP/IP control panel, you see an error message such as “Unable to locate host” or “Could not create a socket,” your software is unable to reach the network. This indicates a problem in the TCP/IP configuration. For troubleshooting information, see Chapter 7.

Configuring via a BootP, DHCP, or RARP server

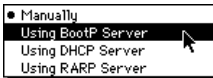
To configure TCP/IP using a BootP, DHCP, or RARP server:

1 Choose Ethernet from the “Connect via” pop-up menu.



2 From the Configure pop-up menu, select the server type that is appropriate for your network.

In this example, a BootP server is selected.



The next time you make a TCP/IP connection, an IP address will be assigned to the server. If you open the TCP/IP control panel, your assigned IP address will appear in the “IP Address” box.

If you close the TCP/IP connection and don't make another connection for a period of time, the BootP or DHCP server may take back the IP address and assign it to another host. The next time you make a TCP/IP connection, the BootP or DHCP server will assign a different IP address.

BootP and DHCP servers can provide your IP address and the addresses of name servers that may be available on your network. RARP servers can provide your IP address only. You may have additional TCP/IP configuration information to enter (such as a subnet mask, the IP address of a router, or domain name information). Go to step 5 in the next section, “Configuring TCP/IP Manually.”

Configuring TCP/IP manually

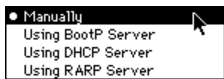
You must configure TCP/IP manually if your server connects to a network in which a BootP, DHCP, RARP, or MacIP server is not present, or if the server does not provide all the configuration information that you need to configure your Workgroup Server.

To configure TCP/IP manually:

- 1 **Choose Ethernet from the “Connect via” pop-up menu.**



- 2 **If your network uses the IEEE 802.3 variant of the Ethernet standard, click the Use 802.3 box to the right of the “Connect via” pop-up menu.**
- 3 **Choose Manually from the Configure pop-up menu.**



- 4 **Type your server’s IP address in the “IP Address” box.**

An IP address is a set of four numbers from 0 to 255, separated by dots (for example, 140.140.54.2). It identifies your server on the network.

IMPORTANT Make sure you enter the correct IP address. Each IP address must be unique. Entering an incorrect address or the IP address that another computer uses can cause problems with your server and with the network.

- 5 **If you have a subnet mask number, type it in the “Subnet mask” box.**

Some organizations use a subnet mask number to increase the number of IP addresses that are available for their network. If your network uses a subnet mask, you must enter it for your server to work correctly on the network. Like an IP address, a subnet mask is a set of numbers from 0 to 255, separated by dots (for example, 255.255.255.252).

6 If you have the IP address for a router, type it in the “Router address” box.

A router is a device that directs information along the most efficient or appropriate network path. It connects two or more network cables, thereby allowing computers and other network devices on each cable to communicate with each other. The router maintains a table that contains the address of each device on each network. When a packet of information reaches the router, the router checks the destination address on the packet and sends it to the cable on which the destination device resides.

If you have a dial-up connection to the Internet using SLIP (Serial Line Internet Protocol) or PPP (Point-to-Point Protocol) software, you do not need to enter a router address.

7 If you have the IP address of a name server, type it in the “Name server addr” box.

A name server is a computer that associates a computer’s name (called a *host name*) with an IP address. By associating names with IP addresses, users don’t have to remember IP addresses when they need to identify a particular computer. For example, an E-mail message can be addressed to “john@planetX” (if “planetX” is the host name of John’s computer) instead of “john@140.140.54.2” (if 140.140.54.2 is the IP address of John’s computer). Before the mail application sends the message, it asks the name server to find the IP address of “planetX.”

You can enter more than one name server address in the “Name server addr” box. (The first address that you enter becomes your default name server.) Press Return after each address. You can specify as many name servers as you want as long as you do not type more than 255 characters.

8 If you have created a hosts file and want to use it, click the Select Hosts File button. (The Select Hosts File button appears only when the control panel is in Advanced or Administration mode.) Otherwise, go to step 9.

A dialog box appears that allows you to locate a hosts file that already exists. When you locate the hosts file that you want to use, select its name and click the Open button. A dialog box appears that asks you if you want to replace the current hosts file with the contents of the selected hosts file. Click the OK button.

The hosts file contains a list of host names and associated IP addresses. The hosts file provides a subset of the functionality of a name server. Because maintaining the hosts file can become difficult in a network that has many hosts, you should use a name server if one is available. If you use a name server and a hosts file, the hosts file is checked before the name server.

For information about the format of the hosts file, see “Hosts File Format” later in this chapter.

9 If you want to take advantage of implicit domain searching, enter your domain name information.

TCP/IP applications can automatically search for computers you identify by host name (for example, when you send mail to “john@planetX.com”). To configure information that makes the search possible, type your local domain name in the “Starting domain name” box and type your administrative domain in the “Ending domain name” box.

The local domain is the name of your own local network domain. For example, if your server is named “server.mktng.east.xyzcorp.com,” your local domain name is “mktng.east.xyzcorp.com.” The administrative domain is the name of the larger domain that contains your local domain. It must match the end of the local domain. For example, if your local domain is “mktng.east.xyzcorp.com,” your administrative domain is “xyzcorp.com.”

The names you type in the two boxes define a range of domain names. When you use a host name, TCP/IP tries to resolve the name by appending each possible suffix in the range. For example, if your local domain is “mktng.east.xyzcorp.com” and your administrative domain is “xyzcorp.com,” and you specify that you want to search for a computer named “eng,” TCP/IP will search for computers that have these names:

eng.mktng.east.xyzcorp.com

eng.east.xyzcorp.com

eng.mktng.xyzcorp.com

eng.xyzcorp.com

10 Enter in the “Additional Search domains” box the names of any other domains that you want to search.

You can enter more than one domain name. Press Return after each domain name. You can specify as many domain names as you want as long as you do not type more than 255 characters.

The domain names that you enter are used exactly as you type them and are not put together in different combinations. For example, if you specify “apple.com,” “university.edu,” and “nowhere.org” in the “Additional Search domains” box, and you specify that you want to search for a computer named “eng,” TCP/IP will search for these computers:

eng.apple.com

eng.university.edu

eng.nowhere.org

11 Close the TCP/IP control panel.

12 If you have made configuration changes, an alert box asks if you want to save changes. Click the Save button.

If you have changed the default port, the alert box also tells you that the change will interrupt any TCP/IP services that are established.

Your changes are saved as the default configuration and take effect immediately.

If, after configuring the TCP/IP control panel, you see an error message such as “Unable to locate host” or “Could not create a socket,” your software is unable to reach the network. This indicates a problem in the TCP/IP configuration. For troubleshooting information, see Chapter 7.

Turning networking on and off

Both the AppleTalk control panel and the TCP/IP control panel allow you to turn off AppleTalk and TCP/IP, respectively.

To turn off AppleTalk or TCP/IP:

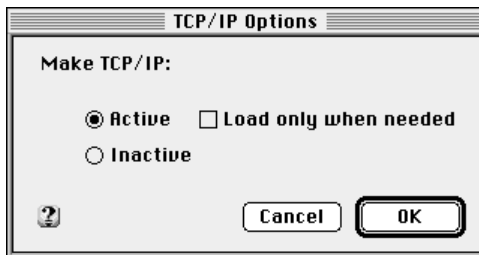
1 Open the appropriate control panel.

To turn off TCP/IP, open the TCP/IP control panel. To turn off AppleTalk, open the AppleTalk control panel.

2 Choose User Mode from the control panel's File menu and click the Advanced or the Administration button. Then click OK.

3 In the control panel, click the Options button.

The TCP/IP Options dialog box appears. (The AppleTalk Options dialog box appears if you opened the AppleTalk control panel in step 1.)



Note: The TCP/IP Options dialog box allows you to configure TCP/IP so that it loads only when it is needed. For Workgroup Servers that frequently connect to TCP/IP networks, the “Load only when needed” option should not be selected (an “X” should not appear in the box). That is, TCP/IP should be configured so that it is always loaded.

4 To make the protocol inactive, click the Inactive button and then click OK.

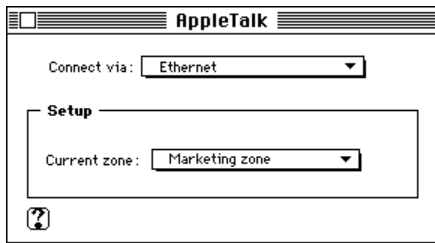
AppleTalk or TCP/IP (depending on the control panel that you opened) becomes inactive immediately. To turn AppleTalk or TCP/IP on again, click the Active button.

User modes

The AppleTalk and TCP/IP control panels support three different modes: Basic, Advanced, and Administration. This section shows you what each control panel looks like in each mode and describes the differences between the modes.

AppleTalk control panel user modes

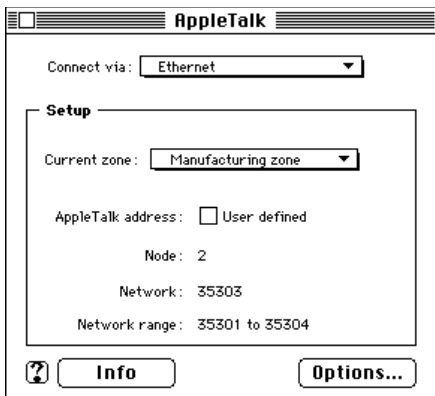
In Basic mode, the AppleTalk control panel looks like this:



In Basic mode, you can use the AppleTalk control panel to do the following:

- Use the “Connect via” pop-up menu to change the interface that is set as the default port (if it is not locked).
- Use the “Current zone” pop-up menu to change the server’s AppleTalk zone (if it is not locked).

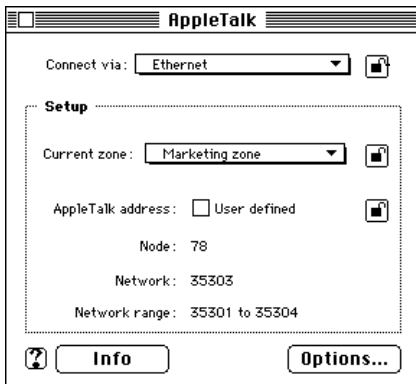
In Advanced mode, the AppleTalk control panel looks like this:



In Advanced mode, you can use the AppleTalk control panel to do everything that can be done in Basic mode, plus the following:

- Display the server's node and network numbers and the network range. AppleTalk dynamically assigns the node number when it starts up.
- Click the Options button to display a dialog box that can be used to turn AppleTalk off or on again.
- Click the Info button to display details about the server's AppleTalk settings.
- Click the "User defined" box so that an "X" appears, allowing you to change the node and network numbers. You should not do this unless you are sure the new address information is correct.

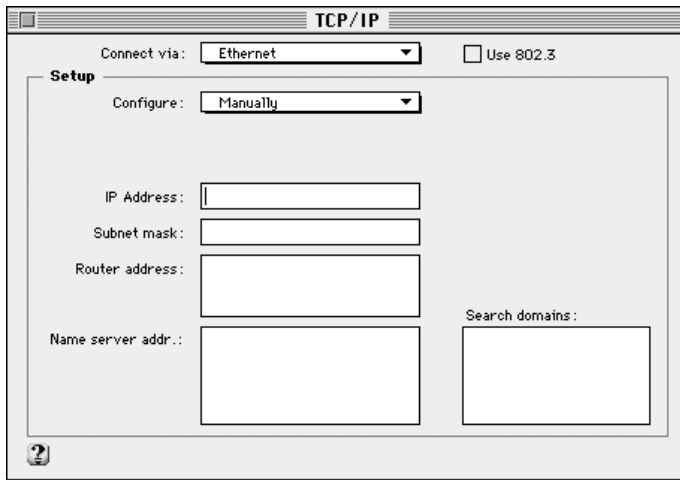
In Administration mode, the AppleTalk control panel looks like this:



In Administration mode, you can do everything that you can do in Advanced mode, plus you can lock settings so they can't be changed. To lock a setting, click the lock button. To unlock it, click again.

TCP/IP control panel user modes

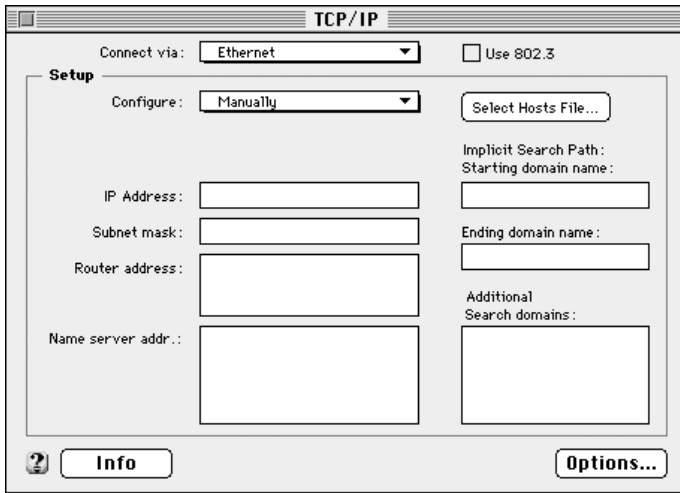
In Basic mode, the TCP/IP control panel looks like this:



In Basic mode, the TCP/IP control panel allows you to do the following (if the settings are not locked):

- Use the “Connect via” pop-up menu to change the default port for TCP/IP.
- Use the Configure pop-up menu to select a configuration method.
- Enter the server’s IP address (if you are configuring manually).
- Enter the server’s subnet mask number.
- Enter the IP address of one or more name servers.
- Enter the names of domains that are to be searched in order to locate a remote host.
- Enable the IEEE 802.3 variant of Ethernet (this option is available only when Ethernet is selected in the “Connect via” pop-up menu).

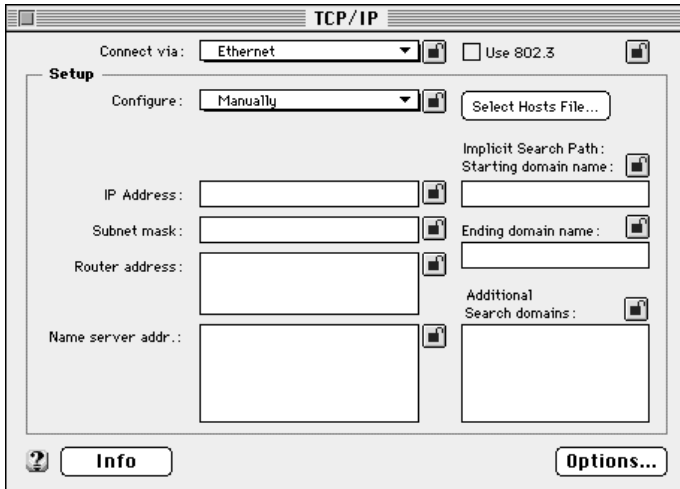
In Advanced mode, the TCP/IP control panel looks like this:



In Advanced mode, you can do everything that can be done in Basic mode, plus the following (if the settings are not locked):

- Select a Hosts file (if you are configuring manually or if you are using a BootP, DHCP, or RARP server). For information about the content and format of this file, see “Hosts File Format” later in this chapter.
- Enter your local and administrative domain in the “Starting domain name” and “Ending domain name” boxes, respectively (if you are configuring manually or if you are using a BootP, DHCP, or RARP server).
- Click the Options button to display a dialog box that can be used to turn TCP/IP off or on again.
- Click the Info button to display details about the server’s TCP/IP settings.

In Administration mode, the TCP/IP control panel looks like this:



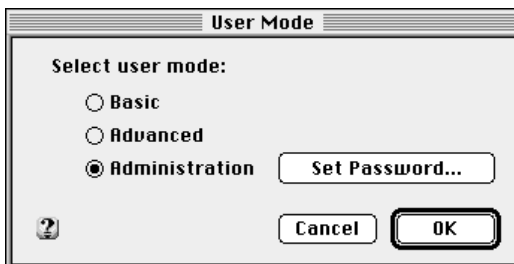
In Administration mode, you can do everything that can be done in Advanced mode, plus lock (by clicking the lock icon) every setting except the current Hosts file.

Setting a password

You can set a password that limits access to Administration mode for both the AppleTalk control panel and the TCP/IP control panel.

To set a password:

- 1 With the AppleTalk or TCP/IP control panel open, choose **User Mode** from the Edit menu.
- 2 In the box that appears, click the **Administration** button and then click the **Set Password** button.



3 Type the password you want to use in the Password box.

When you type the password, you see dots (•) instead of the letters you type.

4 Type the password again in the Verify Password box, then click OK.

The password is set. The next time any one tries to enter Administration mode for this control panel, he or she must enter the password that you set.

Getting information about your configuration

For information about the addresses and software versions currently in effect for Open Transport, follow these steps:

1 Open the control panel for which you want to see configuration information.

For information about your AppleTalk configuration, open the AppleTalk control panel. For information about your TCP/IP configuration, open the TCP/IP control panel.

2 Choose Get Info from the File menu.

If the control panel is in Advanced or Administration mode, you can also click the Info button.

The Info window opens. You can see information in this window, but you cannot change it.

The AppleTalk Info window looks like this:



The top half of the Info window displays the following:

- The AppleTalk network number (in this case, 35404) and the node number (in this case, 240).
- The Media Access Control (MAC) address of the default port (in this case, 08 00 07 BF B5 17).
- The AppleTalk network and node number of the AppleTalk router that is present on the cable connected to the current default port.

The bottom half of the AppleTalk Info window displays the version numbers for Open Transport, AppleTalk, and the AppleTalk driver.

The TCP/IP Info window looks like this:



The top half of the Info window displays the following:

- The IP address (in this case, 192.22.23.28).
- The Media Access Control (MAC) address of the default port (in this case, 08 00 07 BF B5 17).
- The IP address of the TCP/IP router that is present on the cable connected to the current default port (in this case, 192.22.23.52).

The bottom half of the TCP/IP Info window displays the version numbers for Open Transport and TCP/IP.

Working with network configurations

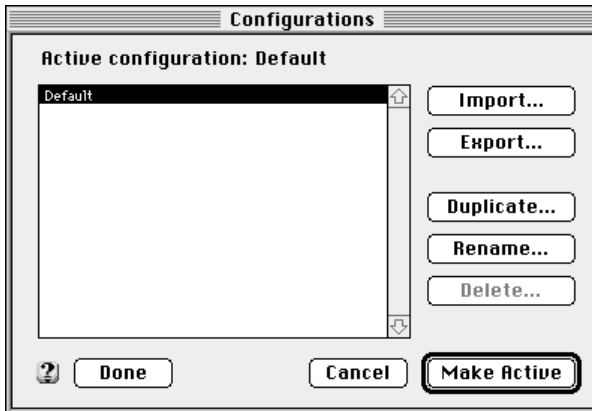
The AppleTalk and TCP/IP control panels allow you to save configurations. An “AppleTalk configuration” is the collection of settings that you make in the AppleTalk control panel, and a “TCP/IP configuration” is a collection of settings that you make in the TCP/IP control panel. You can save settings for each control panel so that it is easy to transport a setting to another computer or so that you can easily switch between settings.

Creating a new configuration

To create a new AppleTalk or TCP/IP configuration:

- 1 **Open the control panel for which you want to create a new configuration.**
- 2 **Choose Configurations from the File menu.**

The Configurations window appears.



- 3 **With the default configuration highlighted, click Duplicate.**
- 4 **In the window that appears, type a name for the new configuration.**

5 Click OK.

The name of the new configuration appears in the configuration list.

6 With the name of the new configuration highlighted, click Make Active.

The settings in the new configuration appear in the control panel.

7 Make any changes that you want for the new configuration.

8 Close the control panel.

An alert box appears:



Once saved, the new configuration will become the current configuration. If the changes you made will disrupt a network service, such as AppleTalk in this example, the alert box warns you that services will be disrupted.

9 Click the Save button.

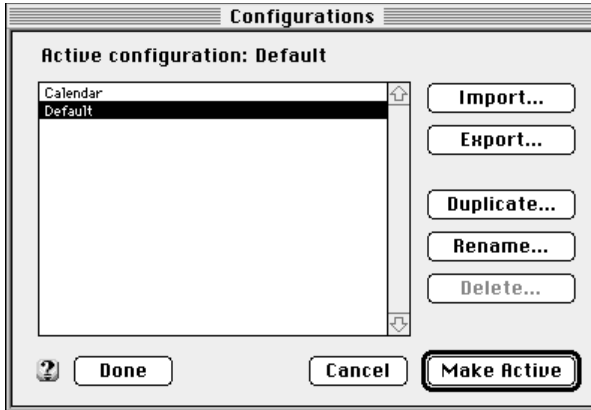
Your changes take effect immediately. The saved configuration becomes the new current configuration.

Using a different configuration

To use a different configuration:

- 1 **Open the control panel for which you want to use a different configuration.**
- 2 **Choose Configurations from the File menu.**

The Configurations window appears.



- 3 **Click the name of the file that contains the configuration you want to use.**
- 4 **Click Make Active.**

The control panel becomes active, and the settings from the selected configuration file appear in it.

- 5 **Close the control panel.**

If the new configuration changes the default port, an alert notifies you that networking services that are already established will be interrupted. Click OK.

The settings of the configuration selected in step 3 take effect immediately.

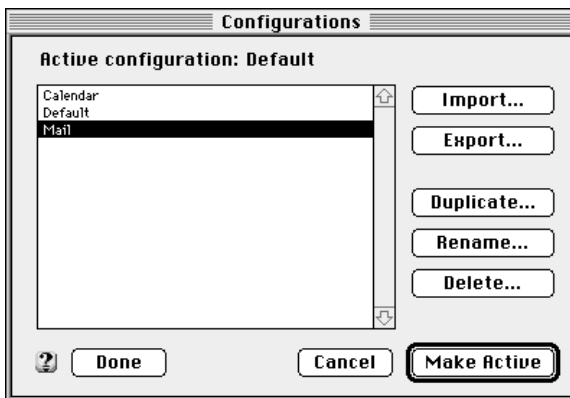
Exporting a configuration

You may want use a configuration (possibly with some small modification) on another computer. You do this by exporting the configuration to a file and copying the file to the other computer.

To export a configuration to a file:

- 1 **Open the control panel for which you want to export a configuration.**
- 2 **Choose Configurations from the File menu.**

The Configurations window appears.



- 3 **Click the name of the configuration that you want to export.**
- 4 **Click Export.**
- 5 **In the dialog box that appears, type a name for the file in which the configuration is to be saved, and locate the disk or folder in which you want the file to reside.**
- 6 **Click Save.**

The configuration is saved in the specified file and folder. To use the configuration on another computer, copy the file to that computer and import it, as described in the next section.

Importing a configuration

To import a configuration from another computer:

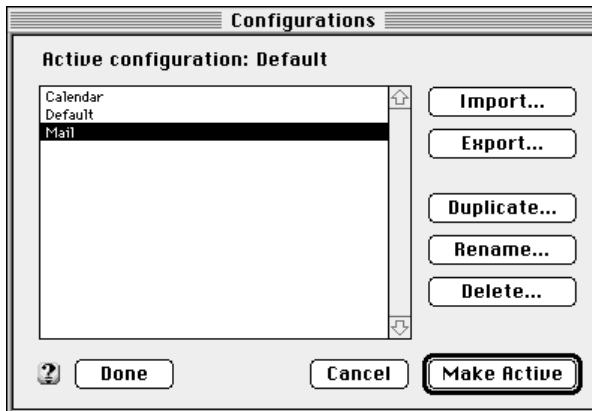
- 1 **Copy the configuration file to the computer on which you want to use it.**
- 2 **On that computer, open the control panel for which you want to import a configuration.**
- 3 **Choose Configurations from the File menu.**
The Configurations window appears.

4 **Click Import.**

5 **In the dialog box that appears, locate the file that contains the configuration you want to import.**

6 **Click Open.**

The name of the new configuration appears in the list of configurations:



- 7 **If you want to make the new configuration active (that is, appear in the control panel), click its name to select it, and click the Make Active button.**

Depending on the type of control panel (AppleTalk or TCP/IP), you may want to change some settings. For example, if it is a TCP/IP control panel, you should change the IP address.

WARNING If you do not change the IP address, you may cause the same IP address to be used by two different computers on the network, which causes network errors.

8 Close the control panel.

9 If you have made configuration changes, an alert box asks if you want to save changes. Click the Save button.

If the imported configuration changes the default port, an alert notifies you that networking services already established will be interrupted. Click OK. The imported configuration becomes the current configuration. Your changes take effect immediately.

Hosts file format

A *hosts file* is a list of IP addresses and the names (host names and domain names) that are associated with them. The hosts file can be stored anywhere on your server's hard drive, but it is usually stored in the Preferences folder in your active System Folder. To make a particular hosts file active, locate it through the Select Hosts file button in the TCP/IP control panel.

The information in the hosts file consists of a series of records whose fields must be in the following format:

name data ; comment

The *name* field can be an alias or a fully qualified domain name (that is, it contains at least one dot). For example, "apple.com" is a fully qualified domain name; "apple" is not.

The *data* field in a hosts file record includes the following subfields, each separated by one or more space characters.

The *ttl* (time to live) subfield specifies the number of seconds for which the record is valid. This subfield is optional. If it is not present, or if it is “-1”, the record is always valid.

The *class* subfield is optional. The only value that is currently supported is “IN” (Internet domain).

The *type* subfield is required and describes the type of identifier that follows. Use “A” to indicate that an IP address follows. Use “CNAME” to indicate that the identifier that follows is a canonical (“real”) name. Use “NS” to indicate that the identifier that follows is a name server.

The *identifier* subfield is required and can be an IP address or a canonical name.

Examples of valid hosts file records are:

```
apple.com A 130.43.2.2  
; address of host apple.com
```

```
foobar CNAME barfoo.apple.com  
; canonical name for the host whose local alias is “foobar”
```

```
xyzcorp.com 86400 NS biglist.xyzcorp.com  
; name server for xyz corp (valid for one week)
```

The MacTCP application also allows you to use a hosts file. The format requirements for the MacTCP hosts file are slightly different from the format requirements for an Open Transport hosts file.

If you want to use a MacTCP hosts file from another computer, make sure that all of the listed domain names are fully qualified. MacTCP allows the hosts file to contain domain names that are not fully qualified. When used with Open Transport, a domain name that is not fully qualified will cause an error unless it is an alias.

To use a domain name that is not fully qualified in the TCP/IP hosts file, you can use two records. The first record associates a local alias with a fully qualified domain name, and the second record resolves the domain name to an IP address. For example, you might have the following entry in a MacTCP hosts file:

```
bigcomputer A 128.1.1.1
```

To accomplish the same effect of associating “bigcomputer” with the address 128.1.1.1, an Open Transport hosts file needs these two records:

```
bigcomputer CNAME largedomain.xyzcorp.com
```

```
largedomain.xyzcorp.com A 128.1.1.1
```

The first record associates the alias “bigcomputer” with the fully qualified domain name “largedomain.xyzcorp.com.” The second record resolves that domain name to the IP address 128.1.1.1.

3 Using Application Software

This chapter provides important information you need to know about using your Workgroup Server with application programs. For instance, although your server is compatible with most programs intended for use with Macintosh computers, certain programs are designed especially for Power Macintosh computers. These kinds of programs take best advantage of your server's speed. In addition, the order in which certain programs start up affects a server's performance. Be sure to read the information in this chapter before setting up your server's application programs.

Using Power Macintosh programs

Programs designed for the PowerPC-based Workgroup Server provide improved performance for your server. However, to get the full benefit of this software, you need to know about two important items—virtual memory and shared libraries.

Virtual memory

Virtual memory is a feature of Macintosh computers that lets you use space on a hard disk as additional memory. This feature helps you run large programs when the computer does not contain enough dynamic random-access memory (DRAM). However, virtual memory may adversely affect the performance of some server application programs, such as AppleShare. Refer to the documentation that came with your application to see if the application works well with virtual memory turned on.

Shared libraries

Power Macintosh programs use special files called *shared libraries*. These files help Power Macintosh programs to run more efficiently, and can be used by more than one Power Macintosh program simultaneously. Any necessary shared libraries are installed automatically in the System Folder when you install Power Macintosh programs.



Shared libraries are represented by icons like this

If a Power Macintosh program requires a shared library and there is not enough memory available for the shared library, you'll see a message that the program could not be opened because there is not enough system memory available for the shared library. If this happens, quit programs not in use or install more memory in your server. (For more information, see the information on expanding memory in the setup guide that came with your server.)

If a required shared library is missing, you'll see a message that the program could not be opened because the shared library could not be found. If this happens, follow the directions that came with your program to reinstall the program. If the shared library is still missing, contact the software program's manufacturer for assistance.

Using older Macintosh programs

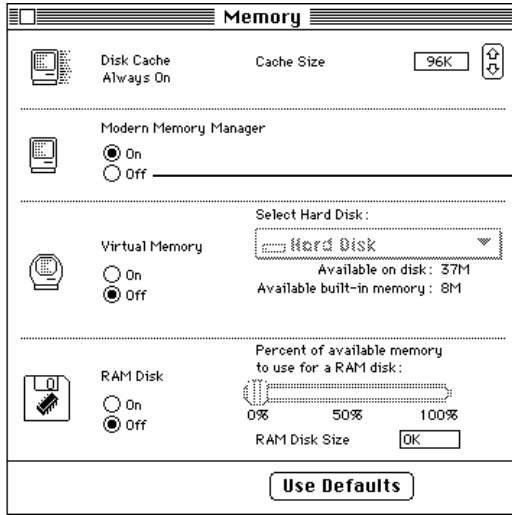
If you experience problems using an older Macintosh program, it may be incompatible with your Workgroup Server. You may be able to use your older program if you change the Modern Memory Manager setting in your Memory control panel.

WARNING If your Workgroup Server is running AppleShare, do not change the Modern Memory Manager setting. For AppleShare to work properly, Modern Memory Manager must be turned on. If you want to run other applications that do not work when Modern Memory Manager is turned on, check with the application's vendor to see if an update is available.

Follow these steps to change the Modern Memory Manager setting:

- 1 **Choose Control Panels from the Apple () menu and open the Memory control panel.**

2 Turn off Modern Memory Manager.



Click here to turn off
Modern Memory Manager

When you are finished using the program, open the Memory control panel again and turn Modern Memory Manager back on.

For best performance, contact the program's manufacturer for an upgrade.

Using server application programs

Specific server application programs or services, such as AppleShare, AppleSearch, Apple Remote Access, or Apple RAID Software, may have been included with your server. Review the documentation that came with the software before you install these services; you may be required to perform special procedures that can affect your server system before you use a particular service.

IMPORTANT See the Workgroup Server Read Me for information about the versions of application programs from Apple that are compatible with your Workgroup Server.

Using desktop application programs

You can also use your Workgroup Server as a desktop personal computer to run some personal application programs. Running such programs, however, may degrade the performance of your server application programs or network services.

Order of installing and starting programs

Though your server may have come with server application programs or network services, you may want to install additional software. Note that the order in which server application programs are installed and started is important. Be sure to review the documentation, especially product Read Me files, for all the server application programs you plan to use before installing and running them. Also, refer to the Workgroup Server Read Me file on your server system's hard disk for the most up-to-date news about installing server application programs.

Setting up your server to restart programs automatically

You can set the Workgroup Server to start server application programs (including network services) automatically whenever you start up the server or whenever the server automatically restarts after a temporary power outage.

To set up your server to restart server application programs automatically:

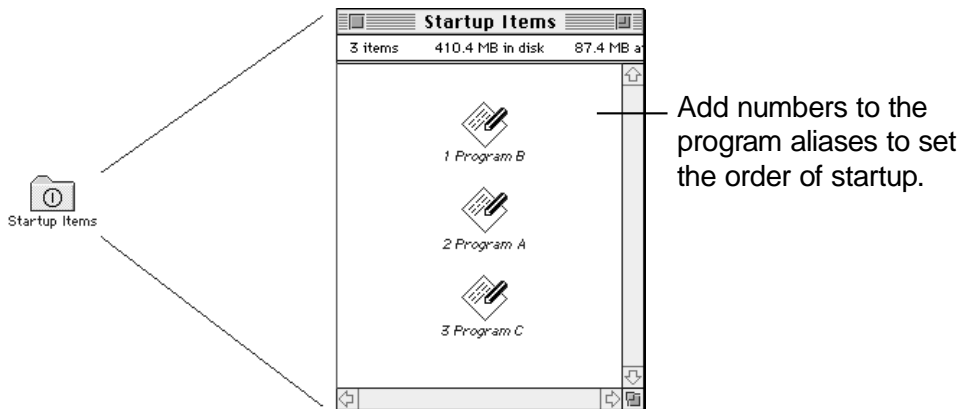
- 1 Create an alias for each program that you want the server to start automatically.**

You create an alias by selecting the icon of the program on the desktop and choosing Make Alias from the File menu.

2 Drag the aliases to the Startup Items folder, located in the System Folder on your startup disk.

Macintosh computers and servers automatically open documents and programs (or their aliases) located in the Startup Items folder whenever the server starts up.

Note: The server opens documents and programs located in the Startup Items folder in alphabetical or numerical order. Because the order in which server application programs are started may be important (as described in the program documentation), you may want to rename the aliases so that the programs start in the desired order. For example, you can insert a number at the beginning of each filename. The following figure shows a sample setup.



Setting up your server to run programs at shutdown

The Shutdown Items folder in the System Folder allows you to specify scripts or programs that automatically run during the shutdown process. This folder works much like the Startup Items folder. To specify an item to run during shutdown, put the item or its alias in the Shutdown Items folder.

Note: The server opens scripts and programs located in the Shutdown Items folder in alphabetical or numerical order. Because the order in which server application programs are run may be important, you may want to rename the aliases so that the programs are run in the desired order.

The next time you choose Shut Down or Restart from the Special menu, the scripts and programs are run. If you choose Shut Down from the Apple menu, the items in the Shutdown Items folder are not run.

Additional capabilities for your server system

You have the option to install two programs included with your server that provide additional capabilities for your system software:

- PowerTalk, which provides built-in mail and collaboration services
- QuickDraw GX, which gives your computer more powerful printing capabilities

Because these programs are not designed specifically for use on server systems, they may reduce your server's performance. Keep this possibility in mind when deciding if you want to add these capabilities to your Workgroup Server.

IMPORTANT If you use the AppleShare Print Server with your server and you want to use QuickDraw GX also, be sure to see the AppleShare Read Me file.

You'll find Installers for these optional programs in the System Software Installers folder on the *Workgroup Server Software* CD-ROM disc.

IMPORTANT AppleScript, which allows you to automate many actions you perform repeatedly on your server, is already installed in your system. To review the available automated tasks, look in the Apple (🍏) menu. To learn how to create new scripts for your server, see the "Using AppleScript" documents in the AppleScript folder in the Apple Extras folder on your hard disk.

Working with several programs at a time

You can open as many application programs and desk accessories as your server's memory allows.

Finding out which programs are open

All open programs are listed in the Application menu at the right end of the menu bar. The name of the active program (the one you're using right now) has a checkmark next to it, and its icon appears in the menu bar.

Switching programs

You can switch to another open program or desk accessory by choosing its name from the Application menu.

If a program's icon is dimmed in the menu, that means its windows are hidden. Choosing the program from the Application menu displays its windows.

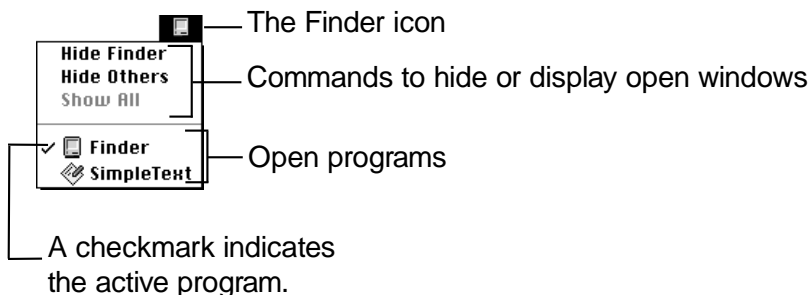
You can also switch to another program by clicking in a window that belongs to an open program or by double-clicking a program icon (or the icon of a document that was created with the program).

Hiding and showing windows on the desktop

You can hide all windows except those of the active program by choosing Hide Others from the Application menu.

The other programs remain open even though their windows are hidden. When you switch to another program, its windows become visible again.

If you want to see all the open windows, choose Show All from the Application menu.



4 Managing Hard Disks

This chapter tells you how to perform common disk maintenance tasks, such as mounting volumes, initializing hard disks, and installing system software. When working with your Workgroup Server's startup disk, you often need to start up from a different disk, such as the *Workgroup Server Software* CD-ROM disc. This chapter tells you how.

Backing up your files

Making backup copies of important server files is good protection against possible damage to the originals. If a backup program was included with your server, be sure to use it (or another backup program if you prefer) to set up and schedule a regular, automatic backup of your files. You can also back up your files manually, by making copies on another hard disk or even on floppy disks, but such methods are less convenient.

Using Apple RAID Software

Your Workgroup Server comes with Apple RAID Software, which you can use to increase the performance of your hard disk drives. To use Apple RAID Software with a disk, you must install the Apple RAID driver on it. For information about managing hard drives that have been prepared for Apple RAID, see the *Apple RAID Software Administrator's Guide*.

IMPORTANT Drive Setup, the disk utility from Apple Computer, cannot be used on drives on which the Apple RAID driver has been installed. When a drive is used with Apple RAID, you use Apple RAID Software to manage the drive.

Mounting volumes

Each time you start up your Workgroup Server, it automatically searches the SCSI buses for volumes and mounts any that it finds. Any SCSI devices that are not turned on when you start up your Workgroup Server are not found, so their volumes are not mounted.

If you later turn on a SCSI device, you can use Drive Setup to mount any volume it contains.

To use Drive Setup to mount volumes:

1 Open the Drive Setup icon.

The Drive Setup program resides in the Utilities folder in the Apple Extras folder on your startup disk.



Drive Setup

When Drive Setup starts up, it automatically scans the SCSI bus for devices that contain volumes.

2 In the list of drives, click the unmounted volume that you want to mount.

3 Choose Mount Volumes from the Functions menu.

The selected volume is mounted, and its icon appears on the desktop.

4 Choose Quit from the File menu.

Starting up from a CD-ROM disc

To test, repair, or initialize your startup hard disk, or to install system software on your startup hard disk, you need to start up your server from another disk, such as the *Workgroup Server Software* CD-ROM disc that came with the server.

To start up the server using the *Workgroup Server Software* CD-ROM disc, follow these steps:

1 Turn your server on.

2 When you see the desktop on your screen, press the Open/Close button on your CD-ROM drive, and insert the CD-ROM disc containing system software into the drive.

3 Hold down the “c” key on your keyboard and restart your server.

To ensure that the CD-ROM disc remains in the CD-ROM drive, continue to hold down the “c” key until you see the “Welcome to Macintosh” message.

Initializing a hard disk

Before you can use a new disk, the disk must be prepared so that the server knows where to store information on the disk. This preparation is called *initializing* (or *formatting*) the disk.

WARNING Initializing a disk erases any information that may be on it. Before you initialize a damaged disk, try to repair it as described in “Repairing a Damaged Disk” later in this chapter.

When do you need to initialize a hard disk?

The hard disk inside your server was initialized at the factory, so you probably won't need to initialize it. You need to initialize a hard disk only if one of the following is true:

- *The disk is new and uninitialized.* Your internal hard disk and most external hard disks are initialized at the factory and do not have to be initialized again. If you are adding a new non-Apple hard disk to your server, check your owner's manual to see if it needs to be initialized.
- *You've experienced repeated errors using this disk.* If problems persist after you initialize the disk, the disk is in need of servicing.
- *You want your disk to be partitioned in a different way.*

If a hard disk hasn't been initialized, the disk's icon does not appear on the desktop when you start up the server using another disk.

How to initialize a hard disk

You initialize an Apple SCSI hard disk by using the Drive Setup program, which is available on your server's hard disk and on the *Workgroup Server Software* CD-ROM disc that came with your server. (To initialize a hard disk from another manufacturer, use the utility software that came with the hard disk.)

- 1 **If the disk that you need to initialize is your startup disk, start up your server from the *Workgroup Server Software* CD-ROM disc.**

For details, see “Starting Up From a CD-ROM Disc” earlier in this chapter.

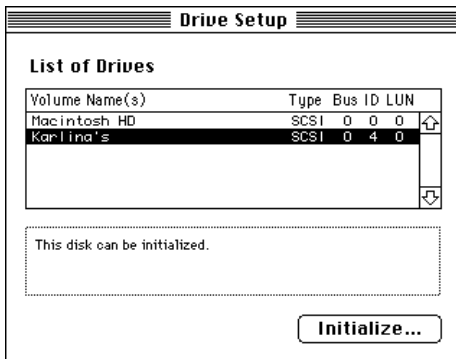
- 2 **Open the Drive Setup icon.**

The Drive Setup program resides in the Utilities folder in the Apple Extras folder on your startup disk and on the *Workgroup Server Software* CD-ROM disc.



Drive Setup

- 3 **In the list of drives, click the disk you want to initialize.**



- 4 **Click Initialize to initialize the hard disk.**
- 5 **Click Quit when you see a message reporting that initialization was successful.**

If a message reports that initialization failed, try again. If initialization fails a second time, take the disk to your Apple-authorized service provider for repair.

Installing system software

System software is the set of programs and other files that your server uses to start itself up, keep track of your files, and run the application programs you use. System software is kept in the folder called the System Folder. When you turn on your server, it looks for a startup disk, which is a disk that contains the system software. The startup disk is usually an internal hard disk, although another hard disk or a floppy disk can also be a startup disk.

If you're installing system software on a hard disk for the first time, make sure that your hard disk has been initialized, a process that prepares the disk to store information. If you see the hard disk's icon on the desktop when you start up the server, the disk has been initialized. If no disk icon appears when you start up, see "Initializing a Hard Disk" earlier in this chapter for instructions.

When should you reinstall system software?

If you have a problem with your system software, you may see this icon in the middle of the screen:



If this icon appears, follow the instructions in "Solving Hard Disk Problems" in Chapter 7 to test your startup hard disk and repair any damage.

If repairing the disk doesn't help, reinitialize it as described in "Initializing a Hard Disk" earlier in this chapter. Then follow the steps in this section to do what is commonly called a "normal" installation of system software.

Doing a normal installation of system software

To do a normal installation, follow these steps:

- 1 **If the disk on which you want to install system software is your startup disk, start up your server from the *Workgroup Server Software* CD-ROM disc.**

For details, see "Starting Up From a CD-ROM Disc" earlier in this chapter.

2 Find and open the Disk First Aid icon.

The Disk First Aid program resides in the Utilities folder in the Apple Extras folder on your startup disk and on the *Workgroup Server Software* CD-ROM disc.



Disk First Aid

After Disk First Aid starts, follow the instructions on the screen. Disk First Aid checks your hard disk for any problems.

3 When Disk First Aid has finished checking your hard disk, choose Quit from the File menu.**4 Open the Drive Setup program.**

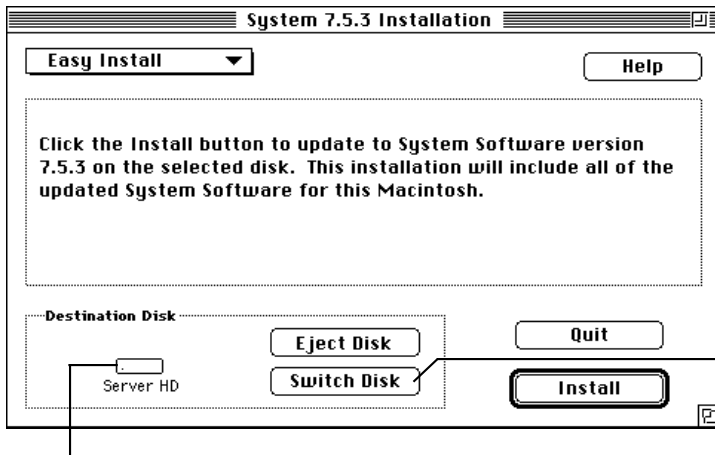
The Drive Setup program resides in the Utilities folder. You use the Drive Setup program to update your hard disk.

5 In the list of drives, click your startup disk.**6 Pull down the Functions menu and choose Update Driver.****7 When the update process is finished, quit Drive Setup.****8 Shut down your server.****9 If the disk on which you are installing system software is your startup disk, start up your server from the *Workgroup Server Software* CD-ROM disc.**

For details, see “Starting Up From a CD-ROM Disc” earlier in this chapter. The Installer’s Welcome screen may appear or you may have to double-click the System Software Installer icon to open the Installer program.

10 Click OK.

The Easy Install dialog box appears.



This is the disk on which system software will be installed.

Click to indicate a different disk.

11 Make sure that the hard disk named in the box is the one on which you want to install system software.

If it isn't, click Switch Disk until the correct disk name appears.

12 Click Install.

13 Follow the instructions that appear on the screen.

If you're installing system software from floppy disks, you see messages asking you to insert different disks.

14 When you see a message reporting that the installation was successful, click Restart (or "Quit," if you're installing from the CD-ROM disc).

Don't forget to eject the CD-ROM disc containing system software. If a message reports that installation was not successful, try installing again. (Follow the instructions on the screen.)

If, after reinstalling system software by doing a normal installation, you still experience problems with your server, follow the steps in the next section for doing a "clean" installation of system software.

IMPORTANT Certain system extensions or application programs that were originally on your hard disk may not be installed with the Installer program. If you notice that a certain extension or program was not installed, you need to install it separately. You can find these additional extensions and programs on the *Workgroup Server Software* CD-ROM disc. (Application programs from other vendors can be reinstalled from backup copies you made.)

Doing a clean installation of system software

The steps in this section outline a “clean” installation of system software. A clean installation allows you to discover which item in your System Folder is causing a problem. A clean installation creates a brand new System Folder and saves everything in your original System Folder in a different location. You can then follow the instructions in “Replacing Special Software,” later in this chapter, to reinstall system extensions, control panels, and other special software one at a time from the old System Folder to the new System Folder. This procedure allows you to determine which item in the old System Folder was the source of the problem.

Do a clean installation if you can’t determine what is damaged in your System Folder (especially if you think any special software, such as control panels, system extensions, or custom utilities, may be causing the problems you’re experiencing). You should also do a clean installation if you’re still having problems with your server after you’ve reinstalled system software by doing a normal installation.

To do a clean installation, follow these steps:

- 1 If the disk on which you are installing system software is your startup disk, start up your server from the *Workgroup Server Software* CD-ROM disc.**

For details, see “Starting Up From a CD-ROM Disc” earlier in this chapter.

- 2 Find and open the Disk First Aid icon.**

The Disk First Aid program resides in the Utilities folder in the Apple Extras folder on your startup disk and on the *Workgroup Server Software* CD-ROM disc.



Disk First Aid

After Disk First Aid starts, follow the instructions on the screen. Disk First Aid checks your hard disk for any problems.

- 3 When Disk First Aid has finished checking your hard disk, choose Quit from the File menu.**

4 Open the Drive Setup program.

You use the Drive Setup program to update your hard disk.

5 In the list of drives, click your startup disk.

6 Pull down the Functions menu and choose Update Driver.

7 When the update process is finished, quit Drive Setup.

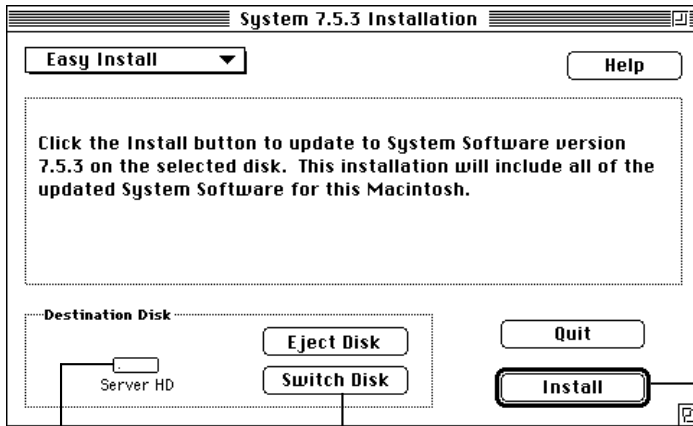
8 Shut down your server.

9 If you are installing system software on your startup disk, start up your server from the *Workgroup Server Software* CD-ROM disc.

The Installer's Welcome screen may appear or you may have to double-click the System Software Installer icon to open the Installer program.

10 Click OK.

The Easy Install dialog box appears.



Disk on which system software will be installed.

If you need to install on a different disk, click this button.

For a clean installation, DO NOT click the Install button.

- 11 Make sure that the hard disk named in the Destination Disk box is the one on which you want to install system software.**

If it isn't, click Switch Disk until the correct disk name appears.

- 12 Hold down Shift-⌘-K to start the clean installation.**

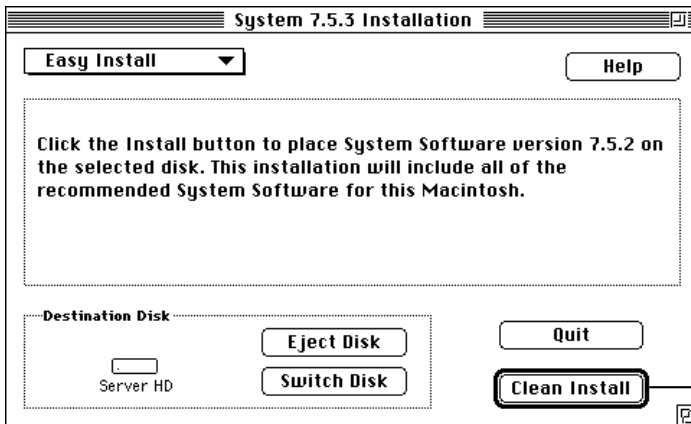
The following dialog box appears.



- 13 Make sure that the Install New System Folder button is selected and click OK.**

The Easy Install dialog box appears. The Install button has changed to Clean Install, and the contents of your old System Folder have been moved to a new folder named Previous System Folder.

- 14 Click Clean Install.**



Click here to install the software you need.

15 Follow the instructions that appear on the screen.

It takes a few minutes to complete the installation.

16 When you see a message reporting that the installation was successful, you may need to click Restart.

You need to click Restart only if you installed software onto the startup disk. If a message reports that installation was not successful, try repeating the clean installation procedure.

IMPORTANT Certain system extensions or application programs that were originally on your hard disk may not be installed with the Installer program. If you notice that a certain extension or program was not installed, you may need to install it separately. You can find these additional extensions and programs on the *Workgroup Server Software* CD-ROM disc. (Application programs from other vendors can be reinstalled from backup copies you made.)

Replacing special software

Special software consists of items such as control panels, system extensions, custom utilities, fonts, or Apple menu items that you may have had in your old System Folder. To make sure that special software does not create any conflicts with other programs on your server, follow this procedure to replace these items in your new System Folder:

1 Copy any special software items from the Previous System Folder back to your System Folder one item at a time, restarting the server after copying each item.

IMPORTANT Be very careful not to *replace* (copy over) any of the files in the System Folder with files from the Previous System Folder.

2 Check after each restart to make sure your server is not having any software problems.

If any of your special software items cause software problems, contact the software manufacturer for assistance or an upgrade.

Doing a custom installation of system software

The Easy Install procedure described in the previous sections is usually appropriate, because it automatically installs all the items you need. However, if you'd like to select a combination of system software files for your specific needs, you can customize your system software installation. You use custom installation to install or update one or more specific files, or to save space on your hard disk by installing only the files you want.

To install customized system software, follow these steps:

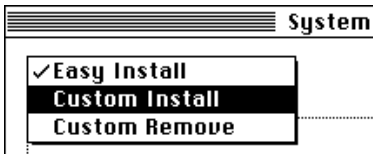
- 1 If you are installing system software on your startup disk, start up your server from the *Workgroup Server Software* CD-ROM disc.**

For details, see "Starting Up From a CD-ROM Disc" earlier in this chapter. The Installer's Welcome screen may appear or you may have to double-click the System Software Installer icon to open the Installer program.

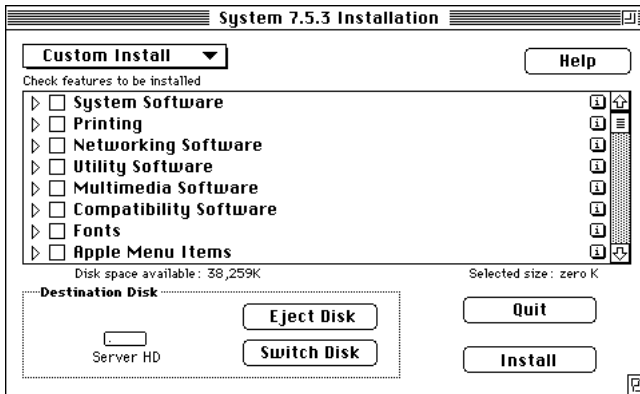
- 2 Click OK.**

The Easy Install dialog box appears.

- 3 Choose Custom Install from the pop-up menu.**



The Custom Install dialog box appears, listing all available system software components.



- 4 **Scroll through the list of components, clicking the checkbox next to each component you want to install.**

You can see and select individual items within each component by clicking the arrow to the left of the component, then clicking the item you want to install. To get additional information about each component listed, click the box with the letter *i* in it to the right of the component.

- 5 **Click Install.**
- 6 **Follow the instructions that appear on the screen.**
- 7 **When you see a message reporting that the installation was successful, click Quit.**

If a message reports that installation was not successful, try installing again. (Follow the instructions on the screen.)

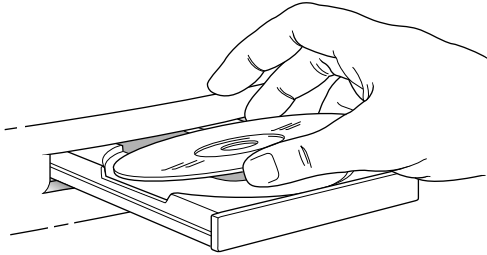
- 8 **Restart your server.**

The system software is installed and your server is ready to use. Don't forget to eject the CD-ROM disc containing system software when you are finished.

5 Using the CD-ROM Drive

Read this chapter for information on using your server's internal CD-ROM (Compact Disc Read-Only Memory) drive. (CD-ROM drives are also sometimes called CD-ROM players.) For information on the proper handling of CD-ROM discs, refer to Appendix A in the setup guide that came with your server.

Your internal CD-ROM drive works with CD-ROM discs, standard audio compact discs (CDs), and single-session or multisession Photo CDs. Your CD-ROM drive provides access to large amounts of information. However, you cannot save information on CD-ROM discs. ROM stands for *read-only memory*, meaning that the player cannot “write” information onto CD-ROM discs.

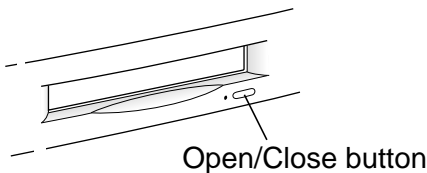


A wide selection of CD-ROM discs is available for entertainment, education, and business. A typical disc can hold over 650 megabytes (MB) of information—the equivalent of 270,000 pages of text, up to 8 hours of speech or music (depending on the sound quality), hundreds of high-resolution images, or any combination of text, sound, and graphics.

Inserting a CD-ROM disc

Follow these instructions to insert a CD-ROM disc into your CD-ROM drive. Then follow the instructions provided with your disc, as well as the instructions in this manual.

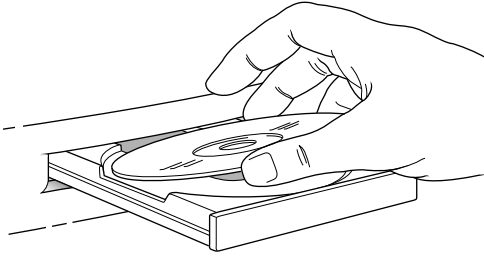
- 1 Turn on your server, if it's not already on.**
- 2 Press the Open/Close button to open the tray of the CD-ROM drive.**



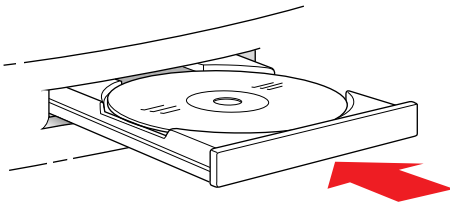
The tray opens.

3 Place a CD-ROM disc in the tray, with the disc label facing up.

Make sure the disc is lying flat and centered in the tray. If you are using a small (8 cm) disc, make sure it is centered within the inside ring on the tray.



4 Push the tray in, or press the Open/Close button, to close the tray.



In a few moments, an icon for the CD-ROM disc appears on your screen.

Ejecting a CD-ROM disc

Follow these instructions to open the tray and eject a CD-ROM disc from your computer.

IMPORTANT You may not be able to eject a disc if it is being shared.

1 Open the tray.

There are several ways to open the tray of your CD-ROM drive.

If a CD-ROM disc icon appears on your screen:

- Select the disc icon on your screen and drag the icon to the Trash.
- Click the disc icon, then choose the Put Away command in the File menu.
- While the AppleCD Audio Player window is active, choose Eject CD from the File menu, or simultaneously press the ⌘ and E keys. (AppleCD Audio Player is a program that allows you to control your CD-ROM drive and is available in the Apple [🍏] menu.)

If no CD-ROM disc icon appears on your screen:

- Press the Open/Close button for your CD-ROM drive.

2 Take the CD-ROM disc out of the tray.

Store your disc in a safe place, away from heat, dust, and moisture.

3 Push the tray in, or press the Open/Close button, to close the tray.

To avoid possible damage to the tray or the CD-ROM drive, keep the tray closed when you are not using it.

Playing audio CDs

With your CD-ROM drive and your computer's built-in speaker, you can play audio compact discs (CDs) or audio tracks on CD-ROM discs. You can also attach headphones or speakers to the computer to listen to audio CDs and audio tracks. For information on connecting sound equipment to your server, see Chapter 3 in the setup guide that came with your server.

You may need to set control panel options in order to play audio CD-ROM discs. See "Choosing Sound Devices and Alert Sounds" in Chapter 1.

To start, stop, and otherwise control audio discs, use the AppleCD Audio Player program, available in the Apple (🍏) menu. Your audio CD software will only play tracks that contain audio information. You can listen to an audio CD or audio tracks in the background while you do other work on your server. For more information about playing audio CDs, see the "CD-ROM Discs" topic of Macintosh Guide, available in the Guide (🔍) menu.

Working with Photo CDs

You can use your CD-ROM drive to open Photo CD images stored on Photo CDs. A Photo CD image is a digitized version of a standard photograph that you can open and view on your screen.



You can do many things with the images on your Photo CDs:

- Open and view the images individually on your screen.
- View the images on your screen in a series, as you would view a slide presentation.
- Copy and save the images, print them, paste them into word-processing documents or other documents that accept graphics, and edit them with a graphics application program.

Photo CD images are an excellent source of graphics for desktop publishing, multimedia presentations, business documents, and professional-quality graphic design. For more information on working with Photo CD images, see the “CD-ROM Discs” topic of Macintosh Guide, available in the Guide (🔍) menu.

6 Using a DAT Drive and Tape Cassettes

You need to read this chapter only if your server includes an internal tape-backup unit. This chapter describes the types of tape cassettes that work with the internal tape-backup unit, tells you how to insert and remove tape cassettes, explains the DAT drive status lights, and tells you how to clean the tape-drive heads.

The internal DDS-2 DAT drive and accompanying software can perform full or partial backup and restore procedures for all of the data on your hard disks. In addition, the drive automatically performs error correction and data compression of the files that you back up and restore. The error-correction feature helps ensure a high level of data integrity. The data-compression feature allows more data to fit on a cassette than do conventional backup mechanisms.

Use Retrospect Remote (or some other backup utility) to back up and restore data. For more information, see the utility's documentation.

Compatible tapes

Your internal DAT (digital audio tape) drive is compatible with MRS-quality DDS (digital data storage) tape cassettes. MRS (Media Recognition System) cassettes are the highest-quality digital data tape available. Your internal tape drive requires this level of quality to perform backup operations successfully. See your Apple-authorized service provider for more MRS-quality DDS tape cassettes or their compatible substitutes. Compatible cassettes are typically stamped “Digital Data Storage” and longer-length cassettes (120 meters) need the “DDS2” designation. If you use cassettes not approved by your Apple-authorized service provider, you void the warranty on your tape drive.

IMPORTANT Some vendors of computer products may refer to DDS cassettes as *digital audio tape* (DAT) cassettes. However, DAT (audio) cassettes have a different mechanical specification from DDS cassettes. For backing up your server files, be sure to use only those DAT cassettes designed for MRS.

Tapes supplied with the server

Two cassettes are supplied with your Workgroup Server. The first is a blank DDS cassette for backup and restore operations. (The blank tape included with your system has a maximum storage capacity of 10–14 gigabytes of compressed data.) The second is a cleaning cassette; its operation is discussed later in this chapter.

Starting up the tape drive

The tape drive receives power and performs a self-test when you start up your server. During the test, both status lights next to the tape drive opening are solid green; then the light on the left flashes green and the light on the right turns off. If no tape is loaded in the tape drive, both status lights turn off. If a tape is loaded in the tape drive, the light on the left becomes solid green.

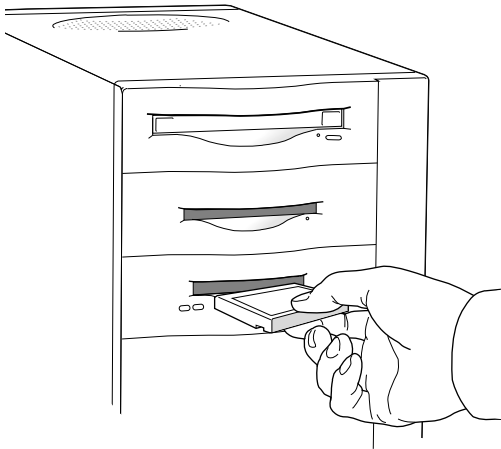
There are two conditions that indicate the self-test has failed. If the light on the right flashes amber, you may need to clean the tape-drive head, as described in the section “Cleaning the Tape-Drive Heads” later in this chapter. Or, if a tape is loaded in the tape drive, a flashing amber light may indicate that the tape is worn and needs to be replaced. If the light on the right becomes solid amber, the tape drive did not successfully complete its self-test and should not be used; consult an Apple-authorized service provider.

The status lights are discussed in greater detail later in this chapter.

Inserting tape cassettes

To use a cassette:

- **Insert it into the tape slot in the front panel of the server, as shown in this figure:**



As you insert the cassette, the drive pulls it into place and performs a loading sequence, which includes threading and rewinding the tape and checking for error conditions. The loading procedure takes about 30 seconds.

Status lights

Located next to the tape drive opening are two lights that inform you of the status of tape operations. The light on the left is the tape light, and the light on the right is the clean light. A solid green tape light indicates normal operation and a solid amber clean light indicates a warning condition. A flashing green tape light indicates activity between the tape drive and the SCSI bus. A flashing amber clean light indicates the tape in the drive is worn or the tape-drive head needs to be cleaned.

The following table lists all the possible meanings of the status lights.

Tape light (left side)	Clean light (right side)	Meaning
Normal operation		
Flash green*	Off	Cassette loading or unloading, or self-test in progress
Fast flash green [†]	Off	Cassette loaded/read or write activity
Green	Off	Cassette loading/drive online
Error states		
Any	Flash amber*	Media wear (caution), or clean required
Any	Amber	Error condition

*Flash means the light flashes 1/2 second on, 1/2 second off.

[†]Fast flash means the light flashes 1/4 second on, 1/4 second off.

The caution signal

If your tape drive detects problems, it displays a caution signal: the clean light flashes amber. You can clear the caution signal by ejecting the cassette.

The caution signal may be caused by dirty tape-drive heads. If this signal appears, clean the heads and insert the tape again. (Head-cleaning instructions are given in “Cleaning the Tape-Drive Heads,” later in this chapter.) The caution signal may also indicate a worn-out tape. If the tape is old or worn, you should copy its data to a new tape and discard it. If you’re trying to restore data from a worn tape and the caution signal appears, clean the tape-drive heads, then try the restore operation again.

Removing tape cassettes

You can remove a tape cassette at any time by pressing the eject button located under the tape slot on the right side. You should not press the eject button while the tape is in use.

Check the Retrospect Remote (or other backup utility’s) documentation to learn about additional methods for ejecting cassettes while using the backup software.

Forcing the ejection of a tape cassette

If you need to force the ejection of a tape cassette:

- **Hold the eject button down for at least 5 seconds (perform this step *after* the server has started up).**

The drive waits 35 seconds for the normal eject procedure to occur, and, if it does not occur, unthreads the tape and ejects the cartridge.

WARNING If you force an eject while the drive is busy, you may lose data or cause the tape to be invalidly formatted.

Locking a cassette

You can lock a DDS cassette by sliding the tab on the back of the cassette so that the hole is visible. Once a tape cassette is locked, data can be read from the cassette but not written to it.

Avoiding high humidity

Whenever your tape drive detects water condensation, both status lights glow solid amber. This warning signal cancels any commands in progress. Furthermore, any commands that access the tape are rejected. The tape drive then unthreads the tape to prevent tape and tape-head damage.

To minimize the chance of condensation, adhere to the environmental requirements described in the safety, health, and maintenance information in the setup guide that came with your server and follow these general cassette guidelines:

- Use tape cassettes at temperatures between 5° C (40° F) and 40° C (104° F).
- If you expose the tape cassettes to temperatures outside the operating limits, you can stabilize them by leaving them in the proper operating temperature for a minimum of two hours.

Follow these guidelines to avoid temperature problems:

- Avoid exposing cassettes to severe temperature conditions. For example, don't store a cassette in a car in bright sunlight.
- Avoid transferring data to or from a tape cassette when the temperature is changing by more than 10° F per hour (roughly 5° C per hour).

Cleaning the tape-drive heads

The most common reason for the display of a caution signal on the front panel is that the tape-drive heads are dirty. Although your tape drive has a built-in roller for cleaning the heads during normal operation, you still need to perform a separate cleaning step as part of preventive maintenance.

Your system comes with a cleaning cassette that you should use to clean the tape-drive heads after every 25 hours of running time.

The Apple cleaning cassette P/N 654-0002 is approved for use with the Workgroup Server DDS-2 DAT drive. This cleaning tape is the “dry” type. Don’t use the “wet,” alcohol-style cleaning tapes. Note that, in general, cleaning tapes that work with DDS-2 drives also work with DDS drives, but DDS cleaning tapes should not be used with DDS-2 drives.

When you insert the cleaning cassette into the drive, the drive automatically loads it and cleans the heads. When the cleaning process is completed, the drive automatically ejects the cassette. Keep a record of how many times you use the cleaning cassette. After 25 uses, replace it.

The interval at which you clean the tape drive depends on how often you use it. In general, if you back up daily, you should clean the drive weekly. If you back up weekly, you should clean the tape drive once a month.

For more information about using the cleaning cassette, refer to the instructions that came with it. For additional cleaning cassettes, see your Apple-authorized service provider.

7 Troubleshooting


If you have trouble with your server, review the solutions to typical problems listed in this chapter.

If you have a question or encounter a problem while your system is still running, you can also check the “Troubleshooting” topic of Macintosh Guide, available in the Guide (🔍) menu. For more information on the kinds of on-screen help available, see Appendix A, “Getting Help,” in this guide.

When you run into trouble

When you see an error message, you don't have to take action immediately. The message stays on the screen until you click the OK button or turn off the server.

To help diagnose and correct the problem, gather as much information about the situation as you can before starting over.

- Make a note of exactly what you were doing when the problem occurred. Write down the message on the screen and its ID number (if any). Also list the programs you were using and the names of any items you know have been added to the System Folder since the system software was installed. This information will help a service person diagnose the problem. (It is helpful to keep a printed copy of the items in your System Folder. See instructions for printing a list of files in a window in the "Printing" topic of Macintosh Guide, available in the Guide  menu.)
- Check the screen for any clues. Is a menu selected? What programs and document icons are open? Note anything else that seems relevant.
- If you were typing text and were not able to save it before the problem occurred, you can write down the parts of the text still visible on the screen so that some of your work will be easy to replace.
- Ask other Macintosh users about the problem you're having; they may have a solution for it.
- Find out what actions users were performing on the server (such as copying large files, launching programs on the server, or installing programs over the network).

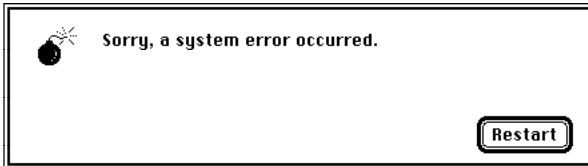
If you need repair service, consult the service and support information that came with your server for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

WARNING If you have a problem with your server and nothing presented in this chapter solves it, consult the service and support information that came with your server for instructions on how to contact an Apple-authorized service provider or Apple for assistance. If you attempt to repair the server yourself, any damage you may cause to the server will not be covered by the limited warranty on your server. Contact an Apple-authorized dealer or service provider for additional information about this or any other warranty question.

Start over

Often you can eliminate a problem simply by clearing the server's memory and starting over.

If you can, save any open documents before restarting the server. If your system is "frozen" and does not respond to any input, or if you have a "bomb" message on the screen, saving may not be possible.



You can try pressing ⌘ -Option-Esc to quit the program in use when the problem occurred; if this works, you can then save the documents open in other programs before restarting. (Be sure to restart the server immediately after you save your documents—quitting a program using ⌘ -Option-Esc may leave corrupted data in the server's memory. This corrupted data is erased when you restart the server.)

To restart your server, try the following steps:

- 1 If you can, choose Restart from the Special menu or from the dialog box that's on screen.**
- 2 If you can't choose Restart, press ⌘-Control-Power key.**
This key combination restarts the server. (Use this key combination only when you can't choose Restart from the Special menu.)
- 3 Turn off your server with the power button on the front panel of the server, wait at least 10 seconds, and then turn it on again.**
If the server does not turn off, try pressing and holding down the power button for 3 to 4 seconds.
- 4 If the power button doesn't turn off the server, unplug your server.**
- 5 If you suspect that the problem is with a peripheral device, such as a printer or external hard disk, turn it off for 10 seconds or more, then turn it on again and restart the server.**

Rebuild your desktop

A process known as “rebuilding the desktop” helps your server keep track of data on your startup disks. (Although the hard disk in your server is usually the startup disk, you can start up from any other disk that has system software installed.)

Rebuilding your desktop can solve a number of problems. For example, when application documents are no longer represented by application-specific icons (and are instead represented by generic icons on the desktop), rebuilding the desktop fixes the problem. Afterward, appropriate icons should appear for all documents.

Some extensions may interfere with rebuilding your desktop. To prevent problems, you'll need to turn off all extensions except Macintosh Easy Open before you rebuild your desktop. When you finish rebuilding the desktop, turn the extensions you normally use back on.

To rebuild the desktop of a startup disk, follow these steps:

1 Save your set of currently selected extensions.

- a. Open the Extensions Manager control panel by choosing Extensions Manager from the Control Panels submenu of the Apple () menu.
- b. From the Sets pop-up menu, choose Save Set.
- c. In the Save Set dialog box, type a name for your currently selected extensions (for example, "My Extensions") and click OK. The name of your set is added to the Sets pop-up menu.

2 Choose All Off from the Sets pop-up menu to turn off all extensions.

3 Turn on Macintosh Easy Open by clicking it in the list (under Control Panels) so that a checkmark appears beside it.

4 Restart your server while holding down the Command (⌘) and Option keys.

Hold down the ⌘ and Option keys until you see the dialog box that asks if you're sure you want to rebuild your desktop file. When the dialog box appears, you can release the keys.

5 Click OK.

The desktop is rebuilt.

IMPORTANT Do not stop the desktop-rebuilding process. Doing so could corrupt your system files.

6 Turn your original set of extensions back on.

- a. Open the Extensions Manager control panel by choosing Extensions Manager from the Control Panels submenu of the Apple () menu.
- b. From the Sets pop-up menu, choose the name you gave your set of extensions in step 1.

7 Restart your server to activate the extensions.

Solving typical problems

This section contains descriptions of problems your server may experience. Some problems may be caused by your CD-ROM drive, so if you don't find your problem here, be sure to check the section "Solving CD-ROM Problems" later in this chapter.

IMPORTANT Be sure to review the information in the Workgroup Server Read Me file located on your server's hard disk and on the *Workgroup Server Software* CD-ROM disc. This file contains late-breaking information and tips.

The following table lists problems and the page number for each problem.

Problem	Page
Your server's performance decreases	91
You cannot turn on the server	91
The server is turned on but the screen is dark	92
A disk icon with a blinking question mark appears	92
A disk icon with an X appears	93
A "sad" Macintosh icon appears	93
You hear a prolonged beep as the server starts up	93
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Problem	Page
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Your server's performance decreases.

If you notice a decrease in your server's speed and general performance after adding special software (a control panel, a system extension, or a custom utility), it may be because your special software does not work well with Power Macintosh computers.

To see if this is the problem, use the Extensions Manager control panel to turn off individual programs and extensions, one at a time, and then restart the server. (For information on using the Extensions Manager control panel, see the "Customizing Your Computer" topic of Macintosh Guide, available in the Guide (🔍) menu.) If your server performs better when a special program or extension is removed, contact the software's manufacturer for information or an upgrade.

If you still do not notice an improvement after removing all special programs, try doing a "clean" installation of system software, as described in "Doing a Clean Installation of System Software" in Chapter 4.

You cannot turn on the server.

See the section about turning on your server in the setup guide that came with your server.

The server is turned on but the screen is dark.

The server or the monitor is not getting power, a program has darkened the screen, or the monitor controls are not adjusted properly.

- If you use a screen-saver program or the Energy Saver control panel to dim the screen, press a key or move the mouse.
- Check the monitor's brightness and contrast controls and turn them up if necessary.
- Check that the monitor is turned on.
- Check that the power cord and monitor cable are plugged in and firmly connected to the server and that the electrical outlet has power. The power light on the server's front panel should be on.
- If you have more than one monitor, and only one is dark, check that it is set up correctly in the Monitors & Sound control panel.
- If none of these steps solves the problem, you may need to reset your server's parameter RAM (PRAM). Reset PRAM by turning off the server and disconnecting all external SCSI devices. Next, restart the server while holding down the key combination ⌘-Option-p-r. Wait for the second startup chime, then release the keys. (Note that the Caps Lock key must be in the up position. This procedure won't work with the uppercase "P" and "R" keys.)

A disk icon with a blinking question mark appeared when you started your server.

The blinking question mark indicates that your server cannot find system software. You may need to repair a damaged disk, or reinstall system software.



- Your server may be having a problem recognizing a SCSI device. Turn off external SCSI devices and restart.

If the server starts up after you turn off your SCSI devices, read the section on SCSI devices in the setup guide that came with your server for information on connecting SCSI devices and assigning SCSI ID numbers.

- The system software is not installed on the startup hard disk, the system software is damaged, or the hard disk is not working properly. Start up your server with the *Workgroup Server Software* CD-ROM disc (see “Starting Up From a CD-ROM Disc” in Chapter 4). Then refer to “Solving Hard Disk Problems” at the end of this chapter.

If repairing the disk doesn't help, follow the instructions in “Installing System Software” in Chapter 4.

A disk icon with an X appeared and the floppy disk was ejected.

Your server ejected a floppy disk that is not a startup disk.



- Wait a few seconds. The server should start up from its internal hard disk. Make sure you insert floppy disks only after the server has begun starting up.

A “sad Macintosh” icon appeared and the server won't start up.

Your server cannot start up because of a problem with the system software or the server hardware.



- Eject any floppy disks (or CD-ROM discs) by turning off the server and then holding down the mouse button while you turn the server on again. Try starting up with a different startup disk (such as the *Workgroup Server Software* CD-ROM disc). If the “sad Macintosh” icon appears again, consult the service and support information that came with your server for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

You hear a prolonged beep during the startup process.

Sometimes during heavy network traffic, a server may not start up correctly. Disconnect the Ethernet cable before you try to start up again, and reconnect it after the server starts up. Open the AppleTalk control panel to make sure that Ethernet is still selected.

You installed a CD-ROM drive after you bought your server and your server won't restart after you've copied software for your CD-ROM drive to the System Folder.

- If you attempt to install software for your CD-ROM drive without using the Installer, you may not be able to restart your server. Restart the server while holding down the Shift key (to turn off system extensions) and then remove any CD-ROM software files you copied by dragging them to the Trash. Reinstall the software according to the instructions that came with the drive.

If this procedure doesn't solve the problem, restart your server using the Workgroup Server Software CD-ROM disc that came with your server. (For instructions on starting your server using a CD-ROM disc, see "Starting Up From a CD-ROM Disc" in Chapter 4.)

Your server won't restart, and a CD-ROM disc is in the CD-ROM drive.

- Your server may be trying to start up from the CD-ROM disc. Press the Open/Close button of your CD-ROM drive to open the tray and remove the CD-ROM disc. Close the tray, then restart your server.

You see an error message at startup telling you that the system will use the LocalTalk port.

There may be a problem with the cable that connects your server to the network—it may be loose or damaged. Verify the connection, as described in the setup guide that came with your server, and restart your server.

The server starts up from the wrong hard disk, or the hard disk icon does not appear on the desktop.

- The startup disk may be slow to start up.
During startup, your server's operating system finds and mounts attached SCSI devices that are up and running within 20 seconds. Some very large hard disk drives (such as 2-gigabyte drives) may take longer than 20 seconds to come up to speed and therefore may not be recognized by the operating system when the server is first turned on. Use the Drive Setup program to make the disk available. Drive Setup is located in the Utilities folder in the Apple Extras folder. For instructions, see the section "Mounting Volumes" in Chapter 4.

If you still have a problem, try the following:

- If the hard disk is external, make sure it is turned on and its cable is connected firmly and properly terminated; then restart the server.
- Check the ID numbers of all SCSI equipment connected to your server. See the information on SCSI devices in the setup guide that came with your server.
- If the hard disk is your startup disk, start up your server with the *Workgroup Server Software* CD-ROM disc (see “Starting Up From a CD-ROM Disc” in Chapter 4). Then see “Solving Hard Disk Problems” (later in this chapter). If repairing the disk doesn’t help, follow the instructions in “Installing System Software” in Chapter 4.

IMPORTANT If the hard disk in question has been initialized for use with Apple RAID volumes, you won’t see an icon for it on the desktop until you create at least one RAID volume on that disk.

The server’s clock keeps time inaccurately.

- Your server has a clock that runs continuously. When the server is turned off, a battery keeps the clock running. If your clock begins to keep time inaccurately, have your Apple-authorized service provider replace the battery. Consult the service and support information that came with your server for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

Icons do not appear correctly on your screen.

You need to “rebuild the desktop”—a process that helps your server keep track of files and folders on your hard disks. For instructions, see “Rebuild Your Desktop” earlier in this chapter.

Your server can't read a floppy disk.

If you see a message that a floppy disk is unreadable, try one of the following:

- Insert the disk again—sometimes that's all it takes.
- If the disk has never been used, you may simply need to initialize it. See the instructions for preparing a disk listed in the "Disks" topic of Macintosh Guide, available in the Guide (🔍) menu.
- Insert the disk in another computer's disk drive. If that computer can use the disk, make a copy of the data and put the copy on a different floppy disk.
- You may need to repair the disk because it is damaged. For information on testing and repairing disks, see "How to Repair a Hard Disk or Floppy Disk" later in this chapter.

If you are trying to use a DOS disk:

- The disk may have been formatted incorrectly on a DOS computer. On DOS computers it's possible to format a standard double-sided disk in a high-density (1440K) format, and vice versa. Disks formatted this way cannot be read by a Macintosh computer.

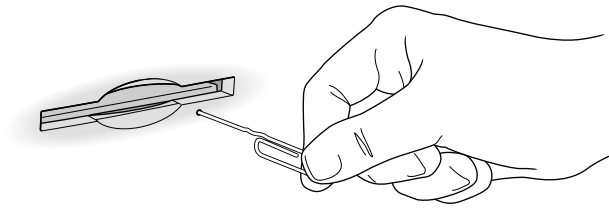
When formatting disks on a DOS computer, always format standard double-sided disks in the 720K format. Always format high-density disks in the 1440K format.

If a disk has been formatted incorrectly, use a DOS computer to copy its contents onto another disk that has been properly formatted.

You can't eject a floppy disk.

If you can't eject a floppy disk in the usual way, try the following in order:

- Hold down the ⌘ and Shift keys and press the number 1 key on your keyboard to eject a disk in the internal disk drive.
- Turn off the server. If the disk isn't ejected, then hold down the button on your mouse or other pointing device while you turn the server on again.
- Locate the small hole near the disk drive's opening, and carefully insert the end of a large straightened paper clip into it. Push gently until the disk is ejected. Do not use excessive force.



If none of these solutions works, take the server or disk drive to your Apple-authorized service provider to have the disk removed.

You can't start your program or it quits unexpectedly. When you try to open a program, you see a message that not enough memory is available.

The program needs more memory or the server ran out of memory.

- Quit the programs that you have open and then open the program you want to use, or restart your server.
- Use the program's Info window to give it more memory. For more information see the instructions for making more memory available in the "Application Programs" topic of Macintosh Guide, available in the Guide (🔍) menu.
- The program is a non-Power Macintosh application program running in emulation mode that requires a separate floating-point unit (FPU). It cannot use the built-in FPU on your server's microprocessor.

Check the documentation that came with the program or contact the program's manufacturer to find out if the program requires the FPU found in a non-Power Macintosh chip. If it does, you may need to upgrade to a Power Macintosh version of the program, or install software that emulates a non-Power Macintosh FPU. (See your dealer for this software.)

- Sometimes incompatible system extensions or control panels can cause software problems. Restart while holding down the Shift key to turn off all system extensions temporarily.

If your program works normally after you do this, use the Extensions Manager control panel to turn off individual extensions and control panels. For detailed instructions, see the "Customizing Your Computer" topic of Macintosh Guide, available in the Guide (🔍) menu.

If your program performs better when a particular extension or control panel is turned off, contact the software's manufacturer for information or an upgrade.

A dialog box with a “bomb” icon appears.

Your system has a software problem.

- Write down what you were doing when the dialog box appeared, and write down the number on the message, if there is one.
- Restart your server (see “Start Over” earlier in this chapter). Most software problems are temporary and restarting usually corrects the problem.
- If the problem recurs, check the startup disk and program you are using when the message appears. Make sure that all programs, desk accessories, and system extensions you’re using are compatible with the system software. Reinstalling the system software may correct the problem.
- If the bomb only occurs in one application program, try reinstalling the program from the original disks. If reinstalling doesn’t solve the problem, contact the manufacturer of the program.
- Sometimes incompatible system extensions or control panels can cause system software problems. To see if this is the problem, use the Extensions Manager control panel to turn off individual extensions and then restart the server. For information on using this control panel to manage system extensions, see the “Customizing Your Computer” topic of Macintosh Guide, available in the Guide (Ⓜ) menu. If turning off these programs doesn’t correct the problem, you may need to reinstall system software.

The pointer doesn’t move when you move the mouse.

The mouse is not connected properly, its signals are not reaching the server, or there is a software error.

- Turn off the server by using the power button on the front panel of the server check that the mouse cable is connected properly, then restart the server.
- Clean the mouse. (For information about cleaning the mouse, see the setup guide that came with your server).
- If you have another mouse or pointing device, try connecting and using it. (Turn off the server first.) If it works, there is probably something wrong with your mouse.
- Restart the server with a different startup disk (such as the *Workgroup Server Software* CD-ROM disc). If the mouse works, reinstall system software on your startup disk.

- If the problem recurs, it may be due to an incompatible program. Make sure that all programs, desk accessories, and system extensions you're using are compatible with the system software.

If none of these procedures solves the problem, consult the service and support information that came with your server for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

Typing on the keyboard produces nothing on the screen.

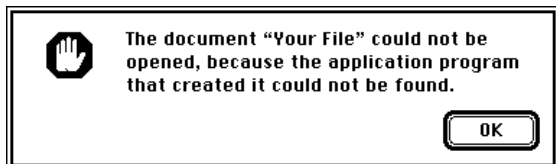
The insertion point hasn't been set, no text is selected, an application program is not active, the keyboard is not connected properly, the keyboard's signals are not reaching the server, or there is a software error.

- Make sure the program you want to use is the active program.
- Place the pointer in the active window and click to set an insertion point or drag to select text (if applicable).
- Easy Access may be turned on. (When Easy Access is turned on, the server beeps every time you press a key.) Open Easy Access from the control panels listed under the Apple (🍏) menu and turn it off.
- Turn off the server by using the power button on the front panel of the server, then check that the keyboard cable is connected properly at both ends.
- Turn off the server, then connect the keyboard cable to the other ADB port (marked with the ⌘ icon) on the keyboard. (You may have to unplug the mouse to do this.) If your keyboard cable is connected to your monitor, connect it to another ADB port on the monitor or directly to the server's ADB port (on the back of the server). If typing still doesn't work, the problem is most likely in the keyboard itself.
- If you have access to another keyboard, try using it instead. (Turn off the server before connecting it.)
- Restart the server with a different startup disk (such as the *Workgroup Server Software* CD-ROM disc). If this solves the problem, reinstall system software on your startup disk.

If none of these procedures solves the problem, consult the service and support information that came with your server for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

You see a message that an application program can't be found.

The following dialog box appears if you try to open a document created using software that is not on your hard disk.



Normally, you see this message if you try to open a document that came from another computer with software that is different from yours.

- Some documents can be opened by more than one application program. Try starting a program that you think might be able to open the document, then choose the Open command from the program's File menu to try to open the document. (Or drag the document to the program's icon. If the program can open the document, the program's icon highlights.)
- Purchase and install the correct software to use the document, or find out if the original owner of the document can convert it to a form that one of your programs can use.
- Don't try to open the files in your System Folder. Most of the System Folder files are used by your server for internal purposes, and are not intended to be opened.
- Rebuild your desktop. (Refer to "Rebuild Your Desktop" earlier in this chapter.)
- The application program itself may be damaged. Try reinstalling it.
- If the document is from a DOS computer, use the PC Exchange control panel. See the information on setting up your Macintosh to use DOS files in the "DOS, Windows, Apple II Files" topic of Macintosh Guide, available in the Guide (📖) menu.
- See the Workgroup Server Read Me file for additional information about Macintosh PC Exchange and DOS-formatted media.

You experience problems using a document from a DOS computer.

If you can't open a DOS or Windows document using a Macintosh program, try the following:

- Open the document from within the program by using the Open command in the program's File menu.
- Use the PC Exchange control panel to change the document's type to one that can be opened by the program. See the information on setting up your Macintosh to use DOS files in the "DOS, Windows, Apple II Files" topic of Macintosh Guide, available in the Guide (🔍) menu.

If a DOS document is displayed incorrectly, or you see strange codes or characters in the document:

- Your application program may have special procedures for opening and saving documents with different file formats. See the information that came with your application program.
- Try opening the document in another program.

Note: Some characters that can be displayed on the server are not accurately displayed on DOS computers.

You see a message that your application program can't be opened because a file can't be found.

Power Macintosh programs use special files called *shared libraries*. Any necessary shared libraries should be installed automatically when you install Power Macintosh programs.

- Follow the directions that came with your program to reinstall the program. If the shared library is still missing, contact the software program's manufacturer for assistance.

You experience problems using an older Macintosh program.

Some older Macintosh programs are not completely compatible with the Power Macintosh computers.

- Open the Memory control panel and turn off Modern Memory Manager. (Note that AppleShare cannot work properly when the Modern Memory Manager is turned off.) For more detailed instructions, see "Using Older Macintosh Programs" in Chapter 3 of this guide.

Solving CD-ROM problems

The following table lists CD-ROM problems by symptom and the page number for each problem.

Symptom	Page
The CD-ROM drive icon does not appear on-screen	102
Your server won't restart after you copied CD-ROM software to the System Folder	103
You see large folder-shaped areas on the screen	103
The tray of your CD-ROM drive won't open	104
Your server won't restart, and a CD-ROM disc is in the CD-ROM drive	104
You insert a CD-ROM disc, but its icon doesn't appear on the Macintosh desktop	105
The message "This is not a Macintosh disk" appears	105
Your server ejects a CD-ROM disc without displaying an error message	106
You can't open a document on a CD-ROM disc	106
You can't access files on an ISO 9660 or High Sierra disc	106
You don't hear sound when you play an audio CD	107
The audio track stops playing when you double-click the CD-ROM disc icon	107
You are unable to record sound from an audio CD	107
You can't open a Photo CD	108
Your server does not display color icons for individual images on a Photo CD	108
An image on a Photo CD is displayed incorrectly	108
Your server "freezes" when you open a Photo CD image	108

Problems using the CD-ROM drive

The CD-ROM drive icon does not appear on-screen.

- If you attached additional SCSI devices to your server, make sure that each device has a unique SCSI ID number. See the setup guide that came with your server for the SCSI ID numbers of factory-installed devices.

Refer to the documentation that came with your SCSI devices if you need to reset the SCSI ID number of a SCSI device that you attached to your server.

Note: The Workgroup Server 7250 has one SCSI bus, and the Workgroup Server 8550 has two SCSI buses. On a Workgroup Server 7250, all SCSI devices must have unique ID numbers because they are on the same SCSI bus. On the Workgroup Server 8550, devices on different SCSI buses can have the same SCSI ID number.

- If you installed an additional CD-ROM drive, make sure the CD-ROM software that came with the drive is installed. See the manual that came with the CD-ROM drive for software installation instructions.
- If you reinstall the CD-ROM software, make sure to restart your server after you reinstall the software.

You installed an additional CD-ROM drive and your server won't restart after you've copied software for the additional CD-ROM drive to the System Folder.

- If you attempt to install software for an additional CD-ROM drive without using the Installer, you may not be able to restart your server. Restart the server while holding down the Shift key (to turn off system extensions), and then remove any CD-ROM software files you copied by dragging them to the Trash. Reinstall the software according to the instructions that came with the drive.

If this procedure doesn't solve the problem, restart your server using the *Workgroup Server Software* CD-ROM disc. (For instructions on starting your server using a CD-ROM disc, see "Starting Up From a CD-ROM Disc" in Chapter 4.)

Your server starts up and you see large folder-shaped areas, containing labeled pictorial buttons, instead of the usual Macintosh desktop.

- Your server may have started up from a CD-ROM disc containing At Ease, an alternative to the Macintosh desktop.
To return to the Macintosh desktop, choose Shut Down from the Special menu. When your server is off, press the Open/Close button of your CD-ROM drive to open the tray, then remove the CD-ROM disc. Close the tray. Then start up your server again.

To avoid having the server start up from a CD-ROM disc, remember to remove any disc in the drive before you shut down your server.

The tray of your CD-ROM drive won't open.

If a CD-ROM disc icon appears on your screen:

- Drag the disc icon to the Trash, or select it and choose Put Away from the File menu. If the AppleCD Audio Player program is active, choose Eject CD from the File menu.

If you see a message that a disc can't be put away because it is being shared, turn off file sharing, then try again to put away the disc.

If no CD-ROM disc icon appears on your screen:

- Press the Open/Close button of your CD-ROM drive.
- The signal to open the tray may not be reaching the computer. Turn off your server and locate the small pinhole to the lower right of the CD-ROM tray opening. Insert the end of a large, straightened paper clip firmly and horizontally into the pinhole. Push gently until the tray is released, then carefully pull the tray open. Do not force the tray open; wait until the paper clip has dislodged it, or you may break the front of the tray.

WARNING Turn off your server before you attempt to eject the tray using a paper clip. If you don't, you may damage the CD-ROM drive.

If neither of these suggestions works, your CD-ROM drive may be damaged. Contact an Apple-authorized service provider or Apple for further assistance.

Your server won't restart, and a CD-ROM disc is in the CD-ROM drive.

- Your server may be trying to start up from the CD-ROM disc. Press the Open/Close button of your CD-ROM drive to open the tray, and remove the CD-ROM disc. Close the tray, then restart your server.

Problems using CD-ROM discs

You insert a CD-ROM disc, but its icon doesn't appear on the Macintosh desktop.

- Make sure that the disc label is facing up and the disc is centered in the tray. If you're using a small (8 cm) disc, make sure it is within the tray's inner ring.
- Make sure the tray is closed all the way.
- Try restarting your server.
- Try starting your server from the CD-ROM disc that contains system software while holding the "c" key down. If only the hard drive icon appears on the desktop, then there may be a hardware problem with your CD-ROM drive. If the CD-ROM icon appears above the hard drive icon, try reinstalling your CD-ROM software following the instructions in "Reinstalling CD-ROM Software" later in this chapter.
- If you installed the CD-ROM drive after you bought your server, make sure the CD-ROM software is installed. (Refer to the documentation that came with the CD-ROM drive.)

Software for the built-in CD-ROM is already installed on your server. You can reinstall it by following the procedure in "Reinstalling CD-ROM Software" later in this chapter.

Your server displays the message "This is not a Macintosh disk: Do you want to initialize it?" when you insert a CD-ROM disc in the CD-ROM drive.

- Make sure that the Foreign File Access and Audio CD Access CD-ROM extensions are installed in your Extensions Folder and are turned on. (If they are not turned on, use the Extensions Manager control panel to turn them on and then restart your server.)
- Make sure the CD-ROM software is installed. Software for the built-in CD-ROM is already installed on your server. If you installed another CD-ROM drive after buying your server, see the manual that came with your drive.
- The disc may use a format that the Mac OS cannot recognize.

Your server ejects a CD-ROM disc without giving you any error message.

- Make sure the disc is flat in the tray and the disc label is facing up. If you're using a small (8 cm) disc, make sure it's centered within the tray's inner ring.
- The disc may need to be cleaned. (For information on how to do this, see the section on handling CD-ROM discs in the setup guide that came with your server.) If there are visible scratches on the shiny side of the disc, you may be able to remove them with a CD polishing kit (available from your audio CD dealer). If the scratches can't be removed, you'll need to replace the disc.
- The disc may be damaged. Try another disc in the drive, and try the original disc in another drive. If the original drive reads other discs or if the original disc doesn't work in another drive, the disc is probably damaged. You'll need to replace the disc.

You can't open a document on a CD-ROM disc.

- Try opening the application program first; then open the document.
- Read the manual that came with your CD-ROM disc. Some discs come with software that you need to install on your computer before using the disc.

Problems using ISO 9660 or High Sierra discs**You can't access files on a CD-ROM disc that uses the ISO 9660 or High Sierra format.**

- Discs in the ISO 9660 and High Sierra disc formats have version numbers attached to filenames. Some application programs need these version numbers in order to work with files. To make the version numbers available to programs on your server, follow these instructions:
Drag the CD icon to the Trash. When the tray opens, hold down the Option key and push the tray back in, continuing to hold down the Option key until the disc is fully in the drive. The program you are using should now be able to locate filenames on that CD-ROM disc.
- Make sure that Foreign File Access, ISO 9660 File Access, and High Sierra File Access are present in the Extensions folder in your System Folder.

Problems playing audio CDs

You don't hear any sound when you play an audio CD or an audio track on a CD-ROM disc using the AppleCD Audio Player.

- If the CD-ROM drive was installed after you bought your server, make sure the audio cable is properly connected. See the documentation that came with the CD-ROM drive for more information.
- If you have headphones or speakers connected to the server, adjust the connector to make sure they are firmly connected. Make sure the volume control on your headphones or speakers is not turned down too low.
- Some programs change the sound options to suit their needs. You may need to reset the sound options in the Monitors & Sound control panel. Refer to the "Sound" topic of Macintosh Guide, available in the Guide (🔍) menu.
- If you are using a CD-ROM disc over a network, you won't be able to hear the audio portion.
- Make sure the volume is turned up in the AppleCD Audio Player. With the Audio Player open, drag the volume control slider up or press the Up Arrow key on your keyboard.
- The CD may have been paused. Click the Play/Pause button in the AppleCD Audio Player once or twice.

While playing an audio track on a CD-ROM disc that combines audio tracks and data, you double-click the disc icon and the audio track stops playing.

- You can't open data files on a CD-ROM disc and listen to audio tracks on that disc at the same time.

You are unable to record sound from an audio CD.

- Check your server's sound input port to see if a microphone or other device is connected.
- You may need to reset the sound options in the Monitors & Sound control panel. See "Choosing Sound Devices and Alert Sounds" in Chapter 1.

Problems using Photo CDs

Your CD-ROM drive will not open Photo CDs.

- Reinstall the CD-ROM software. See “Reinstalling CD-ROM Software” later in this chapter.

Your server does not display color icons for individual images on a Photo CD.

- Your server may be low on memory. To view color icons, restart your server and then reopen the Photos folder. See the “Memory” topic of Macintosh Guide, available in the Guide (⌘) menu, for more information on managing memory.

After you open an image on a Photo CD, the image is scrambled, colors are displayed incorrectly, or no image appears in the window.

- The program you are using may not be designed to work with large (high-resolution) image files. You can open the image with another program or you can assign more memory to the program. (For more information on managing memory, see the “Memory” topic of Macintosh Guide, available in the Guide [⌘] menu.)

After you open an image on a Photo CD, your system is “frozen” and does not respond to any input, or you have a “bomb” message on your screen.

- Restart your server. The program you are using may not be designed to work with large (high-resolution) image files. You can open the image with another program, or you can assign more memory to the program. (See the “Memory” topic of Macintosh Guide, available in the Guide [⌘] menu, for more information on managing memory).

Reinstalling CD-ROM software

CD-ROM software is a set of programs and files that allow your CD-ROM drive to work correctly with your server and allow it to play different kinds of CDs, like Photo CDs or audio CDs. The CD-ROM software is part of system software and was preinstalled on your server’s hard disk. (It is also available on the *Workgroup Server Software* CD-ROM disc that came with your server.)

If you added a CD-ROM drive after you bought your server, the CD-ROM software is probably on a floppy disk that came with the drive. If, for some reason, you need to reinstall the CD-ROM software for that drive, you should reinstall it from the floppy disk that came with the drive.

Follow these steps to reinstall the CD-ROM software for the built-in CD-ROM drive:

1 Start up your server from the *Workgroup Server Software* CD-ROM disc.

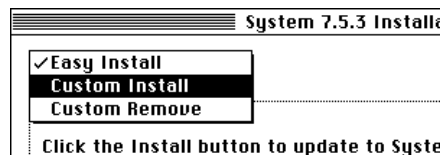
For details, see “Starting Up From a CD-ROM Disc” in Chapter 4.

The Installer’s Welcome screen may appear automatically. Or, you may have to double-click the System Software Installer icon to open the Installer program.

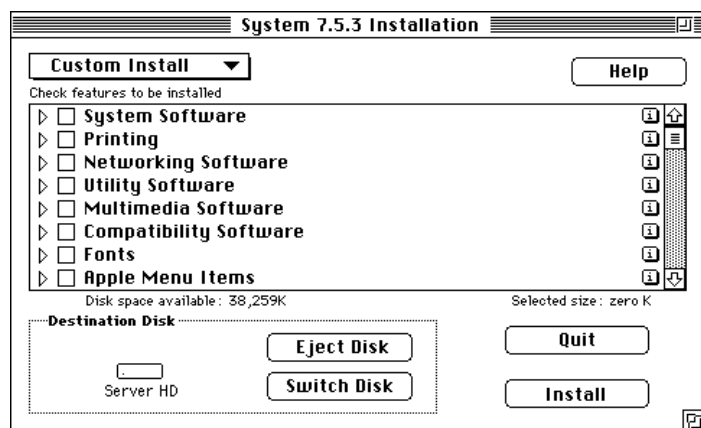
2 Click OK.

The Easy Install dialog box appears.

3 Choose Custom Install from the pop-up menu.



The Custom Install dialog box appears, listing all available system software components.



4 Select Multimedia Software by clicking the checkbox next to it.

To get additional information about each component listed, click the box with the letter *i* in it to the right of the component.

5 Click Install.**6 Follow the instructions that appear on the screen.****7 When you see a message reporting that the installation was successful, click Quit.**

If a message reports that installation was not successful, try installing again. (Follow the instructions on the screen.)

8 Restart your server.

The CD-ROM software is reinstalled and your server is ready to use. Don't forget to eject the CD-ROM disc or floppy disk containing system software when you are finished.

Solving printer connectivity problems

The following suggestions should work for all printers.

- Check your printer settings in the Chooser, making sure you have selected the correct printer.
- Next, turn off the server and printer and check the printer cable connections.
- If neither of these suggestions solves the problem, reinstall your printer driver. If your printer is an older model, do not use the driver that came with the printer. Instead, use the updated printer drivers provided on the system software CD-ROM that came with your server. These drivers are created especially for use with Power Macintosh computers, such as your server. Note that if the printer is being used in conjunction with the AppleShare Print Server software, the driver must be version 7.2 of the LaserWriter printer driver.

Solving AppleTalk problems

You can't turn AppleTalk on.

Make sure you turn on AppleTalk in the AppleTalk control panel. If you're sure it's turned on in the control panel, check to make sure AppleTalk is also turned on in the Chooser. If you have other software that can turn AppleTalk on or off, make sure that it's turned on in that software as well.

You can't see any network devices in the Chooser.

- Make sure AppleTalk is turned on.
- If AppleTalk is turned on, make sure you have chosen the correct port in the "Connect via" pop-up menu in the AppleTalk control panel.
- If your network number or node number has been set to User Defined, turn off the User Defined setting. Then restart your server.
- Make sure your network is functioning correctly by making sure that other computers on your network can see network devices.

You can't switch from a serial to an Ethernet connection.

- If you use an expansion card to connect to Ethernet, make sure the card is installed correctly.
- Make sure your Ethernet cables are connected properly.
- Make sure your network is functioning correctly by making sure that other computers on your network can see network devices.

You can't remember your Administration password.

You can erase your Administration password (along with all of your AppleTalk settings and configurations) by dragging the AppleTalk Preferences file (inside the Preferences folder in your active System Folder) to the Trash. When you open the AppleTalk control panel again, you must reenter all your settings.

Solving TCP/IP problems

Your server can't connect to devices outside its local network.

Make sure your router address is correct.

Your server can connect to hosts by IP address, but not by name.

- Make sure you have entered valid domain names in the Additional Search Domains box.
- If you have entered your local and administrative domain names, double-check to make sure they're correct.

Your server does not respond to a "ping."

- Make sure you have an active application on your server that uses TCP/IP and can respond to a ping from another computer.
- Make sure your TCP/IP configuration is correct.
- Make sure your network cables are properly connected.
- Make sure your network is functioning properly.

You can't remember your Administration password.

You can erase your Administration password (along with all of your TCP/IP settings and configurations) by dragging the TCP/IP Preferences file (inside the Preferences folder in your active System Folder) to the Trash. When you open the TCP/IP control panel again, you must reenter all your settings.

Solving hard disk problems

If you can't start up from a hard disk or you don't see the hard disk icon on the desktop, try the following:

- Shut down your server and turn off any external disk devices.
- Check the ID numbers of all SCSI equipment connected to your server. The Workgroup Server 7250 has one SCSI bus, and the Workgroup Server 8550 has two SCSI buses. On a Workgroup Server 7250, all SCSI devices must have unique ID numbers because they are on the same SCSI bus. On the Workgroup Server 8550, devices on different SCSI buses can have the same SCSI ID number. See the setup guide that came with your server for information about SCSI ID assignments for factory-installed devices.
- Check that each SCSI bus is terminated properly. For information about terminating a SCSI bus, see the setup guide that came with your server and the manuals that came with your SCSI equipment.
- Remove devices that you do not use. Apple recommends that you remove SCSI devices that are turned off and are not used. Removing unused devices avoids signal strength problems for the remaining devices on the bus.
- Remove SCSI-1 devices if you are also using SCSI-2 devices. Older disks, usually under 200 MB in size, cause problems when they are connected to a SCSI bus to which SCSI-2 devices are also connected. Most older disks are SCSI-1 compliant and are not always compatible with SCSI-2 devices.
- If the hard disk is internal, wait at least 10 seconds, and then turn your server on again.
- If the hard disk is external, make sure that it is turned on and that its cable is connected firmly; then restart the server.
- If the hard disk is your startup disk, start up with a different startup disk. (For details, see "Starting Up From a CD-ROM Disc" in Chapter 4.) If the hard disk's icon appears on your desktop, reinstall system software on the hard disk. See "Installing System Software" in Chapter 4.
- Follow the instructions in the next section, "How to Test a Hard Disk."

How to test a hard disk

You can test an Apple SCSI hard disk with the Drive Setup program.

Note: Drive Setup can only test drives that were formatted by the Drive Setup program. It cannot test drives on which the Apple RAID driver is installed, or drives that were formatted by another utility.

- 1 If the disk that you need to test is your startup disk, start up your server from the *Workgroup Server Software CD-ROM* disc.**

For details, see “Starting Up From a CD-ROM Disc” in Chapter 4.

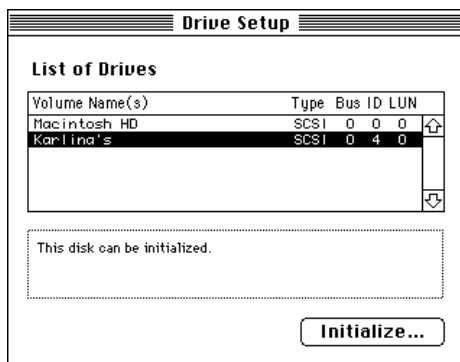
- 2 Open the Drive Setup icon.**

The Drive Setup program resides in the Utilities folder in the Apple Extras folder on your startup disk and on the *Workgroup Server Software CD-ROM* disc.



Drive Setup

- 3 In the list of drives, click the disk you want to test.**



- 4 Choose Test Disk from the Functions menu.**

5 When a message tells you that testing is complete, click Quit.

If the test reveals a problem, you may be able to correct it by using Disk First Aid or another disk repair program (see the instructions in the next section), or you may need to initialize the disk (see “Initializing a Hard Disk” in Chapter 4). Consult an Apple-authorized service provider for assistance if necessary. If you have a hard disk from another manufacturer, use the software that came with the disk or contact the disk vendor to get the latest version of software.

How to repair a hard disk or floppy disk

You can repair some types of disk damage by using the Disk First Aid program.

1 If the disk that you need to repair is your startup disk, start up your server from the *Workgroup Server Software CD-ROM* disc.

For details, see “Starting Up From a CD-ROM Disc” in Chapter 4.

2 Open the Disk First Aid icon.

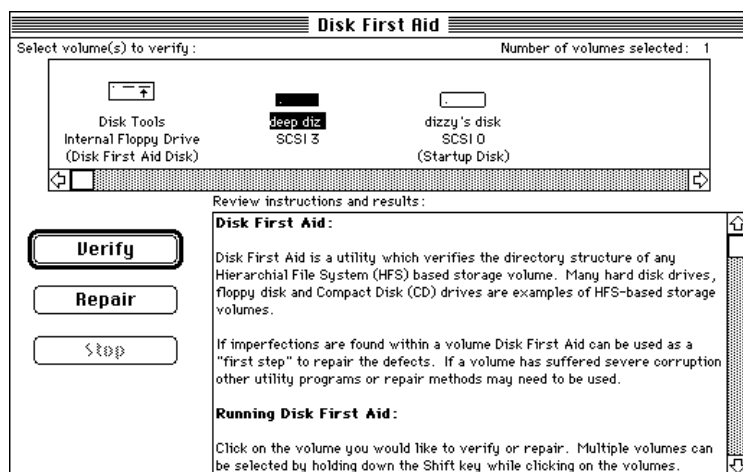
The Disk First Aid program resides in the Utilities folder in the Apple Extras folder on your startup disk and on the *Workgroup Server Software CD-ROM* disc.



Disk First Aid

3 Click the icon of the disk you want to test.

Disk icons appear in a box at the top of the Disk First Aid window.



4 Click Repair to begin testing and repairing the disk.

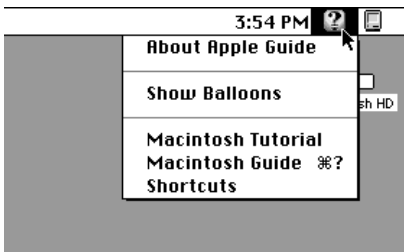
If you want to test and repair another disk, click its icon and then click Repair.

5 When testing and repair are finished, choose Quit from the File menu.**If Disk First Aid cannot correct the problem**

- Try repairing the disk again. Sometimes repeating the process corrects the problem.
- Use another disk repair or recovery program. Some disk repair programs let you recover information from a damaged disk.
- Consult a computer repair specialist for help.
- Once you have recovered all the information you can, initialize the disk as described in Chapter 4. If initializing doesn't work, discard the damaged disk (if it's a floppy disk), or take it to your Apple-authorized service provider for repair (if it's a hard disk).

Appendix A Getting Help

When you have questions about how your system software works, look to the Guide menu for access to on-screen help. The Guide menu is identified by a question mark (Ⓜ) in the upper-right corner of the screen.



This appendix provides information on the various kinds of on-screen help available in the Guide menu:

- Macintosh Tutorial for learning the basics
- Macintosh Guide for step-by-step assistance in using the Macintosh Operating System (Mac OS)
- Balloon Help for quick definitions of on-screen objects
- Shortcuts for increased desktop productivity

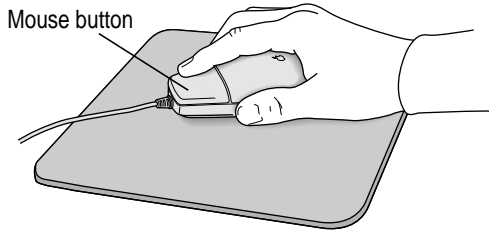
Some application programs also put access to help information in the Guide menu.

Learning the basics

If you are a new Macintosh user, take a look at the Macintosh Tutorial, available in the Guide menu. The tutorial teaches you the basic skills you'll need to use your server. To start the tutorial, follow these steps:

1 Slide your mouse along your mouse pad or desk.

Hold the mouse as shown, with the cable pointing away from you. Don't press the mouse button (under your index finger). Notice that the arrow (↔) on the screen moves in the same direction that you move the mouse.



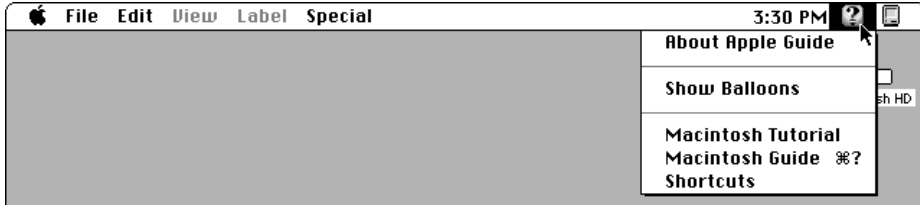
If the arrow doesn't move, make sure that the cables connecting the mouse and keyboard are secure and that your mouse is positioned as shown in the illustration.

2 Move the tip of the arrow (↔) to the question mark (?) in the upper-right portion of the screen.

If you run out of room on your mouse pad or desk while moving the mouse, pick up the mouse and place it where there's more room. (The arrow on the screen moves only when the mouse is in contact with the mouse pad or desk.)

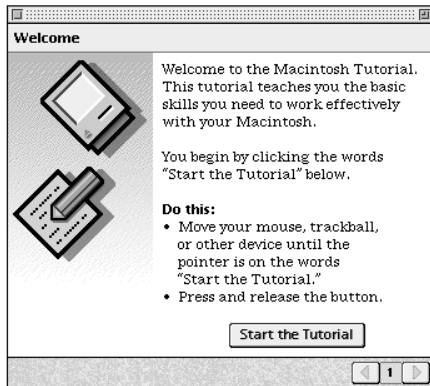
3 With the tip of the arrow on the question mark, press and hold down the mouse button.

A list of choices (called a menu) appears. This is the Guide (⌘) menu, which is the place to go when you have a question about how to use your server.



4 While holding down the mouse button, move the arrow until the words "Macintosh Tutorial" are highlighted, then release the mouse button.

A window appears welcoming you to the tutorial. You can set this book aside for now and follow the instructions on the screen. When you have completed the tutorial, return to this book.

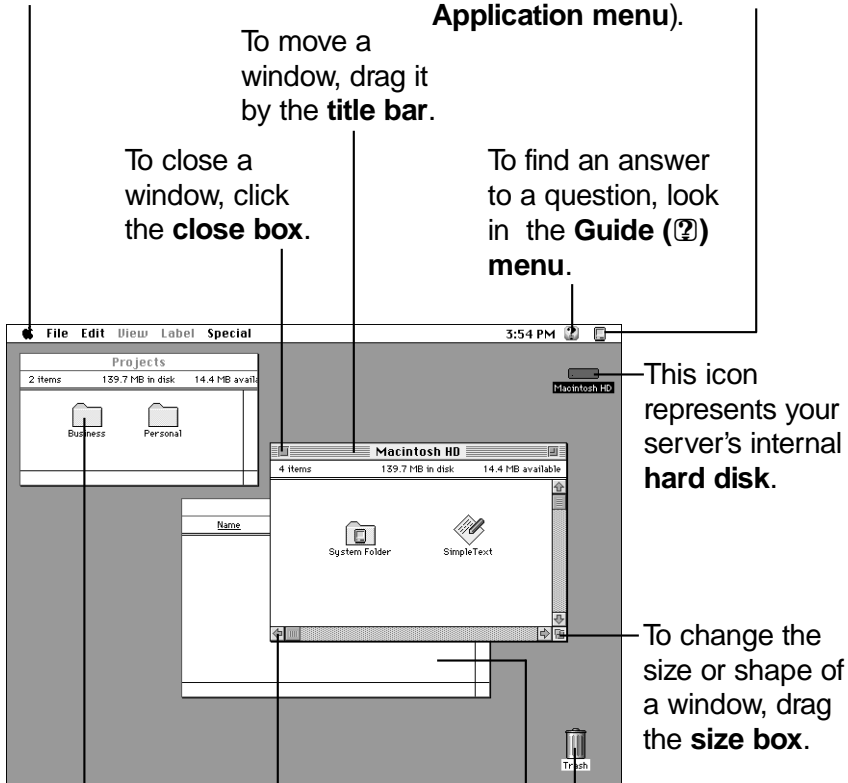


Reviewing the basics

The following illustration summarizes many of the basic skills and terms you learned from the tutorial.

The strip across the top of the screen is called the **menu bar**. The symbols and words in it represent menus of commands.

You can have several application programs open at once. To see which program is active or to switch from one program to another, use this menu (called the **Application menu**).



To move a window, drag it by the **title bar**.

To close a window, click the **close box**.

To find an answer to a question, look in the **Guide (?) menu**.

This icon represents your server's internal **hard disk**.

To change the size or shape of a window, drag the **size box**.

Icons are small pictures that represent disks, folders, programs, and documents. To open an icon, click the icon twice quickly.

To bring hidden portions of a window's contents into view, click the **scroll arrows**.

Windows are boxes that display text, graphics, or icons. To bring a partially covered window to the front, click anywhere in the window.

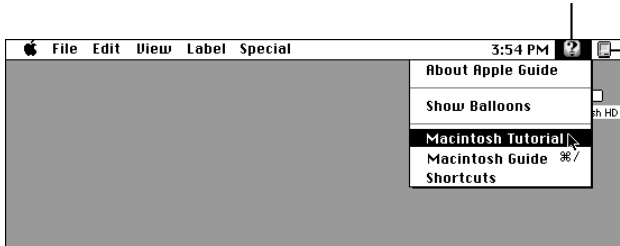
To throw away an item you no longer want, drag it to the **Trash** and choose Empty Trash from the Special menu.

Menus

The strip across the top of the screen is called the menu bar. The symbols and words in it represent menus of commands. To open a menu, place the pointer on the symbol or word for the menu and press the mouse button.

Guide menu

To find an answer to a question, look in the Guide (?) menu.



Application menu

You can have several application programs open at once. To see which program is active or to switch from one program to another, use this menu (called the Application menu).

Icons

Icons are small pictures that represent disks, programs, documents and folders. You can double-click any icon to open it and see what it contains.



Server HD

This icon represents your server's internal startup disk.



Application

Icons like this one represent application programs, which you use to create documents and do other work.



Document

Icons like this one represent documents, which you can create and edit.



Folder

Icons like this represent folders. A folder contains other icons.

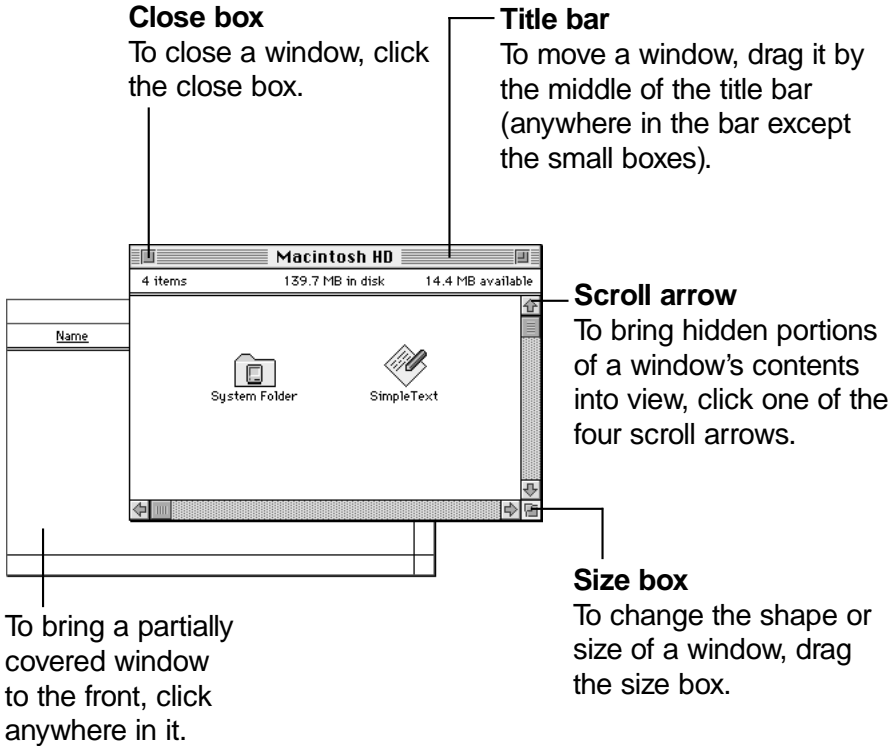


Trash

To throw away an item you no longer want, drag it to the Trash icon and choose Empty Trash from the Special menu.

Windows

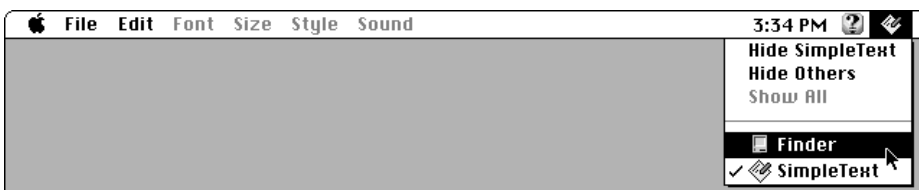
Windows are boxes that display text, graphics, or icons. To change the shape or position of a window, or to close the window, use the elements shown here.



Getting answers in Macintosh Guide

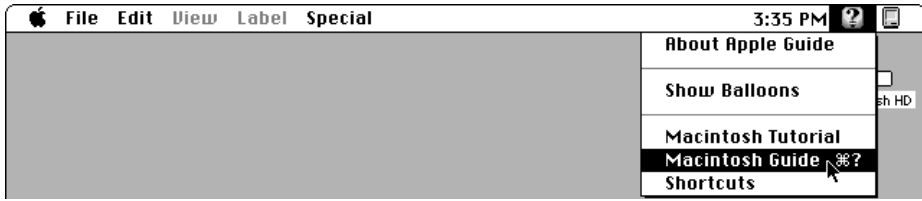
When you have a question while working with your server, you can get the answer by choosing Macintosh Guide from the Guide menu.

- 1 **Pull down the Application menu (in the upper-right corner of the screen) and choose Finder to make it the active application program.**

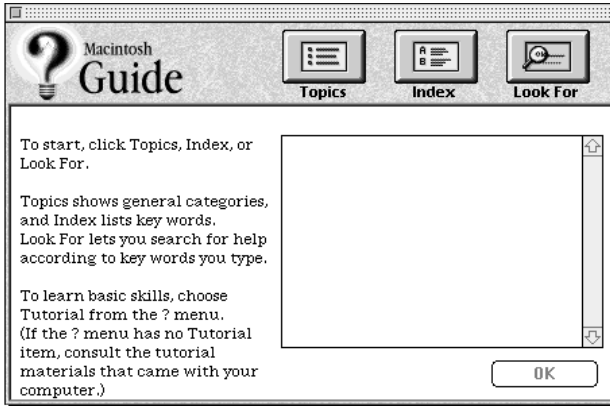


A checkmark in the menu indicates that the Finder is the active program.

2 Pull down the Guide menu (marked with the ) and choose **Macintosh Guide**.



The Macintosh Guide window appears.



Whenever you use Macintosh Guide, its window remains in front of other windows. If the window gets in your way, you can move it by dragging its title bar (the gray bar across the top of the window).

3 Notice the three buttons at the top of the window: **Topics**, **Index**, and **Look For**.



Macintosh Guide gives you three ways of finding information:

- *Topics* lets you choose from a list of general subjects; it is like the table of contents in a book.
- *Index* lets you choose from an alphabetical list of more specific subjects; it is like the index in a book.
- *Look For* lets you search for information related to a specific word or phrase that you type.

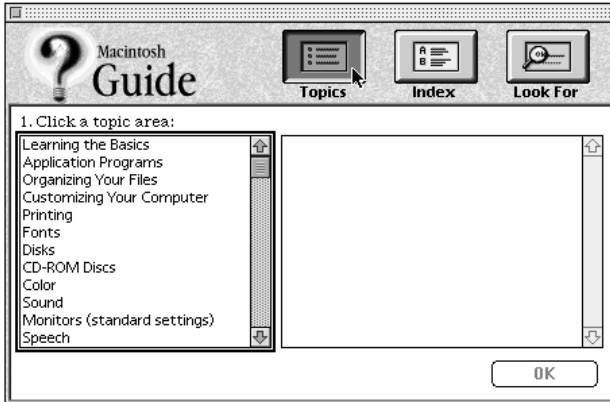
In the following sections you will practice using each method.

If you have problems while using Macintosh Guide, see “Tips for Using Macintosh Guide” later in this chapter.

Getting answers with the Topics button

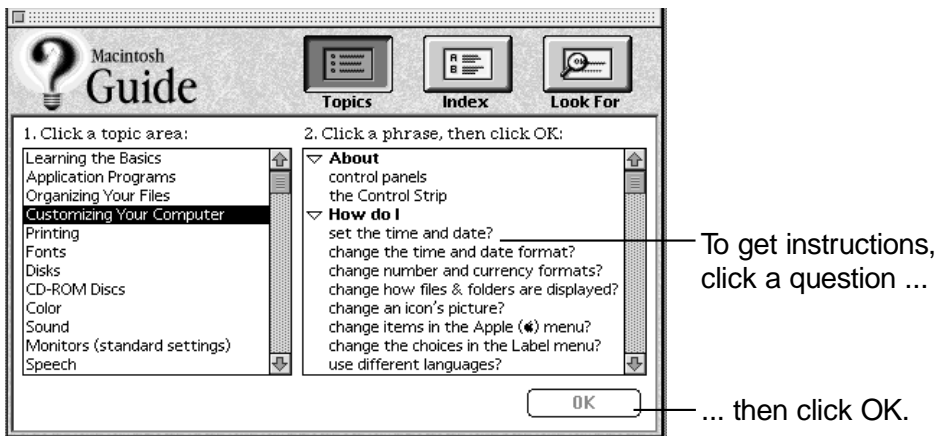
1 In the Macintosh Guide window, click the Topics button.

A list of general topics appears on the left side of the Macintosh Guide window. (Depending on the hardware and software you have, the list of topics may be different.)



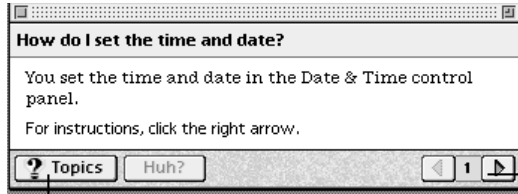
2 Click "Customizing Your Computer" in the list of topics.

When you click any topic area, a list of related questions appears on the right side of the Macintosh Guide window.



- 3 Click the question “How do I set the time and date?” and then click OK. Or double-click the question.**

A small window appears with instructions for you to follow.



Click here to see the next step (if there is one).

If you want to return to the main Macintosh Guide window, click here.

- 4 Read and follow the instructions in this window.**

Macintosh Guide provides step-by-step instructions to answer the question you selected. When you have completed each step, click the right arrow in the lower-right corner to see the next step.

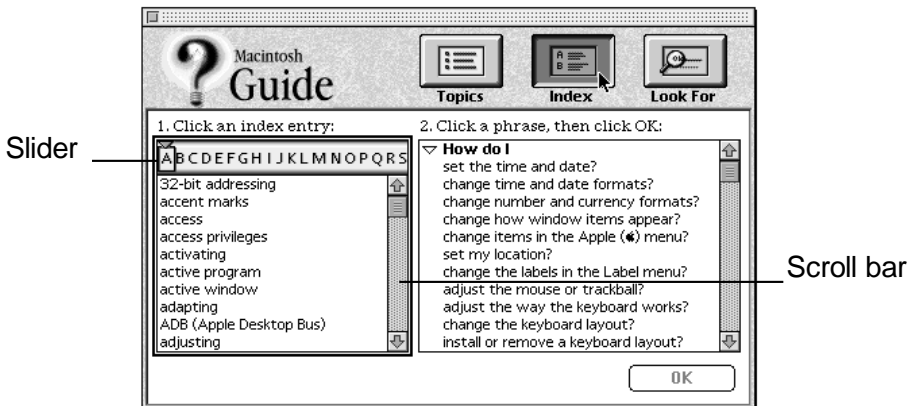
- 5 When you have completed all the steps, click the Topics button in the lower-left corner to return to the main Macintosh Guide window.**

Now continue with the next section.

Getting answers with the Index button

- 1 In the Macintosh Guide window, click the Index button.**

An alphabetical list of subjects appears on the left side of the window.

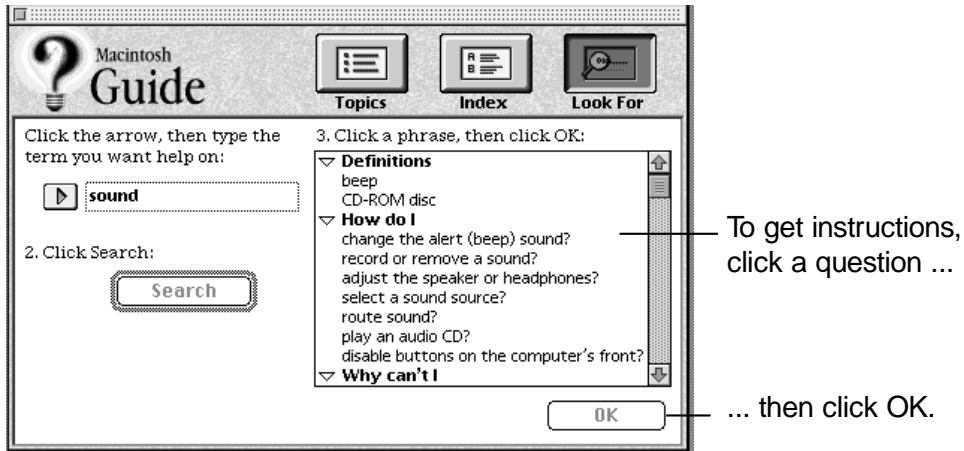


2 Scroll through the alphabetical list until the phrase “background pattern” is visible.

You can scroll through the list either by dragging the slider to the letter *B* or by using the scroll bar at the right of the list.

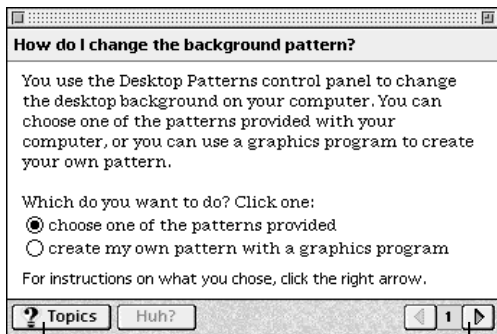
3 Click the phrase “background pattern” in the alphabetical list.

When you click any index entry, a list of related questions appears on the right side of the Macintosh Guide window.



4 Click the question “How do I change the background pattern?” and then click OK. Or double-click the question.

A small window appears with instructions for you to follow.



If you want to return to the main Macintosh Guide window, click here.

Click here to see the next step (if there is one).

5 Read and follow the instructions in the window.

Macintosh Guide provides step-by-step instructions to answer the question you selected. When you have completed each step, click the right arrow in the lower-right corner to see the next step.

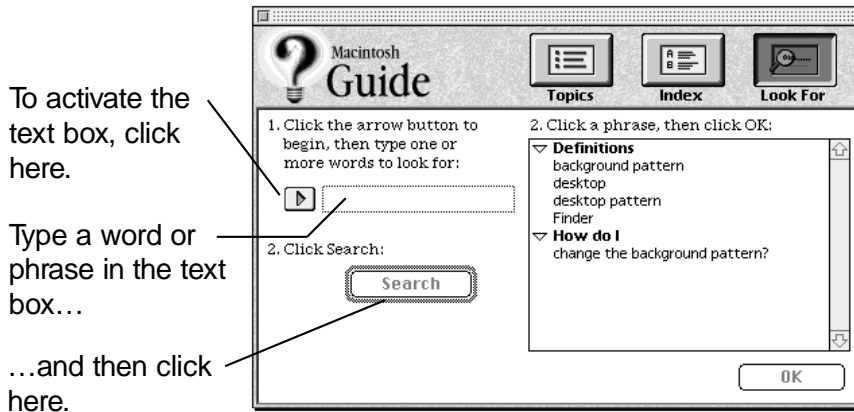
6 When you have completed all the steps, click the Topics button in the lower-left corner to return to the main Macintosh Guide window.

Now continue with the next section.

Getting answers with the Look For button

1 In the Macintosh Guide window, click the Look For button.

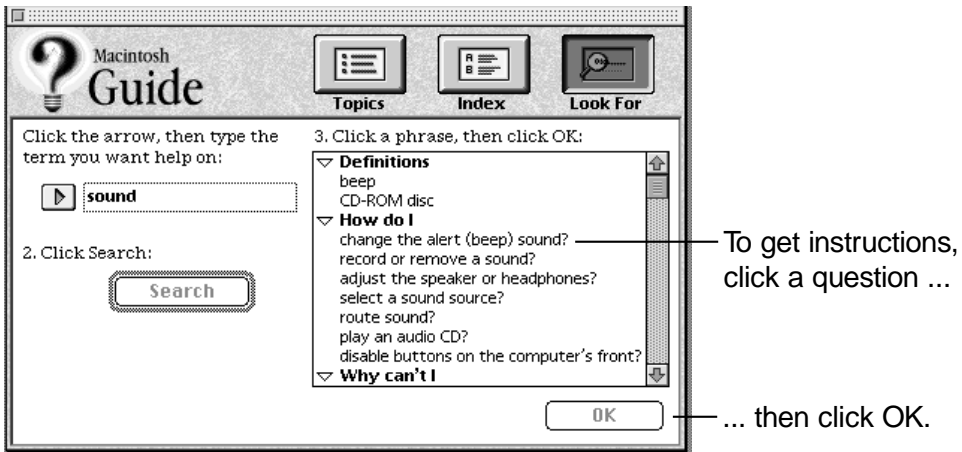
A small box appears on the left side of the window, where you can type text.



2 Click the arrow button to activate the text box.

3 Type `sound` in the text box and then click Search.

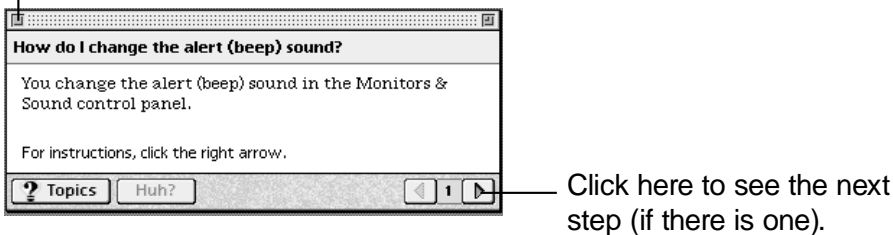
When you click Search, a list of questions related to the word or phrase you typed appears on the right side of the Macintosh Guide window.



- 4 Click the question “How do I change the beep sound?” and then click OK. Or double-click the question.**

A small window appears with instructions for you to follow.

If you want to close
Macintosh Guide, click here.



- 5 Read and follow the instructions in the window.**

Macintosh Guide provides step-by-step instructions to answer the question you selected. When you have completed each step, click the right arrow in the lower-right corner to display the next step.

- 6 When you have completed all the steps, click the close box in the upper-left corner to close Macintosh Guide.**

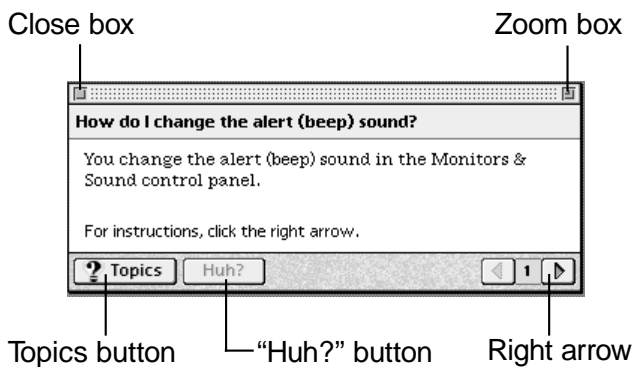
Tips for using Macintosh Guide

Here are a few tips for using Macintosh Guide effectively:

- Macintosh Guide is available only when you are in the Finder—the desktop area where you can see the icons of disks, folders, and files. (Other programs may also have help available in the Guide menu, however.) If you don't see Macintosh Guide in the Guide menu, pull down the Application menu (to the right of the Guide menu) and choose Finder.
- Follow the steps when you're instructed to; don't skip ahead or read ahead. That way the computer can check to make sure you've done a step correctly.
- Unlike most windows, the Macintosh Guide window stays in front of other windows on the screen so that your instructions are never covered. If you need to move the Guide window out of the way, drag it by the title bar at the top of the window.

You can also move the window out of the way by clicking the zoom box. Click the box once to shrink the window; click it a second time to expand the window to its original size.

- If you need more information about an instruction or a term, click the button labeled "Huh?" to get further explanation. (The "Huh?" button is dimmed when no additional information is available.)
- If you want to return to the main Macintosh Guide window, click the Topics button in the lower-left corner of the Guide window.
- When you're finished using Macintosh Guide, click the close box in the upper-left corner of the window.



Identifying objects on the screen

Sometimes you'll see an unfamiliar item on the screen and ask yourself, "What's that?" You can get an answer by using a Macintosh feature known as Balloon Help.

Balloon Help explains the function of icons, menus, commands, and other items on the Macintosh screen in balloons like those you see in comic strips.

Follow these steps to use Balloon Help:

- 1 Pull down the Guide menu (marked with the  icon) and choose Show Balloons.**



- 2 Point to any object on the screen that you want to identify.**

A balloon appears next to the object. In the following illustration, for example, pointing to the Trash displays a balloon that explains how to use the Trash to throw items away.



Although balloons appear next to items when you point to them, the way you work does not change; you can still select icons, choose commands, and so on.

- 3 When you're finished using Balloon Help, choose Hide Balloons from the Guide menu.**

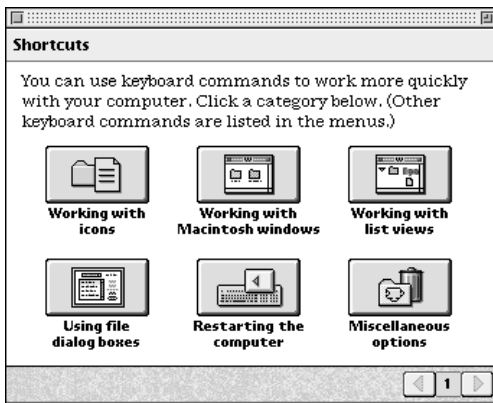
Learning useful shortcuts

You can perform many tasks in the Finder more quickly if you use keyboard or mouse shortcuts. For example, instead of clicking an icon and choosing Open from the File menu, you can simply double-click the icon to open it.

Follow these steps to learn keyboard and mouse shortcuts:

- 1 **Pull down the Guide menu (marked with the  icon) and choose Shortcuts.**

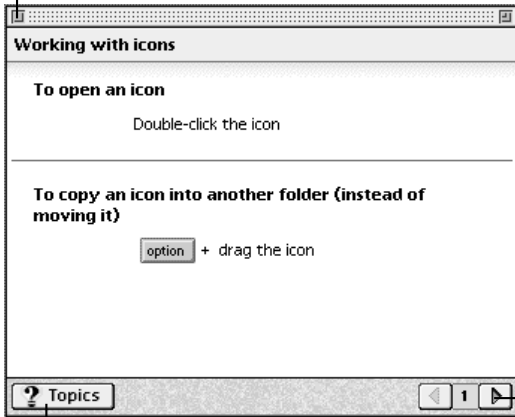
The main Macintosh Shortcuts window appears.



2 Click one of the category buttons.

Another window appears, describing shortcuts for that category.

If you want to close the window, click here.



Click here to see the next step (if there is one).

Click here to return to the main Macintosh Shortcuts window for more categories.

3 Read about the shortcuts available for the category you selected.

Click the right arrow in the lower-right corner of the window to display the next window (if there is one).

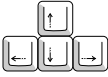






4 When you finish reading about the shortcuts for your category, click the Topics button in the lower-left corner to return to the main Macintosh Shortcuts window. Or click the close box in the upper-left corner to close the window.

Appendix B Special Keys on Your Keyboard

Your server keyboard contains certain special keys that typewriter keyboards don't have. Many of these keys allow you to give commands to the server without using the mouse. For example, in many application programs, pressing the ⌘ (Command) key at the same time as the Q key is often an alternative method of quitting a program.




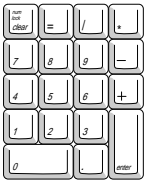





The following table describes what you can do with the special keys on your keyboard. The number of special keys on your keyboard may vary from this list; it depends on the model of keyboard you have.

Special keys on Apple keyboards

Arrow keys		Use to move the insertion point, as an alternative to using the mouse to move the pointer. In some programs, the arrow keys have other functions.
Caps Lock key		Use to capitalize a series of letters. (Numbers and symbols aren't affected.)
Clear key		Use to delete the current selection (or use the Delete key). In some programs, Clear has other functions.
⌘ (Command) key		Use in combination with other keys as an alternative to choosing a menu command.
Control key		In combination with other keys, this key provides shortcuts or modifies other actions.
Delete key		Use to delete selected material, or the character to the left of the insertion point.
Enter key		In a dialog box, pressing Enter is the same as clicking the outlined button. In some programs, pressing this key confirms information you have provided.

Continued .

Special keys on Apple keyboards *(continued)*

Escape key		The function of this key depends on the program you're using.
Function keys		Some programs allow you to use the 12 function keys to give commands. You can assign commands or action sequences to function keys with special utility programs.
Option key		Use in combination with other keys to produce special characters or modify actions.
Numeric keys		Use to produce numbers and mathematical symbols; some programs use these keys as function keys to initiate actions.
Power On key		Press to turn on the server.
Return key		Use to move the insertion point to the beginning of the next line. In a dialog box, pressing Return is the same as clicking the outlined button.
Shift key		Use to produce capital letters (or the upper character on the key).
Other special keys		The function of these keys depends on the operating system and program you're using.
Tab key		Use to move the insertion point to the next stopping place (such as a tab stop or field in a dialog box or program).

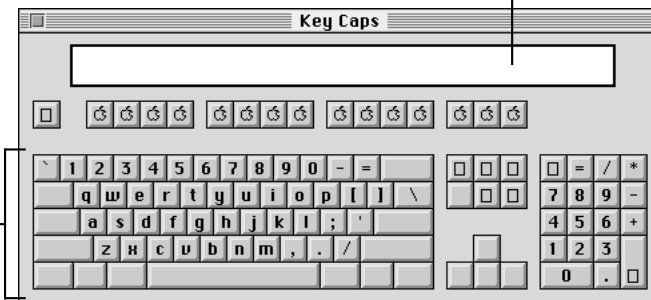
Typing special characters and symbols

You can type a variety of international and other special symbols and characters (including characters with diacritical marks, such as accents) by pressing combinations of keys.

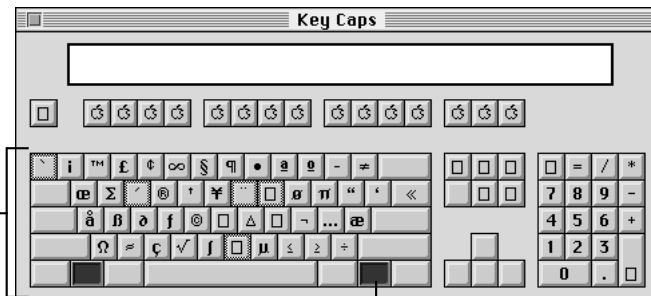
The Key Caps program, which is installed with your system software, shows you the characters produced when you type certain keys and key combinations in the fonts available on your server. Choose Key Caps from the Apple (🍏) menu, then choose the font from the Key Caps menu.

Characters available in the Chicago font

Characters appear here when you press keys on the keyboard or click them in the window.



To have Key Caps show more options for special characters, press each of these keys or key combinations: Option, Shift, Shift-Option, Shift-⌘, and Option-⌘.



Characters available in the Chicago font when the Option key is pressed

The highlighted key represents the key held down on the keyboard—in this case, the Option key.

If you press the Option key, Key Caps outlines lightly the keys that you can use in combination with letter keys to type letters with accents or other diacritical marks.

If you see rectangles: If you see rectangles instead of diacritical marks on some of the pictures of keys in Key Caps, try pressing Option-⌘ to see the diacritical marks. However, you only need to use the Option key (not Option-⌘) in combination with the other keys to type letters with diacritical marks.

If you press the Option key at the same time as a key for a specific diacritical mark and then release both keys, Key Caps outlines in bold the keys for letters that can be typed with that mark. (You'll see that most key combinations for diacritical marks can be used with the Space bar as well as letter keys—producing the mark without a letter.)

The most common diacritical marks and how to create them are summarized next.

Diacritical mark	Key combination
Grave accent (`)	Option-`, then type the character
Acute accent (´)	Option-e, then type the character
Circumflex (^)	Option-i, then type the character
Tilde (~)	Option-n, then type the character
Umlaut (¨)	Option-u, then type the character
The letter “c” with a cedilla (ç)	Option-c

- **To type a letter or a space with a specific diacritical mark, press the Option key and the key for the mark simultaneously. Then type the letter that needs the mark.**

If you are having trouble getting a mark and letter to appear together, try again. Be sure to press the Option key before (or at the same time as) the key for the mark; then, after you release both keys, type the letter to be marked.

Special key combinations

If difficulties with your mouse or server don't allow you to use standard methods of quitting a program or restarting your server you can try using these special key combinations.

To do this...	...press this key combination
----------------------	--------------------------------------

Force a program to quit	⌘-Option-Esc
-------------------------	--------------

Here are other key combinations you may find useful:

To do this...	...press this key combination
----------------------	--------------------------------------

Start a "debugging" program used by software programmers*	⌘-Power key
Start the server from a CD-ROM disc	C key (at startup)
Ignore SCSI ID 0 (zero)	⌘-Option-Shift-Delete
Turn off system extensions	Shift key (while starting up)
Reset PRAM	⌘-Option-p-r (while starting up with external SCSI devices disconnected)

*If you do not have a debugging program installed, your screen displays a caret prompt (>). To return to the desktop, type "G."

Appendix C Obtaining Updated Apple Software

Apple technical support information and software updates are available from many online services. Using these services, you can get troubleshooting and other important information. You can also get the latest versions of Apple software, including most printer drivers, system enablers, and updates to utilities, networking, and communication software.

IMPORTANT Be sure to read the posted Apple Software License Agreement before installing any software.

Currently, Apple posts support information and Apple software updates to the following online services:

- America Online
- AppleLink
- CompuServe
- eWorld
- Internet: FTP servers
- Internet: Gopher server
- Internet: World Wide Web sites

IMPORTANT Although specific paths for each service are provided in the sections that follow, online information is subject to change. If you have trouble finding Macintosh-related information online, see the service and support information that came with your server.

America Online

Apple software updates are posted to the USA Apple SW Updates area, which is located in the Apple Computer, Inc. folder. You can use the keyword `applecomputer` to go directly to the Apple Computer, Inc. folder, or follow this path to find the software updates:

- Computing window

 - Company Connection window

 - Technical Support window

 - Hardware folder

 - Hardware window

 - Apple Computer, Inc. folder

 - USA Apple SW Updates folder

AppleLink

Support information is posted to the Support area, located in the following path:

- AppleLink Services (main window)

 - Support

Apple software updates are posted to the Apple SW Updates board, located in the following path:

- AppleLink Services (main window)

 - Software Sampler

 - Apple SW Updates

CompuServe

The MacPlanet (GO PLANET) area provides access to Macintosh-related information on CompuServe. From MacPlanet, go to the Apple Online (GOAPLNEW) section for Apple product information, a database of technical support articles, a collection of popular software files, and software updates for U.S. and international customers.

The address for the Apple systems operator on CompuServe is 74431,1472 (via the Internet: 74431.1472@compuserve.com).

eWorld

Support information and Apple software updates are posted to the Apple Technical Support area. You can use the shortcut `support` to go directly to this area, or follow this path:

Computer Center
 Apple Customer Center
 Apple Technical Support

Internet: FTP servers

Support information and software updates are posted to two file transfer protocol (ftp) servers: `ftp.info.apple.com` and `ftp.support.apple.com`.

`ftp.info.apple.com`

- Host name: `ftp.info.apple.com`
- IP number: 204.96.16.4
- Path: `ftp/Apple.Support.Area/Apple.SW.Updates`

`ftp.support.apple.com`

- Host name: `ftp.support.apple.com`
- IP number: 130.43.6.3
- Path: `/pub/Apple SW Updates`

Internet: Gopher server

Support information and Apple software updates are posted to the Apple Computer Gopher Server, located in the following path:

Home Gopher Server
 Computer Information
 Apple Computer Gopher Server

- Host name: `gopher.info.apple.com`

Apple recommends using TurboGopher client software to access the Apple Computer gopher server. TurboGopher client software is available via anonymous file transfer protocol (ftp) to `boombox.micro.umn.edu` in the `/pub/gopher` directory.

IMPORTANT If you are downloading a software update from an FTP site, please note that the updates are self-extracting archive files (identified by having “.sea” at the end of the file name) that have been converted to a binhex file format. If your FTP client software or commercial online service gateway does not perform an automatic binhex to .sea file translation, you’ll need to obtain software to do this manually. Stuffit Expander and DiskDoubler Pro are two popular Mac OS applications that can perform this task for you.

Internet: World Wide Web sites

Support information and Apple software updates are available via Apple’s World Wide Web sites:

- <http://www.info.apple.com>
- <http://www.support.apple.com>

Staying informed of Apple software updates

You can receive notification and descriptions of each new Apple software update posted to the Apple Software Updates areas on Apple supported online services and Internet sites. We will also send you information on fee-based Apple software upgrades not posted online.

To subscribe

1 Send an E-mail message to swupdates@thing1.info.apple.com.

2 In the message SUBJECT field, type “subscribe yourrealname.”

For example, if your name is Royce Walthrop, you would type

`Subscribe Royce Walthrop`

You'll receive an automated reply letting you know you've been added to the list.

To unsubscribe

1 Send an E-mail message to swupdates@thing1.info.apple.com.

2 In the message SUBJECT field, type “unsubscribe yourrealname.”

For example, if your name were Royce Walthrop, you would type

`Unsubscribe Royce Walthrop`

You'll receive an automated reply letting you know you've been removed from the list.

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Workgroup Server Administrator's Guide

for the Workgroup Server 7250 and 8550

 Apple Computer, Inc.

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