AppleShare Pro Administrator's Guide

Apple Computer, Inc.

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Contents

Preface: About This Guide vii

1 Getting Started 1

Installing AppleShare Pro / 2

Installing workstation software over the network / 6

- Instructions for workstation users / 7
  - Installing the AppleShare workstation software / 7
  - Installing the AppleTalk resource / 9

Upgrading from earlier versions of AppleShare / 11

- Converting your AppleShare 2.0 Users & Groups file / 11
- Converting your AppleShare Server 3.0 Users & Groups Data File / 12
- Retaining your current server volumes / 13

What's new in AppleShare Pro? / 14

What's next? / 16

2 Setting Up File Service

Overview of setting up file service / 18

Starting the AppleShare Pro Admin program / 19

Establishing file server security / 24

- Guests and registered users / 25
- Superusers / 25
- Users and groups / 25
- Sharing / 26
- Access privileges / 27

Registering users / 28
Allowing or denying guest access / 31
Setting up and adding members to groups / 32
Sharing volumes and folders / 34
Setting access privileges / 36
About the Everyone privilege / 39
Access privilege strategies / 39
Recognizing privileges / 41
Changing owners or users / 42
Removing users or groups / 42
Starting the AppleShare Pro File Server program / 42
Getting users ready to use the file server / 44
General considerations / 44
Macintosh users / 44
IBM PC users / 45
What's next? / 45

3 File Server Supervision / 47

Changing names and passwords / 48
Deleting users / 49
Revoking group membership and deleting groups / 50
Revoking membership / 50
Deleting groups / 51
Sending file server messages / 52
Greetings / 52
Specific user messages / 53
Quitting and restarting file service / 55
Quitting file service / 55
Restarting file service / 56
Disconnecting users / 57

Monitoring file server usage / 58
Using the Connected Users window / 58
Using the file server log / 59
Creating and using AppleShare Pro reports / 60
Adjusting file server performance / 62
Changing the maximum number of concurrent connections / 63
Controlling file server activity / 64
Setting cache preferences / 65
Recommended settings / 65
Setting the preferences / 66
Compacting volume access privileges / 67
Emptying network Trash / 68
Limiting program use / 69
Copy-protecting programs and documents / 70
Locking files / 72
Locking folders / 73
Copying folders and files across volumes / 75
Backing up your Users & Groups Data File / 76
Adding hard disks and drives to the file server / 77
Changing startup disks / 77
Unmounting removable volumes / 79

4 Setting Up Print Service / 81

About the AppleShare Pro Print Server / 82
Capturing printers / 83
Getting users ready / 86

5 Print Server Supervision / 87

Monitoring print queue windows / 88
Viewing queue windows / 89
Managing queue and log windows / 89

Changing the print queue / 90
Moving a document to the top of the print queue / 90
Deleting documents from the print queue / 90
Changing the location of the print queue folders / 91
Allowing users to bypass spooling / 92
Temporarily stopping spooling or printing / 94
Releasing printers / 95
Adjusting the ImageWriter Interpage Time-out option / 96
Quitting and restarting print service / 98
Quitting print service / 98
Restarting print service / 100
Printing banner pages / 100
Using the print log / 102
Reviewing the print log / 102
Saving the print log / 103
Removing the print log / 103

6 Troubleshooting / 105

Problems with the AppleShare Pro File Server / 106
Problems with the AppleShare Pro Print Server / 110

Appendix A AppleShare Pro Specifications / 115

Glossary / 117
Index / 121

Preface About This Guide

This guide provides all the information you need to install, set up, and administer AppleShare file and print services on an Apple Workgroup Server 95. The AppleShare Pro File Server program provides a centralized resource for users of networked Macintosh and IBM PC–compatible computers to store and share information. The AppleShare Pro Print Server program gives network users more efficient service from their LaserWriter, AppleTalk ImageWriter II, and AppleTalk ImageWriter LQ printers. The steps you take to initiate and control these services are fully detailed in this guide.

What you need to know

You should already have set up and become familiar with your Apple Workgroup Server 95. You should also be familiar with basic Macintosh concepts and techniques, such as using the mouse to point, click, and drag, choosing menu commands, and working with icons. If you are unfamiliar with the Macintosh graphical user interface, you can find an explanation in the *Basic Skills* guide that came with your Apple Workgroup Server 95.

What's covered in this guide

This guide is a step-by-step introduction to using AppleShare Pro:

- Chapter 1, "Getting Started," provides instructions for installing AppleShare Pro from the AppleShare Pro CD-ROM. It also includes instructions that you can distribute to users for installing workstation software on their computers over the network. Finally, the chapter explains how to upgrade from earlier versions of AppleShare. The procedure allows you to retain user accounts, passwords, and access privileges from earlier versions and to use them with AppleShare Pro.
- Chapter 2, "Setting Up File Service," provides instructions for setting up AppleShare Pro file service on your Apple Workgroup Server 95. You will learn how to create user and group accounts, assign passwords, and provide access privileges to volumes you want to share over the network.
- Chapter 3, "File Server Supervision," provides instructions for monitoring and controlling file server activity, and for communicating with users.
- Chapter 4, "Setting Up Print Service," shows you how to set up AppleShare Pro print service.
- Chapter 5, "Print Server Supervision," provides instructions for monitoring and controlling print server activity.
- Chapter 6, "Troubleshooting," explains common file and print server problems, with solutions for each problem.
- Appendix, "AppleShare Pro Specifications," provides detailed product specifications.

The guide also includes a glossary of terms and an index.

On-line help and documentation

You can display information about AppleShare Pro on your computer screen and get on-screen help, using AppleShare Pro in several ways.

Balloon Help

AppleShare Pro comes with a feature called Balloon Help, which provides immediate on-screen help when you need it. If at any time you don't understand the instructions in this guide—or if you see a window, button, menu, command, or icon you want to know more about—use Balloon Help to get the help you need. For instructions on using Balloon Help, see the *Basic Skills* guide.

On-line documentation

The contents of this guide, and of most of the other documentation that comes with the Apple Workgroup Server 95, are provided in electronic form so that you can display them on your screen. If you prefer using on-line forms of documentation, you can use the on-line utility called Apple DocViewer, which comes with the Apple Workgroup Server 95. The user's guide for Apple DocViewer is itself provided in on-line form, in the Documentation folder on your server. The *Apple DocViewer Quick Reference Card,* packaged with the Apple Workgroup Server 95, explains how to start Apple DocViewer and display the user's guide.

For more information

If you need to learn more about the Apple Workgroup Server 95, or about server and network administration generally, here are some good sources of information.

Other guides for the Apple Workgroup Server 95

In addition to the *AppleShare Pro Administrator's Guide,* you received other guides with your Apple Workgroup Server 95 that provide valuable information about the hardware, operating system, and program components of your server. If you don't find the information you need in this guide, consult the other guides in the Apple Workgroup Server 95 documentation suite:

- *Setting Up and Managing Your Server*
- *Basic Skills*
- *Server Administration With A/UX 3.0.1: Advanced Concepts and Procedures*
- Retrospect® documentation

Retail books

Apple has produced a number of general books on networking in conjunction with the Addison-Wesley Publishing Company. These are available through most bookstores.

- *Understanding Computer Networks* is an introduction to the how, what, and why of networking.
- *Inside AppleTalk* (second edition) is a comprehensive look at the AppleTalk protocol architecture.
- *AppleTalk Network System Overview* is a condensed version of Inside AppleTalk.
- *Planning and Managing AppleTalk Networks* provides an in-depth discussion of administering a small- to medium-sized AppleTalk network.

There are also a large number of independently written books on all aspects of networking. You can find a good selection at many general or technical bookstores.

1 Getting Started

This chapter provides instructions for installing AppleShare Pro on your Apple Workgroup Server 95. It also includes instructions that you can distribute to users for installing current AppleShare and AppleTalk workstation software over the network. The chapter also tells how to upgrade to AppleShare Pro from earlier versions of AppleShare and explains the differences between AppleShare version 3.0 and AppleShare Pro.

Installing AppleShare Pro

This section provides instructions for installing your AppleShare Pro software from the *AppleShare Pro Installer* CD-ROM. Before you begin, you need to

- make sure the server is set up and connected to an AppleTalk network(see *Setting Up and Managing Your Server*)
- connect the CD-ROM drive (see *Setting Up and Managing Your Server* or the instructions that came with your CD-ROM drive)
- make sure that A/UX 3.0.1 has been installed on the server

IMPORTANT To avoid erasing data inadvertently, disconnect any hard disk drives and other SCSI devices that you do not need for the installation process, and reposition the SCSI terminator on the last active device in the SCSI chain. You can reconnect these devices after you complete the installation.

To install AppleShare Pro software:

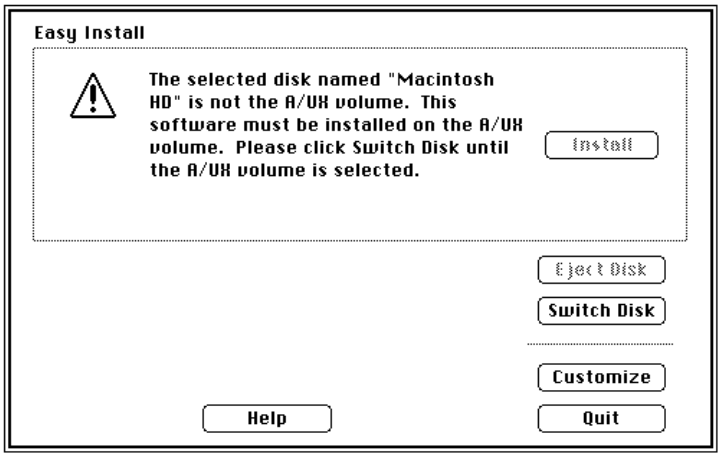
1 Insert the *AppleShare Pro Installer* CD-ROM into the CD-ROM drive.

First insert the CD-ROM into the CD-ROM tray, and then insert the tray into the drive. (If necessary, consult the instructions that came with your CD-ROM drive.)

The following window appears:

2 Double-click the Installer icon.

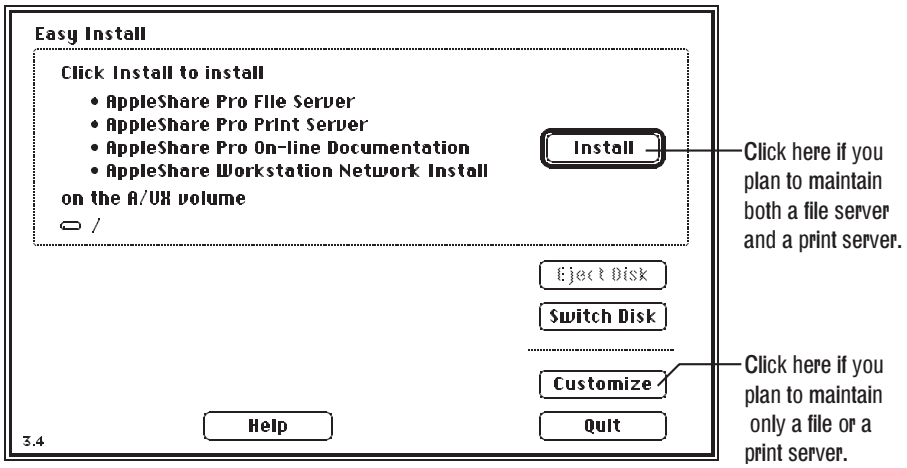
The Easy Install dialog box appears:



3 Click the Switch Disk button.

Depending on how many volumes are available on your server, you may have to click Switch Disk more than once to find the A/UX volume.

The following dialog box appears:



4 Click Install or Customize.

If you're going to provide both file *and* print service on the server, clicking Install is the most convenient method. If you plan to provide only one or the other, use the Customize button.

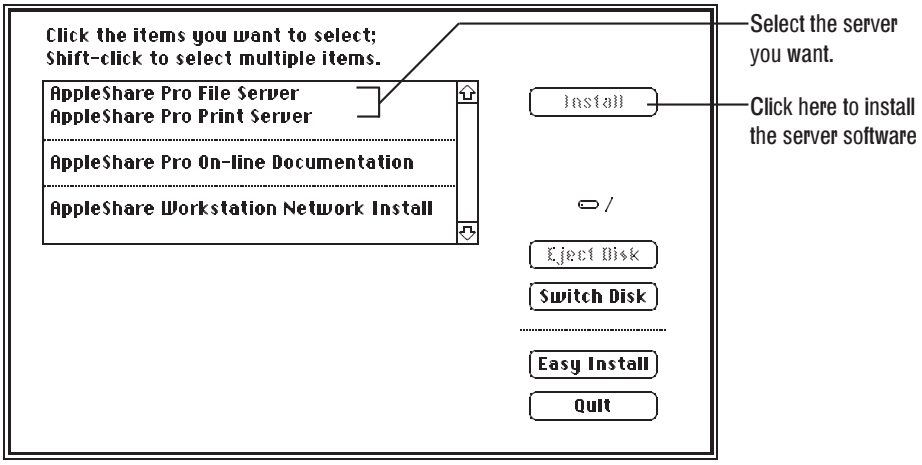
The Easy Install option automatically installs these files:

- AppleShare Pro File Server
- AppleShare Pro Print Server
- AppleShare Pro On-line Documentation
- AppleShare Workstation Network Install

Clicking Customize lets you choose any or all of these files and skip the ones you don't need.

If you clicked the Install button, the files are installed and in a while your screen displays the dialog box that appears after step 6. Skip to step 7. If you clicked Customize, continue with steps 5 and 6.

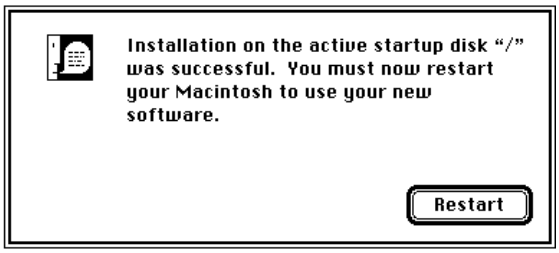
5 Click the first item you wish to install; Shift-click to select additional items.



6 Click Install.

If you are running other programs, a dialog box appears indicating that installation is not possible while other applications are running. Click Continue to quit the other applications and to continue with the installation. A screen appears indicating progress of the installation.

When the installation is complete, this dialog box appears:



The AppleShare Pro software is installed on your hard disk. However, your changes won't take effect until you restart the server.

7 Click Restart.

The CD-ROM is automatically ejected and the server restarts. You're back at the Finder, ready to set up file or print service.

8 Remove the *AppleShare Pro CD-ROM* and store it in a safe place in case you need it again later.

If necessary, see the instructions that came with your CD-ROM drive.

9 Check the clock.

The server's internal clock is the source for all time entries in AppleShare Pro records. Before you set up file or print services, make sure that the server's clock is accurate and that the time zone is correct. (For instructions on setting the time and time zone, see Chapter 3, "Configuring the Software," in *Setting Up and Managing Your Server*.)

IMPORTANT After you've successfully installed the AppleShare Pro software, users on your network should upgrade the AppleShare workstation software on their computers. Follow the instructions in the next section, "Installing Workstation Software Over the Network."

Installing workstation software over the network

The instructions in this section can be copied and distributed to users who are upgrading their AppleShare and AppleTalk workstation software.

Networking software built into System 7—as well as earlier versions of AppleShare workstation software—allows users to access information on any file server; however, users will not be able to receive the full range of server messages nor be able to use the extended password security features of AppleShare Pro unless they specifically upgrade their AppleShare workstation software. Also, a new version of the AppleTalk resource must be installed on all workstations to take advantage of the Apple Workgroup Server 95's increased performance.

Distribute these instructions if users are already familiar with accessing information on a file server—through either Macintosh file sharing or AppleShare. Before users can perform the installation, you need to make the workstation software available on the server. To do so, first drag the icon of the *Apple Network Software Installer* disk to the Workstation Software folder inside the Shared Data folder on the / (slash) volume. This will create a folder within the Workstation Software folder and copy the contents of the disk to the folder. Then you need to provide access to the Workstation Software folder so users can log on to the folder over the network. (If you're unsure of how to do so, see Chapter 2, "Setting Up File Service.")

Instructions for workstation users

Use these instructions to install new workstation software on your Macintosh. You will need to perform two installations, one to install AppleShare workstation software and another to install an updated version of the AppleTalk resource. Once the software is installed, you'll be able to receive messages sent by your network administrator when you connect to the file server, to use new password security features, and to take advantage of higher server performance.

Installing the AppleShare workstation software

To install the AppleShare workstation software:

1 Connect to the file server.

See the manuals that came with your computer or with System 7 for details about using the Chooser to connect to the file server.

If your network has more than one file server, ask your network administrator on which server the new AppleShare workstation software is available.

2 Select the volume containing the new AppleShare software.

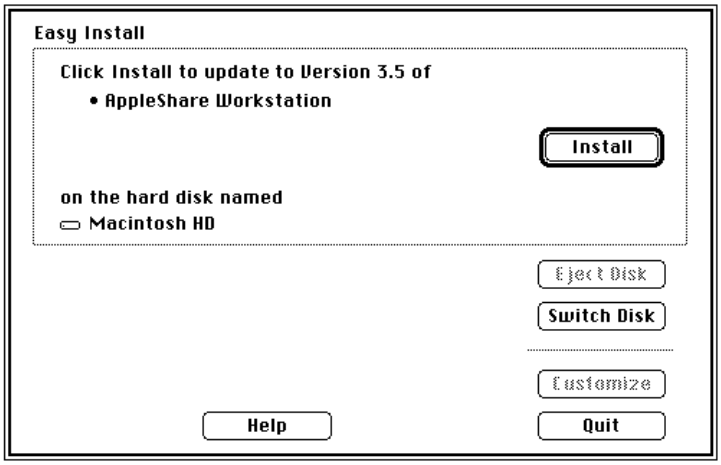
Ask your network administrator for the name of the correct volume.

3 Double-click the Workstation Software folder icon to open it.

4 Double-click the AppleShare Workstation folder icon to open it.

5 Double-click the Installer icon to open it.

This dialog box appears:



If the hard disk listed in the Easy Install dialog box is not the startup disk for your Macintosh computer, click the Switch Disk button until the correct name appears.

6 Click Install.

If you are running other applications, you see a dialog box indicating that installation is not possible while other applications are running. Click Continue to quit the other applications and to continue with the installation.

When the installation is complete, you see a message indicating that installation was successful. The latest version of AppleShare workstation software is installed on your hard disk. However, your changes won't take effect until you restart the computer.

7 Click Restart.

Now that you've installed AppleShare workstation software on your computer, you need to install an updated version of the AppleTalk resource. Once the software is installed, you'll be able to take advantage of the increased performance of the Apple Workgroup Server 95.

Installing the AppleTalk resource

To install the new AppleTalk resource on your Macintosh.

1 Connect to the file server.

See the manuals that came with your computer or with System 7 for details about using the Chooser to connect to the file server.

If your network has more than one file server, ask your network administrator on which server the new AppleShare workstation software is available.

2 Select the volume containing the new AppleTalk software.

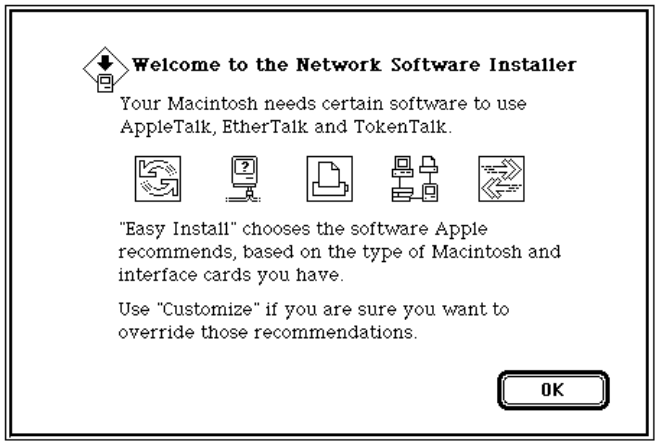
Ask your network administrator for the name of the correct volume.

3 Double-click the Workstation Software folder icon to open it.

4 Double-click the Network Software Installer folder icon to open it.

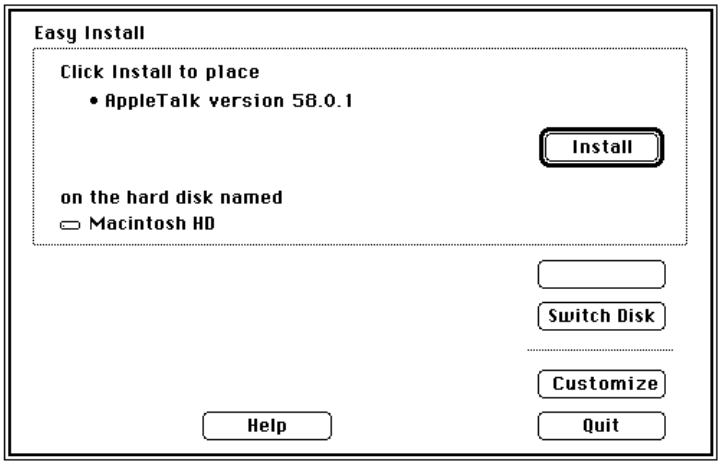
5 Double-click the Installer icon to open it.

This dialog box appears:



6 Click OK.

The Easy Install dialog box appears:



If the hard disk listed in the Easy Install dialog box is not the startup disk for your Macintosh computer, click the Switch Disk button until the correct name appears.

Depending on the type of Macintosh computer you are using, you may see more than one item listed in the Easy Install dialog box. If so, the additional networking software listed there should also be installed on your computer to ensure that you are using the most up-to-date versions.

7 Click Install.

If you are running other applications, a dialog box appears indicating that installation is not possible while other applications are running. Click Continue to quit the other applications and to continue with the installation.

The latest version of AppleTalk software is installed on your hard disk. However, your changes won't take effect until you restart the computer.

8 Click Restart.

You have completed the installation.

Upgrading from earlier versions of AppleShare

If you are upgrading from either AppleShare version 2.0 or 3.0, you can avoid having to re-create accounts for all your users and groups, and resetting access privileges for the volumes you share on your Macintosh server. The following few sections provide instructions for upgrading from earlier versions of AppleShare while maintaining these accounts and access privileges.

IMPORTANT Upgrades from AppleShare version 1.0 are not automated. If you are upgrading from version 1.0, you will need to create new users and groups, and assign new access privileges to the volumes you want to share on the Apple Workgroup Server 95. See Chapter 2, "Setting Up File Service" for instructions.

Converting your AppleShare 2.0 Users & Groups file

To convert your current AppleShare 2.0 Users & Groups file for use on your Apple Workgroup Server 95:

1 **Start up the Apple Workgroup Server 95.**

2 **Create a new, temporary folder on the server's / volume.**

From the Finder, choose New Folder from the File menu. It doesn't matter where you place the temporary folder.

3 **Move the Users & Groups Data File from the Preferences folder to t**

The Preferences folder is inside the System Folder. (Use the System Folder alias to open the System Folder.) The file you move is empty; you will discard it after you've converted your current Users & Groups file.

4 **On your existing Macintosh server, copy your current AppleShare 2 file onto a floppy disk.**

The file is found in the Server Folder. You will use the floppy disk to copy this file onto your Apple Workgroup Server 95.

5 **Copy the Users & Groups file from the floppy disk to the System Folde of your Apple Workgroup Server 95.**

When you copy the file, do not rename it.

6 **On the Apple Workgroup Server 95, start the AppleShare Pro Admin p**

A dialog box appears indicating that the Users & Groups Data File was not found. You are given a choice of creating a new one or using your current AppleShare Users & Groups file. Select "Use AppleShare 2.0 'Users & Groups'" and click OK.

A dialog box appears in which you must provide a new server name and Admin Key.

7 **Enter a new server name and Admin Key.**

Once you enter a new server name and Admin Key, you've successfully converted your original AppleShare 2.0 Users & Groups file for use with the Apple Workgroup Server 95. All the user and group accounts you originally used with your earlier version of AppleShare will now be in effect on your Apple Workgroup Server 95.

8 **Drag the temporary folder containing your empty Users & Groups Data**

Converting your AppleShare Server 3.0 Users & Groups D

To convert your current AppleShare Server 3.0 Users & Groups Data File for use on your Apple Workgroup Server 95:

1 **Start up the Apple Workgroup Server 95.**

2 **Create a new, temporary folder on the server's / volume**

From the Finder, choose New Folder from the File menu. It doesn't matter where you place the temporary folder.

3 **Move the Users & Groups Data File from the Preferences folder to the**

The Preferences folder is inside the System Folder. (Use the System Folder alias to open the System Folder.) This file is empty; you will discard it after you've converted your current Users & Groups Data File.

4 **On your existing Macintosh server, copy your current AppleShare Groups Data File onto a floppy disk.**

The file is found in the Preferences folder inside the System Folder. You will use the floppy disk to copy this file onto your Apple Workgroup Server 95.

5 **Copy the Users & Groups Data File from the floppy disk to the Pref volume of your Apple Workgroup Server 95.**

When you copy the file, do not rename it.

6 **On the Apple Workgroup Server 95, start the AppleShare Pro Admi**

7 **Drag the temporary folder containing your empty Users & Groups D**

Retaining your current server volumes

Before continuing with the instructions in this section, you need to prepare your Apple Workgroup Server 95 hard disk drives for use with the A/UX operating system. If you haven't done so already, go now to *Setting Up and Managing Your Server* for instructions. Then return here.

To move data and access privileges from your current server volumes to your Apple Workgroup Server 95:

1 **Start your current version of the AppleShare File Server program 3.0 server.**

2 **From the Apple Workgroup Server 95, log on to your 2.0 or 3.0 se privileges enabled.**

As the server administrator, you probably already have all privileges enabled. If not, you need to assign this attribute to yourself using AppleShare Admin on your version 2.0 or 3.0 server and then log on from the Apple Workgroup Server 95.

3 **On the Apple Workgroup Server 95, start the Retrospect®.**

Follow the instructions provided in the Retrospect documentation.

4 **From the Apple Workgroup Server 95, use the Retrospect program to backup of all your current 2.0 or 3.0 server's volumes.**

Follow the instructions provided in the Retrospect documentation. Make certain that you retain file, folder, and volume attributes during the backup process. These attributes are necessary to maintain the same access privileges you've been using on your 2.0 or 3.0 server.

5 **On the Apple Workgroup Server 95, start the AppleShare Pro File Se**

6 **Use the Retrospect program to perform a complete restoration to the h Apple Workgroup Server 95.**

Follow the instructions provided in the Retrospect documentation, making sure you retain all file, folder, and volume attributes.

7 **When the volumes have been completely restored, quit the Retrospect**

Once you've restored the original volumes to the Apple Workgroup Server 95, you've completed the upgrade process. Users should now be able to access the same shared volumes as before, using their own user names and passwords.

What's new in AppleShare Pro?

If you are already familiar with AppleShare Server 3.0, you'll find it extremely simple to use AppleShare Pro. This section briefly summarizes the differences between Appleshare Server 3.0 and AppleShare Pro.

When you install AppleShare Server 3.0, the installation places the AppleShare Admin, File Server, and Print Server programs in an Applications folder on the server's startup disk. For your convenience, the AppleShare Pro Installer also creates aliases of each and puts them in the Apple (🍎) menu. You can easily start the Admin, File Server, and Print Server programs by choosing their aliases from the Apple menu.

Unlike AppleShare Server 3.0, which runs on the Macintosh Operating System, AppleShare Pro is designed to run on the A/UX operating system, Apple Computer's implementation of the UNIX® operating system. Because A/UX interprets volumes somewhat differently than the Macintosh Operating System, AppleShare Pro varies slightly from AppleShare Server 3.0 in how you share volumes.

AppleShare Server 3.0 allows the administrator to share the startup volume. Without defining any more specific access privileges, the contents of the startup disk are then available to users. AppleShare Pro does not allow you to share the A/UX startup volume (the / volume). You must specifically share a folder or folders within the startup volume if you want users to have access to their contents.

A/UX allows you to choose mount points for disks anywhere within the hierarchy of volumes and folders on the system. While this provides you with greater flexibility in configuring your system, it also requires greater care in sharing folders and volumes. You cannot share a folder if it contains an A/UX mount point. You must assign explicit privileges to any volumes mounted within shared folders. (See Chapter 2 of this guide or *Server Administration With A/UX 3.0.1* for more information.)

AppleShare Server 3.0 allows you to automate the startup process by placing the file server and print server icons (or aliases of them) in the Startup Items folders in the System Folder. You can also do so with AppleShare Pro, with some differences. As a security measure, A/UX provides administrators with the option of maintaining a password for the `root` account. If you choose to use a `root` password, you cannot automate the startup process for the file and print servers.

AppleShare Server 3.0 generates file server reports and logs as TeachText documents with a maximum file size of 32K (Kilobytes). AppleShare Pro generates these reports and logs as A/UX TextEditor files, with no maximum size. You can use the A/UX TextEditor program to open these files, or you can use other word-processing programs, including TeachText, that can open plain-text files.

Superuser status in AppleShare Pro is different from that of AppleShare Server 3.0. With AppleShare Server 3.0, a superuser can see the contents of all server volumes, regardless of whether they are shared. This is not true of AppleShare Pro. Superusers of AppleShare Pro still have access to all folders and files, but only on specifically shared volumes and folders.

AppleShare Server 3.0 Print Server creates a queue folder for each captured printer and places each folder in the Preferences folder within the System Folder. AppleShare Pro also places queue folders in the Preferences folder, but provides the option of changing the location of the queue folders. See "Changing the Location of the Print Queue Folders" in Chapter 5.

AppleShare Server 3.0 provides Apple II support. AppleShare Pro does not.

AppleShare Pro provides a cache feature not available with AppleShare Server 3.0. AppleShare Pro File Server allows you to set aside a portion of the Apple Workgroup Server 95's random-access memory (RAM) for temporarily storing, or caching, frequently accessed files, folders, and icons. Caching frequently used files, folders, and icons speeds up access, since such items are already in the server's memory and do not need to be repeatedly read from disks. See "Setting Cache Preferences" in Chapter 3 for more information.

AppleShare Pro provides improved performance over AppleShare Server 3.0. It can accommodate a higher maximum number of connected users, open files, and simultaneous program launches. The AppleShare Pro Print Server program supports a broader range of AppleTalk-compatible printers as well as an increased maximum number of queue files. For more information, see the Appendix, "AppleShare Pro Specifications."

AppleShare Pro documentation is available in on-line form. If you prefer using on-line forms of documentation, you can use the on-line utility called Apple DocViewer, which comes with the Apple Workgroup Server 95. The user's guide for Apple DocViewer is itself provided in on-line form, in the Documentation folder on your server.

What's next?

You're now ready to go on to Chapter 2, "Setting Up File Service." Even if you're upgrading from an earlier version of AppleShare, you still need to follow some of the procedures in Chapter 2.

2 Setting Up File Service

When you install the AppleShare Pro File Server software, you automatically install a program called AppleShare Pro Admin. You use AppleShare Pro Admin to register users and assign access privileges for the volumes you plan to share on the file server.

This chapter explains how you use AppleShare Pro Admin to set up file service on your Apple Workgroup Server 95. You'll also learn how to start the AppleShare Pro File Server program. Finally, you'll learn what information users might need to know before they begin using file service.

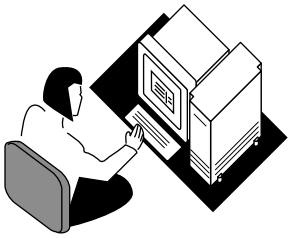
Overview of setting up file service

This figure shows you "at a glance" the steps you need to take before you can begin providing AppleShare Pro file service. The rest of this chapter describes in detail how to complete these procedures.

Start AppleShare Pro Admin

Once you start the AppleShare Pro Admin program, you'll also need to

- name the file server
- enter an Admin Key
- create a user account for yourself

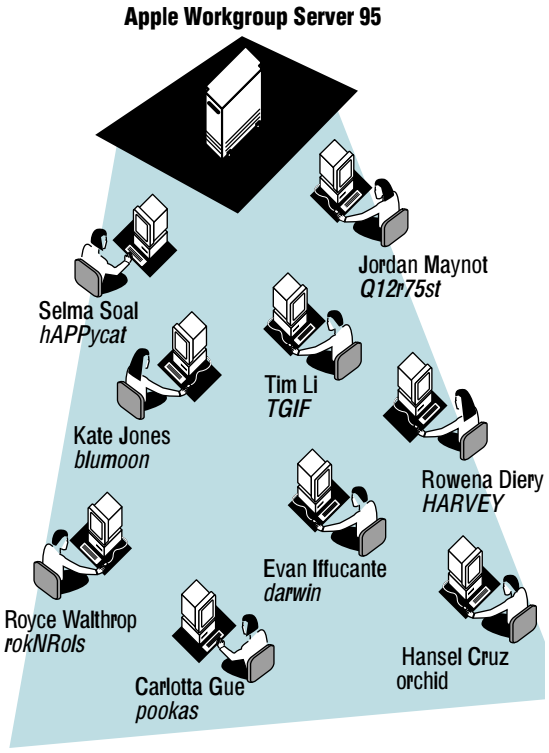


Establish file server security

There are several methods of controlling access to folders and files on the server:

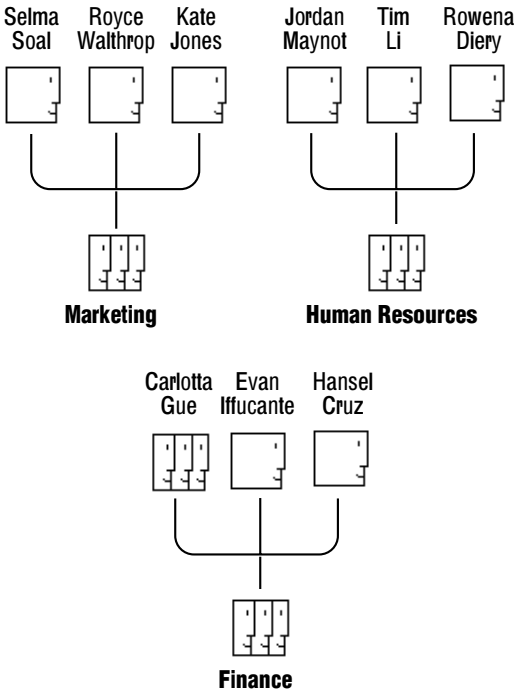
Register users

Assign a user name and password to users who will access volumes on the server. You can also choose to allow or deny guest access.



Create groups

Set up groups so you can conveniently assign access privileges for the group as a whole. You can create groups according to such things as organizational structure, physical location, or project team membership.



Share volumes and folders

Select items that you want to share

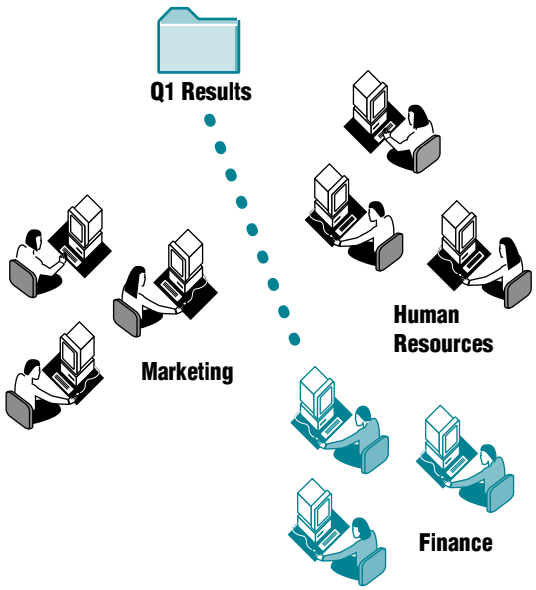
Select whole volumes or folders within volumes.

Set privileges

Set privileges according to the level of access you want users to have to particular items.

Assign a user or group to the volume or folder

Only those users with the appropriate privileges will be able to access the shared item.



Starting the AppleShare Pro Admin program

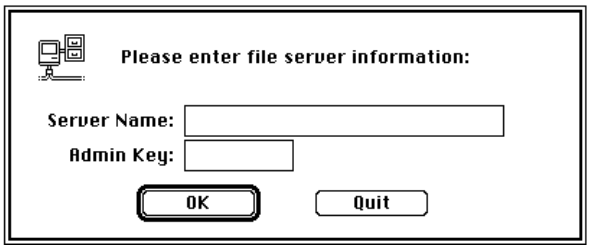
AppleShare Pro should already be installed on your Apple Workgroup Server 95. If it is not, follow the instructions in Chapter 1 to install AppleShare Pro. Then return here to start up the AppleShare Pro Admin program.

To start the AppleShare Pro Admin program:

1 Choose the AppleShare Pro Admin program alias from the Apple (K) m

Upon installation, the AppleShare Pro Admin and AppleShare Pro File Server programs are placed in the Applications folder on the server's startup disk. Aliases for each of the AppleShare Pro programs are automatically created and placed in the Apple menu.

In a moment, a dialog box appears asking you to name the file server and enter an Admin Key:



The dialog box will look somewhat different if you are upgrading from an earlier version of AppleShare. You won't need to enter a server name, only your Admin Key.

2 Name the file server.

The name you give the file server is the name users will see in the Chooser when they log on to the file server. The name you choose should help describe the purpose of the file server or indicate which group shares it — for instance, "Accounting" or "Human Resources."

The file server name can be up to 31 characters long.

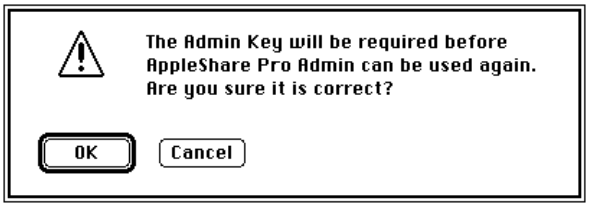
3 Enter an Admin Key.

The Admin Key "unlocks" the AppleShare Pro Admin program. Its purpose is to help prevent unauthorized use of the Admin program.

The key can be any combination of up to eight characters. The Admin Key records both uppercase and lowercase letters, so be sure to type the key *exactly* as you want it. (You can use numbers in the Admin Key, too.)

IMPORTANT Remember your Admin Key! Record it somewhere if necessary. Replacing a forgotten Admin Key is difficult and very time consuming. (See Chapter 6, "Troubleshooting," for instructions on replacing the Admin Key.)

After you enter the Admin Key, this dialog box appears:



4 Click OK or Cancel.

This is the last time you'll see the Admin Key on the screen, so be sure to make a note of it. Click OK to confirm the Admin Key. Click Cancel if you want to change it.

The file server name and Admin Key are stored in a special file created and maintained by the Admin program. The name of the file is the Users & Groups Data File; it's kept in your startup disk's Preferences folder within the System Folder. As you progress through the steps in this chapter—creating user and group accounts, assigning passwords, and so on—you are adding information to the Users & Groups Data File.

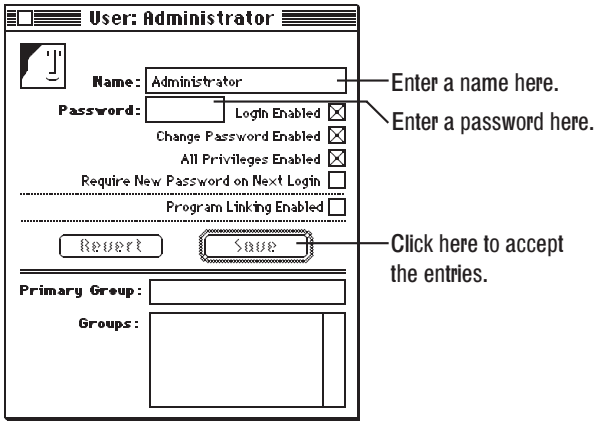
Note: In the A/UX operating system, the System Folder is nested a few folders deep. For your convenience, an alias of the System Folder is automatically created during the A/UX installation process and placed at the top level of the / (slash) volume. (For more information, see *Server Administration With A/UX 3.0.1*.)

After you click OK, the Admin program continues the startup process, preparing the startup disk and the other hard disks connected to your server. (You can deny access to these other disks through the Admin program, using the instructions provided later in this chapter.)

In a moment a message appears indicating that you must enter an administrator name and password. You are creating an account for yourself as the file server administrator.

5 Click OK.

After you click OK, a User Information window appears:



6 Enter an administrator name in the Name box.

This step is optional. Many people prefer to leave the name as "Administrator." You can do so, or you can enter any name you wish.

7 Enter a password

When you log on to the file server from a workstation computer, you must enter this password before you can connect.

Don't confuse your password with the Admin Key. You use the Admin Key to start the AppleShare Pro Admin program; you use your password to log on to the file server.

The password can be any combination of up to eight characters.

IMPORTANT Don't use a password that is the same as the Admin Key. Keeping the two distinct provides an added level of administrator security.

8 Verify your AppleShare Pro options.

Most of the check boxes—Login Enabled, Change Password Enabled, and All Privileges Enabled—are checked, indicating that the options are enabled. These options are explained in the section "Registering Users" later in this chapter. As the server administrator, you'll almost certainly want to have these options enabled.

9 Click Save.

The password is replaced by dots. You'll never see it again, but you can change it at any time by selecting the dots, entering a new password, and clicking Save.

AppleShare Pro Admin is now ready for use. In the sections that follow, you'll learn how to establish file server security, register users, create groups, and—when you're ready—begin file server operation.

Establishing file server security

AppleShare Pro file server security works through a combination of interlocking safeguards:

- sharing
- user registration
- passwords
- group membership
- ownership
- access privileges

You use sharing to determine which volumes users see when they connect to the server. You have the choice of restricting server access to specific registered users—that is, users with a user name included in the Users & Groups Data File. You can assign each registered user a password that must be entered each time he or she connects. You can include registered users in one or more groups.

As the server administrator, you are by default the owner of all volumes (and of all folders you create within each volume), but you can transfer ownership if you wish. Ownership of folders is assigned by default to the user who creates them. You set access privileges to determine what the owner, members of a group, designated individual users, and guests can see and do once they have gained access to a volume.

You can set access privileges for the folders you create within a volume as well as for the volume itself. Users do the same for the folders they create from their own workstations. These various security methods are described in greater detail in the next few sections.

IMPORTANT The AppleShare Pro software provides substantial and effective security features to prevent unauthorized access over a network. But access privileges cannot substitute for the security you gain from physically isolating the Apple Workgroup Server 95. If you plan to store highly confidential information on the file server, the best means of securing that information is isolating the Apple Workgroup Server 95 in a lockable room. If no such room is available, you can use the key lock to lock up the server's keyboard and mouse to prevent unauthorized access to the system itself.

Guests and registered users

Anyone on the network can be a guest. Access privileges permitting, guests can open folders, read files, and start programs. They can create folders, and they can add files to them or to owned folders that will accept their work.

A registered user is anyone who has been assigned a user name and (optionally) a password. Like guests, registered users are limited by the access privileges you or other users have assigned. Unlike guests, registered users can take advantage of access privileges themselves to protect their own work.

Superusers

As the server administrator, you have the ability to override the access privileges users set and to modify those you have set yourself. You can do this from any workstation, as well as from the server. Because you can exercise this power from a workstation, you're called a *superuser*. If you wish, you can assign this ability to one or more additional users.

Superuser status is controlled by the All Privileges Enabled option. You set this option when you create a user, as discussed in the section "Registering Users" later in this chapter. This option is selected by default for you as the administrator. It's initially off for all other users. Sometimes, though, you may need to share your administrative responsibilities, and the superuser option lets you do that.

> **WARNING** Superuser privileges should not be assigned casually. A superuser has access privileges that can pose a serious security risk if not assigned carefully.

Users and groups

You can assign registered users to groups, which can be set up in any way that is appropriate to your environment. The access privileges you set up for a volume or folder are extended to a single user or to a group. In the latter case, all users belonging to that group can take advantage of the access privileges.

IMPORTANT AppleShare Pro permits the owner of a volume or folder to assign access privileges either to a group or to a single registered user. In the latter case, there is no need to create a "group of one." You can work with a single user exactly like a group. If you want to assign privileges to more than one user but not to everyone, you must do so by creating a group with the appropriate membership.

Sharing

Sharing is the most basic of the AppleShare Pro security features. If you don't share a volume, users won't see it at all. You can set up access privileges for the volume, as discussed later in this chapter, and assign those access privileges to whomever you want. But unless you specifically share the volume, those privileges remain inactive.

IMPORTANT The term *volume* in AppleShare Pro refers to a shared entity available on the Apple Workgroup Server 95 and listed in the Chooser when users log on to the file server. A volume may be an entire hard disk or CD-ROM, or it may be a single folder on a hard disk or CD-ROM. This is a change from earlier versions of AppleShare (versions 1.0 and 2.0) in which a volume was always an entire hard disk or CD-ROM. In earlier versions, the terms *volume* and *hard disk* could be used interchangeably. To avoid confusion, the two terms are now kept distinct.

Once you've shared a disk or a folder, all the folders within it become accessible according to the access privileges you assign. From a user's point of view, it makes no difference whatsoever whether the shared entity is an entire disk or a folder contained on the disk.

Access privileges

Access privileges are the privileges you give to or withhold from users for opening and making changes to a shared disk or folder. You first decide what can be done and then choose who you'll permit to do it. There are three privilege categories:

- *See Folders* Allows users to open a folder and see the other folders (if any) it contains.
- *See Files* Allows users to see, open, and copy documents and programs within a folder.
- *Make Changes* Allows users to make changes to the contents of a folder, including creating, deleting, moving, and modifying the files and folders within it.

There are also three user categories:

- *Owner* Either the creator of the folder or any registered user or group to whom the first owner assigns ownership. Owners are able to change access privileges to the shared items they own whenever they want.
- *User/Group* A single user or a specified group of registered users. Users cannot change access privileges to shared items.
- *Everyone* Any user with access to the file server, whether logged on as a registered user or as a guest.

You can assign privileges to an enclosing folder separately from the privileges you assign to folders it contains, so that you can control access very precisely. You *cannot* set access privileges for files. To limit access to particular files, you must create a folder, set the access privileges for the folder, and then place the files in that folder.

Registering users

Registering users means assigning a user name and (optionally) a password to each user to whom you want to allow controlled access to the volumes you share on the server. In addition, other options are available to define and control how each user works on the server. Each user you register is listed in the Users & Groups Data File kept in the server's Preferences folder. You register users with the Create User command in the AppleShare Pro Admin program.

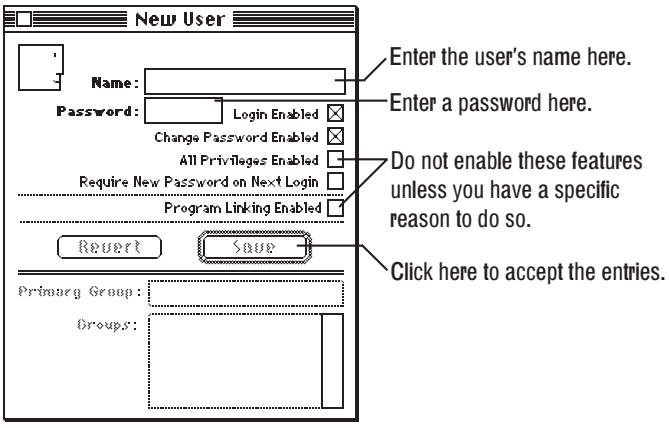
To register users:

1 Start the AppleShare Pro Admin program, if it isn't already on.

Choose the AppleShare Pro Admin alias from the Apple menu to start the program.

2 Choose Create User from the Users menu.

A New User window appears:



Note: The list of options available in the New User window may be longer than that shown here depending on the networking services installed on the Apple Workgroup Server 95.

3 Enter the user's name.

A name can be up to 31 characters long. In general, you should plan to enter all names in the same way. For example, *Jane, Jane Smith,* and *Smith, Jane* are all equally good, but if you mix the patterns it's easier to become confused. Using uppercase and lowercase letters does not matter; for instance, when the user attempts to log on to the server, *Jane* is treated the same as *jane*.

4 Enter a password.

Press the TAB key to move to the Password box, or just click in it. A password can be up to eight characters long. Users must enter their passwords exactly as you have set them up. (Uppercase and lowercase letters must match. The password *Grtef267,* for example, is not the same as *grtef267* or *GrteF267*.)

You can stipulate a minimum password length in the File Server Preferences window. To view the window, choose File Server Preferences from the Admin program's Server menu.

IMPORTANT Length is important to password security, but so is making a password difficult to guess. Avoid proper names (especially the user's own or that of someone in his or her family) or any other combination of characters that may be obvious or easily guessed.

5 Select the AppleShare Pro options you want.

An X should appear in the check boxes for the options you've selected. To deselect an option, click the checkbox so the X does not appear.

IMPORTANT DO not use the Require New Password on Next Login feature for IBM PC users. IBM PC users cannot receive the server messages that indicate a new password is necessary.

> **WARNING** Program linking is a feature of some programs that automates the accessing and use of data created with other programs that provide program linking. Program linking poses a potential security risk if you enable it. Unless you have a specific reason to do so, do not enable program linking

About AppleShare Pro User Options

The New User window lets you assign options to each user: Login Enabled, Change Password Enabled, All Privileges Enabled, Requir New Password on Next Login, and Program Linking Enabled. If oth networking services are installed on the server computer, the list options may be longer.

Login Enabled lets a user connect to the file server.

Disabling this option prevents access to the file server for that particular user, though file service for others remains unaffected Enabled and Change Password Enabled are on by default. All users must have the Login Enabled privilege if they are to log on to the f server. You would only turn it off if for some reason you wished to exclude a user without deleting his or her name from the User Lis

Change Password Enabled allows users to change passwords from their workstations.

Change Password Enabled is an important security feature of AppleShare Pro. Many administrators choose to advise or require users to change passwords often. On the other hand, some administrators want complete control over users' passwords and prefer to turn off this option.

All Privileges Enabled allows users to change passwords from their workstations.

All Privileges Enabled, as discussed earlier in the section "Superusers," should be allowed on only rarely.This option is on default for you as the administrator. It's off for all other users.

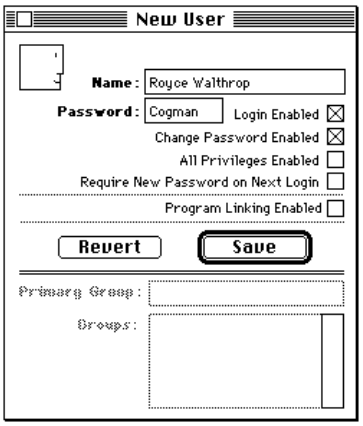
Require New Password on Next Login requires users to change their password the next time they log on to the file server. This is a good option to enable when creating a new user.

Require New Password on Next Login is off by default. It can be useful when setting up accounts: You can assign something simple as a password—like the user's initials—but require that users change the password to something more effective when they log on. After the user has provided a new password, the Admi program automatically turns this setting off.

Program Linking Enabled allows a user to create a link between a program on the server and his or her computer.

Program Linking Enabled is off by default for you as the administ and for all other users. Be very careful in assigning this privilege Users with program linking enabled have the capability of gaining access to data on the file server that you have not necessarily shared. Enabling this feature poses a severe security risk. Be careful how you use it.

6 **Click Save.**



AppleShare Pro saves the user's name and password in the Users & Groups Data File. The name appears in the window's title bar and is also listed alphabetically in the User List.

IMPORTANT When you click Save, the password changes to a series of dots—one dot for each letter—and you never see it again. If a problem occurs, you can always change the password, as described in the section "Changing Names and Passwords" in Chapter 3, "File Server Supervision."

Allowing or denying guest access

As explained in the "Guests and Registered Users" section earlier in this chapter, if you allow guest access, anyone with a computer on your network can connect to the file server. If you deny guest access, only registered users can connect. You control this option with the <Any User> information window.

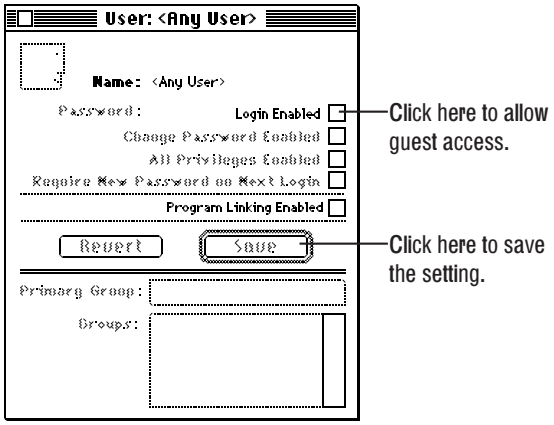
IMPORTANT If you're upgrading from AppleShare version 2.0 or 3.0, guest access is automatically set to whatever settings you chose with version 2.0 or 3.0. If you're starting with AppleShare Pro, guest access is automatically disallowed but can be turned on.

To allow guest access:

1 **Choose User List from the Users menu.**

2 **Double-click the <Any User> entry.**

The <Any User> information window appears:



3 **Click the Login Enabled checkbox to place an X in it.**

Selecting Login Enabled allows guest access; to turn off guest access, click the Login Enabled checkbox to remove the X. Options that do not apply to a guest are dimmed.

4 **Click Save.**

Setting up and adding members to groups

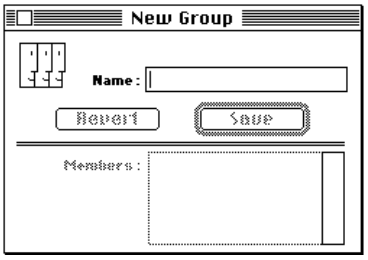
Usually groups are set up to reflect the actual divisions and working relationships of an organization, although you can choose another arrangement, such as physical location. Your arrangement can be complex or simple. There is no right or wrong way; it's simply a matter of matching group structure to your particular needs, and, if necessary, changing the structure to adapt to changes in the organization.

Steps 1 through 3 in the following instructions show you how to create a group. Steps 4 and 5 can be used either to assign users to this new group or to add members to an existing group.

To create a group and add users:

1 Choose Create Group from the Groups menu.

A New Group window appears:



2 Type in a name.

The name can be up to 31 characters long.

3 Click Save.

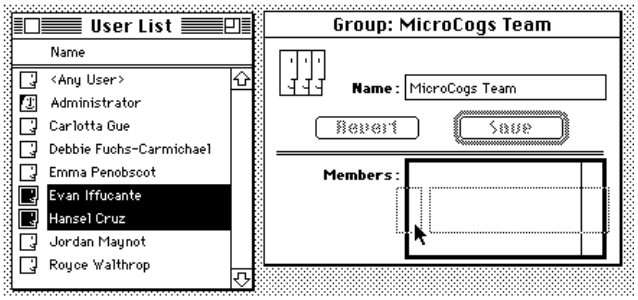
The group is added to the Group List window.

4 Choose User List from the Users menu, then select the users you wa group.

Select a name (not the icon) by clicking it in the User List window. Select additional sequential names by dragging. SHIFT-click to select nonsequential names.

5 Drag the *icons* representing the users you selected to the Members box window.

Position the pointer on any user icon (not the name), then press and hold down the mouse button. Drag the icons into the Members box until the outline of the box appears bold, and then release the mouse button.

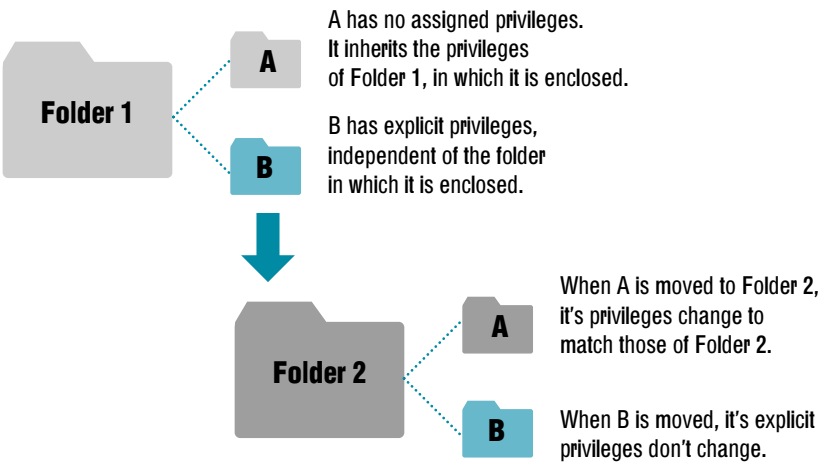


Note: You can work this process in reverse, by dragging a group icon — or a set of group icons — over a name in the User List. The user is automatically added to the group or groups. Or you can add users to a group by dragging one or more selected users' icons from the User List to the group icon in the Group List.

Sharing volumes and folders

You can set access privileges for all volumes and the folders they contain. If you don't assign access privileges, AppleShare Pro assigns default (preset) privileges.

The default access privileges for a volume are restricted to the administrator only. The administrator can see folders, see files, and make changes. No one else can do anything. The default privileges for a folder are different from those for a volume. When you create a new folder, if you don't set explicit access privileges for it, the folder automatically takes on the User and Everyone privileges that are set for the folder it's contained in, or for the volume if it's on the volume level. These privileges change if you move the folder into another folder with different privileges. The following figure shows the process in action.



Privileges that change when you move a folder into another folder are called *inherited privileges*. You can override these inherited privileges by assigning privileges called *explicit privileges*. Explicit privileges remain with the folder regardless of where you drag it. Note that ownership and ownership privileges don't change unless you change them, or if the folder has inherited privileges and is then moved to a folder owned by someone else.

IMPORTANT AppleShare Pro does not allow you to share the / volume. You must share specific folders within the / volume to share the contents of the / volume. Also, if you choose a mount point for a shared disk within a volume or folder, you cannot share the enclosing volume or folder. Disks that are mounted within a folder must be shared through *explicit* privileges.

Setting access privileges

When you first share a folder or disk, anyone on the network can open, use, and even make changes to the files and folders inside it. But if you want to control access to the shared item, you can modify its access privileges.

For a discussion of the categories of users that can access volumes, see the section “Access Privileges” earlier in this chapter. For tips on assigning the appropriate access privileges for specific purposes, see “Access Privilege Strategies” later in this chapter.

You use the AppleShare Pro Admin’s Access Information window to set access privileges.

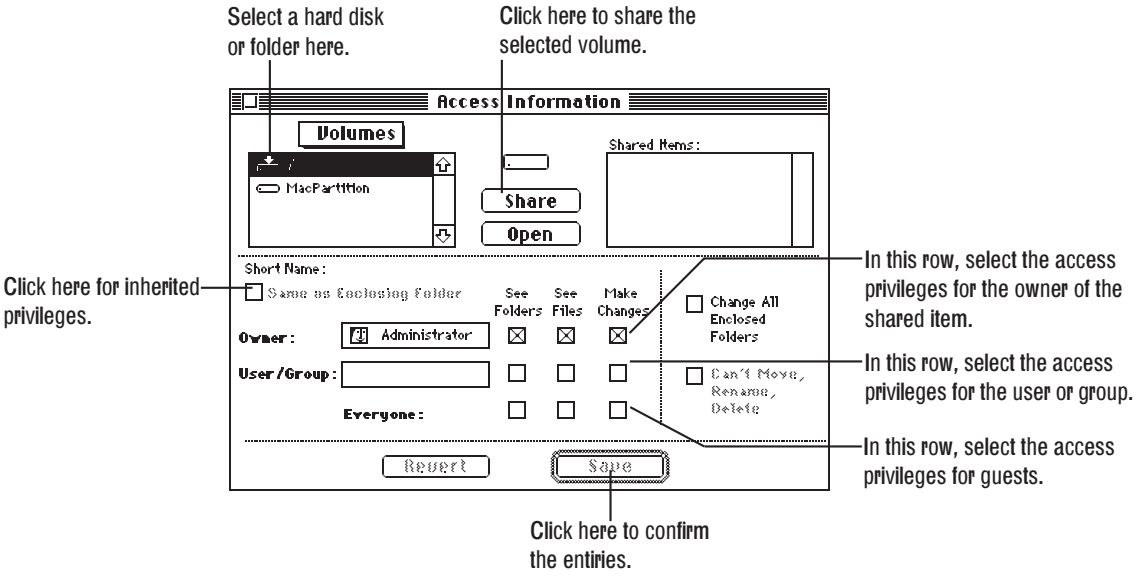
To set access privileges:

1 Start the AppleShare Pro Admin program.

Choose AppleShare Pro Admin from the Apple menu.

2 Choose Access Information from the Privileges menu.

The Access Information window appears:



3 Select a volume, or a folder from within a volume, from the Volum

Double-click the icon of the volume to see the folders within it. You may have to scroll through the list to find the volume or folder you want.

IMPORTANT AppleShare Pro does not allow you to share the / volume. You must share specific folders within the / volume to share the contents of the / volume. Also, if you create a mount point for an A/UX disk within a volume or folder, you cannot share the enclosing volume or folder.

4 Click Share to share the volume or folder.

The volume or folder appears in the Shared Items box.

5 For folders, click the Same as Enclosing Folder option to remove th

Removing the X ensures that the folders have explicit, and not inherited, privileges.

6 Select the privileges you want to apply.

Click the privilege boxes. You can allow the owner, a group of users, or everyone to see files, see folders, and make changes, or you can limit any of these privileges as you choose. An X in a box means the privilege is assigned; an empty box means the privilege is denied. See “Access Privilege Strategies” later in this chapter for tips on assigning the appropriate access privileges.

7 Assign an owner to the volume or folder.

If necessary, type the name of the owner. As the server administrator, you are the default owner of all volumes and of all folders you have created within a volume. You can change ownership if you want to, using the following procedure:

a. Choose User List from the Users menu or Group List from the Groups menu.

b. Select the user or group you’re assigning ownership to. You can choose one user or one group.

c. Select the *icon* of that user or group and drag it to the Owner box in the Access Information window.

The new name appears in the Owner box. The owner receives all of the owner access privileges you have designated.

8 Assign a user or group to the volume or folder.
You can choose any group or any individual (or none at all).

a. Choose User List from the Users menu.

b. Choose Group List from the Groups menu.
The User and Group Lists appear.

c. Select the user or group you're assigning privileges to. You can choose one user or one group.

d. Select the icon of that user or group, and drag it to the User/Group box in the Access Information window.

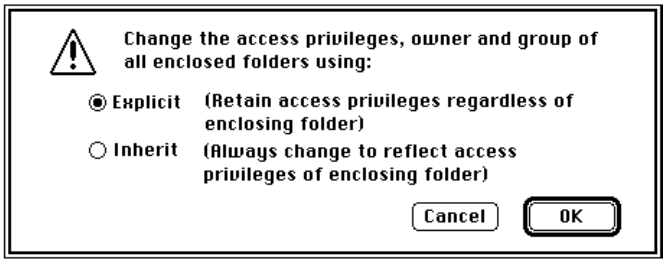
The new name appears in the User/Group box. The group or individual user receives all of the user access privileges you have designated. All other users and guests are restricted to the privileges designated for Everyone.

9 If you want to apply the same access privileges to all enclosed folders, All Enclosed Folders checkbox to place an X in it.

This optional step applies the same access privileges to all enclosed folders. Even if explicit privileges have been assigned to enclosed folders, clicking this box will make the privileges the same as the enclosing folder.

10 Click Save.

If you clicked Change All Enclosed Folders in step 9, the following alert box appears:



11 Click the button representing the choice you want and click OK.

About the Everyone privilege

If guest access is allowed, the Everyone privileges you select apply to guests and to all registered users. (Registered users can have User/Group or Owner privileges *and* Everyone privileges.) If guest access is disallowed, Everyone privileges apply to all registered users. Thus it's easy to make a volume or folder accessible to all registered users and to no one else. You simply disallow guest access as described in "Allowing or Denying Guest Access" earlier in this chapter, and assign the privileges you want to Everyone.

Access privilege strategies

By granting certain access privileges to some people and different access privileges to others, you can effectively control who can do what with the files you share. The following is a list of frequently used configurations that may be useful to you. Of course, you can combine privileges in any way you like.

- **Allow everyone on the network all privileges:**

	See Folders	*See Files*	*Make Changes*
Owner	☒	☒	☒
User/Group	☒	☒	☒
Everyone	☒	☒	☒

If guest access is allowed on the server, then you can let anyone on the network see, open, read, or change what's in the folder or disk. If guest access is not allowed, then only registered users have access to the files.

The following set of privileges also provides the same results since "Everyone" includes registered users:

	See Folders	*See Files*	*Make Changes*
Owner	☒	☒	☒
User/Group	☐	☐	☐
Everyone	☒	☒	☒

- **Keep a folder or disk on the network private:**

	See Folders	See Files	Make Changes
Owner	☒	☒	☒
User/Group	☐	☐	☐
Everyone	☐	☐	☐

To allow yourself full access to a folder or disk on the network while preventing anyone else from opening, using, or even seeing its contents, use the configuration of privileges shown above.

- **Share with one other person or group:**

	See Folders	See Files	Make Changes
Owner	☒	☒	☒
User/Group	☒	☒	☒
Everyone	☐	☐	☐

To share a folder with one other person or with one group of people on the network, first select the user or group and then allow all access privileges to that user or group. Finally, remove privileges for Everyone.

- **Keep a folder private but allow others to drop files or folders into it:**

	See Folders	See Files	Make Changes
Owner	☒	☒	☒
User/Group	☐	☐	☒
Everyone	☐	☐	☒

You can set up a folder to act as a "drop folder," which allows network users to deposit files or folders into it but does not allow anyone to see, remove, or change its contents. You can set privileges in this way only for folders within shared folders and disks.

- **Post information like a bulletin board:**

	See Folders	See Files	Make Changes
Owner	☒	☒	☒
User/Group	☒	☒	☐
Everyone	☒	☒	☐

You can set up a folder to act like a bulletin board, allowing people to open and read files but preventing them from changing the files.

Recognizing privileges

Users must have sufficient privileges to work with files and folders in a shared folder or volume. The following table shows the minimum types of privileges you need to assign for a folder called Memos before users can perform each of the frequently used operations that are listed.

Action	See Folders	See Files	Make Changes
Copy or move to Memos	☐	☐	☒
Copy a file from Memos	☐	☒	☐
Copy a folder from Memos	☒	☐	☐
Create a folder in Memos	☒	☐	☒
Delete a file from Memos	☐	☒	☒
Delete a folder from Memos	☒	☐	☒
Open and use a file in Memos	☐	☒	☐
Save changes to a file in Memos	☐	☒	☒

Changing owners or users

To change the owner or the users of a folder or volume:

1 **Choose User List from the Users menu or Group List from the Groups m**

2 **Choose Access Information from the Privileges menu to open the Access Information window.**

3 **Select the new user or owner from the User List or Group List and drag new owner or user to the Owner or User/Group box in the Access Info**

The new information replaces the old.

Removing users or groups

To remove the user or group you have assigned privileges to, without naming a replacement:

1 **Choose Access Information from the Privileges menu to open the Access Information window.**

2 **Select the group or user you want to remove in the User/Group box.**

3 **Choose Clear User/Group from the Privileges menu.**

The name in the User/Group box disappears.

Starting the AppleShare Pro File Server program

Now that you've set up users and groups and set access privileges for the volumes and folders you plan to share, you're ready to start file service. You can leave the AppleShare Pro Admin program open or you can quit the program.

IMPORTANT You don't need to run AppleShare Pro Admin unless you have administrative work to perform. If you keep the program closed, no one can open it without the Admin Key. However, for maximum data security, keep the Apple Workgroup Server 95 in a locked room.

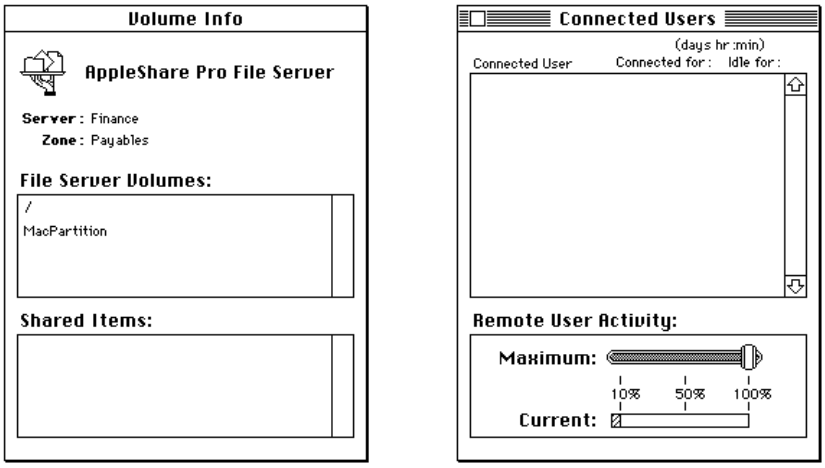
To start the AppleShare Pro File Server program:

- **Choose the AppleShare Pro File Server program alias from the Appl**

Upon installation, the AppleShare Pro File Server program is placed in the Applications folder on the server's startup disk. An alias of the program is automatically created and placed in the Apple menu.

A dialog box appears on your screen:

Then these two windows appear on your screen:



The Volume Info window displays the name of the file server, the zone it's in, and the volumes and items you shared. The Connected Users window shows the name of any users logged on to the file server (you shouldn't have any at this point) and the Remote User Activity box, which you manipulate to modify file server responsiveness. (For more information on the Remote User Activity box, see the section "Adjusting File Server Performance" in Chapter 3, "File Server Supervision.")

Getting users ready to use the file server

With the file server up and running, it's time to prepare users to take advantage of it. For System 7 users, detailed information about using the file server is provided in the Macintosh file-sharing portions of the documentation that came with their computers or in their System 7 upgrade kit. For other users, detailed information is provided in the AppleShare user's guides for Macintosh and IBM PC–compatible computers. The following section does not attempt to repeat or replace those guides. Instead it covers connection basics and refers you to the appropriate places for more information.

General considerations

Regardless of computer type, all users' computers need to be connected to the network correctly, using the proper cables and communication software. For Macintosh or IBM PC computers, consult the appropriate user's guides.

As the server administrator, you'll need to field questions on access privileges, folder creation, application use, password changing, and numerous other server subjects. Although all these topics are covered in the user's guides, people will still turn to you for answers. To make things easy on yourself, you'll probably find it useful to familiarize yourself with each of the user's guides.

Macintosh users

Macintosh users should use the latest version of AppleShare Pro workstation software, and can install the software over the network by logging on to the file server and running the Installer from the Apple Workgroup Server 95. (For instructions, see Chapter 1, "Getting Started.") The procedures System 7 users must know for logging on to the file server are described in the manuals that came with their Macintosh computers (or with their System 7 upgrade). System 6 users can find the information in the *AppleShare 3.0 User's Guide*.

Note: Although users can log on to the file server without installing the latest workstation software, you should nevertheless install (or request that users install) AppleShare Pro workstation software on all workstation computers. Without the workstation software installed, users will not be able to receive the full range of AppleShare Pro server messages, nor will they be able to use the extended password security features of AppleShare Pro.

IBM PC users

Users working with IBM PC or compatible computers need to use third-party, AppleShare-compatible product solutions that allow them to communicate over AppleTalk and AppleTalk-compatible networks. Ask your authorized Apple reseller or representative for more details.

What's next?

You have now done everything necessary to provide basic file service. To learn more about the file server control options available to you, see Chapter 3, "File Server Supervision."

3 File Server Supervision

AppleShare Pro provides you with a number of methods to control and track file server performance. This chapter explains these options and shows you how to put them into operation.

Changing names and passwords

You can change a user's name and password at any time. Be sure to tell users you have done so, or they won't be able to log on to the file server. Users can also change their passwords from their own workstations. It isn't usually a problem if they don't tell you what the new password is, because AppleShare Pro keeps track of the change.

You don't have to change the password and name at the same time; the following procedure works for changing either or both.

Note: The administrator and users generally change passwords for different reasons. The most common reason for an administrator to change a password is because a user has forgotten it and can't log on to the server. The most common reason for a user to change his or her password is because doing so is suggested or required for security. You'll probably not want to change everyone's password on a regular basis, as it's much easier to have users do this for themselves.

To change names and passwords:

1 **Start the AppleShare Pro Admin program.**

Choose the Apple Share Pro Admin program alias from the Apple menu.

2 **Choose User List from the Users menu.**

3 **Double-click the user's name in the User List to open the User Inform**

4 **Select the current name in the User Information window and type a nev**

5 **Select the current password in the User Information window and type a new one.**

You won't actually see the current password—just the dots that represent it. You'll see the new password until you click Save, when it too changes to dots.

6 **Click Save.**

AppleShare Pro saves the new information.

Deleting users

To delete a user from the network:

1 Start the AppleShare Pro Admin program.

Choose the Apple Share Pro Admin program alias from the Apple menu.

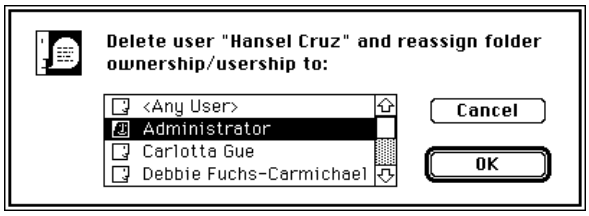
2 Choose User List from the Users menu.

3 Select the user or users you wish to delete.

If you want to delete users whose names appear in order in the User List, you can drag through their names. If you want to delete users from different sections of the list, you can SHIFT-click to select their names.

4 Choose Delete User from the User menu.

This dialog box appears:



5 Assign folder ownership to another user or group.

If you're deleting several users at the same time, you have to assign all of their folders to the same new owner. As the administrator, your name is always chosen by default, but you can select the name of another user or group.

> **WARNING** Choosing <Any User> makes the folders generally available. Any registered user can then claim ownership.

6 Click OK.

The users are removed from the User List and the ownership of their folders is transferred.

Revoking group membership and deleting groups

Workgroups often change with time, so a user's membership in a group may become inappropriate, or the group itself may have fulfilled its mission. When this happens, you can revoke group memberships or delete the group itself.

Revoking membership

Revoking membership in a group has no effect on membership in other groups, as memberships are assigned separately.

To revoke group membership:

1 Start the AppleShare Pro Admin program.

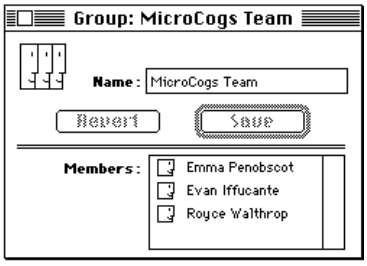
Choose the Apple Share Pro Admin program alias from the Apple menu.

2 Choose Group List from the Groups menu.

3 Select the group in the Group List.

4 Choose Group Info from the Groups menu.

Or double-click the group name. The group window opens, with the members listed in the Members box.



5 Select the member or members you want to remove from the group.

6 Choose Revoke Membership from the Groups menu.

Deleting groups

When you delete a group, any folders or volumes for which it had access privileges may be accessible only by their owners until another group (or individual user) is assigned to them.

1 Start the AppleShare Pro Admin program.

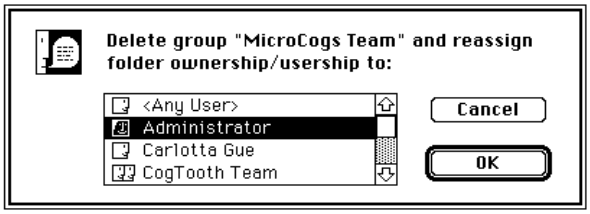
Choose the Apple Share Pro Admin program alias from the Apple menu.

2 Choose Group List from the Groups menu.

3 Select the group in the Group List.

4 Choose Delete Group from the Groups menu.

A dialog box appears asking you to reassign folder ownership of the group you're deleting:



5 Assign folder ownership to another group or user.

Select the name of the user or group you're reassigning ownership to.

If you're deleting several groups at the same time, you have to reassign all of their folders to the same new owner. As the administrator, your name is always chosen by default, but you can select the name of another user or group.

6 Click OK.

The groups are removed from the Group List and the ownership of their folders is transferred. This may take some time, as AppleShare Pro Admin sorts through each folder and shared disk to see if the group has access privileges for it, deleting the group from each record in turn.

Sending file server messages

You can send four kinds of messages to file server users:

- greetings that all users see when they log on to the file server
- messages to one or more specific users
- shutdown messages that tell users when the file server is shutting down, with additional explanations as needed
- disconnection messages, informing a particular user or group of users that they are being disconnected from the file server, with additional explanations as needed

IMPORTANT IBM PC users cannot receive file server messages. Some Macintosh users may not receive greeting messages, depending on the version of AppleShare workstation software installed on their systems. See Chapter 1, "Getting Started," for instructions on installing current workstation software.

The procedures for sending greetings and user messages are given in the next few sections. Shutdown messages are discussed in the section "Quitting and Restarting File Service" later in this chapter. Disconnection messages are discussed in "Disconnecting Users" later in this chapter.

Note: Whenever a message window is open, you can edit the message using the Undo, Cut, Copy, and Paste commands in the Edit menu.

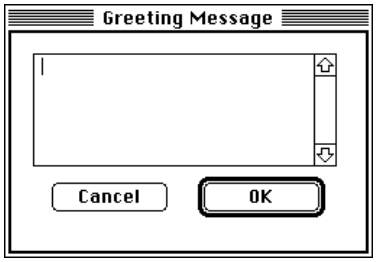
Greetings

To set a greeting message that users will receive whenever they log on to the file server:

1 Start the file server, if it is not already running.

2 Choose Set Greeting from the Server menu.

The Greeting Message dialog box appears:



3 Enter the greeting and click OK.

Enter a greeting of up to 199 characters in the scrollable window.

All Macintosh users see this greeting when they log on to the file server. You can change it any time by choosing Set Greeting again. The old greeting appears in the box; you can delete the old message and type a new one in its place.

Note: You do not have to create a new greeting each time you start up file service. Greetings are stored with the program between file server sessions and become active again each time you start the file server program.

Specific user messages

To send messages to any connected Macintosh user or group of Macintosh users.

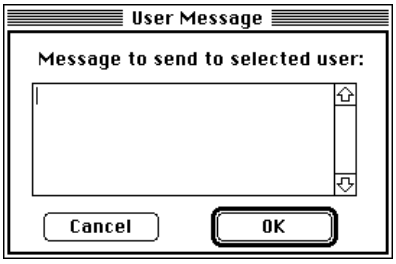
1 Choose Show Connected Users from the Server menu.

The Connected Users window appears, showing a list of connected users:

2 Select the user (or users) you wish to communicate with.

3 Choose Send Message to User from the Server menu.

The User Message box appears:



4 Enter a message of up to 199 characters and click OK.

The message appears on the selected user's screen.

Quitting and restarting file service

You may need to quit AppleShare Pro file services periodically. You don't have to switch off the Apple Workgroup Server 95 when you quit file service. You can keep other services available even when file service is temporarily discontinued.

IMPORTANT Never quit file service by switching off the Apple Workgroup Server 95. If you do, connected users may lose unsaved information. Always follow the procedures provided in the next section.

Quitting file service

To quit file service:

1 Choose Quit from the File menu.

The Terminate File Service dialog box appears:

2 Enter the number of minutes until shutdown.

The preset time until shutdown is 10 minutes. You can enter any time from 0 to 4094 minutes, or about 68 hours. Users who haven't logged off at shutdown lose any information they haven't saved, so you should pick a time that gives them adequate warning.

3 Enter any additional message you wish to send.

This step is optional. The AppleShare Pro File Server program will notify all connected users that file service will be terminated in the number of minutes you just entered. If you choose to enter an additional message, it can be up to 199 characters and will be received by every connected Macintosh user along with notification that file service will be terminated.

4 Click OK.

Every connected user receives a standard shutdown warning, giving the time until shutdown. Macintosh users with System 7.1 or current AppleShare workstation software will also receive your additional message, if you sent one.

If the time you enter is greater than an hour, the warning is repeated once per hour until the final hour, every ten minutes during the final hour, and then at five minutes, two minutes, and one minute before service is halted. Users can't connect to the file server during the final five minutes.

Restarting file service

When you are ready to resume file service, you follow much the same procedure as when you started the AppleShare Pro File Server and AppleShare Pro Admin for the first time.

To restart file service:

1 If necessary, start up the Apple Workgroup Server 95 and any connect that have been shut down.

2 Choose the AppleShare Pro File Server program alias in the Apple mer

3 If necessary, choose the AppleShare Pro Admin program alias in the A

As noted earlier, you don't need to run the AppleShare Pro Admin program unless you have administrative work to perform. For security reasons, it's wise not to leave Admin running and unattended unless the server is in a locked room, or you've locked the server with the key lock.

Note: You can automate restarting by dragging the AppleShare Pro File Server icon, or an alias of the icon, into the Startup Items folder. This way the program starts automatically when you start up the Apple Workgroup Server 95, unless you maintain an A/UX `root` account password. If you also turn the server's key lock switch to the "locked" position, the server system and the AppleShare File Server program will automatically start after a power failure, but only if you do not maintain an A/UX `root` password. For more information about the Startup Items folder, see *Server Administration With A/UX 3.0.1*, or see your System 7 documentation.

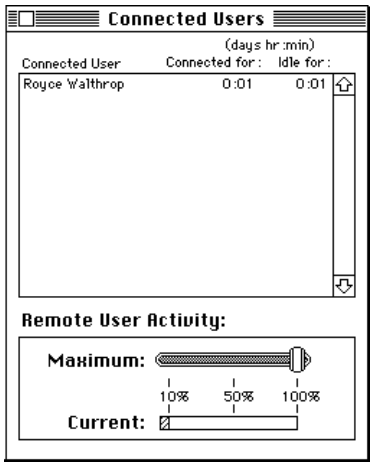
Disconnecting users

To disconnect one or more users from the file server without disrupting other users:

1 Choose Show Connected Users from the Server menu.

The Connected Users window presents a list of all users currently logged on to the file server.

2 Select the user (or users) from the Connected User list.



3 Choose Disconnect User from the Server menu.

The Disconnect User dialog box appears:

4 Enter the number of minutes you want before the user is disconnected, message, and click OK.

Unless you specify otherwise, AppleShare Pro disconnects the selected users after 10 minutes. You can enter any time from 0 to 4094 minutes, or about 68 hours.

A message announcing that disconnection will take place at that time is automatically included. If you want, you can also include an explanatory message of up to 199 characters.

At the specified time, the users are disconnected.

Monitoring file server usage

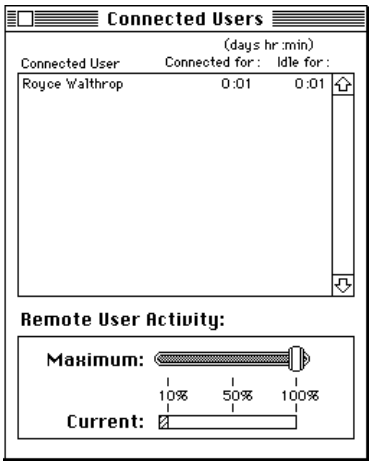
AppleShare Pro allows you to observe either current file server usage or usage that has occurred over time. You can monitor file server usage by viewing the Connected Users window or by using the file server log.

Using the Connected Users window

The Connected Users window lets you see a snapshot of current server use.

n Choose Show Connected Users from the Server menu.

The Connected Users window appears:



The Remote User Activity box at the bottom of the Connected Users window gives you a dynamic measure of server activity. In the box are two scales. The Current scale (the lower scale) indicates the percent of the Apple Workgroup Server 95's performance that is currently being devoted to processing file server requests. The Maximum scale (the upper scale) allows you to set a maximum limit for processing file server requests.

Note: The Maximum scale is described in the section "Controlling File Server Activity" later in this chapter.

Using the file server log

When you start the AppleShare Pro File Server program, you see a number of status messages. The contents of these messages are recorded in the file server log. The log includes dates and times of startup for both the AppleShare Pro File Server and Admin programs, and the number of connected hard disks.

To use the file server log:

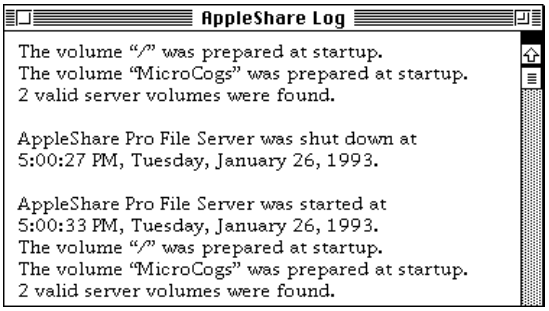
1 Start the AppleShare Pro Admin program.

Choose the AppleShare Pro Admin program alias from the Apple menu.

2 Choose File Server Log from the Server menu.

The log file appears, scrolled to the end to show the most recent entries. You can scroll toward the top of the file to see earlier entries if you wish.

AppleShare Pro sets a limit of 32K on the size of the file, so it deletes earlier records if needed to make space available.



The file server log file is a TeachText file, and can be opened with the TeachText program. It can also be converted into any other word-processing format that can convert text files. You can find the log file in the startup disk's System Folder. (Use the System Folder alias to open the System Folder.)

Creating and using AppleShare Pro reports

The AppleShare Pro Admin program provides two types of reports: file server reports and shared-item reports.

File server reports

- list all connected hard disks or drives and show the space available on each
- list registered users and show what groups they belong to
- tell how many files and folders each user maintains and how much space the files and folders occupy

Shared-item reports

- list the folders on a shared volume or folder, the names of their enclosed files and folders, the access privileges, the owner, and the associated group for each folder
- show if a folder is locked or unlocked and if a file is copy-protected

Both file server and shared-item reports are available in either complete or summary form. The complete versions contain everything listed above. The file server summary shows disk use and users and groups only, omitting file and folder data; the shared-item summary shows folder information only, omitting file data.

By studying reports, you can determine if hard disks or volumes are being underused or overused, and you can get an early warning of when to reclaim some disk space or when to add new equipment. You can remind yourself of group membership at a glance, and you have a handy reference for user queries. You can see if users are wasting space by keeping multiple copies of documents on the file server.

AppleShare Pro reports are saved as TextEditor files, so you can open, view, or print them with the A/UX TextEditor program or with most word-processing programs. (For information on using TextEditor, see the *Basic Skills* guide.)

To create a report:

1 Start the AppleShare Pro Admin program.

2 Choose File Server Report from the Server menu or Shared Item Re Privileges menu.

An alert box appears:

3 Select File Server (or Shared Item) Summary or Complete Report a

The list of files and folders on the startup disk appears.

4 **Select the folder in which you want to save the report.**

It's probably most convenient to create a special Reports folder. You can, however, save the report wherever you wish.

5 **Type a name for the report and click Save.**

You will probably want to use a name that reflects the type of report and the date of its creation.

The report is saved as a text file in the designated folder).

Adjusting file server performance

Over time, demands for file service may increase or decrease, and you may want to adjust server performance accordingly. The AppleShare Pro software provides a number of methods.

Using the Admin program, you can raise or lower the number of users who can connect to the file server at any one time. Using the file server program, you can set the maximum percent of processing the server should provide for connected user activity.

Memory demands can also affect file server performance. You can use the file server program to set aside a portion of the server's RAM for caching frequently accessed files, folders, and icons, which speeds up access. Finally, the AppleShare Pro Admin program provides two ways to free up hard disk space: by periodically emptying network Trash and by compacting volume access privileges. The following sections describe how to use these methods.

Note: Server performance depends on a number of interacting factors: the amount of RAM available in the Apple Workgroup Server 95, the type of network used, the number of users, the type of work users perform on the server, and the amount of other work you do on the machine. The features described in the next few sections provide simple ways of meeting changing performance needs. If these are not adequate, you may need to consider adding RAM or changing to a faster network type.

Changing the maximum number of concurrent connect

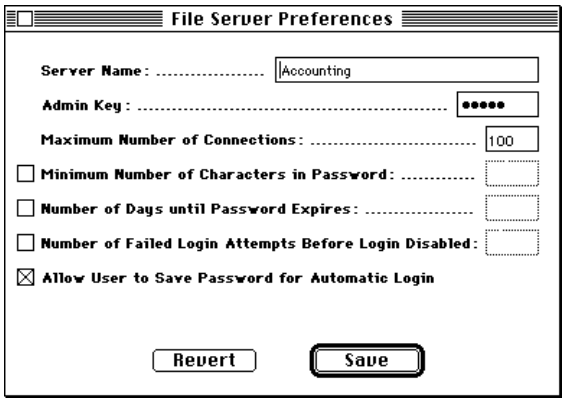
This option lets you limit the number of users who can connect at any one time. Those who try to log on after the maximum has been reached see a message indicating that the file server has reached its maximum and users are directed to try again later.

To change the maximum number of concurrent users:

1 **Start the AppleShare Pro Admin program.**

2 **Choose File Server Preferences from the Server menu.**

The File Server Preferences window appears:



3 **Enter any number from 0 to 200 in the Maximum Number of Conne**

If you enter 0, only you, the administrator, can log on to the file server.

4 **Click Save.**

The change takes place the next time you restart the AppleShare Pro File Server program.

Controlling file server activity

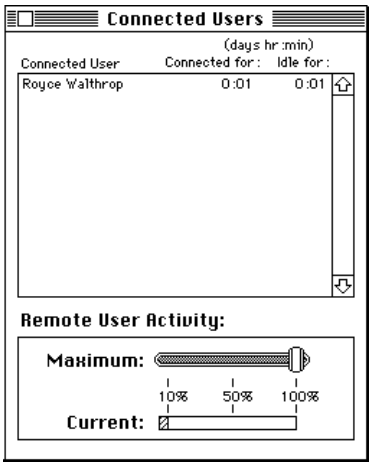
Because you can run multiple programs simultaneously on the Apple Workgroup Server 95, you can use the same Apple Workgroup Server 95 for file service and for other tasks of your own choosing. You can adjust the Apple Workgroup Server 95's performance by adjusting the maximum percent of processing the server should devote to file server activity. This may be necessary if you run other services—AppleShare Pro Print Server, electronic mail services, and so on—on your Apple Workgroup Server 95.

To control file server activity:

1 **Start the AppleShare Pro File Server program, if it is not already ru**

2 **Choose Show Connected Users from the Server menu.**

The Connected Users window appears:



3 Drag the Maximum scale slide bar in the Remote User Activity box

Moving the slide bar to the right—to a higher percentage—increases the processing time the Apple Workgroup Server 95 gives to file server demands, thus increasing file server performance (though possibly lowering performance on other programs). Moving the slide bar to the left—to a lower percentage—decreases the preference the server gives to file server demands, thus decreasing file server performance and freeing up more of the Apple Workgroup Server 95's processing for other services or for local work.

The change in setting takes effect immediately.

Setting cache preferences

AppleShare Pro File Server allows you to set aside a portion of the Apple Workgroup Server 95's RAM for temporarily storing, or caching, frequently accessed files, folders, and icons. Caching frequently used files, folders, and icons speeds up access, since such items are already in the server's memory, and do not need to be repeatedly read from disks.

Recommended settings

You can determine the best cache sizes for the AppleShare Pro File Server by evaluating two factors: server memory size and file server usage patterns. Server memory size determines how much of the preferred values can be allocated, while file server usage patterns suggest what the preferred value for the cache settings should be.

Not all of the memory listed in the File Server Cache Preferences dialog box is available for use by AppleShare Pro. After allocating the necessary amount of memory for the A/UX kernel, the operating system divides the remainder into two parts: the first part for the A/UX file system, and the second part for application programs. In general, the total cache size you set should not exceed 50 percent of the available memory as listed in the File Server Cache Preferences dialog box. Lower this threshold if you intend to run other programs other than the AppleShare File Server or Print Server programs, or the Retropect backup program, on the server while providing AppleShare file service.

Following are general guidelines for setting cache sizes.

- Set the Number of Files to Cache setting to 20. If many files are open at the same time, consider raising this value to 40. The preferred amount for the Cache Size for Each File setting is 64K.
- In determining the Folder Cache Size settings for a server with random usage patterns (that is, when users are as likely to access one file or folder as they are any other), multiply the number of shared files and folders by 0.2K. A large server (for example, a server with 10,000 folders and files) might allocate 2000K for the Folder Cache Size setting. For a server on which specific folders are used repeatedly, multiply the number of shared files and folders by 0.05K.
- Set the Icon Cache Size setting to 256K.

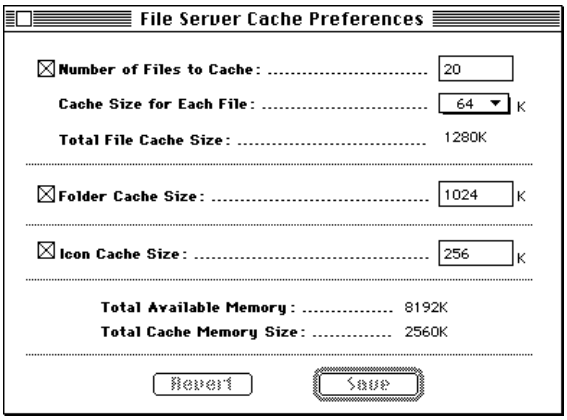
Setting the preferences

To set cache preferences:

1 Start the AppleShare Pro Admin program.

2 Choose File Server Cache Preferences from the Server menu.

You see the File Server Cache Preferences window. The settings in the File Server Cache Preferences window represent the default cache settings set by the program:



3 Select the type of item for which you want to set cache preferences

You can set cache preferences for files, folders, or icons, or any combination of the three. Click the checkbox next to the type for which you want to set preferences. An X in the checkbox indicates that the setting is on; to turn the setting off, click the checkbox to remove the X.

4 Set the cache preferences for each type of item you selected.

For files, indicate the number of files you want to cache by typing a number, then choose the cache size for each of the files by using the pop-up menu presenting the size options available. Drag through the menu to choose the size you want, then release the mouse.

To set cache sizes for folders and icons, select the current setting for each, then type in a new value.

As you set cache preferences, the total file cache size and the total cache memory size change to reflect your new settings.

5 Click Save.

6 Restart the AppleShare Pro File Server program.

The new settings go into effect only after you restart the file server program.

Compacting volume access privileges

One way to conserve disk space is to compact volume access privileges. Compacting volume access privileges replaces explicit access privileges with inherited ones for folders whose explicit privileges are the same as those of their enclosing folders. Replacing explicit with inherited privileges compacts the volume because inherited privileges take up much less disk space.

To compact access privileges:

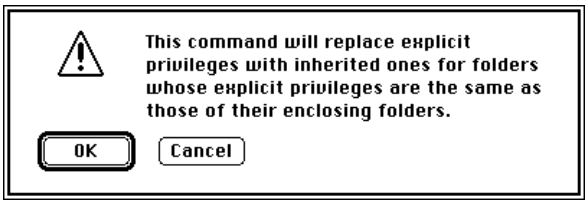
1 Start the AppleShare Pro Admin program.

2 Choose Access Information from the Privileges menu.

3 Select a volume from the Volumes list.

4 Choose Compact Volume Access Privileges from the Privileges menu.

This alert box appears:



5 Click OK.

The explicit privileges for all appropriate folders within the volume are cleared, and each folder now reverts to its inherited status.

Emptying network Trash

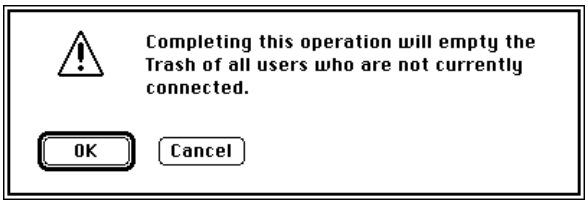
If users are disconnected from the file server before they have an opportunity to empty their Trash, the Trash continues to take up disk space on the server (since files they drag to the Trash are actually on the server, not on the workstation). You can free up this disk space by occasionally using the AppleShare Pro Admin program's Empty Network Trash command.

To empty network Trash:

1 Start the AppleShare Pro Admin program.

2 Choose Empty Network Trash from the Server menu.

This alert box appears:



3 Click OK

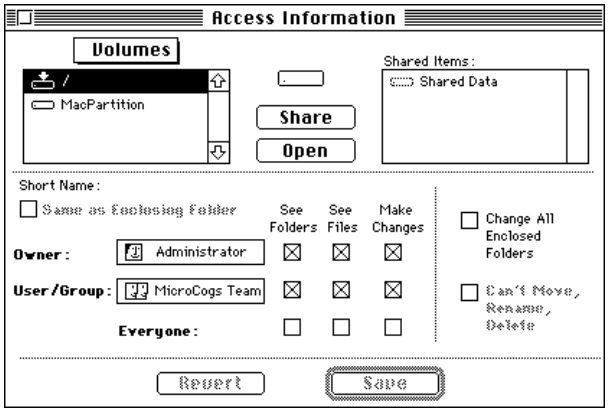
AppleShare Pro allows you to limit the number of users who can start a program simultaneously, as you may need to do to meet the licensing requirements of a software-licensing agreement.

To limit program use:

1 **Start the AppleShare Pro Admin program.**

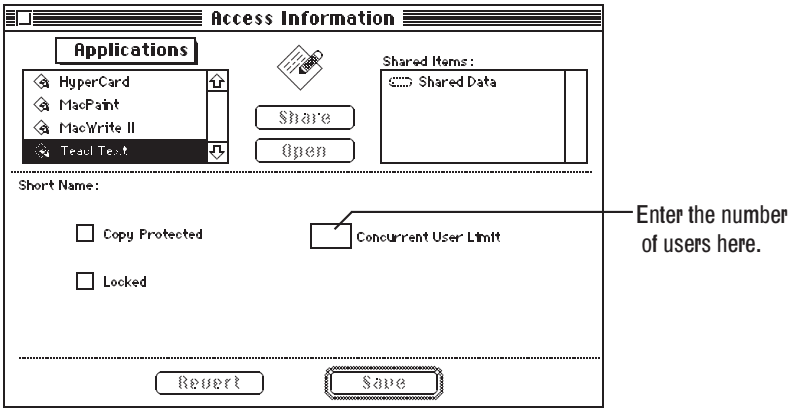
2 **Choose Access Information from the Privileges menu.**

The Access Information window appears:



3 **Select the program that you want to limit use of.**

The lower portion of the window changes.



4 **In the Concurrent User Limit box, enter the desired number of users v the program.**

The number corresponds to the maximum number of users who can use the program at the same time.

5 **Click Save.**

If additional users try to start the program, they are instructed to try again later.

Copy-protecting programs and documents

AppleShare Pro allows you to copy-protect any file so that it cannot be duplicated while the file server is running. Copy-protecting allows users to start a program but not to copy it from the file server.

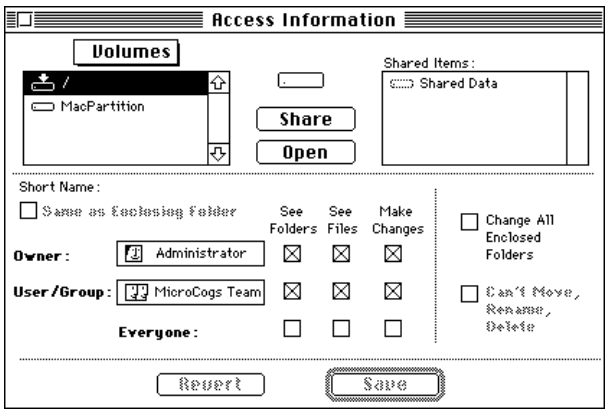
IMPORTANT Copy-protecting programs and documents from within AppleShare Pro prevents users from copying programs and files from the Finder. However, the copy protection is not foolproof; other software programs that users may have will ignore this setting.

To copy-protect programs and documents:

1 **Start the AppleShare Pro Admin program.**

2 **Choose Access Information from the Privileges menu.**

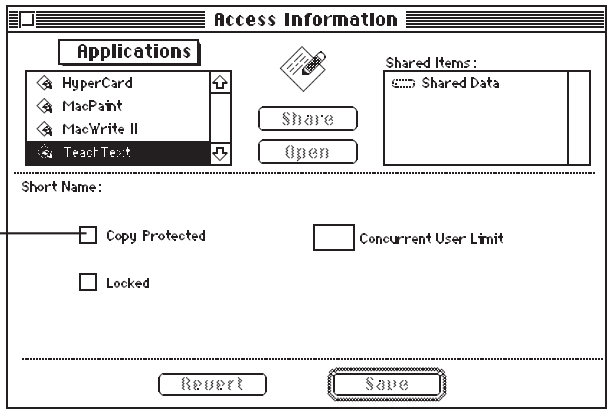
The Access Information window appears:



3 Select the program or document that you want to copy-protect.

The lower portion of the window changes.

4 Click the Copy Protected checkbox so an X appears.



Click here to copy-protect the program or document.

5 Click Save.

Note: You can copy-protect files only, not folders.

Locking files

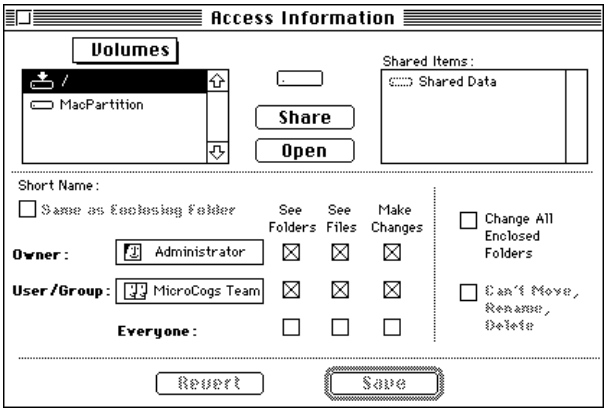
Locked files cannot be renamed, discarded, or changed, even by their owner. They can, however, be copied, duplicated, or opened, so the See Folders and See Files privileges you've allowed remain in effect. However, after you lock a file, Make Changes privileges are no longer in effect.

To lock files:

1 Start the AppleShare Pro Admin program.

2 Choose Access Information from the Privileges menu.

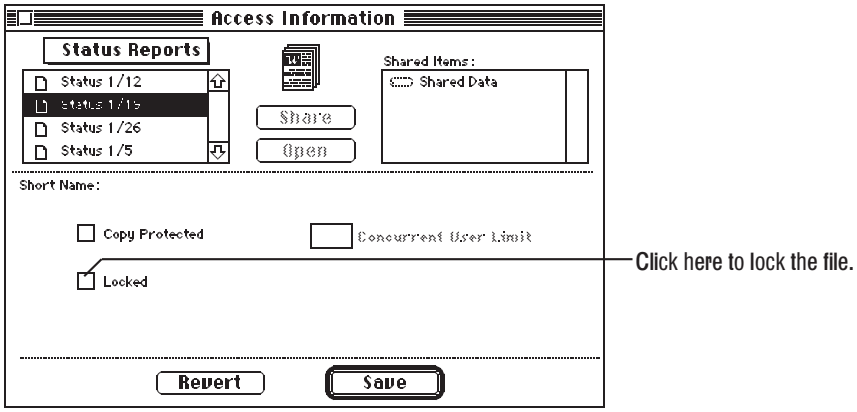
The Access Information window appears:



3 Select the files you intend to lock.

The lower portion of the window changes.

4 Click the Locked checkbox so an X appears.



5 Click Save.

Note: The Locked checkbox in the Access Information window works the same way as the Locked checkbox in the Get Info dialog box in the Finder.

Locking folders

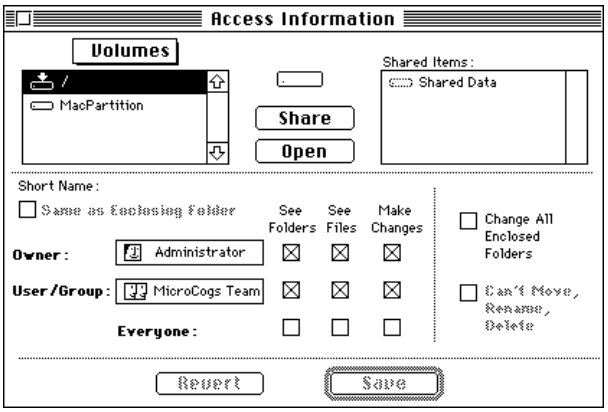
Folders can be locked by setting the Can't Move, Rename, Delete checkbox. Locked folders cannot be moved, renamed, or deleted while the AppleShare Pro File Server program is running, even by their owner. They can, however, be copied, duplicated, or opened, so the See Folders and See Files privileges you've allowed remain in effect. The Make Changes setting applies only to the files inside the folder, not the folder itself.

To lock folders:

1 Start the AppleShare Pro Admin program.

2 Choose Access Information from the Privileges menu.

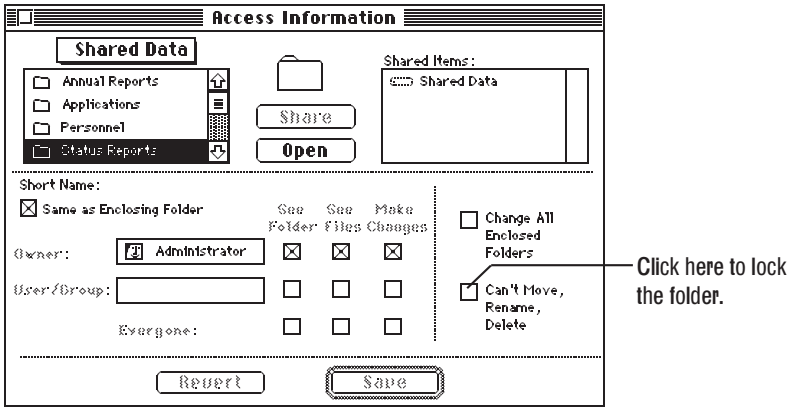
The Access Information window appears:



3 Select the folder you want to lock.

When you select a folder, the Can't Move, Rename, Delete option in the lower-right corner of the window becomes active.

4 Click the Can't Move, Rename, Delete checkbox so an X appears.



5 Click Save.

Copying folders and files across volumes

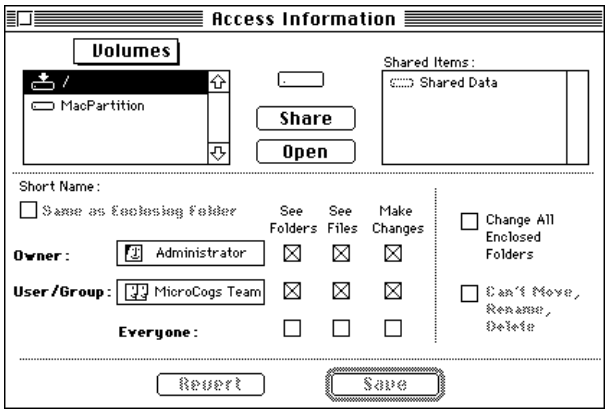
You can copy folders and files across volumes from within AppleShare Pro while retaining access privileges by using the Copy <*Item*> command.

IMPORTANT If you are using the Copy <*Item*> command to copy a large number of folders and files, it's a good idea to terminate file service beforehand. If you do not terminate file service, response time for server activity is likely to slow down appreciably while you're copying, and workstations may appear to freeze.

To copy folders and files across volumes:

1. **Start the AppleShare Pro Admin program.**
2. **Choose Access Information from the Privileges menu.**

   The Access Information window appears:

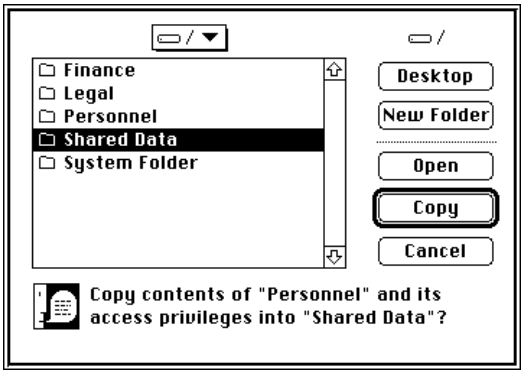


3. **Select the volume or folder you wish to copy in the Volumes list a of the Access Information window.**

4 **Choose Copy *item* from the Privileges menu.**

The command name changes to reflect the object you are copying.

A dialog box appears listing potential destination volumes or folders:



5 **Select the destination volume or folder and click Copy.**

AppleShare Pro copies the entire contents of the selected volume or folder.

IMPORTANT You (or a user) can copy files or folders simply by copying them onto floppy disks. This won't preserve access privileges unless you use a backup program designed to preserve them, such as Retrospect. If access privileges are lost, you can restore them manually if you have a current record of them in a shared-item report.

Backing up your Users & Groups Data File

You should back up your Users & Groups Data File. That way, if it gets damaged or lost you won't need to re-register users and re-create groups.

To back up your Users & Groups Data File:

1 **Open the System Folder on the startup disk for the Apple Workgroup**

Use the System Folder alias to open the System Folder.

2 **Open the Preferences folder.**

3 **Copy the Users & Groups Data File to a floppy disk.**

Adding hard disks and drives to the file server

To add additional hard disks or CD-ROM drives to the file server:

1 **Quit the Apple Share File Server and AppleShare Pro Admin progra**

See "Quitting and Restarting File Service" earlier in this chapter.

2 **From the Finder, choose Shut Down from the Special menu.**

IMPORTANT Don't connect a peripheral device to the Apple Workgroup Server 95 while the server is on. Always shut down the server before connecting peripheral devices to it.

3 **Attach the new hard disks or CD-ROM drives.**

Follow the manufacturer's instructions.

4 **Prepare the hard disk for use with the A/UX 3.0.1 operating syster**

For optimal performance, the hard disk should be prepared for use by the A/UX 3.0.1 operating system. See *Setting Up and Managing Your Server* for special instructions on preparing hard disks for use with the A/UX operating system. Return here when you've completed the procedure.

5 **Restart the server.**

6 **Restart the AppleShare Pro Admin program.**

The Admin program automatically prepares the hard disks or CD-ROM discs.

7 **Restart the AppleShare Pro File Server program.**

The new hard disks or CD-ROM discs can now be shared as volumes and used like any other.

Changing startup disks

At some point, you may want to change startup disks. In addition to installing AppleShare Pro on the new disk, there are additional steps you need to take to maintain your original user accounts and access privileges.

IMPORTANT There may be important operating-system consequences to changing startup disks. Before following the instructions in this section, see the guide *Server Administration With A/UX 3.0.1* for information on changing startup disks.

To change startup disks:

1 **Connect the hard disk you want to use as the startup disk for the Apple Workgroup Server 95.**

Use the instructions in the previous section, "Adding Hard Disks and Drives to the File Server."

2 **Prepare the hard disk for use with the A/UX 3.0.1 operating system.**

Follow the instructions in *Setting Up and Managing Your Server* to prepare the hard disk.

3 **Install the A/UX 3.0.1 operating system and AppleShare Pro software o disk.**

Follow the instructions in *Setting Up and Managing Your Server* to perform the A/UX installation. Follow the instructions in Chapter 1 of this guide to install AppleShare Pro.

4 **From the Finder, copy the User & Groups Data File and File Server fol Preferences folder on the original startup disk to the Preferences folde startup disk.**

The Preferences folder is inside the System Folder. (Use the System Folder alias to open the System Folder.)

IMPORTANT If you have been providing print service from the original startup disk and want to do so from the new startup disk, you also need to copy the AppleShare Pro Print Server folder from the old Preferences folder.

5 From the AppleShare Pro Admin program, copy any other files or f original startup disk to the new startup disk.

To copy folders to the new startup disk while retaining their access privileges, choose Copy Item from the Privileges menu.

This step is necessary only if you are *replacing* the original startup disk. If you plan to use both hard disks, you can skip this step.

6 Click the new disk's icon in the new disk's Startup Disk control pa

To open the Startup Disk control panel, choose Control Panels from the Apple menu, then double-click the Startup Disk icon.

7 Choose Restart from the Special menu.

After the Apple Workgroup Server 95 has restarted, you can provide file service from the new startup disk.

Unmounting removable volumes

You can make a removable file server volume (floppy disks and CD-ROM discs) unavailable, or unmount the volume, without having to quit file service.

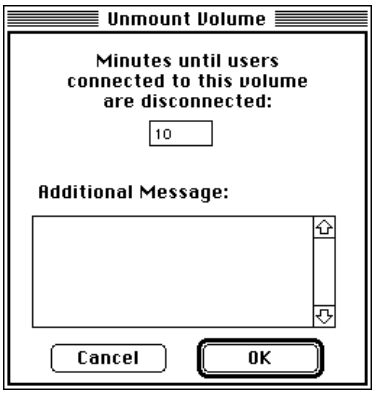
To unmount a volume:

1 Drag the icon of the volume you want to unmount to the Trash.

If no users are connected to the volume, it is automatically unmounted and ejected.

2 If users are sharing the volume, choose Unmount Volume from the Ser

This dialog box appears:



3 Enter the number of minutes you want to allow before the volume is ur optional message.

Unless you specify otherwise, AppleShare Pro unmounts the volume after 10 minutes. You can enter any time from 0 to 4094 minutes, or about 68 hours. A message announcing that disconnection will take place at that time is automatically sent to any users connected to the volume. If you want, you can also include an explanatory message of up to 199 characters.

4 Click OK.

At the specified time, users are disconnected, the volume is unmounted, and the volume is ejected. However, the volume may be ejected earlier if all users connected to it log off before the specified time.

IMPORTANT Users cannot log on to a volume after you've begun to unmount it. Users who try to log on will receive a message indicating a problem. If the user's workstation is an IBM PC, the message will not indicate the exact nature of the problem.

4 Setting Up Print Service

In this chapter, you'll learn how to start the AppleShare Pro Print Server program, capture printers for spooling documents over the network, choose print server options, and get users ready to use the print server.

Upgrading from earlier versions of the AppleShare Pro Print Server requires no special procedures. After allowing all print jobs to finish printing, you use the same instructions as you would for setting up a new print server.

About the AppleShare Pro Print Server

The AppleShare Pro Print Server extends server efficiency to printing. When users choose the Print command while the print server is in operation, their documents are spooled to the Apple Workgroup Server 95, rather than sent directly to the printer. Spooled documents are placed in a queue and printed sequentially. Users regain the use of their computers quickly because most of the work is handled by the print server. When a print server is added to the network, users experience better service, and their method of printing remains completely familiar: After using the Chooser to select the print spooler they want, they just click Print as usual, and the print server takes care of the rest. In addition, the print server is very easy to run. In many cases, you need do nothing beyond making sure that all printers have paper and toner, and that all users have the same printing software.

This chapter shows you how to get the print server up and running. For additional information on management options and record keeping, see Chapter 5, "Print Server Supervision." For solutions to problems that may surface occasionally, see Chapter 6, "Troubleshooting."

IMPORTANT The AppleShare Pro Print Server can accommodate any model of AppleTalk LaserWriter and AppleTalk ImageWriter printers, as well as any other printers compatible with the print drivers for these two classes of printers.

Capturing printers

Printers assigned to duty as print spoolers are said to be *captured*. A single server can capture up to five printers.

To capture a printer:

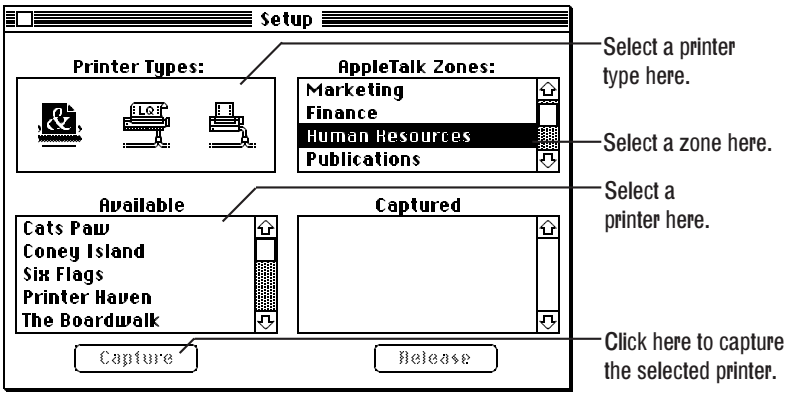
1 Start the AppleShare Pro Print Server program.

Choose the AppleShare Pro Print Server alias from the Apple menu.

If you do not have any print drivers installed in your System Folder, you see a message that the program cannot complete its startup procedure. Install a print driver for each type of printer you want to use with the print server. (Use the Apple Workgroup Server 95 *Installation Boot Disk* to install the driver. Instructions for the installation are included in *Setting Up and Managing Your Server*.)

2 If necessary, choose Setup from the File menu.

The Setup window appears:



3 Select the icon for the type of printer you want to capture from the P

You can capture printers of various types, but only one type at a time.

4 If necessary, select the zone the printer is in.

If your network is part of a larger internet that is subdivided into zones, you see a zone list in the upper-right portion of the window. Your home zone is automatically selected, and its printers are listed in the Available list in the lower-left portion of the window. If you want to select a printer from another zone, select that zone, scrolling to find it if necessary. When you select another zone, the printers in that zone appear in the Available list.

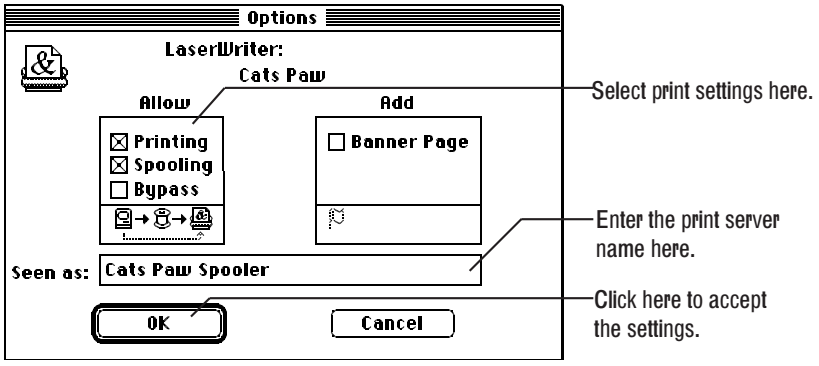
5 Select the printer you wish to capture from the Available list.

You can capture only one printer at a time.

6 Click Capture.

Or double-click the name in the Available list.

The Options dialog box appears:



The default options are in effect when you first open the dialog box. These are the most common choices for print service. For information on changing them, see Chapter 5, “Print Server Supervision.”

The Spooling option indicates that users’ documents will be accepted for spooling; the Printing option indicates that they will be accepted for printing. The Bypass option allows users to bypass spooling and send documents directly to the printer. The “Seen as” name is what users see in the Chooser. By default, it’s the name of the uncaptured printer with the word *Spooler* added to it. The name, not including “Spooler,” must be 32 characters or fewer. The program automatically shortens longer names. If you want to change the name of the spooler, enter the new name.

7 Click OK.

The program begins capturing the printer. You see a series of status messages; clicking Stop Capture at any time halts the process.

The print server adds the name of the captured printer to the Printer menu. The print server also creates a print queue folder for each captured printer and, by default, stores it in the Preferences folder. The Preferences folder is inside the System Folder. (Use the System Folder alias to open the System Folder.) This folder contains the print log and print queue files. The folder’s name consists of the letter *Q* followed by the the printer’s name followed by the name of its AppleTalk zone. If there is no zone, the name ends in an asterisk instead. For instance, “Q_Gutenberg_*” would indicate a printer named Gutenberg on a network that does not have zones. The Q folder also holds temporary files that the print server creates for spooled jobs.

You can change the location of the print queue folder, if you wish. For instructions, see Chapter 5, “Print Server Supervision.” You’ll learn how to work with the print log and queue files in Chapter 5.

8 Repeat steps 2 through 7 for each additional printer you want to c

Repeat the steps until you have captured all the printers you need, or you have reached the maximum of five printers.

Getting users ready

Macintosh users who plan on using the print server should all have the same version of printer drivers installed on their workstations. (This is true even if they use networked printers directly.) To check the version number of the printer driver on the Apple Workgroup Server 95, select the driver icon in the Extensions folder inside the System Folder, and choose Get Info from the File menu. (Use the System Folder alias to open the System Folder.)

The AppleShare Pro Print Server software does not include printer drivers. Users with System 6.0.8 or later do not need to upgrade their printer drivers. To update the printer drivers on earlier versions of System 6 workstations on the network, use the installer disks that came with your System 7 upgrade kit. (IBM PC users can continue to print using their usual network printing software.)

Once users have updated printer drivers installed in their workstations, the print server is ready to use. In many cases you'll find that you have few responsibilities beyond physically maintaining the printers. You can, however, control the process more closely. For more information on print server supervision and record keeping, see Chapter 5, "Print Server Supervision."

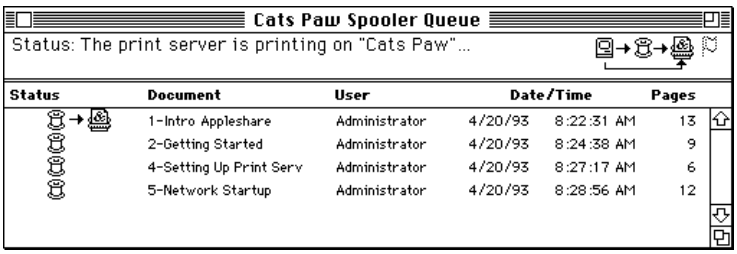
5 Print Server Supervision

AppleShare Pro provides you with a number of methods to control and monitor print server performance. This chapter explains the options and shows you how to put them into operation.

Monitoring print queue windows

Every captured printer has an associated print queue that provides detailed information on a printer's activity. (When you capture a printer, its queue and log windows are both automatically opened.) At the top of the window is the Status line. It tells you what is happening at the moment. For example, if the print server is sending a document to the printer, this is reported in the status line, which changes as work progresses.

Below the status line is a list of spooled documents. The top document is always the one that is currently printing. Documents below the top are listed in the order received, unless, as discussed later, you change the order.



Each entry in the list shows the status of the document—whether it is currently being spooled from the workstation, is in the server waiting its turn, or, in the case of the top document, is currently printing. In addition, the document name, user name, date and time of spooling, and number of pages are included.

Note: The print queue for ImageWriter printers shows only the date and time for each document received. No document or user name or page count is included.

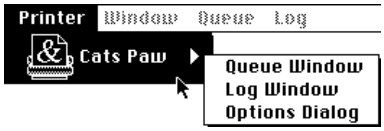
As new documents are spooled, they are listed at the end of the queue. When the queue is full, the print server blocks spooling until room becomes available. A print queue can hold up to 1000 documents, given sufficient disk space.

The queue contains listings for active documents only. Once a document has been printed, its listing is removed from the print queue and added to the print log. The print log and the print log window are discussed in "Using the Print Log" later in this chapter.

Viewing queue windows

When you capture a printer, its queue and log windows are both automatically opened. To view a closed queue window:

1 Choose the printer's name from the Printer menu.



2 Holding down the mouse button, drag across the printer's name into the submenu that appears next to the printer's name.

3 Choose Queue Window.

Managing queue and log windows

You may often want to look at the print queues of several printers simultaneously, and you may sometimes need to work with their logs as well. You can keep your windows in good order using the standard techniques of dragging, resizing, and closing. Or you can control the display with the commands in the Window menu:

- The Tile Queues and Logs command automatically sizes and positions open queue and log windows so that you can see all of them without overlap. Each window may shrink so that you see only a small part of it.
- The Stack Queues and Logs command stacks the windows with all of the front window visible and a corner of each of the windows behind visible as well. Clicking any part of a visible window brings that window to the front.

Note: Window displays have no effect on spooling or printing. A queue window need not be visible for a spooler to print.

Changing the print queue

When users send documents to the print queue, they are normally listed and processed in the order received. Sometimes, though, you may wish to delete or print a document immediately. Also, you may want to change the location of the print queue folder. The following sections tell you how.

Moving a document to the top of the print queue

Follow these steps to move documents to the top of the print queue.

1 If necessary, open the print queue window.

If the window is hidden, choose the printer's name in the Printer menu, and then choose Queue Window from the submenu.

2 Select the document you want to print next.

Click the document's name in the window. If necessary, scroll to find the document.

3 Choose Print Next from the Queue menu.

The selected document is moved to the second position in the queue, after the document that is currently being printed.

Deleting documents from the print queue

Sometimes you may wish to cancel printing of one or more documents. Follow these steps to delete documents from the print queue:

1 If necessary, open the print queue window.

2 Select the document or documents you want to delete.

Click the first document name in the list; SHIFT-click to select additional documents. If necessary, scroll to find them.

3 Choose Delete from the Queue menu.

You see this dialog box, asking you to confirm the deletion:

4 Click OK.

Deleted documents are removed from the print queue, and an entry is included in the print log. (See "Using the Print Log," later in this chapter, for more information.)

If you delete a document that's being printed, printing may continue for a short time. This is because part of the information for the document may have already been sent to the printer.

Changing the location of the print queue folders

As the AppleShare Pro Print Server program captures printers, it creates a print queue folder for each captured printer in the Preferences folder in the startup disk's System Folder. These print queue folders store all the documents spooled to their respective printers, where they wait for printing. Depending on the amount of printing you anticipate, you may want to choose another location for the print queue folders that provides more disk space than the default location.

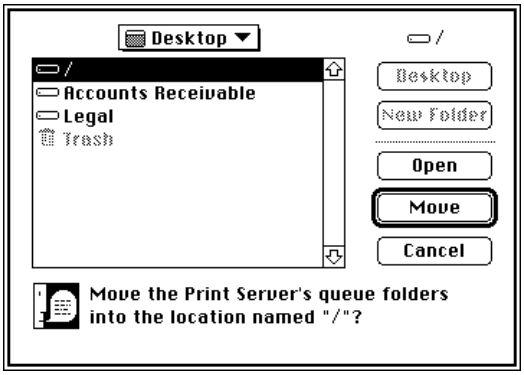
To change the location of the print queue folders:

1 If necessary, release any captured printers.

Choose Setup from the print server's File menu, then click the appropriate icon in the Printer Types box in the Setup window. Select the printer you want to release from the Captured list, and then click Release.

2 From the File menu, choose Set Queue Location.

This dialog box appears:



3 Choose a new location for the print queue folders.

Use standard Macintosh techniques to choose a new location. Double-click folders to open them, or pull down the pop-up menu to move through the hierarchy of folders. Click New Folder to create a new folder.

4 Click Move.

5 Recapture the printers you want to make available on the print server

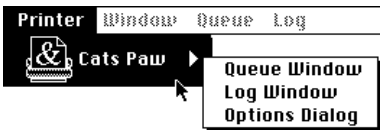
Use the same procedures you originally used to set up print service. As you capture printers, a new print queue folder is created for each printer in the new location you just chose.

Allowing users to bypass spooling

In some situations, you may want to let users bypass the spooler and print directly to a captured printer. This is usually necessary, for example, to support manual paper feed. Or you may just want to give users the option of either print service or direct printing control.

To allow users to bypass spooling:

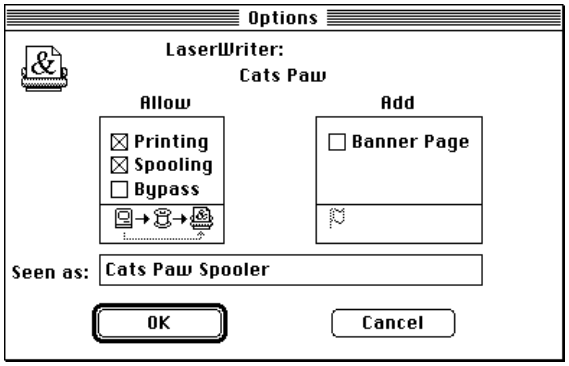
1 Choose the printer's name from the Printer menu.



2 Holding down the mouse button, drag across to the submenu.

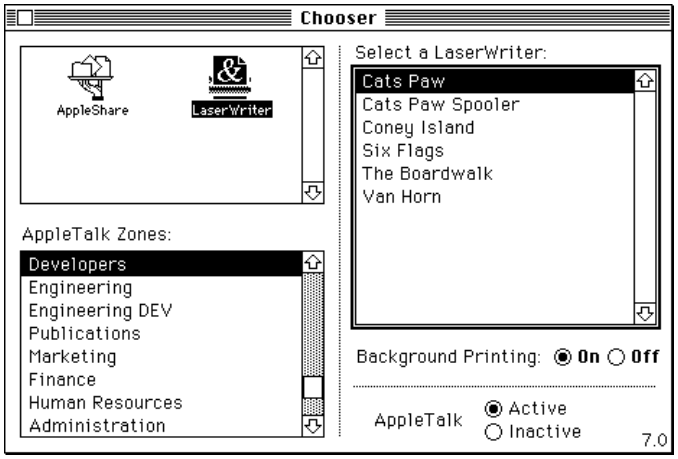
3 Choose Options Dialog.

The Options dialog box appears:



4 Click the Bypass checkbox so an X appears, and click OK.

The printer is now listed in the Chooser as both a spooler and a direct printer.



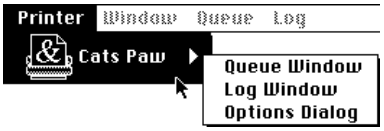
Once you've allowed users to bypass the print spooler and to print directly to a captured printer, the printer will be listed in two forms in the Chooser. Users can choose either to print directly (by choosing the printer listed by name only) or to send their documents to the spooler (by choosing the printer with the same name and followed by the word *spooler)*.

Temporarily stopping spooling or printing

You may want to prevent users from printing or spooling to a captured printer temporarily—for example, while you're performing routine maintenance. You implement this with the Options dialog box.

To temporarily stop spooling or printing:

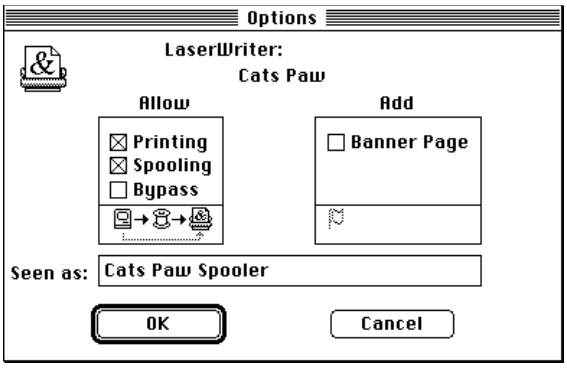
1 Choose the printer's name from the Printer menu.



2 Holding down the mouse button, drag across to the submenu.

3 Choose Options Dialog.

The Options dialog box appears:



4 Click the Printing checkbox, the Spooling checkbox, or both; then clicl

The X's are removed from the boxes, indicating that the options are deselected.

Releasing printers

If you decide that you don't need to spool to a particular printer (or you want to make room to capture a new one), you can release it with essentially the same procedure as for capturing.

To release a printer:

1 **Choose Setup from the print server's File menu.**

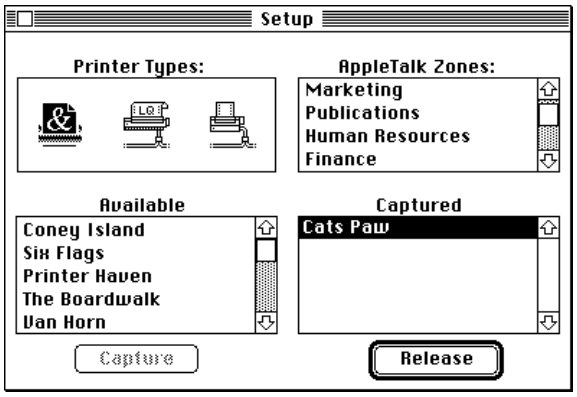
The Setup dialog box appears, showing the captured printers in the Captured list.

2 **If necessary, click the appropriate icon in the Printer Types box.**

When the dialog box appears, the LaserWriter icon is automatically selected, and captured LaserWriter printers are displayed in the Captured list. If you want to release an AppleTalk ImageWriter II or ImageWriter LQ, you must click its icon.

3 **Select the printer you want to release from the Captured list.**

4 **Click Release.**



If you click Release while a document is spooling or printing, an alert box appears:

5 Click Complete, Release Now, or Cancel.

- If you click Complete, the printer finishes printing the current job.
- If you click Release Now, the server stops spooling and printing.

  The server does not accept additional documents for this printer. Listings for documents in the process of being spooled are deleted from the print queue and placed in the print log. All documents that have been spooled but not yet printed remain in the queue and will be printed upon recapture. A document that is actually being printed remains at the top of the print queue and will be printed in its entirety upon recapture.
- If you click Cancel, the printer remains captured.

Adjusting the ImageWriter Interpage Time-out option

When printing to an ImageWriter II or ImageWriter LQ printer, many programs treat each page as a separate document. This can cause print server problems, because each page could be listed separately in the print queue, and, much more important, documents might be shuffled if several documents are spooled simultaneously.

The ImageWriter Interpage Time-out option is a way around these problems. It causes the server to pause after receiving a page of an ImageWriter document. If a new page arrives within a set time (five seconds is the default) from the same user's machine, the server treats it as part of the same document as the previous page. If the page arrives later, the server treats it as page one of a new document.

Because printing can take variable amounts of time, the Interpage Time-out option is adjustable. You need to adjust it if you have either of these problems:

- A document is split into a series of one-page documents.
- Several documents are combined into one.

In the first case, the option is set too low. You need to give the program more time to print each page. In the second case, the option is set too high.

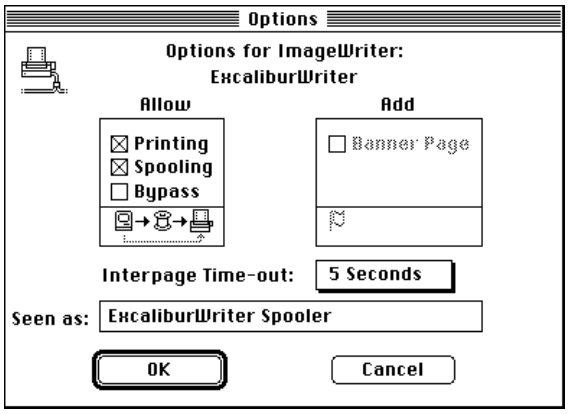
To adjust the Interpage Time-out option:

1 Choose the printer from the Printer menu.

2 Holding down the mouse button, drag across to the submenu.

3 Choose Options Dialog.

The Options dialog box appears:

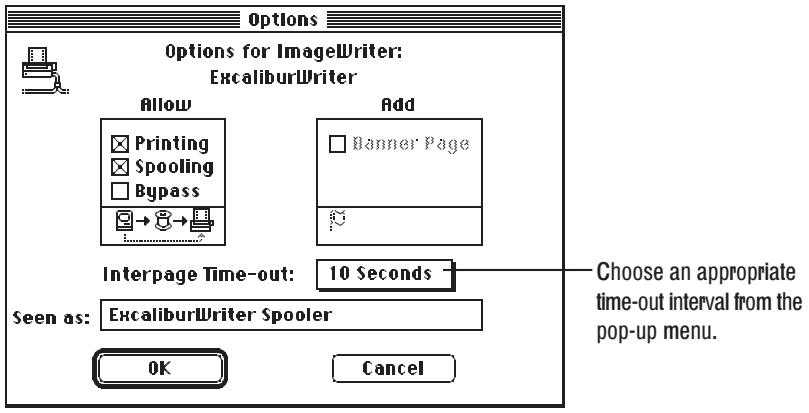


4 Pull down the Interpage Time-out pop-up menu.

To see the pop-up menu choices, click and hold the pointer in the Interpage Time-out box.

5 Choose an appropriate value.

Raise the value to increase the interval; lower the value to decrease it. The new value appears in the Interpage Time-out box:



6 Click OK.

The Interpage Time-out option is set.

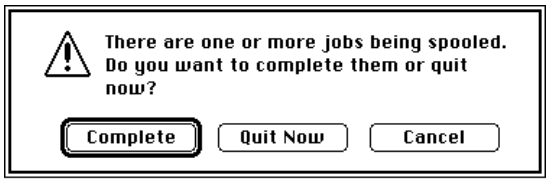
Quitting and restarting print service

If you need to quit print service, queued documents remain in the print queue folder for the printer to which the documents were spooled. They are printed in order when print service resumes. All captured printers are automatically released by the AppleShare Pro Print Server program when you quit. They are automatically recaptured when you restart the AppleShare Pro Print Server program, so you should explicitly release those you don't want to recapture before quitting.

Quitting print service

You suspend print service by quitting the AppleShare Pro Print Server program. Quitting the program has much the same effect as releasing a printer, except that all print spoolers are affected simultaneously.

If you quit while documents are spooling or printing, one or both of these dialog boxes appear:



- If you click Complete while spooling, the print server finishes spooling and registers the documents in their appropriate print queues, but it does not accept additional documents.
- If you click Complete while printing, the print server finishes printing the documents currently being printed (one per captured printer).
- If you click Quit Now while spooling, the server deletes the listings for the documents that are actively spooling or printing from the print queue and enters the listings in the print log.
- If you click Quit Now while printing, the server stops sending documents and quits. The document that is actually printing remains in the print queue and will be the first document printed when services resume.
- If you click Cancel in either case, print service continues without interruption.

Note: If the server shuts down due to a power failure, all documents that have completed spooling are still listed in the print queue. Listings for documents that have not yet been spooled disappear from the queue. The documents must be spooled again.

Restarting print service

You resume print service by choosing the AppleShare Pro Print Server program alias from the Apple menu.

When you start the program, the print server attempts to recapture all the printers it had captured before. It reopens any print queue or print log windows that were open before quitting, and restores the options for each printer.

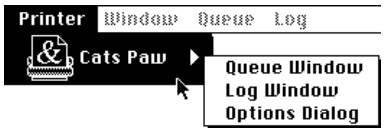
Note: If, in general, you shut down the Apple Workgroup Server 95 when you shut down print service, you may want to automate restarting. You can automate restarting by dragging the AppleShare Pro Print Server icon, or an alias of the icon, into the Startup Items folder. This way the program starts automatically when you start up the Apple Workgroup Server 95, unless you maintain an A/UX `root` account password. If you also turn the server's key lock switch to the "locked" position, the server system and the AppleShare Print Server program will automatically start after a power failure, but only if you do not maintain an A/UX `root` password. For more information about the Startup Items folder, see *Server Administration With A/UX 3.0.1,* or see your System 7 documentation.

Printing banner pages

You can generate banner pages for documents produced on any LaserWriter print spooler. A banner page shows the user's name, the program, the document name, the date and time of spooling, the name of the printer, and the number of pages in a document. A banner page is similar to the cover-page option.

To print banner pages:

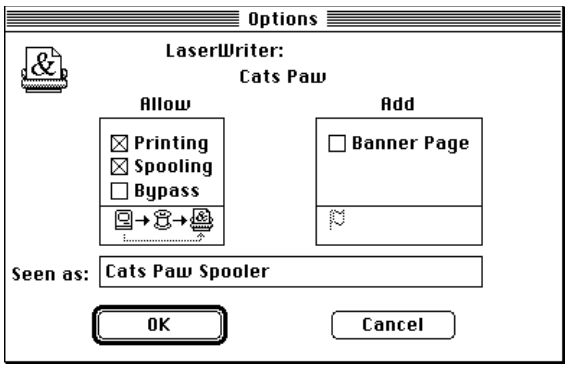
1 Choose the printer's name from the Printer menu.



2 Holding down the mouse button, drag across to the submenu.

3 Choose Options Dialog.

The Options dialog box appears:



4 Click the Banner Page checkbox so an X appears.

The banner-page icon is no longer dimmed on the status line of the print queue window. A banner page is generated at the end of all subsequent documents printed on that particular printer.

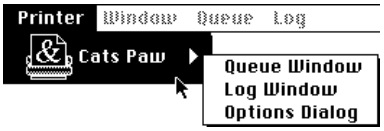
Using the print log

The print log contains historical information about the print server. In contrast with the print queue, which contains information about documents that are waiting to print or are currently being printed, the print log records documents that have been printed, were deleted from the queue, or could not be printed for some reason. Document information is added to the log as it is removed from the queue.

Reviewing the print log

To review the print log:

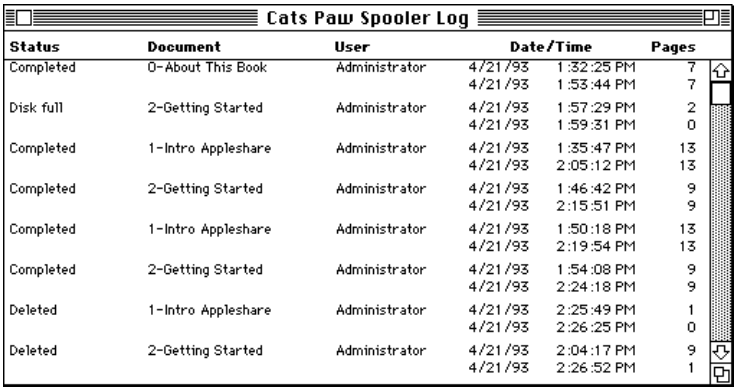
1 Choose the printer's name from the Printer menu.



2 Holding down the mouse button, drag across to the submenu.

3 Choose Log Window.

The print log for that printer appears:



Status	Document	User	Date/Time	Pages
Completed	0-About This Book	Administrator	4/21/93 1:32:25 PM	7
			4/21/93 1:53:44 PM	7
Disk full	2-Getting Started	Administrator	4/21/93 1:57:29 PM	2
			4/21/93 1:59:31 PM	0
Completed	1-Intro Appleshare	Administrator	4/21/93 1:35:47 PM	13
			4/21/93 2:05:12 PM	13
Completed	2-Getting Started	Administrator	4/21/93 1:46:42 PM	9
			4/21/93 2:15:51 PM	9
Completed	1-Intro Appleshare	Administrator	4/21/93 1:50:18 PM	13
			4/21/93 2:19:54 PM	13
Completed	2-Getting Started	Administrator	4/21/93 1:54:08 PM	9
			4/21/93 2:24:18 PM	9
Deleted	1-Intro Appleshare	Administrator	4/21/93 2:25:49 PM	1
			4/21/93 2:26:25 PM	0
Deleted	2-Getting Started	Administrator	4/21/93 2:04:17 PM	9
			4/21/93 2:26:52 PM	1

Saving the print log

If you want to keep the log for future reference, you can save it as a text file. You can then open and edit it, print it, or extract information from it for use in reports.

If the text file is smaller than 32K, you can use TeachText to open it. It can also be converted into any other word-processing or text-editing format that can convert text files. If you have any questions, consult the documentation for the word-processing program or text editor you work with.

To save the print log:

1 Open the print log you want to save.

See the previous section, "Reviewing the Print Log," for details.

2 Choose Save from the Log menu.

A list appears, permitting you to save the log in any folder or disk you choose.

3 Enter a name for the log.

You can use the default name, which is Log File, but a name that includes the spooler name and date will help you keep track of multiple logs.

4 Click Save.

Removing the print log

If you have saved the current print log, or think that the file has grown too large or too old to be usable, you can clear it and begin anew.

To remove the print log:

1 Open the print log you wish to clear.

See "Reviewing the Print Log," earlier in this chapter, for details.

2 Choose Clear from the Log menu.

You see a dialog box asking you to confirm your decision.

3 Click OK.

The log is cleared.

6 Troubleshooting

This chapter helps you address problems you may have while providing AppleShare Pro file and print services on an Apple Workgroup Server 95.

Problems with the AppleShare Pro File Server

You can't find the AppleShare Pro Admin or AppleShare Pro File Serv

Upon installation, the AppleShare Pro Admin and AppleShare Pro File server programs are placed in the Applications folder on the server's startup disk. You can start the programs by choosing their aliases from the Apple menu. When AppleShare Pro is installed, aliases for each of the programs are automatically created and placed in the Apple menu.

You try to run the AppleShare Pro Admin or AppleShare Pro File Serv get a message that another copy of the program is already running.

From the Finder, check the Applications menu in the far-right corner of the menu bar. If the Admin program or the File Server program is listed there, choose it. If it is not listed, close any open programs and restart the Apple Workgroup Server 95. Then try to start the Admin or File Server program again.

The system seems to "freeze."

If the keyboard and mouse do not work, check to make sure the key lock is turned to the unlock position. If the system still does not respond, press the programmer's switch. If the problem persists, see *Server Administration With A/UX 3.0.1* for instructions on using the `fsck` utility to restore your server system.

You've forgotten your Admin Key.

The Admin Key is stored in the Users & Groups Data File. If you forget the Admin Key, quit the Admin program (and File Server program, if necessary). Then drag the Users & Groups Data File out of the Preferences folder to the top level of the System Folder. *Do not drag it out of the System Folder*. (Use the System Folder alias to open the System Folder.) Then restart the Admin program. In a moment the program will ask you to provide a new file server name and Admin Key. Enter the *same* file server name, and a *new* Admin Key.

Following this procedure merely assigns a new Admin Key. All of the original user and group accounts, passwords, and access privileges for shared volumes are retained. After you've restarted the Admin program, you can throw away the copy of the Users & Groups Data File you moved from the Preferences folder. It is replaced by a new one within the Preferences folder.

You can't drag a user's name from the User List window to the Mem window.

- When creating groups, you must click the Save button in the New Group window after you've given the group a name and *before* you assign users to the group. Make certain the group name has been saved. (The name of the group should appear in the Group List window.)
- When assigning membership to a group, you must select each user's name by clicking it in the User List window; to drag it to the Members box in the group window, you must drag the user's *icon,* not the name.

You've inserted a CD-ROM into the drive, but the Admin program won't prepare the volume.

Open the startup disk's System Folder. (Use the System Folder alias to open the System Folder.) Open the Preferences folder and delete the file that begins with the name of the CD-ROM you want prepared. Eject and reinsert the CD-ROM.

You've inserted a CD-ROM into the drive, but users can't access it.

Before users can access a CD-ROM, you must share the volume and set access privileges for it in the Admin program's Access Information window. Once you do so, the CD-ROM is available to any user to whom you've given access privileges.

Volumes are missing after starting the AppleShare Pro File Server

Quit the AppleShare Pro File Server program and start up the AppleShare Pro Admin program. Running the Admin program prepares each connected volume. Quit the Admin program and start the File Server program again.

Mounting CD-ROM volumes takes too long.

Because of their large storage capacities, files on CD-ROM discs are often organized into hundreds of folders, most of which are nested inside other folders. If you assign explicit access privileges for folders on a CD-ROM or for the CD-ROM itself (for instance, by using the Change All Enclosed Folders option), mounting the CD-ROM can become very slow. You can reduce the time: From the Admin program, choose Access Information from the Privileges menu. Select the CD-ROM and choose the Compact Volume Access Privileges command from the Privileges menu. This changes the explicit access privileges on that volume to inherited privileges in cases in which the enclosing folder's privileges are the same as those of the items it contains.

A user has forgotten his or her password.

From the Admin program, choose User List from the Users menu. Double-click the user's name in the User List window to open the user's information window. Select the black dots that appear in the Password box. Enter a new password and click Save.

A user's password won't work.

- If a user cannot log on to the file server with his or her usual password, check to see if the password has expired. If it has, assign a new one. You may also want to consider changing (or disabling) the Number of Failed Login Attempts setting in the Admin program's File Server Preferences window; it may be set too low.
- What happens when a user's password does not work varies depending on the type of workstation he or she is using and the version of AppleShare workstation software installed. Use the following information to help identify the problem:

Workstation	*Message or symptom*
Macintosh with new AppleShare Pro workstation software	"Your password has expired. Please set a password." *or* "Your password must be changed. Please set a new password."
Macintosh with System 7 workstation software	"An AppleShare system error occurred."
Macintosh with AppleShare 2.0 workstation software	"The attempted connection to the server's volume has failed. Please contact the server's administrator."
IBM PC (or compatible)	"Error –5019 has occurred."

- Generally, if the types of workstations on your network vary, you can avoid these password problems by *not* using two features: Require New Password on Next Login (in the user information window) and Number of Days Until Password Expires (in the File Server Preferences window).

A user cannot find a file or folder.

A user must have See Folder access privileges for the volume and for each folder in the path to the file. If a user can't find a file or folder, he or she may not have the access privileges necessary to see it.

- From the Finder of the Apple Workgroup Server 95, use the Find command (in the File menu) to locate the file or folder. Then, from the AppleShare Pro Admin program, choose Access Information from the Privileges menu. Examine the access privileges and change them if necessary.
- At the user's computer (logged on as administrator), locate the file or folder using the Find command (in the File menu), and then use the Sharing command (for System 7) or the Get Privileges command (for System 6) from the File menu to examine the access privileges and change them if necessary.

Creation and modification dates or times are incorrect.

If the clock on the file server is incorrect, quit the AppleShare Pro File Server program, choose the Alarm Clock desk accessory from the Apple menu, reset the clock, and then restart the File Server program. If the Apple Workgroup Server 95's internal battery needs replacing, change the battery, and then set the clock. If a user's clock is incorrect, instruct the user to log off the file server, reset the clock, and then log on again.

Users have access to your personal files.

In general, keep personal files in a separate folder. In the Access Information window, check the folder's access privileges and make sure you are the owner of the folder. Remove any access privileges you assigned for the folder in the User/Group and Everyone checkboxes. Finally, make certain that no one but you has the All Privileges Enabled setting checked in his or her user information window, unless you specifically want superusers.

Too many people have access to the file server.

- You may have allowed guest access. From the Admin program, choose User List from the Users menu. Double-click <Any User>. In the <Any User> information window, make sure the Login Enabled checkbox is not checked. If it is checked, click the box to remove the X—doing so denies guest access.
- If you must allow guest access, limit access to folders only, not entire hard disks, and make sure that access privileges for Everyone are enabled for only those folders to which you must allow guest access.

Local work on the Apple Workgroup Server 95 is too slow.

Quit any programs that you are not currently using. If local work is still too slow, in the AppleShare Pro File Server program choose Show Connected Users from the Server menu. In the Connected Users window, set the Maximum scale to a lower percentage. Doing so reserves more processing activity for local work.

Users complain that the file server is too slow.

Quit any open programs that you are not currently using. If file server performance is still too slow, in the AppleShare Pro File Server program choose Show Connected Users from the Server menu. In the Connected Users window, set the Maximum scale to a higher percentage. Doing so provides more processing for users working on the file server. You can also try adjusting cache sizes. In the AppleShare Pro Admin program, choose File Server Cache Preferences from the Server menu. Assess your current cache sizes and readjust them if necessary.

Problems with the AppleShare Pro Print Server

You can't find the AppleShare Pro Print Server program.

Upon installation, the AppleShare Pro Print Server program is placed in the Applications folder on the server's startup disk. You can start the program by choosing its alias from the Apple menu. When AppleShare Pro is installed, aliases for each of the programs are automatically created and placed in the Apple menu.

You try to run the AppleShare Pro Print Server program and get a mes copy of the program is already running.

From the Finder, check the Application menu in the far-right corner of the menu bar. If the Print Server program is listed there, select it. If it is not listed, close any open programs and restart the Apple Workgroup Server 95. Then try to start the Print Server program again.

The system seems to “freeze.”

If the keyboard and mouse do not work, check to make sure the key lock is turned to the unlock position. If the system still does not respond, press the programmer’s switch. If the problem persists, see *Server Administration With A/UX 3.0.1* for instructions on using the `fsck` utility to restore your server system.

The AppleShare Pro Print Server program cannot capture a printe

If the print server is in the process of capturing a printer and displays the message “Having difficulties connecting to the printer,” someone else is probably already using the printer. You can click Stop Capture to stop the process or wait for the documents currently in the printer to be completed.

The print server can’t find a printer.

Normally, a print server displays the message “Looking for <printer name>” when it’s capturing a printer or preparing to send a document to be printed. If that message remains on the screen for an extended time, it means the print server can’t find the printer.

Make sure the printer is switched on. Check the network connection. If the print server still can’t find the printer, switch the printer off and then on again. Check the name of the printer on the test page. If someone has changed the printer’s name, use the Namer to rename it, or try to capture the printer again under its new name. (The Namer is a program found on the printer installation disk. It’s described in the manual that came with your printer.)

A document won’t spool.

If a message on a user’s computer tells you that a document can’t be printed, or if a document you sent to a print server doesn’t spool, make sure the print server is correctly selected as the computer’s printer. Printers are listed in the Chooser for Macintosh users and in the printer-selecting software for IBM PC users.

- If the print server isn’t listed in the Chooser or IBM PC printer-selecting software, check the print server to make sure that the printer is captured and that the Spooling option is selected in the Options dialog box.
- If the print server still isn’t listed, check the network connections. Refer to the documentation for your networking hardware and software to answer any questions about setting up and troubleshooting the network.

- If workstation users send documents to a print server and find that the documents didn't print and weren't listed in the print queue and print log windows, someone on your network may be using an outdated printer driver. Make sure that all Macintosh workstations on your network are using the same printer driver. Then reinitialize the printer by turning it off and then back on.

The print server can't print a specific document.

- If the print log shows that a printing error occurred, or if an error page is printed, it may mean that the program printing the document isn't fully compatible with the print server program. Have the user print directly to another printer.
- If no other printer is available, select the Bypass option in the Options dialog box. Have the user print directly to the printer by selecting its name in the workstation's Chooser or IBM PC printer-selecting software. If the user still can't print the document, consult the manual that came with the printer or with the program you are using.

The top document doesn't print.

- If the print server doesn't send the top document in the print queue to the printer, make sure the Printing option is selected. Check the status line of the print queue window for a message reporting that the captured printer is out of paper or that paper is jammed. If you see such a message, correct the problem.
- If the status line reports that the print server is looking for the printer, see the information under "The print server can't find a printer" earlier in this section. If the Bypass option is selected, see if the printer is busy with documents from workstations that are bypassing the print server and printing directly.

No printed document appears.

If you or a workstation user can't find a document that was spooled to the print queue, check both the print queue and the print log windows, scrolling through them if necessary. If the document doesn't appear in the print queue, it may have already been printed and should appear in the print log, unless it didn't complete spooling or unless more than 1000 documents were added to the print log after it.

- If the print log shows that the document completed printing, ask other workstation users whether they picked up the printed document by mistake. The print log shows whose documents were printed immediately before and after the missing document.
- If the print log shows that the document was deleted from the print queue, have the user spool it again.
- If the print log shows that a printing problem occurred, see the information under "The print server can't print a specific document" earlier in this section.

Users complain that the print server is too slow.

Quit any open programs that you are not currently using. If print server performance is still too slow and you are concurrently providing file service, in the AppleShare Pro File Server program choose Show Connected Users from the Server menu. In the Connected Users window, set the Maximum scale to a lower percentage. Doing so provides less processing for the file server and more processing for the print server.

The printer is out of paper.

- If a printer is out of paper, or if the printer is jammed, a message appears in the status line of the print queue window. (Depending on the programs being used, IBM PC workstations may not display these messages.) Unless you've set the print server's speaker volume to 0 in the Sound control panel, the print server periodically sounds a beep until paper is added to the printer.
- If several users are printing multipage documents on a captured printer, you need to check frequently to see that the printer has enough paper. If the print server beeps with no print queue displayed, a printer may have run out of paper or be jammed. Examine the print queue windows in sequence until you find the error.

Problems occur with ImageWriter documents.

Because some programs handle printing on an ImageWriter by treating each page of a document as a separate document, you might have these problems when spooling documents to captured ImageWriter printers:

- When you delete an ImageWriter document from the print queue while the document is still spooling, the print server program may delete only those pages that have already been spooled, while it continues to spool and print the remaining pages as a separate document.

  If this happens, you'll need to wait until the entire document is spooled before deleting it from the print queue, or delete each page individually as the pages are spooled.

- If the print server's hard disk is full when an ImageWriter document is spooling, the print server program will delete each page of the document as it receives it from the workstation (and the document will appear and disappear in the spooler's print queue window).

  If disk space becomes available while the document is spooling (if the document at the top of the print queue finishes printing, for example), those pages that are received by the spooler while the hard disk is full will be deleted, but those that are received after disk space is available will be spooled and printed. If this happens, have the workstation user spool the document (or the unprinted portion) again.

- If you quit the AppleShare Pro Print Server program while an ImageWriter document is spooling, a dialog box appears asking you whether you want to complete the print job. If you click Complete, the print server may finish spooling only the page that is currently being spooled, and not spool any remaining pages.

  If the workstation user wants to print the rest of the document when you restart the print server, have the user spool the unprinted portion again after you restart the print server.

You cannot open a print server log.

If a print server log is 32K or greater in size, TeachText cannot open the report. Use a word-processing program capable of reading plain-text (ASCII) documents or a text editor to open the report.

Appendix AppleShare Pro Specifications

AppleShare Pro File Server

Maximum connected users	200
Maximum number of open files	5000 (may require adding RAM)
Maximum number of volumes	50
Maximum number of shared items	50
Maximum number of users in a user/group file	2000
Maximum number of groups in a user/group file	2000
Maximum number of group memberships per user	42
Maximum number of simultaneous launches	200

AppleShare Pro Print Server

Types of printers supported	LaserWriter, LaserWriter II, Personal LaserWriter, LaserWriter Pro, AppleTalk ImageWriter, AppleTalk ImageWriter LQ
Maximum number of captured printers	5
Maximum number of spool sessions per printer	8
Maximum number of queued files	1000
Maximum number of log entries	1000

Glossary

access privileges The ability of network users to see folders, see files, or make changes to a shared disk or folder. Access privileges are determined by the administrator or by users, and are either *inherited* (the same as the item's enclosing folder) or *explicit* (specifically set).

administrator The person who sets up file and print servers, registers users and their passwords, creates groups, and maintains file and print services.

Admin Key A unique word or set of characters that you must enter before you can start the AppleShare Pro Admin program. You choose the Admin Key the first time you start the AppleShare Pro Admin program.

alias A file that stands for and points to a file, folder, or disk that you use as if it were the original. When you open an alias, you're actually opening its original.

AppleTalk A communications environment in which many different kinds of computers, peripheral devices, and software can work together according to protocols (rules) developed by Apple Computer.

A/UX 3.0.1 The operating system used on the Apple Workgroup Server 95. A/UX is Apple Computer's implementation of the UNIX operating system.

banner page A printed page that shows the user's name, the program, the document name, the date and time of spooling, the name of the printer, and the number of pages in a document.

Bypass A print server option that allows users to print directly to a captured printer.

cache A portion of RAM used for storing frequently used folders, files, and icons. Because cached items are already in RAM, access to them is faster than if they were read from a storage device each time they are used.

capture To take control of a printer so that it prints only documents sent by the print server, unless the Bypass option is selected. Opposite of *release*.

Ethernet A high-speed (10 megabits per second), widely used network type.

EtherTalk Software from Apple Computer that allows you to use AppleTalk network services on an Ethernet network.

Everyone A category of users for which you can set access privileges to shared volumes and folders. The category refers to anyone who logs on to the file server as a guest or registered user.

explicit access privileges See *access privileges*.

file server A computer or dedicated server running software that allows many network users to store and retrieve files on the hard disks or other storage devices connected to it.

file server report A document created by the AppleShare Pro Admin program that gives you information about the AppleShare Pro file server. The report lists registered users and the groups they're members of, and includes information about the size and number of folders and files each user has.

file sharing The capability of sharing files among users on a network. See *Macintosh file sharing*.

group A group of registered users on a network who have a common set of access privileges.

guest A user who can log on to the file server without having to provide a user name or password.

guest access A type of access to the file server that permits any network user to connect to the file server for the purpose of file sharing or program linking.

inherited access privileges See *access privileges*.

internet A network made up of two or more interconnected local area or wide area networks.

interpage time-out A specified delay in receiving individual pages on a spooled printer. The time-out is designed to accommodate ImageWriter-generated documents, which are sent one page at a time, rather than as a complete document.

LocalTalk Built-in networking hardware and software that allows a Macintosh computer to be part of an AppleTalk network.

Macintosh file sharing A feature of system software 7.0 (and later) that allows file sharing between Macintosh computers on a network.

network A collection of devices such as servers, computers, and printers that are connected together and communicate among one another. A network allows users to store, share, and retrieve information as well as share network devices such as printers.

network administrator The person responsible for setting up, maintaining, and troubleshooting a network.

owner The registered user who created or was assigned ownership of a folder.

password A unique word or set of characters that must be entered before a registered user can gain access to a volume on the file server.

pathname The complete name of a document beginning with the name of the disk or volume, the name of the subdirectory it's in, and the name of the document.

printer driver Software that controls the exchange of information between a computer and a printer.

print log A chronological list of documents formerly in the print queue.

print queue A collection of spooled documents stored on the print server and waiting to be printed in the order in which they were received.

print server A computer or dedicated server running software that lets network users send files to the same printer simultaneously, regardless of whether that printer is currently busy.

print spooling See *spool*.

privilege See *access privileges*.

program linking The ability of a program to exchange information directly with another program over a network. To use program linking, both programs must have the capability.

Queue folder A folder created when the AppleShare Pro Print Server program captures a printer. The Queue folder is the repository for documents spooled to that printer. The Queue folder is created in the Preferences folder on the Apple Workgroup Server 95's startup disk; however, you can choose to move it, if you wish.

RAM Acronym for *random-access memory*. The part of the server's or computer's memory that stores information temporarily while you're working on it. Information in RAM can be referred to in an arbitrary or random order, hence the term *random access*.

registered user A user who has been given a user name and password by the administrator. Usually, registered users have greater access privileges to volumes on a file server than guests do.

release To remove a printer from the print server's control so that documents can be printed directly. Opposite of *capture*.

shared disk A hard disk, CD-ROM, or other storage medium whose contents can be retrieved over the network.

shared folder A folder that is available to some or all network users over the network.

shared-item report A report that lists the folders on a shared disk; the names of their enclosed folders and files; and the access privileges, owner, and associated group for each folder.

sharing Making a volume available on a file server so network users can access the volume. The administrator must click Share in the Access Information window before a volume is shared.

spool To send documents to the print server to be stored until they are printed. An acronym for *Simultaneous Peripheral Operations On Line*.

superuser A registered user who has been assigned All Privileges Enabled. A superuser can see and make changes to the contents of all shared folders on a volume.

TeachText file A document containing plain text only. The AppleShare Pro file server log and print log are TeachText files.

TextEditor file A document containing plain text only. The AppleShare Pro file server reports and shared-item reports are TextEditor files.

User/Group A category of users for which you can set access privileges to shared folders and disks. The category consists of any user or group that is registered on the file server.

user name The name chosen by a Macintosh user or network administrator to identify a registered user.

Users & Groups An AppleShare 2.0 file that stores the account information about users and groups.

Users & Groups Data File An AppleShare 3.0 file that stores the account information about users and groups.

volume A hard disk attached to the Apple Workgroup Server 95, or a folder contained on that disk, that is defined and named as a place to store files.

zone Zones are set up by a network administrator and are used to group devices on a network.

Index

A

Access Information command
  changing owners and users and 42
  compacting volume access privileges and 67
  copying folders and files across volumes and 75
  copy-protecting programs and documents and 70
  limiting File Server program use and 69
  locking files and 72
  locking folders and 74
  removing users or groups and 42
  setting access privileges and 36
Access Information window
  access privileges and 109
  copying folders and files across volumes and 75
  copy-protecting programs and documents and 71
  limiting File Server program use and 69
  locking files and 72
  locking folders and 74
access privileges
  Access Information window and 109
  assigning 26
  categories of 27
  compacting volume 67–68
  default 34
  definition 27
  Everyone 27, 39
  explicit privileges and 35, 67
  guest and 31–32
  inherited privileges and 35, 67
  moving, from current server 13
  recognizing 41
  setting 36–38
  strategies 39–41
  superuser and 25
  troubleshooting 109
  users and 27
administrator name 22
Admin Key
  Admin program and, unlocking 21
  entering 12, 20, 21
  forgetting 21, 106
  passwords and 23
  security and 42
Admin program
  Admin Key and, unlocking 21
  creation of aliases and 14, 106
  registering users and 28
  security and 42
  starting 18, 20–23
  troubleshooting 106
  users and 62
Alarm Clock desk accessory 109
aliases
  capturing printers and 83
  creation of 14, 106
  deleting groups and 51
  monitoring file server usage and 59
  restarting File Server program and 56
  restarting Print Server program and 100
  revoking group membership and 50
  starting Admin program and 20
  starting File Server program and 43
  System Folder 60, 76, 85

All Privileges Enabled option 25, 30, 109
<Any User> information window 32, 49
Apple DocViewer ix
Apple menu 14, 20, 109. *See also specific commands*
AppleShare 3.0 User's Guide 44
AppleShare Pro Admin program. *See* Admin program
AppleShare Pro File Server. *See* File Server program
AppleShare Pro Installer CD-ROM 2, 5, 6
AppleShare Pro Print Server. *See* Print Server program
AppleShare Pro reports 60–62
AppleShare version 1.0 11
AppleShare version 2.0 11–12, 31
AppleShare Server version 3.0
  AppleShare Pro contrasted 14–16
  Apple Workgroup Server 95, converting for use on 11, 12–13
  upgrading from 11, 12–13, 31
AppleShare workstation software. *See* Workstation software
AppleTalk ImageWriter printers. *See* ImageWriter printers
AppleTalk LaserWriter printers. *See* LaserWriter printers
AppleTalk resource 9–10
Apple Workgroup Server 95
  AppleShare version 2.0 and, converting for use on 11–12
  AppleShare Server version 3.0 and, converting for use on 11, 12–13
  automatic restarting 100
  Current scale and 59
  documentation ix
  internal battery 109
  more information about ix–x
  other guides for ix
  random-access memory 15, 62, 65
  security 24, 42
  slow 110
Apple Workgroup Server 95 *Installation Boot Disk* 83
ASCII documents 114
automatic restarting 57, 100
automatic startup 15
A/UX 3.0.1 operating system 2, 14, 21, 77, 78
A/UX `root` account password 57, 100
A/UX startup volume 14
A/UX TextEditor program 15
Available list 84

B

backing up Users & Groups Data File 76
Balloon Help ix
banner pages, printing 100–101
Bypass spooling option 85, 92–93

C

cache preferences 15, 65–67
Captured list 95
CD-ROM drive 2, 5, 26, 77, 107
Change All Enclosed Folders checkbox 38
Change Password Enabled option 30
Clear command 103
Clear User/Group command 42
clock, internal 5, 109
commands
  Access Information
  changing owners and users and 42
  compacting volume access privileges and 67
  copying folders and files across volumes and 75
  copy-protecting programs and documents and 70
  limiting File Server program use and 69
  locking files and 72
  locking folders and 74
  removing users or groups and 42
  setting access privileges and 36
  Clear 103
  Clear User/Group 42
  Compact Volume Access Privileges 68
  Copy <Item> 75, 76
  Create Group 33
  Create User 28
  Delete 90
  Delete Group 51
  Delete User 49
  Disconnect User 58
  Empty Network Trash 68

File Server Log 59
File Server Preferences 63, 66
File Server Report 61
Group List 42, 50, 51
New Folder 11
Print Next 90
Quit 55
Restart 79
Revoke Membership 50
Save 31, 103
Send Message to User 54
Set Greetings 53
Set Queue Location 91
Setup 83, 95
Shared Item Report 61
Show Connected Users 53, 57, 58, 64
Shut Down 77
Stack Queues and Logs 89
Tile Queues and Logs 89
Unmount Volume 80
User List 32, 33, 37, 42, 48, 49
Compact Volume Access Privileges command 68
Connected Users window 43, 57–59, 64
connections, changing maximum number of concurrent 63
Copy <Item> command 75, 76
copy-protecting programs and documents 70–72
cover-page option 100–101
Create Group command 33
Create User command 28
Current scale 59
current server volumes, retaining 13–14
Customize button 4

D

dates, incorrect 109
default access privileges 34
default options 85
Delete command 90
Delete Group command 51
Delete User command 49
Disconnect User command 58
documentation viii–x, 6, 16
documents
ASCII 114
copy-protecting 70–72
ImageWriter 96, 114
ImageWriter Time-out option and 96–98
printing failure 112–113
print queues 88, 90–91, 94
quitting during spooling or printing 99
spooled 88
spooling failure 111–112
TeachText 15, 60
TextEditor 15, 61

E

Easy Install dialog box 9
Easy Install option 4
Empty Network Trash command 68
erasing data 2
Everyone privileges 27, 39
explicit privileges 35, 67

F

File menu. *See specific commands*
files
copying, across volumes 75–76
locking 72–73
missing 109
TeachText 15, 60
TextEditor 61
file server
access to 109
adding hard disks and drives and 77
AppleShare Pro software and, installing 2
A/UX 3.0.1 operating system and 2
controlling activity 59, 64–65
icons 15, 57
messages 52–54
monitoring usage 58–62
naming 20

file server *(continued)*
performance adjustments 62–68
reports 60–62
requests 59
restarting 5
slow 110
File Server Cache Preferences command 65, 66
File Server Cache Preferences dialog box 65
file server log 59–60
File Server Log command 59
File Server Preferences command 63, 66
File Server program
access privileges and 27
adding hard disks and drives to file server and 77
adjusting performance of file server and 62–68
Admin program and, starting 18, 20–23
aliases for 14
automatic restarting 57
backing up Users & Groups Data File and 76
changing startup disks and 77–79
changing user names and passwords and 48
copying files and folders and 75–76
copy-protecting and 70–72
creating groups and 19, 25–26
deleting groups and 51
deleting users and 49
differences between AppleShare Pro and AppleShare Server 3.0 15
disconnecting users and 57–58
guest and 25
limiting use of 69–70
locking files and 72–73
locking folders and 73–74
monitoring file server usage and 58–62
overview of setting up 18–19
quitting 55–56
registered user and 25
registering users and 18, 28–29
restarting 56–57
revoking group membership and 50
running other programs and 106
security and 24
sending messages and 52–54
sharing and 19, 26
specifications 115
starting 42–43
superuser and 25
troubleshooting 106–110
unmounting removable volumes and 79–80
users and 25–26, 44–45
File Server Report command 61
File Server supervision. *See* File Server program
file service. *See* File Server program
floppy disks 12, 13, 76
folders
assigning user or group to 38
copying, across volumes 75–76
explicit privileges and 35
icon for 7, 8
inherited privileges and 35
locking 73–74
missing 109
nested 21
print queue, changing 91–92
sharing 19, 26, 34
"freezing" of system 106, 111

G

Greeting Message dialog box 53
greetings 52–53
Group List command 42, 50, 51
groups
adding members to 32–34, 107
assigning, to volume or folder 38
creating 19, 25–26, 32–34, 107
deleting 51
messages to 53–54
removing 42
revoking membership to 50
setting up 32–34
of users 25–26
Groups menu. See *specific commands*
guest 25, 31–32

H

hard disks and drives 2, 5, 12, 26, 77
help features viii–ix

I

IBM PC users 29, 45, 52, 80, 86
icons
  AppleShare Workstation folder 6, 7, 9
  file server 15, 57
  folder 7, 9
  Installer 2, 8, 9
  printer 84
  print server 15, 57
  user 33–34, 37
ImageWriter Interpage Time-out option 96–98
ImageWriter LQ printers 96
ImageWriter printers 82, 88, 96, 114
ImageWriter II printers 96
inherited privileges 35, 67
Installer icon 2, 8, 9
installing
  AppleShare Pro software 2–5, 14
  workstation software 6–10, 44
Interpage Time-out pop-up menu 97

L

LaserWriter printers 82
locked files 72–73
locked folders 73–74
Login Enabled option 30, 32
Log window 102

M

Macintosh users 9, 44, 53, 56
Make Changes privilege 27, 39–41, 73
Maximum scale 59, 65
memory 62, 65, 66, 114. *See also* RAM
messages
  disconnection 58
  file server 52–54
  greetings 52–53
  to specific user 53–54
  types of 52
mount points 14

N

names
  administrator 22
  changing user's 48
  registering users and 28, 29
  saving user's 31
  "Seen as" 85
  troubleshooting user's 107
nested folders 21
New Folder command 11
New User window 28

O

on-line documentation viii–ix, 6, 16
on-line help viii–ix
options 23, 30. *See also specific types*
Options dialog box 84, 93, 94, 97, 101
owners 26, 37, 42
Owner user category 27

P

paper for printer 113
passwords. *See also* Security
  Admin Key and 23
  changing 48
  entering 23, 29
  failure of 108
  forgetting 108
  length of 29
  registered users and 25
  Save command and 31
  saving of 31
power failure 99
Preferences folder 11, 12–13, 76, 78, 85
print drivers 83, 86
Printer menu 92, 97, 101, 102

printers
Available list and 84
Captured list and 95
capturing 83–85, 89, 111
icons 84
missing 111
paper 113
print drivers 83, 86
releasing 95–96, 98
stopping, temporarily 94
zones of 84, 85
Print Next command 90
print queues
changing 90–92
deleting documents 90–91
documents and 88, 90–91, 94
folders 91–92
full 88
function 88
managing 89
moving document to top 90
power failure 99
print queue windows 88–89
print server icons 15, 57, 102
print server log 102–103, 114
Print Server program
adjusting ImageWriter Interpage Time-out option 96–98
aliases 14
bypassing spooling and 92–93
capturing printer and 83–85
changing print queue and 90–92
description of 82
differences between AppleShare Pro and AppleShare Server 3.0 15
missing 110
monitoring print queue window and 88–89
from original startup disk 79
printing banner page and 100–101
quitting 98–99
releasing printers 95–96
restarting 100
running other programs and 110
specifications 115
temporary stop in spooling or printing 94
troubleshooting 110–114
users and 86
using print log and 102–103
Print Server supervision. *See* Print Server program
print service. *See* Print Server program
print spooling. *See* Spooling option
Privileges menu. *See specific commands*
problems. *See* Troubleshooting
program linking 29
Program Linking Enabled option 30
programs, copy-protecting 70

Q

queue folder 15
Queue menu. *See specific commands*
Quit command 55

R

RAM (random-access memory) 15, 62, 65
registered users 25, 28. See also Users
Remote User Activity box 59, 65
reports 60–62
Require New Password on Next Login option 30
Restart command 79
Retrospect program 14
Revoke membership command 50
running programs, other 106, 110

S

Same as Enclosing Folder option 37
Save command 31, 103
SCSI devices 2
security 18, 42. *See also* Passwords
See Files privilege 27, 39–41, 73
See Folders privilege 27, 39–41, 73
"Seen as" name 85
Send Message to User command 54
Server Administration With A/UX 3.0.1 14, 21, 57, 78, 100, 106

Set Greeting command 53
Set Queue Location command 91
Setup command 83, 95
Shared Data folder 6
Shared Item Report command 61
shared-item reports 60–62
Shared Items box 37
sharing 19, 26, 34–35
Show Connected Users command 53, 57, 58, 64
Shut Down command 77
slash (/) volume 11, 12, 21, 35, 37
specifications 115
Spooling option 85
Stack Queues and Logs command 89
startup disks, changing 77–79
Startup Items folder 15, 57, 100
startup volume 14
superusers 15, 25
System Folder
  alias 60, 76, 85
  file server log in 60
  file server and print server icons in 15
  nesting 21
  opening 60, 76, 85
  Preferences folder 78, 91
  print drivers 83
  Users & Groups Data File and 12, 13
  Users and Groups file and 11, 12
System 7 57, 100
System 7.1 56
System 6.0.8 86

T

TeachText files 15, 60, 114
TextEditor program 15
Tile Queues and Logs command 89
time
  until disconnection 58
  until ImageWriter document page arrives 96
  incorrect 109
  until shutdown 55–56
  until volume is unmounted 80
Trash, emptying network 68
troubleshooting
  access privileges 109
  Admin program 106
  File Server program 106–110
  Print Server program 110–114
  users' names 107

U

UNIX operating system 14
Unmount Volume command 80
upgrading earlier versions of AppleShare 5, 10–12, 31
User/Group user category 27
User Information window 22
User List command 32, 33, 37, 42, 48, 49
User List window 33
users
  access privileges and 27
  Admin program and 62
  assigning, to volume or folder 38
  bypassing spooling and 92–93
  categories 27
  changing 42
  changing names 48
  deleting 49
  disconnecting 57–58
  File Server program and 25–26, 44–45
  groups 25–26
  IBM PC 29, 45, 52, 80, 86
  icon for 33–34, 37
  limiting number of 69–70
  Macintosh 9, 44, 53, 56
  messages to 53–54
  names 28, 29, 107
  options 30
  Print Server program and 86
  registered 25, 28
  registering 18, 28–29
  removing 42
  sharing and 26
  stopping spooling or printing and 94
  workstation 7–10

Users & Groups Data File
adding information to 21
backing up 76
converting AppleShare Server version 3.0 to Apple Workgroup Server 95 12
registered users in 28
saving user's name and password in 31
System Folder and 12
User and Groups file 11, 12
converting AppleShare version 2.0 to Apple Workgroup Server 95 11
System folder and 11

V

Volume Info window 43
volumes
assigning user or group to 38
copying files and folders across 75–76
definition of 26
logging on, after unmounting 80
missing 107
mounting CD-ROM and 107
retaining current server 13–14
sharing 19, 34
slash (/) 11, 12, 21, 35, 37
startup 14
unmounting removable 79–80

W

workstation software
installing 6–10, 44
upgrading 5, 11–13, 31
users 7–10
Workstation Software folder 6, 7, 9

Z

zones, printer 84, 85