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The Caladan  
User's Guide

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## About This Guide

**T**HIS USER'S GUIDE EXPLAINS HOW TO INSTALL AND USE APPLESHARE® PC. After you install AppleShare PC and the appropriate network communication card in your PC, you can share network file services and print services with other PCs and with Macintosh® computers on an AppleTalk® network system.

❖ *Note:* In this guide, PC refers to the IBM PC, PC/XT, PC AT, PS/2, Compaq, AT&T 6300, and other IBM PC-compatible computers.

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- Chapter 1, "Introduction to AppleShare PC," provides an introduction to the AppleTalk network system, AppleShare services, and AppleShare PC.
- Chapter 2, "Installing AppleShare PC Software," gives step-by-step instructions to install AppleShare PC onto your computer.
- Chapter 3, "Using AppleShare PC," explains how to load AppleShare PC on your system, briefly surveys the DA and ANET, and introduces you to the structure and commands of the DA.
- Chapter 4, "File Services," gives step-by-step instructions to use AppleShare PC file services. Descriptions of the procedures to log on, log off, and set access privileges are included.
- Chapter 5, "Print Services," gives step-by-step instructions to use network printers.
- Chapter 6, "Additional Features," describes functions that can help customize AppleShare PC and help make your work more efficient.
- Chapter 7, "The ANET Command Interpreter," lists the ANET commands and describes how to use them. It also provides information about memory considerations and batch files with AppleShare PC.
- Chapter 8, "Troubleshooting," provides solutions to problems that you may encounter. It also lists error messages that may appear on your computer.
- Appendix A, "The DA Keyboard Commands," provides a summary of keyboard commands used in the DA.
- Appendix B, "International Character Set," provides information about AppleShare PC support for the use of international character sets, character conversions between DOS text and Macintosh text, and date displays.
- Appendix C, "The NET.CFG File," describes the file created by the installation program that is used to hold communication card and driver configuration information.

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## What you need to know

To use this guide successfully, you should be familiar with using an IBM PC-compatible computer and a hard disk or floppy disk system. You should be able to execute basic MS-DOS or PC DOS commands, and have an understanding of the DOS hierarchical file structure.

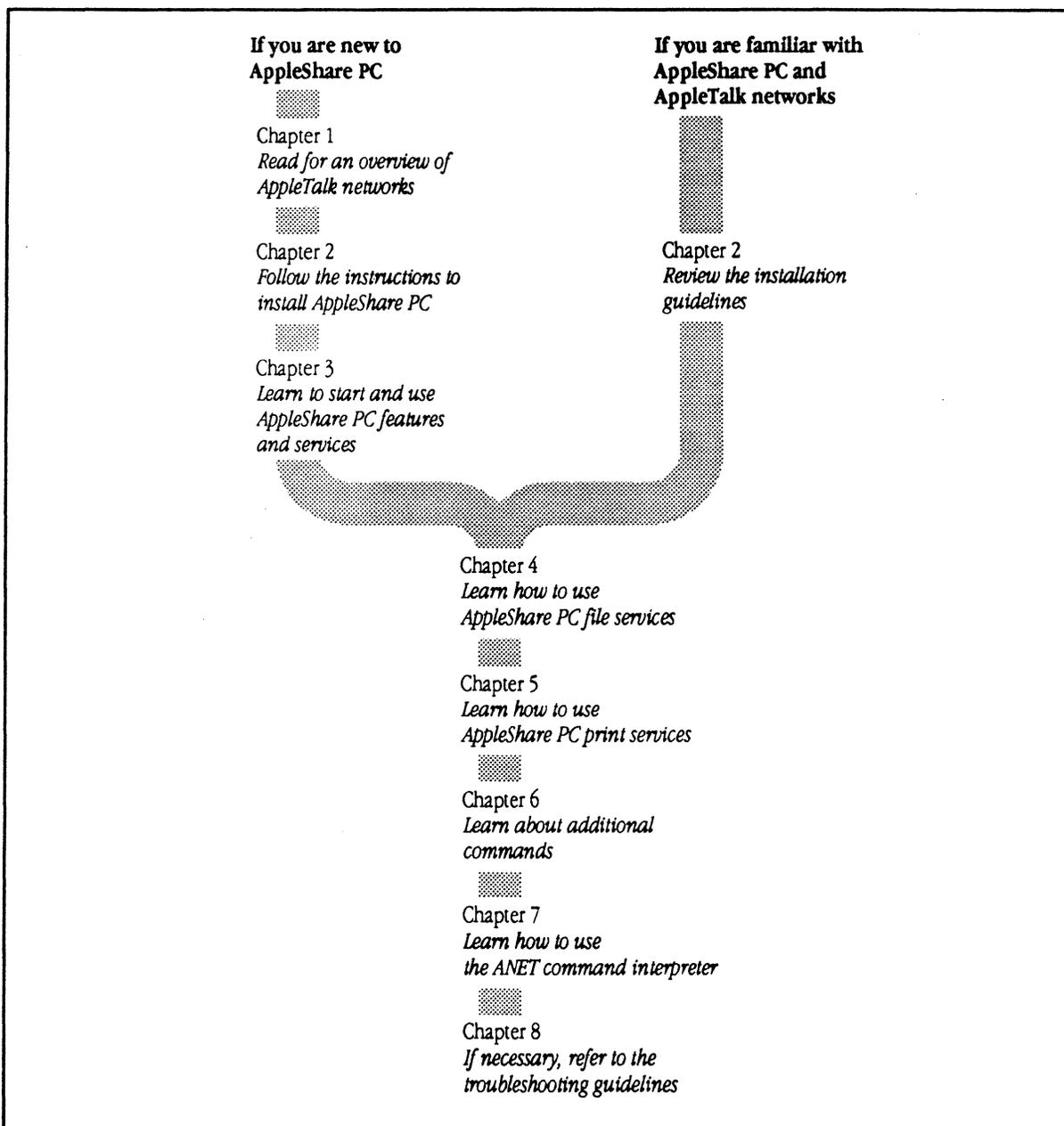
If you are unfamiliar with these areas, you may still be able to install and use the AppleShare PC software. Check with your network administrator before you proceed.

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## How to use this guide

Use the road map that follows (Figure P-1) to determine the best way for you to use this guide:

■ **Figure P-1** Road map of the *AppleShare PC User's Guide*



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## Conventions

To use this guide most effectively, you should recognize the following conventions used in the text.

### **Boldface type**

As you read, you will notice certain words and phrases in the text that appear in **boldface** type. These are new terms and they are defined in the glossary in the back of the guide.

Sections of the guide that provide step-by-step instructions also use boldface type. General instructions are numbered and written in boldface and explanations of the instructions are written below them in regular typeface. This allows you to review the steps of a task quickly by scanning through the instructions in boldface.

### **Use of terms**

The following terms have specific meaning throughout this guide:

*DOS* refers specifically to MS-DOS and PC-DOS operating systems.

*Communications card* refers to the card that you insert into your PC to connect it physically to a network. In other literature, you may have seen it referred to as *adapter* or *interface card*.

The *Enter key* is mentioned in this guide as that which confirms acceptance of text from the keyboard and confirms the completion of certain operations. Keys on your keyboard labeled *Return* or keys with a Return symbol arrow can be used to achieve the same results.

## Special messages

The following words and symbols indicate special messages to you:

- ❖ *Note:* Text set off in this manner presents sidelights or interesting points of information.

△ **Important** Text set off in this manner—with the word **Important**—presents important information or instructions. △

---

▲ **Warning** Text set off in this manner—with the word **Warning**—indicates potentially serious problems. ▲

---

## Related books and manuals

The following books by Apple Computer, Inc. provide additional information about AppleTalk networks:

- The *AppleTalk Network System Overview* provides an introduction to AppleTalk network system architecture and AppleTalk protocols.
- The *AppleShare Administrator's Guide* describes how to install and maintain an AppleShare file server.
- The *AppleTalk Internet Router Administrator's Guide* provides information about installing and operating the AppleTalk Internet Router that connects two or more AppleTalk networks.
- The *Inter•Poll Administrator's Guide* describes how to use the Inter•Poll™ network administrator's utility to perform maintenance and troubleshooting on an AppleTalk network system.
- The *Apple LocalTalk PC Installation Guide* describes the procedure to install the LocalTalk PC Card into a PC.
- The *LocalTalk Cable System Guide* provides reference information about LocalTalk™ cable, hardware, and installation.

## Introduction to AppleShare PC

**A**PPLESHARE® PC ALLOWS YOU TO ACCESS APPLESHARE FILE SERVICES AND print services on an AppleTalk® network. You can share files with other users through a file server, set access privileges for your directories, and share network printers.

---

## Overview

A network is a collection of computers, shared network resources, and connecting devices that are linked together and capable of communicating with each other through transmission media. This section describes the AppleTalk network system that has the flexibility to provide networking capabilities to a variety of computers over different types of transmission media.

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### The AppleTalk network system

An AppleTalk network system can come in many sizes, from a network that consists of one computer connected by a network cable to a LaserWriter® printer, to a system that connects thousands of computers over a large geographical area. What each of the components of the system has in common is the AppleTalk **protocols**, or rules for exchanging information. This manner of information interchange allows networks with different transmission standards, cables, and connections to be used in an AppleTalk network.

The **LocalTalk™**, **EtherTalk™**, and **TokenTalk™** networks are all supported within the AppleTalk network system. The LocalTalk network can connect to a Macintosh® computer by way of its printer port or modem port, and to an IBM PC-compatible computer by way of the LocalTalk PC Card or other LocalTalk-compatible cards. The EtherTalk network brings AppleTalk protocols to an **Ethernet** environment and the TokenTalk network uses AppleTalk protocols within a **token ring** environment.

The transmission media supported by the AppleTalk network system include twisted pair cables, coaxial cables, and optical fiber.

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### AppleTalk services

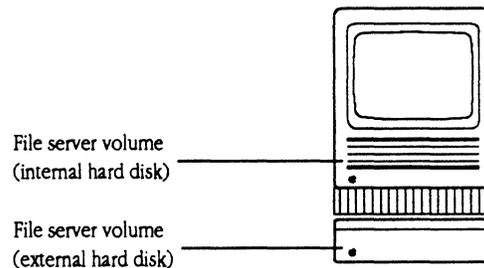
AppleTalk networks are transparent to the user. That is, once set up, you can use the AppleTalk services without concern for the mechanics of the network.

Services provided by an AppleTalk network fall into three general categories: file services, print services, and electronic mail.

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**File services** allow you to access shared files and use certain remote disk drives called **server volumes**. File services are implemented by a **file server**, a computer on the network that is equipped with file service software and that has one or more server volumes attached to it. (See Figure 1-1.) When you install file services on your computer, you not only gain networking functions, but you can use space provided on the server volume for your files and application programs.

■ **Figure 1-1** AppleShare file server



File services allow you to create and maintain directories and files on one or more server volumes much as you do on your local disk drives. You can share applications with others in your office or building, for example, by placing them on the server. In addition, file services sometimes provide abilities to control access to directories in order to maintain file security or privacy. For example, AppleShare allows you to set **access privileges** to the directories that you create. You can choose from three types of access privileges to assign to your directories, and combine them to provide the level of accessibility that is appropriate to each directory and file that you create.

**Print services** allow users to share printers on a network. A **print server** manages the flow of documents to be printed, and ensures that they are printed on a first-come, first-served basis. For example, the LaserWriter® printer provides some services by managing print requests. An AppleShare print server provides the additional print services of spooling and queue management.

A **spooler** stores documents that you want to print when the printer is too busy to print them immediately. While the spooler waits for the printer to become free, you can go on to your next task with little delay. Queue management enables you to change the order of the documents in the print queue and delete print requests, among other abilities.

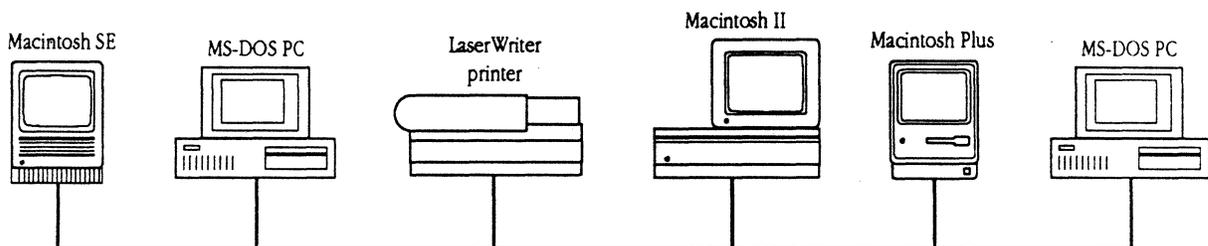
**Electronic mail** allows network users to send messages and files to each other. Users are alerted if anyone has sent them "mail," and they can read their messages right away or store them to read later. Mail service is a convenient way to share information, update coworkers on the status of projects, and leave appointment messages.

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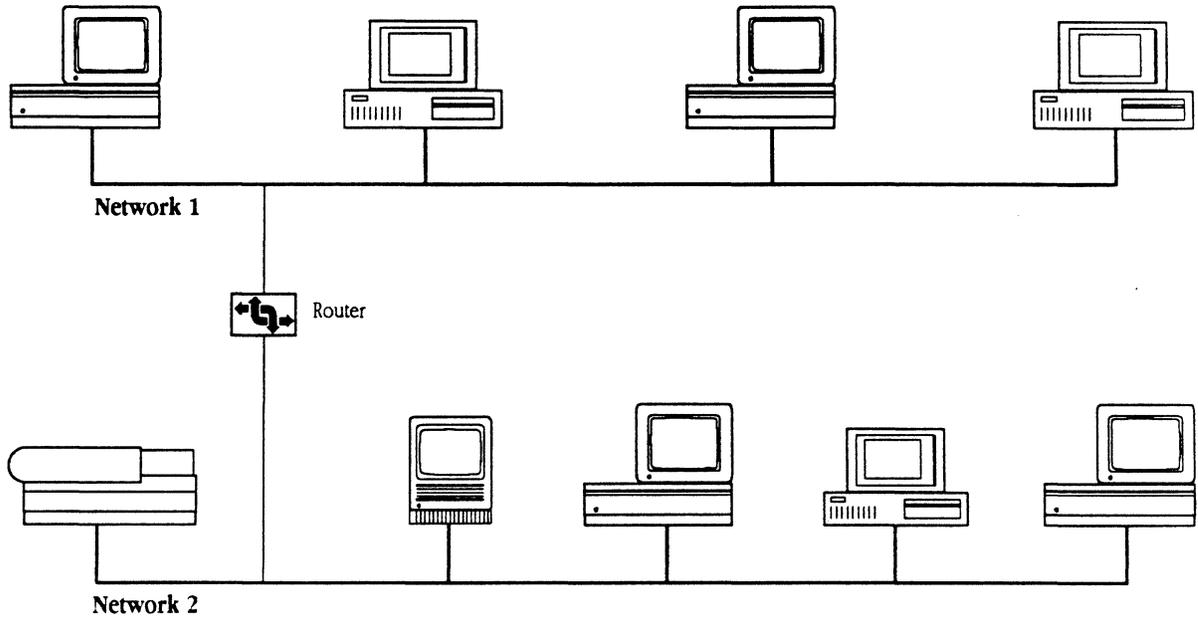
## Building an AppleTalk network

On a **local area network (LAN)**, computer users exchange information and share printers, file servers, and other resources over short distances, such as within a building or office. (See Figure 1-2.) When two or more networks are connected by an **internet router**, they form an **internet**. On an AppleTalk network, an internet router can be used to link the networks and forward **packets** of information from one network to the other. Figure 1-3 shows a LocalTalk and an EtherTalk network connected by way of a router.

■ **Figure 1-2** Local area network



■ **Figure 1-3** Router connecting two networks



Devices on the network such as computers, file servers, and printers are given network addresses in order to receive network information. In larger networks, devices are grouped into **zones** to simplify access to network resources. An important aspect of AppleTalk zones is that they are conceptual groupings of computers and services defined for organizational purposes, *not* the physical arrangement of devices. Figure 1-4 illustrates this concept.

- **Figure 1-4** Devices on network zones

[ART]

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### AppleShare services

AppleShare *file server* software turns a Macintosh with a hard disk into an AppleShare file server. AppleShare *workstation software* installed in a user's computer allows that user to log on to the file server, and with appropriate access privileges, use the server volume disk space as his own. AppleShare *print server software* can be installed on a Macintosh by itself to provide print services, or it can be installed with the AppleShare file server software.

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### AppleShare PC software

AppleShare PC software extends AppleShare's file and print services to IBM PC and compatible computers. You can use the windows of the AppleShare PC Desk Accessory (DA) to log on to servers, select printers, set access privileges, and work with server volumes, directories, and files. AppleShare PC also comes with a command line interpreter, ANET, that allows you to run batch programs and execute network commands from the DOS prompt.

AppleShare PC and the network card drivers that are supplied with it conform to the **Open Data-Link Interface (ODI)** specification. This enables AppleShare PC to function on LocalTalk, EtherTalk, and TokenTalk networks. AppleShare PC is also fully compatible with AppleTalk Phase 2.

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## What you need to get started

To install and use AppleShare PC, you should have the following equipment:

- an IBM PC or compatible computer running MS-DOS or PC-DOS version 3.1 or later
- an AppleTalk-compatible network card, such as the Apple LocalTalk PC Card, installed in your PC
- either a hard disk with at least 512K or two floppy disk drives

- if you do not have a hard disk, you need one or two blank floppy disks

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**Your AppleShare PC  
package**

Your AppleShare PC package contains the following items:

- the AppleShare PC software on two 5.25-inch floppy disks and one 3.5-inch disk
- this guide, the *AppleShare PC User's Guide*



## Installing AppleShare PC Software

**T**HE APPLESHARE PC PACKAGE COMES WITH THREE INSTALLATION DISKS. If your computer uses 3.5-inch disks, use the single 3.5-inch installation disk labeled *Workstation Installer Disk*. If your computer uses 5.25-inch disks, use the two 5.25-inch floppy disks labeled *Workstation Installer Disk 1* and *Workstation Installer Disk 2*. The disks contain an interactive installation program, plus the files you need to run AppleShare PC software.

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## About installation

The AppleShare PC installation program guides you through the process of installing AppleShare PC on your hard disk or floppy disk system. When you run the installation program, you are prompted to answer questions that configure AppleShare PC to your computer and network. This section provides information that will help you determine what configuration is most appropriate for you.

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## Installing the driver

The installation program loads the AppleShare PC files and drivers onto your system. A **driver** is a software program that controls the use of a communications card that has been installed in your computer. The drivers used by AppleShare PC are **Multiple Link Interface Drivers (MLID)**. Several MLIDs are provided on the installation disks so that you can select one that is compatible with the communications card you are using.

When you run the installation program, you configure the driver to your communications card. To do this, you need to know the configuration of the card; namely, the DIP switch settings, DMA channels, interrupt levels, and port I/O addresses that it uses. Refer to your user guide for your card's specifications.

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## Making the DA memory-resident

The AppleShare PC Desk Accessory (DA) can be installed as a memory-resident program. If it is **memory-resident**, you can use the DA and gain access to AppleShare services from within any application by pressing a certain key-stroke combination. Since it remains in memory when it is not in use, the DA takes very little time to start up. You also get on-screen messages whenever a server is shutting down.

To make the DA memory-resident, you need 54 Kilobytes (K) of random-access memory (RAM) in addition to the usual amount of memory needed for your applications. If you do not have enough memory, you can use the DA by running the program from the DOS prompt.

### △ Important

Do not make the DA memory-resident if you are also using a multitasking environment such as TopView, Microsoft Windows, or DESQview. Instead, run the DA as you would any program from the DOS prompt. △

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## AppleShare PC files

The *Workstation Installer Disks* contain the following three groups of files:

The AppleShare PC interface:

- INSTALL.EXE—the installation program
- ASHARE.COM—the AppleShare PC file translator
- APRINT.COM—the AppleShare PC print translator
- LSL.COM—the Link Support Layer; implements the ODI
- COMPAT.COM—allows programs written for AppleShare PC version 1.0, 1.1, and 1.2 to recognize the AppleTalk protocol stack
- ANET.EXE—the command line interpreter
- README.DOC—supplemental information about AppleShare PC
- MINSES.EXE—works with REDIR to translate DOS calls to network calls
- REDIR.310—compatible with DOS 3.xx
- REDIR.400—compatible with DOS 4.00

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The AppleTalk stack:

- ATALK.COM—the heart of the AppleTalk stack
- ASP\_WS.COM—AppleTalk Session Protocol for workstations
- PAP\_WS.COM—Printer Access Protocol for workstations
- PAP\_SRV.COM—Printer Access Protocol for servers

Desk Accessory files:

- DA.EXE—the AppleShare PC Desk Accessory
- DA.OVL—more of the AppleShare PC Desk Accessory
- DA.DTA—the data file for the DA program
- DA.HLP—the help file for the DA program

In addition, the *Workstation Installer Disks* provide communications card drivers that have a .COM or .EXE extension. The disks also contain .DEF and .DOC files that the installation program uses. The drivers cannot be installed without them.

If you are using a hard disk system or a high density floppy disk (720K or more), the installation program copies the AppleShare PC files into a directory of your choosing on your destination disk.

If you are using a 360K floppy disk system, some of your AppleShare PC files are copied into the root directory of a DOS startup disk, and the rest are copied onto a second formatted blank disk.

---

### Loading AppleShare PC automatically

The installation program can configure your system to automatically load the AppleShare PC files each time that you start your computer. If you choose to have them loaded automatically, your AUTOEXEC.BAT file is modified accordingly. If you choose not to load them automatically, you can use the desired network services by running the batch files that the installation program has created.

- 
- ▲ **Warning** If your AUTOEXEC.BAT has been customized and contains a high degree of complexity, it is recommended that you do not load AppleShare PC files automatically. ▲

---

### The AUTOEXEC.BAT file

During the installation process, your AUTOEXEC.BAT file is modified and its PATH statement is changed to recognize the directory that contains the AppleShare files. If you choose to load services automatically, network commands are added. A copy of your current AUTOEXEC.BAT is saved as AUTOEXEC.BAK.

If your startup disk does not already contain an AUTOEXEC.BAT file, the installation program will create one for you in the root directory of your startup disk.

---

## Before you install

- △ **Important** Before you install AppleShare PC, read the file called README.DOC located on the *Workstation Installer Disk*. The file contains notes about the program that were not included in this guide. To see the README.DOC file, insert the *Workstation Installer Disk* in a drive and at the DOS prompt, type

```
type a:readme.doc
```

(If the disk is not in drive A, substitute the drive letter of the drive that contains the disk for the first letter "a".) If necessary, press Control-S to pause scrolling and then press any key to resume scrolling. △

Before you install AppleShare PC, make copies of the master disks provided and then store them in a safe place. Use the copies to install AppleShare PC on your system.

### 1. Format one or two floppy disks.

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If you use 3.5-inch disks, format one disk. If you use 5.25-inch disks, format two disks.

If you have questions about formatting a floppy disk, refer to your DOS reference manual.

### **2. Use the DOS DISKCOPY statement to copy the AppleShare PC disks.**

The first parameter of the statement is the source drive and the second is the destination drive. For example, if you have a computer with two 360K floppy disk drives and the original AppleShare PC disk is in drive A, and the formatted blank disk is in drive B, type

```
DISKCOPY A: B:
```

### **3. Label the copies.**

Label the copies *Copy of AppleShare PC Workstation Installer Disk*. If you use 5.25-inch disks, label the first disk *Disk 1* and the second disk *Disk 2*.

### **4. Store the originals in a safe place.**

---

## Setting up a 360K floppy disk system

If your computer uses two 360K drives, you need two formatted disks to install the AppleShare PC program. One disk is used as your startup disk, and will contain DOS files and some of the AppleShare PC files. The other disk is your applications disk and will contain the remaining AppleShare PC files. When you run AppleShare PC using the startup disk, the AppleShare programs on that disk are loaded into memory. You then insert the applications disk and type `ASPC` and the remaining AppleShare files are loaded.

### **1. Format two 360K disks. Format one of them with the /s option.**

If you have questions about formatting a floppy disk, refer to your DOS reference manual.

Format one of the disks using the DOS command `format /S`. This command copies DOS system files onto the disk allowing you to use it to start your computer. This disk is your working startup disk.

- ❖ *Note* : You might be able to use your current startup disk as your AppleShare PC startup disk if that disk has space available. The amount of space that you will need depends on which services you are installing. If you plan to install all of the AppleShare services, including file and print services, the AppleShare files will occupy approximately 250K of the startup disk. If you plan to use only some of the services, the amount of space you need will be less. If that much space is available on your current startup disk, do not format a new startup disk. Instead, use your current disk as the destination startup disk during installation.

**2. Label the disks.**

Label the system disk "The AppleShare PC Startup Disk." Label the second disk "The AppleShare PC Application Disk."

---

## Setting up a high-density, floppy disk system

If your computer uses a 720K, 1.2 megabyte (MB), or 1.44 MB drive, you need one disk formatted with system files.

**1. Format one disk with the /s option.**

If you have questions about formatting a floppy disk, refer to your DOS reference manual.

Format a disk using the DOS command `format /s`. This disk will be your working startup disk.

**2. Label the disk.**

Label the system disk "AppleShare PC Startup Disk."

---

## Setting up a hard disk system

If your computer uses a hard disk, you do not need to make any special preparations to install AppleShare PC.

---

## Installation tips

Use the following tips to make installation easier:

- Answers on the screen that are highlighted are the default or recommended answers. If these are appropriate responses for your system, press Enter.
- Use the arrow keys to highlight items on menus.
- Use the arrow keys to select "Yes" or "No."
- Press the Enter key after each selection.
- Cancel the program at any time by pressing the Escape key.
- Remember to set Num-Lock off to be able to use the arrow keys on the numeric keypad.

---

## Running the installation program

Use the following instructions to assist you in using the installation program.

**1. Turn on your PC and load DOS.**

If your computer loads a customized menu automatically, exit to DOS.

**2. Insert the AppleShare PC Workstation Installer Disk into a floppy disk drive.**

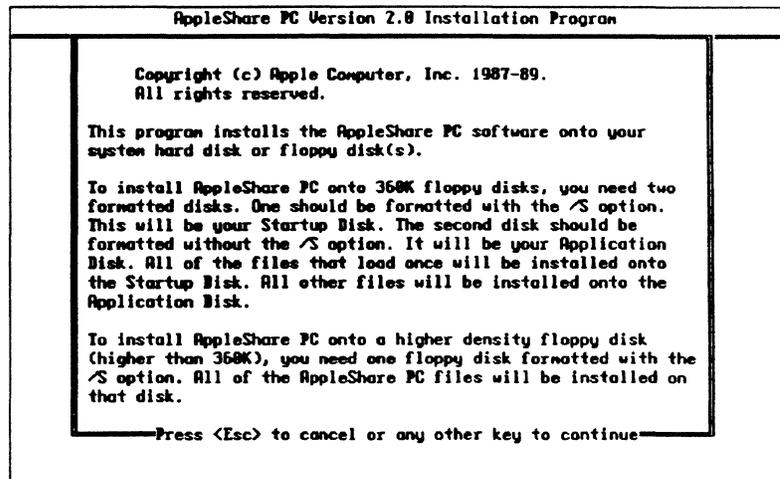
If you are using 5.25-inch disks, insert Disk 1 into one of your floppy disk drives.

**3. Type `install` preceded by the drive designator and press Enter.**

For example, if you placed Disk 1 in drive A, type `a:install`. The first screen of the installation program will display. (See Figure 2-1.)

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- **Figure 2-1** The first screen of the installation program



#### 4. Read the first two introductory installation screens.

The first two screens describe the installation process and what you need to install AppleShare PC.

#### 5. Type the drive letter that contains the AppleShare PC *Workstation Installer Disk* and press Enter.

After reading the information on the screen, tell the installation program which drive contains the AppleShare PC installation disk. Use the drive letter that DOS recognizes for that drive. Under most circumstances, drive A contains the installation disk.

#### 6. Type the drive letter for the drive that is to contain the AppleShare PC software and press Enter.

Use the drive letter that DOS recognizes for that drive. If you are using a floppy disk system and your second drive is the B drive, type B. If you are using a hard disk that is drive C, type C. In any other case, type in the drive letter that is to contain the AppleShare PC software.

#### 7. Verify that you have typed in the correct drive letters.

If the screen does not show the drive letters of the drives you are using,

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answer No. You will be able to reenter the correct drive letters.

### **8. Choose a mode of installation—which services and programs to install.**

Select one of the five choices of services that you want to install.

The first, second, and third options offer combinations of file and print services. You can choose both file and print services or you can choose one without the other. If you do not have a file server installed on your network, select "Install Print Services only." If you will not be using print services, select "Install File Services only." Note that you can use print services if you have an AppleTalk printer such as a LaserWriter connected to your network.

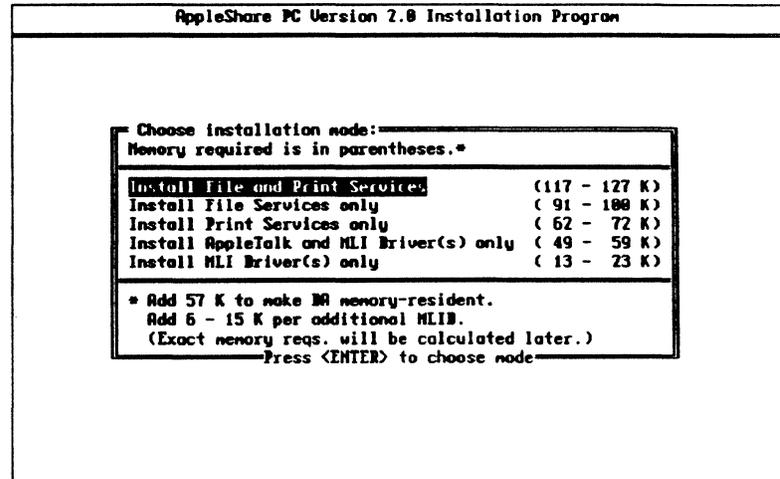
The fourth and fifth options on the menu are provided for use with third-party software packages that use AppleTalk files or the MLI drivers. Refer to the installation instructions for those products if this is the case.

If you are installing AppleShare PC from the two 5.25-inch disks and you choose options whose files are on both disks, the installation program will prompt you to swap the installation disks in the drive.

Figure 2-2 shows the list of options. (The ranges of memory requirements may differ with your version of AppleShare PC.)

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■ Figure 2-2 Installation modes



### 9. Select the driver to use with your communications card.

Choose among the drivers listed on the screen one or more that are compatible with your network media.

If you are using the LocalTalk PC Card, choose between LTALK, the interrupt-driven driver, or LTALKP the polled driver, which does not use interrupts.

LTALKP is the recommended driver for use with the LocalTalk PC Card because it is less likely to interfere with other interrupt-driven cards in your computer. You are most likely to avoid conflicts with cards using the COM1 or COM2 port, such as those used to connect a modem or a mouse.

Use the following keys to select drivers:

- Press the Insert key to select an MLID.
- Press the Delete key to deselect an MLID.
- Press F1 to see information about a selected MLID.
- Press Enter when you finish.

Figure 2-3 shows an example list of MLIDs to choose from.

■ Figure 2-3 An example list of MLI drivers



**10. If you selected more than one MLID, select a default driver.**

AppleShare PC can only connect to one network at a time. If you have selected more than one driver, select the one that you want to use when you start network services.

Use the same keys to select the driver that you used in the previous screen.

Figure 2-4 shows an example screen to select a default driver.

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- **Figure 2-4** Selecting a default MLID



### 11. Choose whether or not to make the DA memory-resident.

See "Making the DA Memory-Resident" earlier in this chapter for more information.

### 12. Name a destination directory for your AppleShare PC files.

If you are installing onto a 360K floppy disk, the AppleShare PC files will automatically be placed in your root directory. You will not name a destination directory. Skip this step and continue with step 12.

If you are installing onto a high density floppy disk, it is recommended that you use the root directory. If you are installing onto a hard disk, it is recommended that you use the subdirectory suggested on the screen.

If the drive letter that shows up on the screen is not the drive you want to use, cancel the installation process and return to step 2.

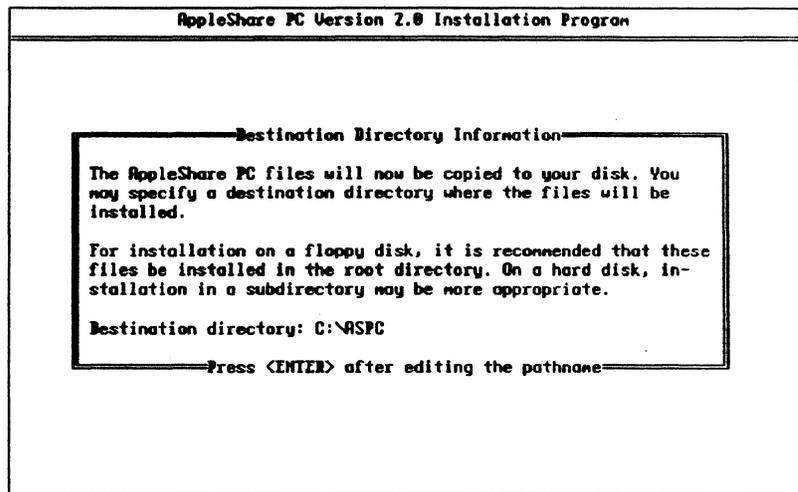
Use standard editing keys to type and edit the directory name.

If you use an existing directory as your destination and you are installing from the 5.25-inch disks, the installation program prompts you to swap disks in the disk drive.

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Figure 2-5 shows the screen as you name a destination directory.

■ **Figure 2-5** Naming a destination directory



**13. If you are creating a new directory, verify that you want to do so.**

If you are installing AppleShare PC from the 5.25-inch disks, the installation program prompts you to swap disks in the disk drive.

**14. Configure the MLIDs.**

Check your communications card user guide or installation guide to determine the correct configuration. Keep a note of the specifications that you select because you may want to modify them later to accommodate changes to your system.

You can configure the drivers either by selecting from a menu of configurations or by indicating the settings of the DIP switches on the screen. The highlighted entry that first appears shows the card's default configuration.

To use the menus, highlight the menu item that applies to your card. To set DIP switch settings, use the Arrow keys to select a switch and move it to its On or Off position.

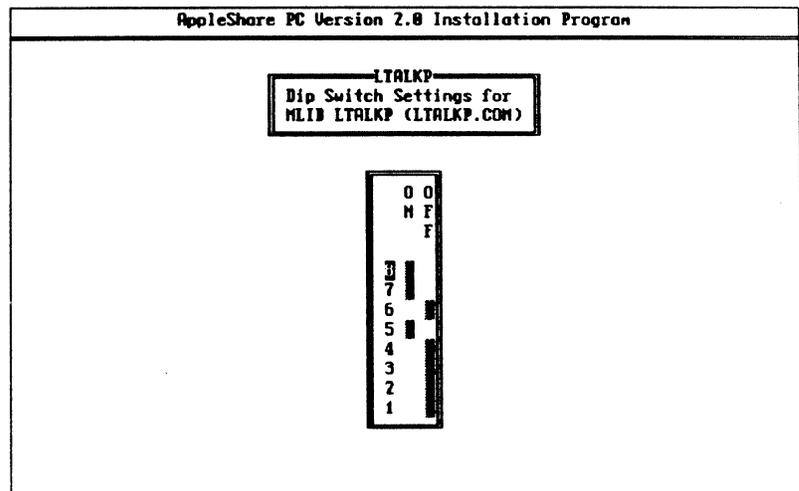
## CONFIDENTIAL

Press Enter to accept the configuration displayed on each screen. Press Enter a final time to accept the entire configuration.

After you press Enter the final time, the installation program creates or updates the NET.CFG file, which contains more information about configuring the drivers and AppleTalk files. For a description of the NET.CFG file, see Appendix C.

Figure 2-6 illustrates a DIP switch configuration.

- **Figure 2-6** A DIP switch configuration



### 15. Choose whether or not to have network services loaded automatically.

See "Loading AppleShare PC Automatically" earlier in this chapter for more information about this choice.

You have now completed the installation of AppleShare PC. Go to Chapter 3 to learn how to use your new network services.



## Using AppleShare PC

**T**HIS CHAPTER GETS YOU STARTED WITH APPLESARE PC AND WITH THE AppleShare PC Desk Accessory (DA). It describes how to load AppleShare PC on your system, gives an overview of the DA and ANET, and familiarizes you with the structure and commands of the DA.

---

## Starting services manually

If you chose not to load network services automatically, start your PC as you normally do. At the DOS prompt, type the names of the batch files that execute the services you want to use.

- Type `AMLID` to install MLIDs only.
- Type `AFILE` to load file services only.
- Type `APRNT` to load print services only.
- Type `ABOTH` to load both file services and print services.

You can also call a batch file to remove AppleShare PC files from memory:

- Type `AOFF` to remove all AppleShare PC files loaded after `ASHARE.COM`.

To remove `ASHARE.COM`, you must turn your computer off.

If `ASHARE.COM` is not removed, `LSL.COM`, `ATALK.COM`, any loaded MLI drivers, and any other files loaded before `ASHARE` will not be removed.

---

## Starting services automatically

If you chose to load network services automatically, use your startup disk to begin using AppleShare PC.

---

### Starting your PC from a floppy

To use AppleShare network services, start your PC using the "AppleShare PC Startup Disk." Once you start your PC using this disk, you can use the Desk Accessory (DA) and command line interpreter at any time without restarting your computer.

#### 1. Insert your "AppleShare PC Startup Disk" into drive A.

If your PC is running and was started with a disk other than the "AppleShare PC Startup Disk", remove that disk first.

#### 2. Restart your PC.

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Turn your computer off and on again, or press Ctrl-Alt-Del.

The computer starts and executes the AUTOEXEC.BAT file on the disk. If you are using a high-density drive and have installed the DA as a memory-resident program, it is now in your computer's memory and ready for use. If you are using a PC with a 360K drive and have installed the DA as a memory-resident program, you are prompted to remove the "Startup Disk" from drive A and insert the Applications Disk. After you've done this, type `ASPC` and press Enter. The remaining AppleShare files are loaded into memory.

---

### Starting your PC from a hard disk

To access network services with AppleShare PC, you must start your computer using your hard disk with the AppleShare PC files installed on it.

- **Restart your PC.**

Turn your computer off and on again, or press Ctrl-Alt-Del to restart your PC.

The computer starts and executes the AUTOEXEC.BAT file in your root directory. If you installed the DA as a memory-resident program, it is now in your computer's memory, ready for use.

---

### Starting the DA

How you start the DA depends upon whether you have installed it as a memory-resident program. If you are using a PC with 360K drives, insert the "Application Disk" in drive A.

- If the DA is memory-resident, press Alt-A.
- If the DA is not memory resident, type `DA` from the DOS prompt and press Enter.

If you are using 360K drives, remove the "Startup Disk" from drive A when prompted to do so, and insert the "Application Disk." Then type `DA` and press Enter.

The DA appears with the the Chooser window open.

---

## The DA and ANET

The DA and ANET, the command line interpreter, are your interfaces to the AppleTalk network services. With the DA or ANET you can log on and log off of AppleShare servers, work with server volumes, perform file and directory operations, and connect to network printers. The DA uses a window-style display that allows you to select and perform network operations. You can use ANET to execute network commands at the DOS prompt or from batch files.

---

### Using the DA

The DA is made up of **windows** or screens. If the DA is memory-resident, you can use the DA windows without exiting from a running application. The names of the four primary DA windows appear at the top of the screen.

Many of the DA windows consist of several **panes**, which are selection boxes containing information for you to edit or select from. There are three kinds of panes. **List panes** display a list of items to select from, such as the names of file servers. **Edit panes** allow you to enter information from the keyboard, such as your registered name or password. **Toggle panes** allow you to choose between two alternatives, such as choosing between logging on to a server as a guest or as a registered user.

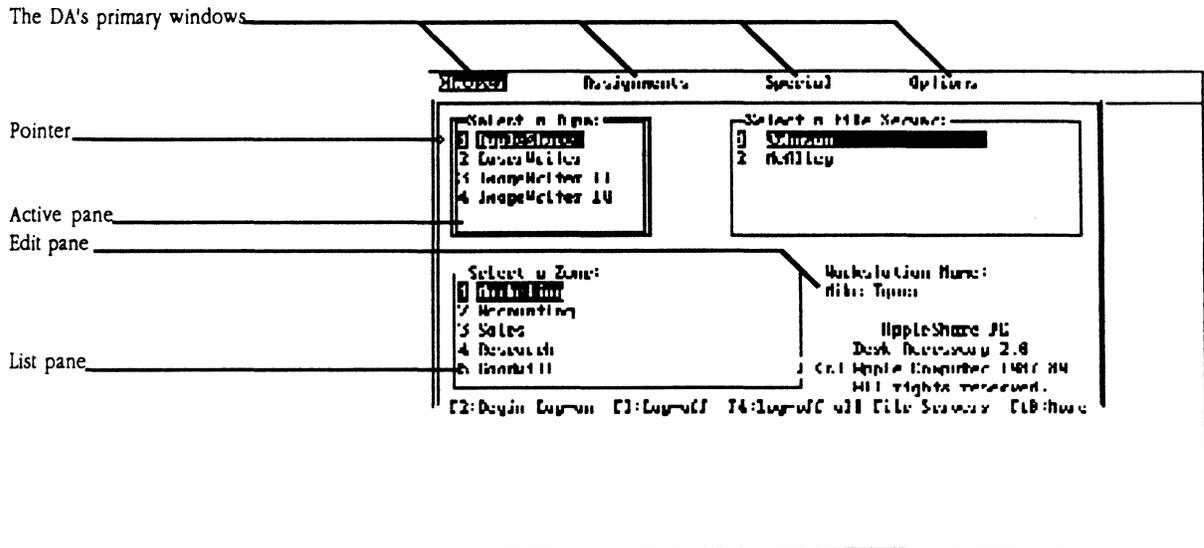
Figure 3-1 shows the Chooser window. The Chooser window contains three list panes labeled *Select a Type*, *Select a Zone*, and *Select a File Server*. The window also contains an edit pane called *Workstation Name*.

The Type pane is **active**, as indicated by the border around it. The first item in the pane is highlighted and a pointer appears in its left margin, indicating that it is the current selection.

When arrows appear on the pane's right edge, more items are available but are not shown. An active edit pane has a blinking cursor, and a pointer appears at the left margin.

- ❖ *40-column display:* The figures in this guide show the AppleShare PC Desk Accessory as it appears on an 80-column display. What you see on a 40-column display is somewhat different. The DA functions the same no matter which display you are using.

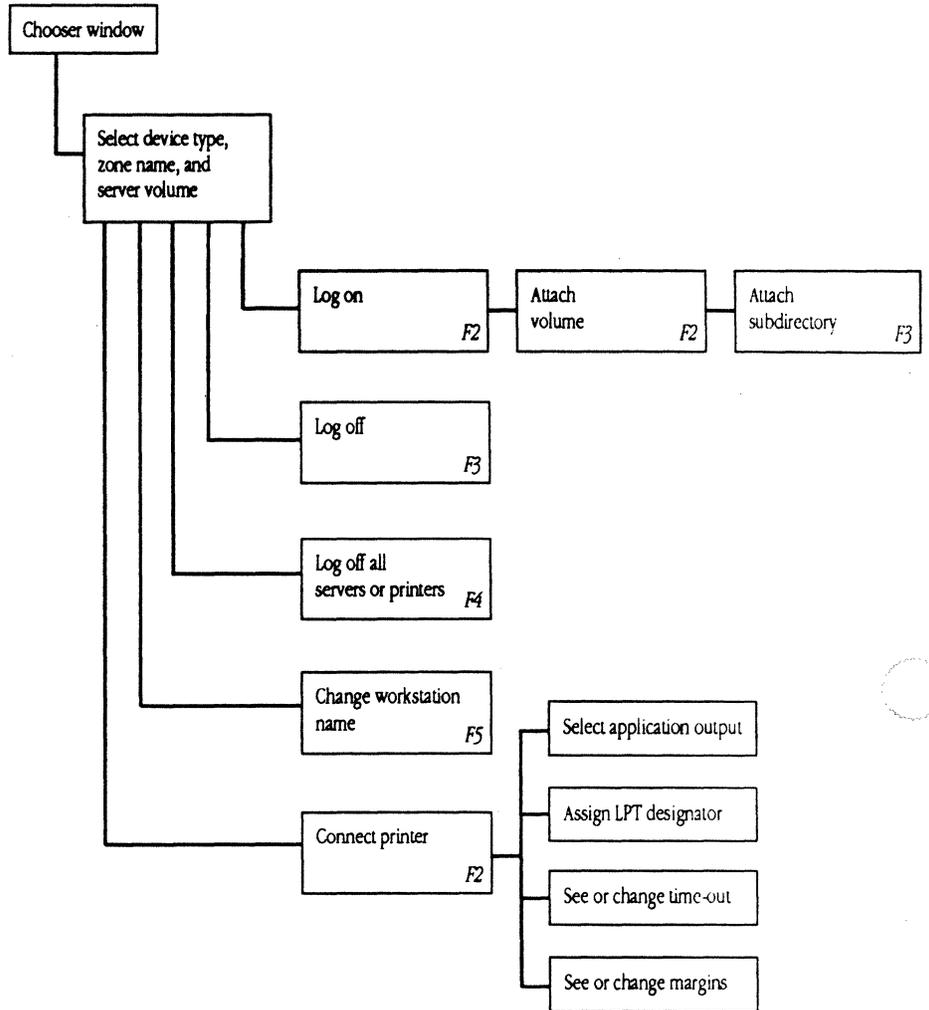
■ Figure 3-1 The DA Chooser window



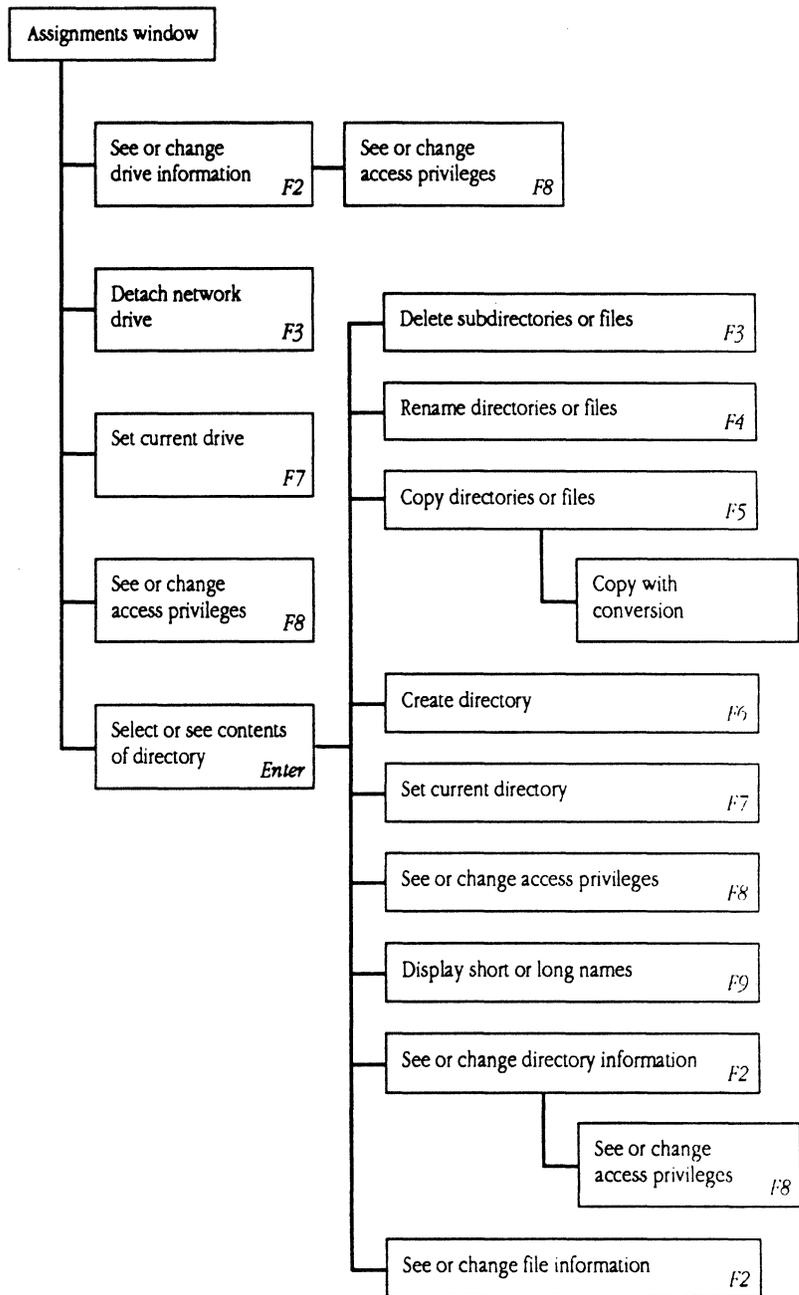
Each of the primary DA windows has one or more auxiliary windows. You can move up and down through the hierarchy of windows by selecting a window and pressing Enter, and by pressing Escape to return to a previous window. Pressing Escape in a primary window closes all of the DA windows and returns you to your previous activity.

Figures 3-2, 3-3, 3-4, and 3-5 are maps of the four primary DA windows: the Chooser window, the Assignments window, the Special window, and the Options window.

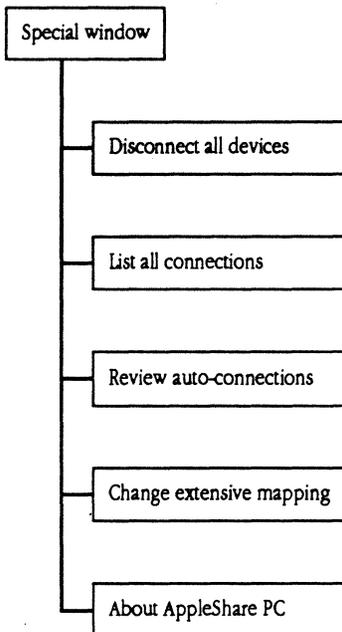
■ Figure 3-2 Organization of the Chooser window



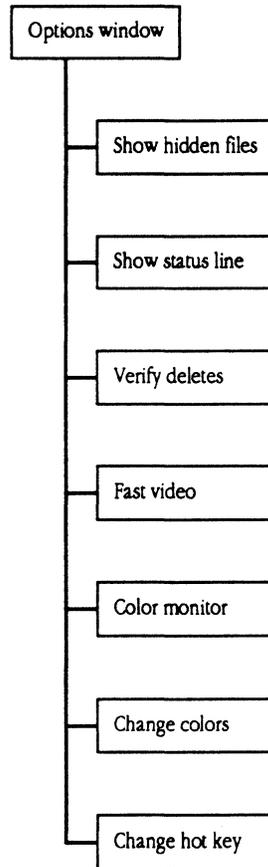
■ Figure 3-3 Organization of the Assignments window



■ Figure 3-4 Organization of the Special window



■ **Figure 3-5** Organization of the Options window



---

## Frequent DA keystrokes

Use the following list of frequently used keystrokes to navigate through the DA:

<b>Keystroke</b>	<b>Function</b>
F1	Display help screen
Enter	Accept selected item; move to next pane, in multipane window; show additional choices, in single-pane window
Tab	Activate next pane
Up/Down Arrows	Select item in list pane
Right/Left Arrows	Select one of the DA primary windows; toggle between selections in a toggle pane
List item number	Select an item in a list pane
List item letter	Select an item in a list pane
Shift-Tab	Activate previous pane
Escape	Exit current window; return to previous window
Ctrl-C	Exit the DA and return to previous operations
Function keys	Initiate commands displayed at the bottom of the screen.

---

## Getting help

Each window in the DA has its own on-line Help window. When you choose it, you are given a brief explanation of what your current options are.

Press F1 at any time to get help.

---

## Assigning a workstation name

Each computer running AppleShare PC has a name that identifies it to other users on the network. This is the workstation name and is different from the user name that you enter during the log-on process.

The first time you run AppleShare PC, your computer is assigned the default workstation name "Untitled." You should change this to a name that will identify you on the network. Check with your AppleShare administrator before you change the workstation name because one may have already been assigned for you.

If desired, you can revise the workstation name at any time.

The workstation name can be up to 31 characters long and can contain almost any character. If the name you want to use is already taken by another workstation on the network, the DA appends a digit to the end of the name. For example, if the name you want to use is HILL, and that name is already in use, the DA assigns the name HILL1 to your workstation. If you don't want to use that name, use standard editing keys to type in a different name.

- ❖ *ANET equivalent:* To assign a workstation name, you can also use the ANET NAME command to name your workstation. See Chapter 7 for an explanation of the ANET program and the NAME command.

Follow these steps to enter a workstation name:

### 1. Start the DA.

Press Alt-A if the DA is memory-resident, or type DA at the DOS prompt.

When the DA appears for the first time, it displays the Chooser window. If you have already started the DA and a different window is showing, use the Left Arrow key to display the Chooser window.

The Workstation Name pane appears at the lower right of the Chooser window. If the name currently displayed in the Workstation Name pane is satisfactory, you can skip steps 2 through 4.

### 2. Press F5 to activate the Workstation Name pane.

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A blinking cursor to the right of the current name indicates that the Workstation Name pane is active. On a monochrome monitor, the name is underlined.

- ❖ *Note:* You can press Escape at any time before step 4 to cancel the name change.

### **3. Press Ctrl-Backspace to delete the current name, and type the new workstation name.**

You can use the Backspace and Right and Left Arrow keys to edit the new workstation name.

### **4. Press Enter to record the new workstation name.**

A message appears briefly to report that the new name is being registered. This name will now appear in the Workstation Name pane whenever you use the DA.

---

## Running programs

Most programs operate correctly when you run them from a file server, and they work successfully with data files stored on a server volume. Some current software, however, is not “network-aware,” and might not correctly handle situations common to a network.

For example, a typical network situation involves two users trying to open the same file at the same time. To be network-aware, a program has to be able to keep files open for their original users, and either exclude or properly manage additional users.

---

### Using multi-user programs

If you're using a multi-user program (one that allows and correctly coordinates several users updating the same file simultaneously), you must install SHARE.EXE on the startup disk of your PC according to the instructions that come with the multi-user program. SHARE.EXE adds concurrent-use capability to DOS.

SHARE.EXE is included with DOS version 3.1 and later versions.

---

### Using standard programs

Programs stored on file server volumes generally run correctly if they're stored in directories to which you have both the See Files and Make Changes privileges. (See "Honoring Licenses," later in this section.) Many programs also run correctly when you run them from directories where you can't make changes. To see if this is the case for a particular program, you'll have to experiment. Try typical program operations such as opening and printing a file, and storing changes to a file in a different directory.

---

### Using files with programs that aren't network-aware

Many current PC programs let more than one person access and change a file, but some of these programs don't correctly manage the file while it's in use. As a result, the file can be destroyed or garbled.

When you want to modify a file stored in a server directory to which several users have access, before you open the file, move it to a directory to which you alone have access privileges. (Use the DA Rename command to do this.) When you've finished using the file, move it back to its original location.

If you want several users to have simultaneous read access to files stored on file server volumes, mark such files read-only and store them in a directory to which no one has the Make Changes privilege. (You can set the read-only attribute through DOS or through the File Info window in the DA.)

For more information about setting access privileges, see "Access Privileges" in Chapter 4.

---

### Honoring licenses

Be sure to check the license that comes with a software package before you install the software on a server volume. Most software copyright holders provide a license for the use of their products rather than sell copies free of any restrictions; the license often limits your use of the software to a single computer.

For more information on the limits of a particular license, contact the copyright holder or the software distributor.



## File Services

**T**HIS CHAPTER SHOWS YOU HOW TO USE FILE SERVICES ON AN APPLE TALK network using the DA. With the DA, you can log on to network file servers, execute directory and file operations, ensure privacy for your directories, and share files with other users on PCs, Macintosh computers, and other AppleShare-capable computers on the network.

Certain computers on your network, the servers, have been designated to provide file services. These servers have one or more hard disks, or volumes, on which you can store directories, data files, and applications.

To set up an AppleShare server on the network, someone in your organization, called the **administrator**, designates a computer to be the file server and installs the AppleShare file server software on it.

While setting up the server, the administrator names the server and each of the server volumes. If the administrator submits your name to the server, you are a **registered user**. If not, you may still use the server as a **guest**. If you are a registered user, you are also given a **password**, to keep others from using your name to gain access to the server.

Since the network connects multiple users to multiple server volumes, users often need to control access to their files. AppleShare PC allows users to set **access privileges** for the directories on AppleShare server volumes, ensuring privacy.

If you've made the DA memory-resident, you can start using it by pressing a hot-key combination; otherwise you can type `DA` at the DOS prompt. You then use the DA to **log on** to a file server, select server volumes, and **attach** DOS drive letters to them. The volumes are then available to you. You can also use the DA to connect to printers on the network.

Alternately, you can use the ANET command line interpreter to log on to a server, attach server volumes, and perform many other network operations.

Using network file server volumes is similar to using local disk drives. Files and directories can be created, copied, deleted, renamed, and so on. You can use standard DOS commands for many of these operations. You can use the DA or ANET to perform other network operations such as setting access privileges, and viewing server volume attachments.

---

## Connecting to a file server

To start a session with a file server, take these steps:

1. Select a file server.
2. Log on to the file server.
3. Attach a drive letter to a volume.

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- 4. Establish automatic connection (optional).

---

## Selecting a server

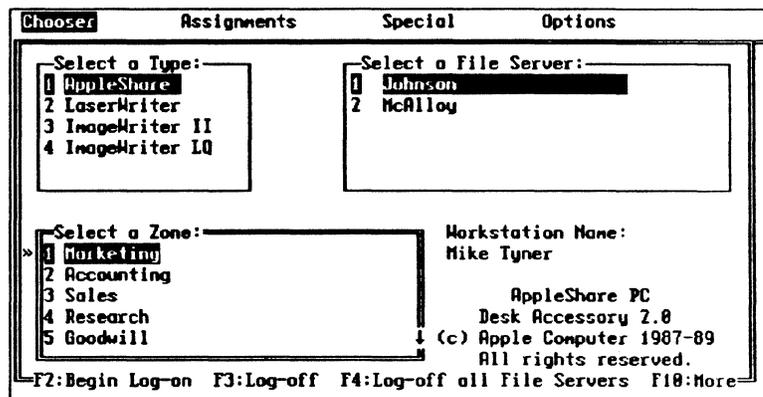
To select a file server, use the panes showing in the Chooser window.

### 1. Display the Chooser window.

The first time you use the DA, the Chooser window is displayed. After the first time, the DA displays the last window that you used the last time you were in the DA.

If you have already started the DA and a different window is showing, use the Left Arrow key to switch to the Chooser window. Figure 4-1 shows the Chooser window.

■ Figure 4-1 The Chooser window



The Chooser window contains three list panes in which you select a server type, indicate the zone that the server is located in, if applicable, and select the file server itself.

### 2. Make the Select a Type pane active.

The Select a Type pane is active when it has double lines around it. If it is not active now, use the Tab key to switch panes until the Select a Type pane becomes active.

**3. Select AppleShare in the Select a Type pane and press Enter.**

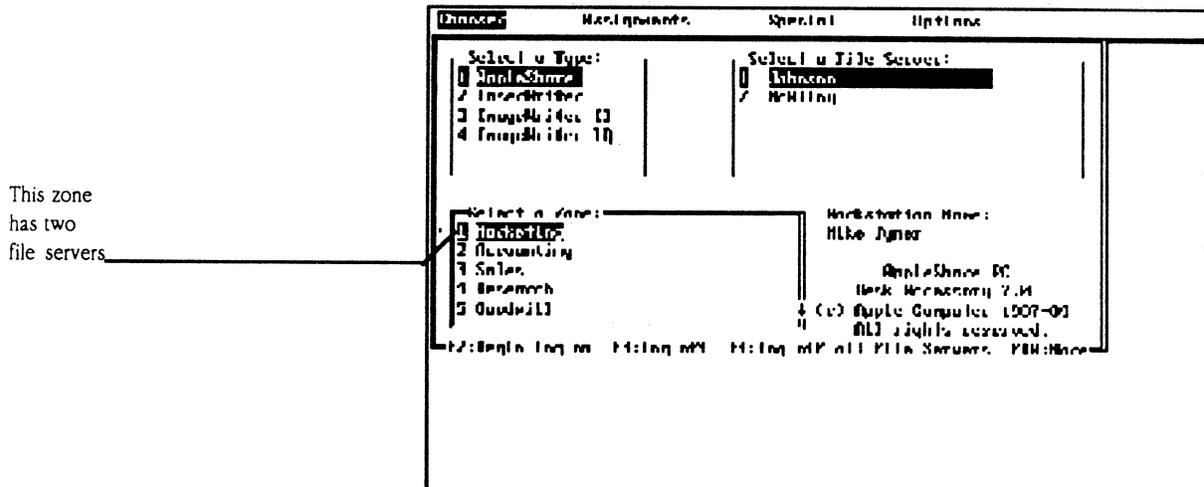
The Select a Type pane lists the types of devices you can use on the AppleTalk network. AppleShare and your printers are shown in the Type pane. (See Figure 4-2.)

When the items in a list pane are numbered or lettered, you can select them and go on to the next step by pressing its number or letter. The choice you make in this pane determines what appears in the Select a File Server pane.

If your network has zones, the Select a Zone pane is now active. Continue with step 3.

If your network does not have zones, the Select a File Server pane is now active. Skip the next instruction, and continue with step 4.

■ **Figure 4-2** The Select a Type pane active in the Chooser window



**4. Select the zone that contains the file server you want to use and press Enter.**

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If your network contains zones, the zone pane is now active. The first zone in the list is always the one that contains your PC. Scroll through the list of zones using the Up and Down Arrow keys, or view the next screenful by pressing the PgUp and PgDown keys. The small arrows along the right edge of a pane tell you the directions in which you can scroll.

After you select a zone, the Select a File Server pane becomes active.

### 5. Select the file server you want to use and press Enter.

In the Select a File Server pane, select the name of the file server that you want to use. You can type the number of the server or select the item and press Enter.

An asterisk to the left of a file server name indicates that you are logged on to it.

- ❖ *Note:* If you want to change any of the selections you made in the Chooser window, you can use the Enter or Tab key to switch panes; Shift-Tab activates the panes in reverse order.

---

## Logging on

Before you can use the server, you must identify yourself as a registered user or a guest. A registered user has been registered by the AppleShare administrator and has been given a password. Registered users can set access privileges for their directories. Guests on the server may be allowed to view public directories and store information on the server.

- ❖ *Note:* Some servers are set up so that only registered users can use the information they contain. You cannot use these servers as a guest. If you are not a registered user on a server that contains information you want to use, see the administrator— you may be able to get a registered user name and password.

### Logging on as a guest

When you log on as a guest

- You can use only those volumes that allow guests to use them.
- You can use only those directories that everyone has access to.

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- Any directories that you create on the server, and the contents of those directories, are accessible to all users.
- You cannot create directories accessible only to yourself.
- Directories that you create can be confiscated by any registered user and made private — denying you access to any files you've placed in them.
- You can transfer ownership of your directories to any registered user.

### Logging on as a registered user

When you log on as a registered user

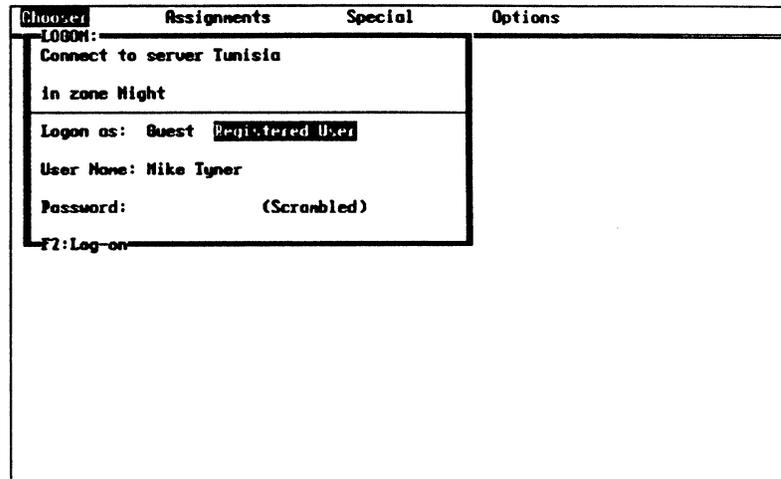
- You can create directories that only you can access, that only members of a specific group can access, or that anybody can access.
- You can set access privileges for your directories.
- You can transfer ownership of any directories to any user.

To log on to a server, follow these steps:

#### 1. In the Chooser menu, press F2.

Press F2 to begin logging on to the file server that you selected. After you press F2, the Log-On window appears. (See Figure 4-3.)

■ Figure 4-3 The Log-On window



**2. Enter your log-on status and press Enter.**

Use the Right or Left Arrow key to select either Guest or Registered User status.

If you select Guest status, the User Name and Password panes disappear. Continue with step 5 to complete the log-on process.

If you selected Registered User status, the User Name pane becomes active and the name most recently entered on the computer appears in the pane with a blinking cursor immediately to its right. By default, the workstation name appears in this pane if you are not currently logged on to this server.

**3. If you log on as a registered user, type your user name and press Enter.**

Press the Backspace key or press Ctrl-Backspace to delete the contents of the pane. Type in your user name exactly as provided by the AppleShare administrator. After you press Enter, the Password pane becomes active as indicated by a blinking cursor.

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- ❖ *About names and passwords:* The user name is not case-sensitive. The password is case-sensitive. Be sure to type in your password exactly as it appears in the registry. If your password is "Sunny" then "SUNNY" will not be accepted.

#### 4. Type your password and Press F2.

As you type, a series of asterisks appears in the pane so that your password remains private.

After you press F2, the information you entered in the Log-On window is scrambled as it is sent to the server so no one can pick it up through electronic eavesdropping.

If you log on as a registered user and the server doesn't recognize your user name or password, an error message appears. Press any key to continue, then try again. If the alert message is repeated, check with your AppleShare administrator to verify that you are registered for the selected server and that you are using the correct user name and password.

When you log on correctly, the Attach Volume to DOS window appears.

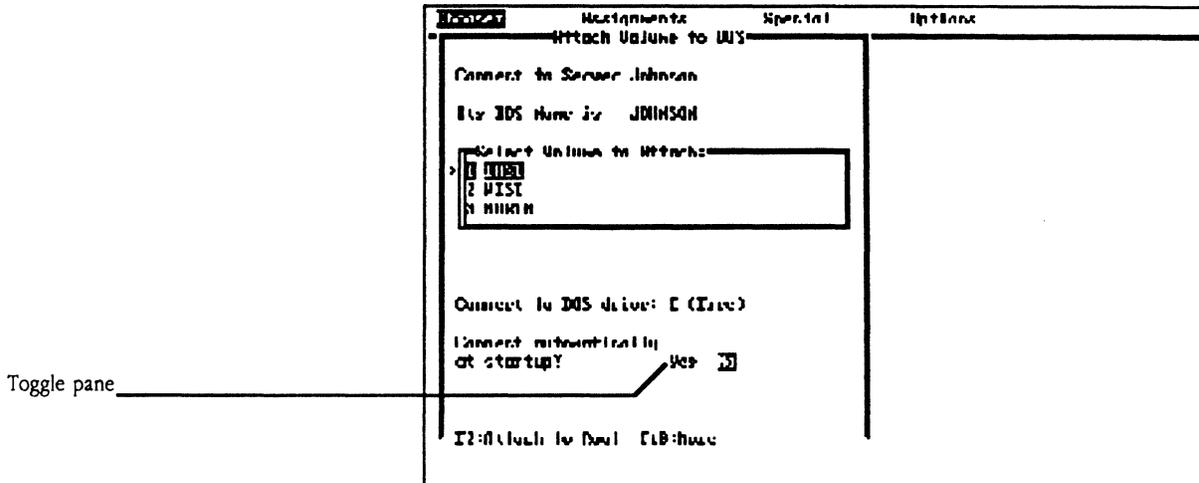
---

### Attaching a server volume

After you log on to a server, you connect to one or more server volumes by assigning a DOS drive letter (A, B, C, and so on) to each volume you want to use. You assign drive letters to the root directory or the subdirectories of the volume.

Use the Attach Volume to DOS window (Attach window) to assign and change the DOS drive letters of the volumes you want to use. When you finish attaching a volume, the DA returns to the top of the Attach window where you can repeat the attachment process and attach more volumes. You can have up to six volumes attached at the same time. (See Figure 4-4.)

■ **Figure 4-4** The Attach Volume to DOS window



The Select Volume to Attach pane displays the volumes attached to the server. If the server that you're accessing has one hard disk, the window displays one volume name. If the server you're accessing has two hard disks, two volumes are listed, and so on.

- ❖ *ANET equivalent:* Several DA operations have equivalent commands that can be executed by the ANET command interpreter. When this is the case, the equivalent command will be mentioned in a note such as this one. For example, you can use the ANET ATTACH command to attach server volumes. See Chapter 7 for an explanation of the ANET program and the ATTACH command.

### Attaching a DOS drive letter to a root directory

Perform the following steps to attach drive letters to the server volume's root directory:

1. **Select a volume and press Enter.**

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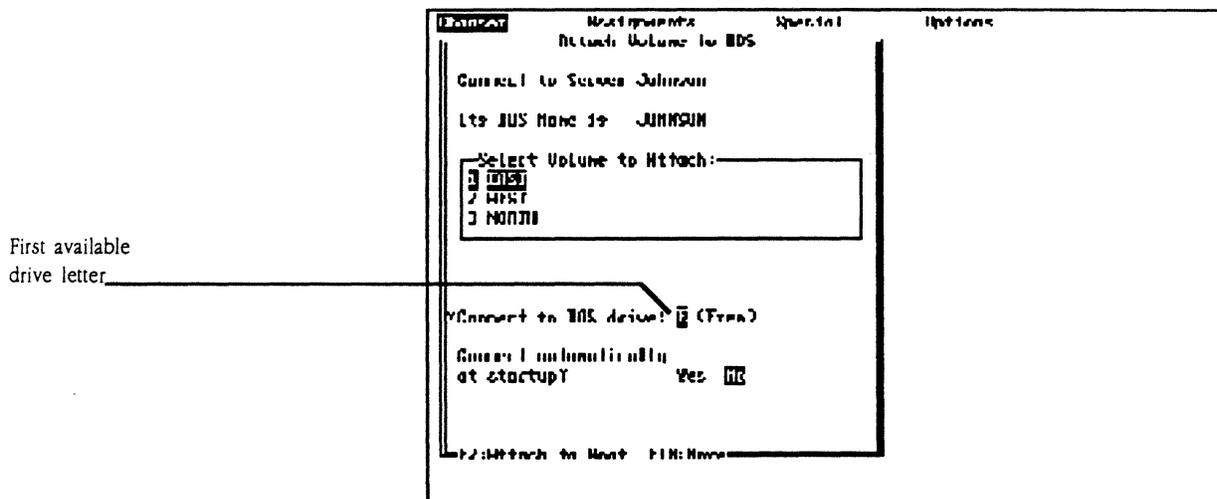
Use the Up and Down Arrow keys to scroll the list, if necessary, to find the volume name that you want.

After you enter your selection, the Drive pane becomes active in the Attach window. The next available drive letter automatically appears in the pane with its Free status displayed in parentheses to its right.

A blinking cursor next to the drive letter indicates that you can edit the letter. If you move the cursor to the left and type a drive letter, the type of server volume that is assigned to that letter is displayed.

Figure 4-5 shows the active Drive pane.

■ Figure 4-5 The active Drive pane



If the drive letter shows a Free status, it indicates that the letter has not been assigned. If no letter appears in the pane, all drive letters have been assigned so no letter is available.

You can use the DOS LASTDRIVE statement in your CONFIG.SYS file to make more drive letters available. Consult your DOS manual for more

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about the LASTDRIVE statement. If you modify the LASTDRIVE statement, see "Memory Considerations" in Chapter 7 of this guide.

If you type a drive letter that is already in use and then complete the attachment process, the DA will use your new letter designation and remove the previous assignment for that letter. If the drive letter was attached to a local disk drive, that disk drive will be unavailable until you detach the existing letter assignment.

The Verification window appears so that you can confirm the new attachment.

### **2. Select a drive letter and press Enter.**

Accept the drive letter displayed or edit the pane by typing a different letter.

When you press Enter, the Automatic Connect pane becomes active. Follow the steps in the section "Establishing Automatic Connections" later in this chapter to log on and attach a drive letter to a server volume automatically. For now, accept the default selection (No) and go on to the next step.

### **3. Press F2 to complete the attachment.**

When you press F2, the drive letter is attached to the root directory of the server volume. In the Drive pane, the word "AppleShare" replaces the word in parentheses to the right of the drive letter.

A message also appears in the status line noting that the connection has been completed.

### **4. Press Ctrl-C to exit the DA.**

Alternatively, you can keep pressing Escape until you see the DOS system prompt or the program you were using when you started the DA.

### Attaching a DOS drive letter to a subdirectory

In some instances you may want to attach a drive letter to a subdirectory on a server volume, rather than to the root directory. This is a useful technique if most of the information you wish to use on a server volume is located in a particular directory or its subdirectories.

- △ **Important** When you attach a letter to a directory or subdirectory, DOS views that directory as the root directory of the volume. This means that you can use any directories at or below the level at which the drive letter is attached, but you cannot access any directories at a higher level, including the actual root directory of the volume, unless you reattach to the root directory. △

Follow these steps to attach a drive letter to a subdirectory:

**1. Complete the information in the Attach window.**

Follow the instructions in the previous sections "Selecting a Server," "Logging On," and "Attaching a Server Volume." Then indicate whether you want to establish an automatic connection. (Establishing an automatic connection is discussed in detail later in this chapter.)

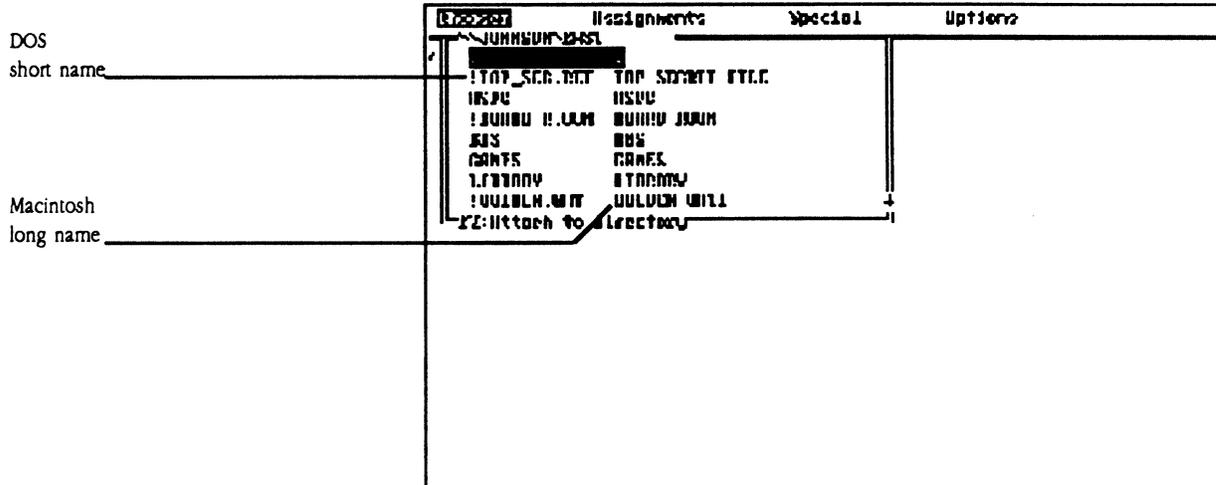
**2. Press F10 to view additional operations.**

Pressing F10 displays additional function-key operations at the bottom of the window. You do not have to press F10 to initiate the connection; it merely displays the additional function-key operations.

**3. Press F3 to see a list of subdirectories.**

When you press F3, a new window appears that contains a list of subdirectories in the root directory of the selected volume. (See Figure 4-6.) The window shows two names for every subdirectory: the left one is the DOS name, and the right one is the Macintosh name. For more information about equivalent DOS and Macintosh names, see "About Network File Names" later in this chapter.

■ Figure 4-6 List of subdirectories



**4. Select a subdirectory and press Enter.**

When a directory name is selected, press Enter to reveal any subdirectories that it contains. If a subdirectory has its own subdirectories, press Enter to move further down the directory tree until you reach the one you want. To move to a subdirectory's parent directory, select the entry that consists of two periods (..).

**5. Press F2 to complete the attachment.**

In a few moments, the word "AppleShare" replaces the word in parentheses to the right of the drive letter in the Drive pane. A message also appears in the status line noting that the connection has been completed.

If you see a message that tells you to modify the redirector options, see "Increasing Sessions and Server Volume Attachments" in Chapter 7.

**Establishing automatic connections**

When you log on to a server volume or subdirectory, you can tell the DA to log on to server volumes automatically whenever you start your PC. You can establish automatic connections with multiple file servers and print servers.

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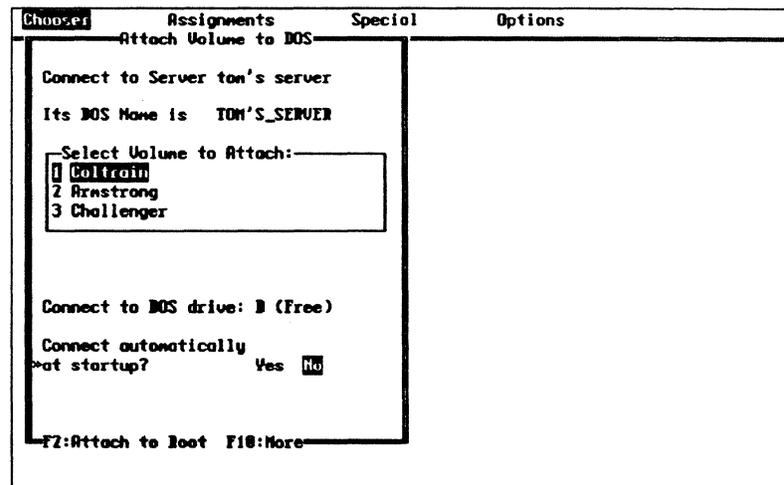
If you always use the same server volume or subdirectory, establishing an automatic connection is an efficient way to log on, attach a drive letter to the desired volume or subdirectory, and submit a password. If you often use different volumes or subdirectories, an automatic connection will probably not be as useful for you.

Follow these steps to set up automatic connections:

### 1. In the Attach window, move to the Automatic Connect pane.

Go to the Attach window by selecting information in the Chooser and Log-On windows. After you select the drive letter you want and press Enter, the Automatic Connect pane becomes active, as indicated by the pointer. (See Figure 4-7.)

■ Figure 4-7 The active Automatic Connect pane



### 2. Select Yes in the Automatic Connect pane and press Enter.

When you press Enter after selecting Yes, the Save Password pane appears at the bottom of the window. It asks if you want to save your password as part of the automatic connection.

**3. Select Yes or No in the Save Password pane.**

If you select Yes here, the DA uses your user name and password to log on automatically. If you are not the only person using your workstation, it is a good idea to select No. Automatically logging on with your password gives anyone who turns on the computer with your startup disk the same access to directories that you have.

**4. Press F2 to attach to a root directory or press F3 to attach to a subdirectory.**

When you complete the connection, a record of the connect information is saved on your startup disk.

The next time you turn on your PC using the startup disk, AppleShare PC automatically establishes your connection with the server volume or subdirectory you selected. If you did not save your password as part of the automatic connection, you are prompted to type the password during the automatic-connection process.

---

## Using the network

When you are logged on to a server, you can use some DOS commands to execute network operations. To use DOS, use the drive letter that you assigned to the volume that you want to access, and type the DOS command in its usual form. For example, if you want to copy a file named REPORT.TXT from a volume labeled L to your local volume labeled A, type

```
COPY L:REPORT.TXT A:REPORT.TXT
```

AppleShare PC also provides another way to execute network commands: the ANET command interpreter. You can use ANET commands to log on, to attach and detach server volumes, and to execute other network operations. See Chapter 7 for a complete discussion of ANET commands.

---

### About network filenames

Once you are logged on to a network file server, you have access to files created on DOS systems and Macintosh systems. These two systems use different file-naming conventions.

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DOS requires filenames to be no more than eight characters in length, plus an optional three-letter extension. Names cannot include special characters such as commas, colons, or blanks.

The Macintosh computer gives users more flexibility in naming a directory or file. For example, Macintosh names can be up to 31 characters long and can contain virtually any character.

AppleShare PC makes certain adjustments to allow you to use Macintosh files with names that contain unusual characters. The server keeps two names on hand for each directory and file—a **long name** for Macintosh users, and a **short name** for DOS users. When a Macintosh directory or file name is not in a form acceptable to DOS naming conventions, the DOS name is changed. The altered name starts with an exclamation point, and unusual characters are replaced with acceptable ones, such as underscores. The following list shows examples of how the server might create a DOS name from a Macintosh name:

Macintosh name	DOS name
MacFold	MacFold
My Special Folder	!MySpeci.alF
Report @ noon	!Report_n
Bank \$\$\$	!Bank

The DOS names are the names that you use to access these files. On your PC, type in any DOS filename exactly as it appears on the screen, including the exclamation point and extension. If a directory or file contains a character you can't type, rename it using the DA. See the section "Renaming a Directory or File" later in this chapter.

- ❖ *Macintosh directories:* Directories on a Macintosh computer are called **folders**. They function exactly as DOS directories do. They can contain files and other folders (subdirectories). The Macintosh computer uses folder icons to distinguish folders from files.

## Drive commands

You can use the DA to perform operations on and get information about the local disk drives connected to your PC, as well as AppleShare volumes and subdirectories. Most volume-level operations use the Assignments window.

### Listing drive information

The Assignments window lists all local disk drives and server volumes attached to your PC. It shows each active drive letter, along with the type and name of the device or connection it represents. (See Figure 4-8.) The current drive—the one that appears at the DOS prompt—is highlighted.

■ **Figure 4-8** The Assignments window

	Drive letter	Type/Device	Special	Options
Drive letter	A	Removable		
Device description	B	Removable		
	C	Fixed C:		
	D	AppleShare (SSUM'S SHARED)		
Current drive	E	AppleShare (SSUM'S SHARED)		
	F	AppleShare (SSUM'S SHARED)		
	G	AppleShare (SSUM'S SHARED)		
	H	AppleShare (SSUM'S SHARED)		
	I	AppleShare (SSUM'S SHARED)		
	J	AppleShare (SSUM'S SHARED)		
	K	AppleShare (SSUM'S SHARED)		
	L	AppleShare (SSUM'S SHARED)		
	M	AppleShare (SSUM'S SHARED)		
	N	AppleShare (SSUM'S SHARED)		
	O	AppleShare (SSUM'S SHARED)		
	P	AppleShare (SSUM'S SHARED)		
	Q	AppleShare (SSUM'S SHARED)		
	R	AppleShare (SSUM'S SHARED)		
	S	AppleShare (SSUM'S SHARED)		
	T	AppleShare (SSUM'S SHARED)		
	U	AppleShare (SSUM'S SHARED)		
	V	AppleShare (SSUM'S SHARED)		
	W	AppleShare (SSUM'S SHARED)		
	X	AppleShare (SSUM'S SHARED)		
	Y	AppleShare (SSUM'S SHARED)		
	Z	AppleShare (SSUM'S SHARED)		

Follow this step to list drive information:

■ **Select the Assignments window.**

The device type that is listed next to the drive letter in the Assignments window indicates that the drive is either Removable, Fixed, Unknown, AppleShare, or Network. Removable devices usually refer to floppy disks, Fixed devices are usually hard disks, and Unknown devices are any devices

that are not Removable or Fixed, such as RAM disks. AppleShare server volumes are given the AppleShare label, and non-AppleShare volumes are called Network volumes.

The names of local devices are the drive's volume label, and the names of network volumes are listed as a network path.

- ❖ *ANET equivalent:* You can also use the ANET ATTACH command to list server volume connections. See Chapter 7 for an explanation of the ANET program and the ATTACH command.

### Listing directories on a drive

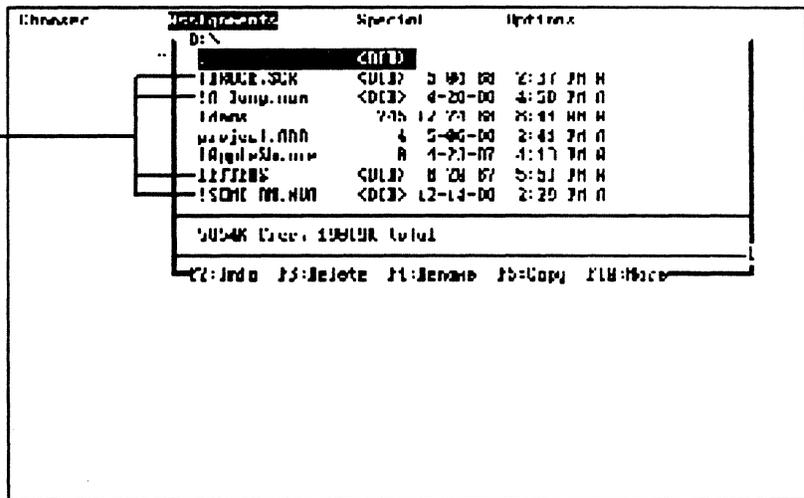
Follow these steps to list the directories of any of the server volumes that you have attached:

1. Select the Assignments window.
2. Select a drive and press Enter.

Select the drive whose directory you want to see. The current directory of the selected volume appears in the Directory window, as in Figure 4-9.

■ Figure 4-9 The Directory window

Directories in the selected volume



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If the list extends below the bottom edge of the window, a small arrow appears at the lower-right side of the window's border.

The directory listing shows the file and subdirectory names, their sizes in bytes, and for files, their creation dates.

If you see a second name in place of the file creation date, you have the Long Names option selected. See "Changing the Directory and File Display" later in this chapter to view the short names and file statistics in the Directory window.

**3. To see nested directories, select a directory name and press Enter.**

You can continue this procedure to view the various directory levels.

If a directory name is dimmed, you do not have privileges to see its contents.

**4. To go up a directory level, select the directory that consists of two periods ( .. ), and press Enter.**

This directory, called the parent directory, always appears second from the top of a subdirectory listing.

You may have to repeat this process several times if you want to return to the root directory.

---

### Setting the current drive

Follow these steps to set the current drive (the letter displayed at the DOS prompt):

- 1. Select the Assignments window.**
- 2. Select the drive to which you want to change.**
- 3. Press F7.**

The selected drive becomes the current drive.

---

## Directory and file commands

The DA provides a number of DOS file and directory utilities, such as copying, deleting, and renaming files or directories. The DA enhances some of these utilities to facilitate bulk operations and to give PC users access to Macintosh data files and Macintosh users access to PC data files. Most directory operations are initiated from the Directory window.

Within any selected volume, you can

- create directories and subdirectories
- set the current directory
- copy directories, subdirectories, and files
- convert DOS text file formats to Macintosh and vice versa
- delete directories and files
- rename a directory or file

When you have selected a directory within an AppleShare server volume, you can also

- view and change access privileges
- display information about the directory or file
- set the display to show short names, or both short and long names

---

### Creating a directory

Once you log on to the server, you can create directories on a volume of the server and use them for storing or sharing information. As with any DOS disk, you can create subdirectories within a directory to produce a hierarchy of directories. On the server, the highest level of the hierarchy (or root) is the volume itself.

When you create a directory on the server as a registered user, you are the directory's owner. Your directories are automatically set up as private directories, and only you can use the information contained in your directories until you tell the DA to give access to other users. (See "Access Privileges" later in this chapter for information about assigning access privileges.)

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Follow these steps to create a directory:

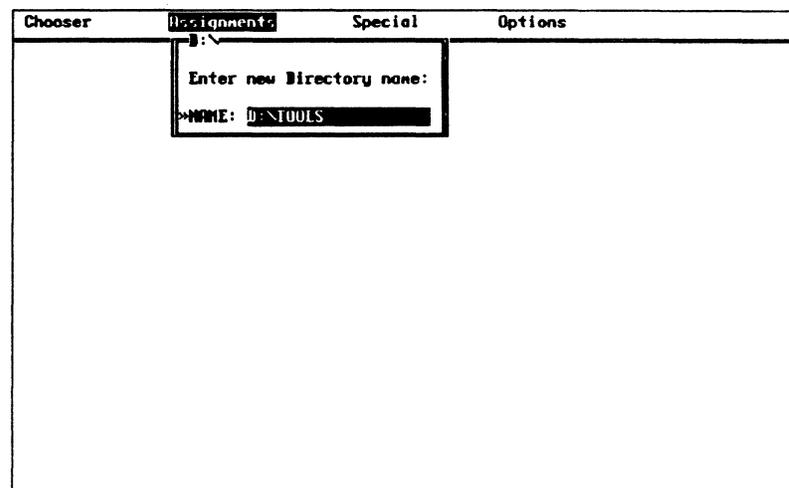
**1. In the Assignments window, select a drive.**

From the Assignments window, select the drive to contain the directory that you want to create. The Directory window opens, showing the current directory of the selected drive.

**2. Press F6.**

The New Directory window opens, as in Figure 4-10. It shows the current pathname.

■ **Figure 4-10** The New Directory window



**3. Type the name of the new directory and press Enter.**

Using DOS naming conventions, type the name of the new directory. You can also change or edit the pathname if you wish.

The new directory is created at the location specified in the pathname.

---

## Changing the current directory

Follow these steps to change the current directory:

**1. From the Assignments window, select a drive and press Enter.**

From the Assignments window, select the drive to contain the directory that is to become the current directory. The Directory window opens, showing the current directory of the selected drive.

**2. Select the directory you want to make the current directory.**

**3. Press F7.**

Although the contents of the Directory window do not change, the selected directory becomes the current one. The directory you specified remains current until you change it again with the DA or the DOS CHANGE DIRECTORY command.

- ❖ *If you display a path for your DOS prompt:* If the DA is memory-resident and you display the path as part of the DOS prompt, you may need to press Enter to see the new directory name.

---

## Copying a directory

You can copy the contents of a directory including its subdirectories. You can also specify whether the Macintosh text files should be converted to DOS text files, or vice versa, as they are being copied.

- ❖ *Note:* The Copy command copies only the contents of the current directory, not the directory itself.

**1. Select a drive in the Assignments window to display its directory and press Enter.**

The Directory window appears, displaying the current directory of the selected drive and listing several function-key operations at the bottom of the window.

If you want to copy a lower-level directory, continue the process of displaying levels until you see the desired directory.

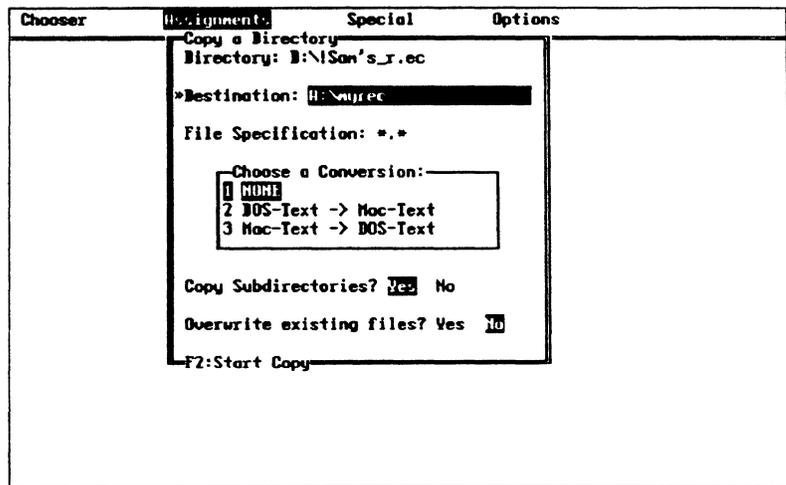
2. Select the directory whose contents you want to copy.

3. Press F5.

When you press F5, the Copy a Directory window appears (Figure 4-11). It displays the directory name and path at the top of the screen.

The Destination pane is active, as the blinking cursor indicates.

■ Figure 4-11 The Copy a Directory window



4. Type the desired pathname for the copy destination and press Enter.

Enter the destination in the same way that you would when copying with the DOS Copy command. The destination must not include file specifications such as asterisks and question marks.

When you press Enter, the File Specification pane becomes active. It contains the global characters, (\*.\*), which specify that all files in the directory should be copied.

5. Edit the file specification as desired and press Enter.

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The file specification allows you to determine which files are to be copied from the source directory to the destination directory.

To copy all files, press Enter to accept the default specification \*.\*. Or, you can edit the file specification to indicate the specific files to be copied. For example, if you want to copy all files with the extension .TXT, you can edit the pane to read \*.TXT. You can also use other DOS wildcard conventions such as the question mark.

When you press Enter, the Conversion pane becomes active.

### 6. Select a conversion option.

You can convert DOS text files to Macintosh text files or Macintosh text files to DOS text files. This is useful when you want to work with files created on a Macintosh computer or make files that you created in DOS available to a Macintosh computer user. The DA recognizes a file as DOS or Macintosh text by the extension in its filename on local disk drives, or by the file's **icon type** on AppleShare volumes.

If you select a conversion option (DOS text to Macintosh text or Macintosh text to DOS text), the DA will convert all the files of the specified type. Other files will be copied with no conversion.

You can also select None as the conversion option, and no files will be converted, regardless of their type.

When you enter the conversion option, the Subdirectory pane becomes active.

### 7. Select Yes or No to copy subdirectories.

If you select Yes, files that match the file specification and that reside within subdirectories are also copied. If you select No, only files on the top level of the directory are copied.

When you enter the selection, the Overwrite pane becomes active.

### 8. Select Yes or No to overwrite existing files.

If you select Yes in the Overwrite pane, this means that any existing files with names identical to those specified for copying will be overwritten.

### 9. Press F2 to start the copying process.

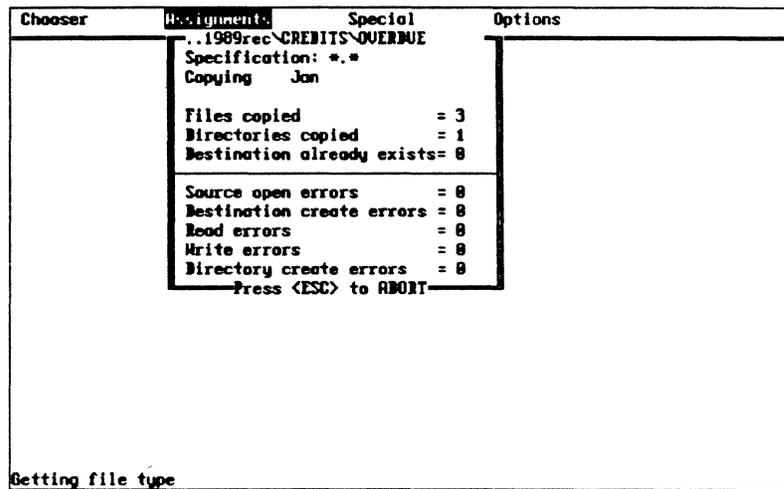
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When you press F2, the Copying Status window appears. It displays the copying status and shows the number of files and subdirectories copied while copying is occurring. This window also lists several error conditions that might develop during copying.

You can press Escape at any time during the copying process to cancel the copy.

Figure 4-12 shows the Copying Status window after a directory's contents have been copied successfully.

■ **Figure 4-12** The Copying Status window



**10. Press any key to return to the Directory window.**

The directory whose contents you just copied is still selected in the window.

---

## Copying a file

Copying a file from one drive or directory to another resembles the DOS Copy command, but you often have fewer items to type.

**1. In the Assignments window, select a drive and press Enter.**

The Directory window appears, displaying the current directory of the selected drive and listing several function-key operations at the bottom of the window.

If you want to copy a file from a subdirectory, continue the process of selecting a directory and displaying its contents until you see the filename you want.

**2. Select the file you want to copy.**

**3. Press F5.**

When you press F5, the Destination window appears as in Figure 4-13. It displays the current pathname of the file you selected for copying. A blinking cursor to the right of the pathname indicates that you can edit this information.

■ **Figure 4-13** The Destination window for copying a file



**4. Type the filename and press Enter.**

The pane shows the current pathname without a filename. Add a name for the file to make a copy in the current directory, or retype the entire pathname to make a copy in another directory.

If you only specify a destination directory, the filename will remain unchanged (as in the DOS Copy command).

When you press Enter, the Conversion window appears.

**5. Select None and press Enter to begin the copying process.**

You have the option to convert the file from DOS text to Macintosh text, from Macintosh text to DOS text, or to copy without any conversion. See the next section "Converting a File While Copying" for more information about text-file conversion.

When you press Enter, the file is copied to the drive and directory that you entered in the Destination window.

---

**Converting a file while copying**

When you copy a DOS text file or a Macintosh text file, you have the option to convert it from DOS text to Macintosh text, or vice versa.

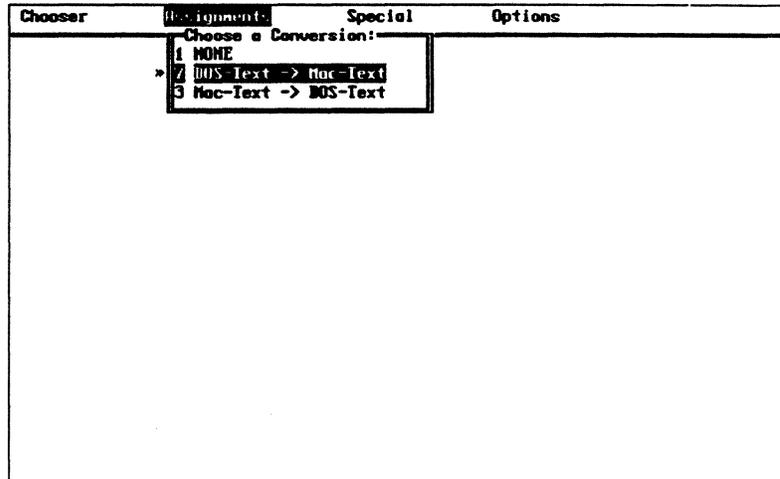
The DA distinguishes between DOS text and Macintosh text by the file's extension on local disk drives, or by the file's icon type on AppleShare volumes. You can designate which file extensions the DA recognizes as DOS text files or Macintosh text files.

To copy and convert a file, follow these steps:

**1. Begin the steps to copy a file.**

Follow the steps in the section "Copying a File." After you enter a destination for the file, the Choose a Conversion window appears. This window lists the file-conversion options; Figure 4-14 shows this window.

■ **Figure 4-14** The Choose a Conversion window



**2. Select a conversion option.**

Select to convert DOS text to Macintosh text or Macintosh text to DOS text.

The file is converted as it is copied. A status message confirms that copying is taking place.

If you select the None option, it copies without any conversion.

**▲ Warning**

If you select an inapplicable conversion option you may create an unusable destination file. ▲

You can also convert files when you copy a directory. See the section “Copying a Directory” earlier in this chapter for details of this procedure.

---

**Deleting a directory**

Deleting a directory removes the files and subdirectories in the selected directory as well as the directory itself.

**1. In the Assignments window, select a drive and press Enter.**

The Directory window appears showing the drive’s current directory. If

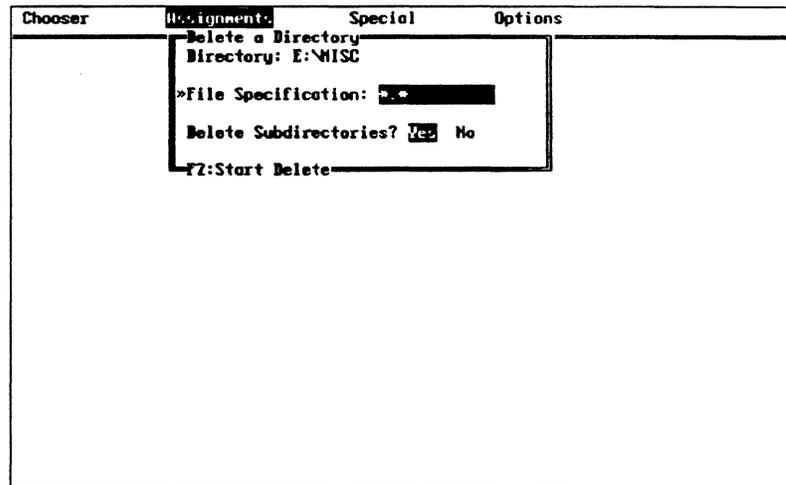
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the directory you want to delete is not listed, repeat the selection process until you locate it.

**2. Select the directory to delete and press F3.**

The Delete a Directory window appears, showing the directory preceded by its pathname, along with a File Specification pane and a Delete Subdirectories pane. Figure 4-15 shows an example of the Delete a Directory window.

■ **Figure 4-15** The Delete a Directory window



The File Specification pane is active, as the blinking cursor indicates. (The text field is also underlined on a monochrome monitor.) The global file specification appears in the pane.

**3. Edit the pane to specify the files you want to delete.**

When you press Enter, the Delete Subdirectories pane becomes active.

**4. Select Yes or No to indicate whether appropriate files in subdirectories should be deleted.**

**5. Press F2.**

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If the file specification for deletion is the global specification (\*.\*) and you also select Yes in the Delete Subdirectories pane, all subdirectories of the selected directory are deleted.

The Verification window appears, asking whether you want to delete the directory and its contents.

### 6. Select Yes to confirm the deletion and press Enter.

If you select No, the directory is not deleted.

If you select Yes, you can press the Escape key during the deletion process to cancel the delete request.

When you enter a confirmation, the Deletion Status window appears. It lists the number of files and directories removed and two possible error conditions.

### 7. Press any key to return to the Directory window.

The directory you selected is no longer in the list displayed in this window.

---

## Deleting a file

You use the Directory window to delete files and directories. Follow these steps to delete a file:

#### 1. In the Assignments window, select a drive and press Enter.

The Directory window appears displaying the drive's current directory.

#### 2. Select a file to delete.

#### 3. Press F3.

The Verification window appears, showing the file preceded by its pathname. (This window does not appear if you have turned off the Verify Deletes option. See "Verifying Delete Operations" in Chapter 6 for more about this option.)

#### 4. Select Yes to confirm the deletion.

If you select No, this cancels the file deletion.

---

## Renaming a directory or file

The DA enables you to rename a directory or file. Follow these steps.

❖ *Moving directories and files:* For AppleShare volumes only, you can move a directory and its contents by changing its pathname when you rename it. On any volume, when you rename the pathname of a file, the renamed file is moved to the designated directory.

**1. In the Assignments window, select the drive that contains the file or directory you want to rename and press Enter.**

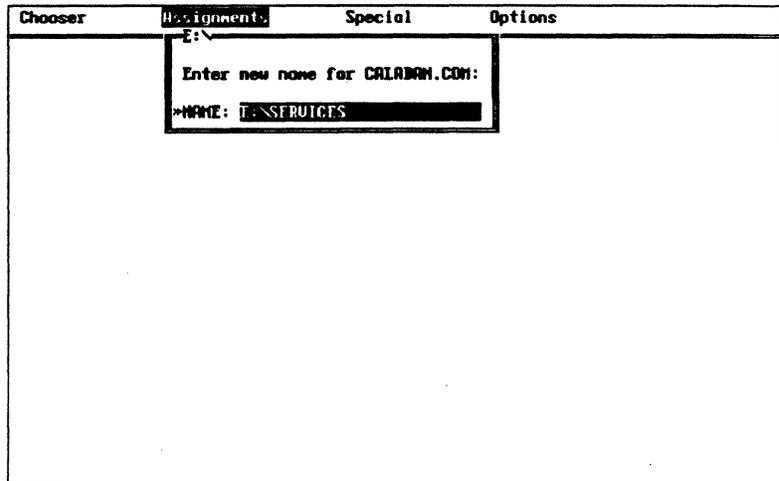
Continue the selection process in the Directory window until it displays the name of the desired file or directory.

**2. Select the file or directory you want to rename and press Enter.**

**3. Press F4.**

The New Name window appears (Figure 4-16). It displays the current pathname but not the filename (if you have selected a file to rename). A blinking cursor indicates that you can enter new information or edit the data displayed.

■ **Figure 4-16** The New Name window



**4. Type the new name and press Enter.**

The file or directory is renamed to match your entry.

- ❖ *Moving a file with Rename:* You can move a file from one directory to another using Rename; just change the pathname. The destination directory must be on the same drive as the source directory. Moving a file has the same effect as copying the file to the destination directory, and then erasing the file from the source directory (except that moving the file is much faster).
- ❖ *Moving an AppleShare directory with Rename:* On AppleShare volumes, you can move a subdirectory from one directory to another. The procedure is the same as the procedure to move a file.

---

## Access privileges

Every directory on an AppleShare file server has an owner. When you create a directory on a file server, you become its owner. If you are a registered user, a newly created directory allows access only to you. If you are a guest, the directories you create are given the owner name of <Any User>, and you and everyone else have access to their contents.

As the owner of a directory, you can also specify who else may use its contents. You can set access privileges to the contents of a directory for each of three user categories: for the Owner, for a Group (which is established by the AppleShare administrator), and for Everyone.

For each of the three categories, you set access privileges that specify what the users in those categories may do with the contents of a directory that you own. These privileges are

- See Directories, which allows users to view and to use the contents of subdirectories in your directory
- See Files, which allows users to see the names of data files and programs in your directory, to read and copy files, and to execute programs therein
- Make Changes, which allows users to make changes to the directory's contents, such as creating, deleting, or modifying files or subdirectories

You can combine access privileges for different effects. For example, you might assign See Files to a directory that contains application programs for others to share. You might not assign See Directories to that directory, to keep the contents of its subdirectories private. Or you might set up a directory for others to drop off files, but not allow them to view the files, by assigning the Make Changes privilege and not assigning See Directories or See Files. Finally, as an owner of a file, you might want to withhold your own privilege to make changes to the contents of a directory so that you don't accidentally delete them.

If you are a registered user, when you create a directory, the default access privileges assigned to it are See Files, See Folders, and Make Changes. No privileges are granted to your group or to Everyone.

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The owner of a directory has three exclusive rights: the right to set access privileges for the directory, the right to change the AppleShare group associated with the directory, and the right to transfer ownership of the directory. Ownership can be transferred to another registered user or to <Any User> (which includes guests).

Access privileges can also be set for volumes because they are directories, too. The user categories and privileges used to set access privileges for volumes are the same as those used for directories. Usually, only the network administrator (as creator of file server volumes) can set access privileges for volumes.

You use the DA to review and set access privileges for the directories that you own, and to determine what your privileges are for other directories on the AppleShare server.

Table 4-1 shows the minimum required access privileges that you must have to execute some frequent DOS commands.

■ **Table 4-1** Minimum access privileges for the use of common DOS commands

DOS Command	See Directories	See Files	Make Changes
Type		X	
Directory (directories only)	X		
Directory (files only)		X	
Directory (all)	X	X	
Copy (from)		X	
Copy (to)			X
Rename		X	X
Delete		X	X

You initiate most operations related to access privileges in the Directory window of the DA.

### Displaying access privileges

You can display access privileges of the directories and files that you create as well as those that others create on your network.

- ❖ *ANET equivalent:* You can also use the ANET ACCESS command to display access privileges for directories. See Chapter 7 for an explanation of the ANET program and the ACCESS command.

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Follow these steps to display the access privileges for a drive or directory:

**1. In the Assignments window, select a drive and press Enter.**

The Directory window appears, displaying a list of files and subdirectories in the current directory of the selected drive.

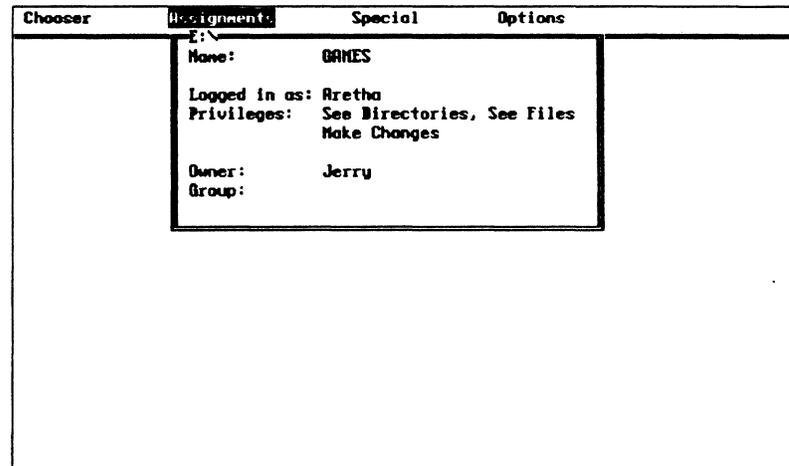
**2. Select the name of the directory whose privileges you want to display.**

**3. Press F8.**

The Access Privileges window appears. It lists the directory name, your user name, the privileges you have for this directory, and the directory's owner. If a group name automatically appears, that group is your primary group. Your AppleShare administrator sets the primary group.

Figure 4-17 shows the Access Privileges window.

■ Figure 4-17 The Access Privileges window



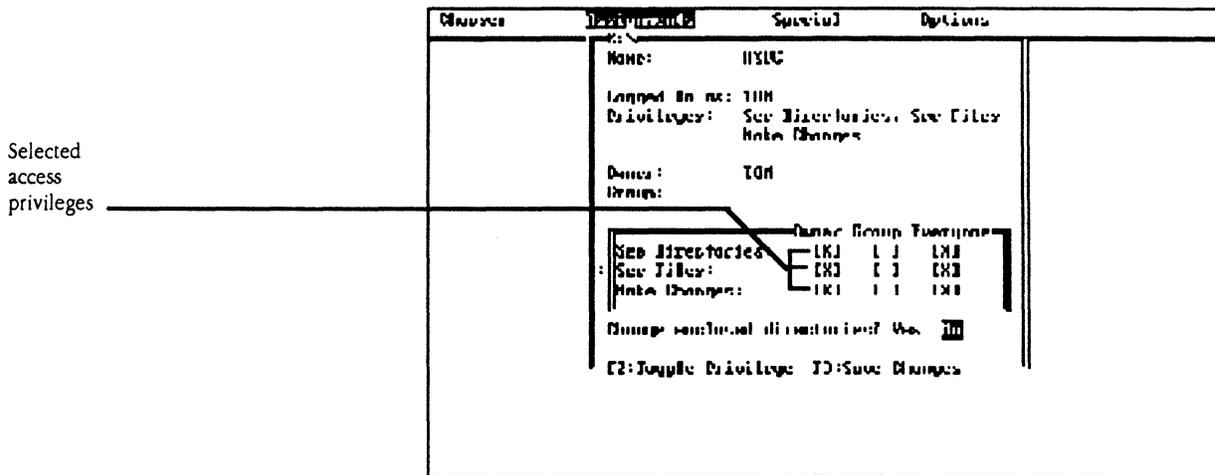
If you are not the owner of this directory, you can only review this information; you cannot change the access privileges.

## Changing access privileges

For a directory that you own, the Access Privileges window contains an extra pane that allows you to change the directory's privileges. Figure 4-18 shows the Access Privileges window with the Change Privileges pane displayed.

- ❖ *ANET equivalent:* You can also use the ANET ACCESS command to change access privileges for directories. See Chapter 7 for an explanation of the ANET program and the ACCESS command.

■ **Figure 4-18** The Change Privileges pane in the Access Privileges window



Follow these steps to change access privileges for a drive or directory:

### 1. Display Access Privileges.

Follow steps 1 through 3 in the preceding section to get to the Access Privileges window.

### 2. Press Enter as many times as required to make the Change Privileges pane active.

A blinking cursor appears in the matrix of boxes when this pane becomes active.

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- 3. Select the user category and the level of access you want to assign to it.**

Use the Arrow keys to move the cursor to your selection. Select only boxes that you want to change.

- 4. Press F2 to change the designation in the selected box.**

The letter X in the box indicates that the corresponding privilege is set. Pressing F2 for an empty box inserts an X; pressing F2 for a box containing an X removes the letter.

- 5. Repeat steps 2 and 3 until you've set the privileges desired, then press Enter to move to the next pane.**

When you press Enter, the Enclosed Directories pane becomes active.

- 6. Select Yes to set the privileges of all enclosed subdirectories or No to exclude subdirectories, and press Enter.**

If you select Yes, the privileges of all enclosed subdirectories that you own are also changed. If you select No, only the selected directory's privileges are changed.

- 7. Press F3 to save the new privileges.**

The status line shows the progress of the DA as it sets the privileges.

You can change privileges for an AppleShare volume's root directory as well. Select the desired drive in the Assignments window, display the Access Privileges window, and then follow the previous steps 1 through 6.

---

### Transferring ownership of a directory

You can transfer ownership of a directory to another registered user or to everyone who uses the server. You can transfer ownership of the files you own as well as any of those owned by <Any User>. A directory that you create is owned by you until you transfer its ownership. A directory that is owned by everybody is assigned the owner name of <Any User>. A directory that is created by a user with guest status is also owned by <Any User>.

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- △ **Important** Once you transfer ownership of a directory to another user, you forfeit your ability to change its access privileges. Indeed, the new owner can restrict or remove your access to the directory. △

Follow these steps to transfer ownership of a directory:

1. **Display the Access Privileges window for a directory that you own and make any desired changes in privileges.**

Change privileges by toggling them on or off in the matrix of boxes in the Change Privileges pane.

As you make changes, remember that you will no longer be the owner or have owner's access privileges. If you want to retain access to the directory's contents, either give privileges to everyone or to a group of which you are a member.

2. **Activate the Owner pane.**

Use the Enter or Tab key.

3. **Type the name of the new owner and press F3.**

When you press F3, ownership of the directory is transferred and the new access privileges take effect.

---

### Preventing changes to a directory

In addition to setting other users' access privileges for a directory that you own, you can set the access privileges to a directory so that its contents cannot be changed or accidentally erased—even by you.

Follow these steps to prevent changes to a directory:

1. **From the Assignments window, select the drive that contains the directory to which you want to prevent changes.**

2. **In the Directory window, select the directory.**

3. **Press F8 to display the access privileges for that directory.**

The Access Privileges window opens.

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**4. Activate the Change Privileges pane.**

Use the Enter key or Tab key to activate the pane. The matrix of boxes for access privileges is displayed.

**5. Select a Make Changes box that contains an X.**

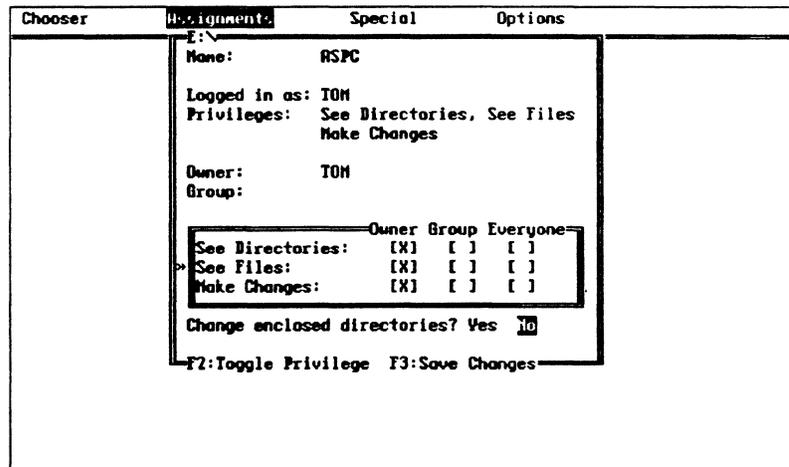
**6. Press F2 to remove that privilege.**

You do not need to change the See Directories or See Files privileges.

**7. Repeat step 5 for all user categories that show an X for the Make Changes privilege.**

Toggling off the Make Changes privilege assures that no one can modify, delete, or add to the selected directory. See Figure 4-19 for the privilege configuration of a directory that does not allow changes.

■ **Figure 4-19** Privileges for a directory that does not allow changes



**8. Press F3 to set the new privileges.**

The new privileges take effect immediately. To unlock this directory, you must change its access privileges.

---

## Setting up a drop box

You can use the DA to set up a directory that serves as a “drop box”—a storage area where anyone can place files or subdirectories, but where only the owner can see or change the contents of these directories or files.

Follow these steps to create a drop box:

**1. Create a new directory to use as a drop box.**

See “Creating a Directory” earlier in this chapter or select an existing directory for this purpose.

**2. In the Directory window, select the directory.**

**3. Press F8 to display the access privileges for that directory.**

If you created a new directory, you are the owner and the only one with access privileges for it.

**4. Activate the Change Privileges pane.**

The matrix of privilege boxes is activated.

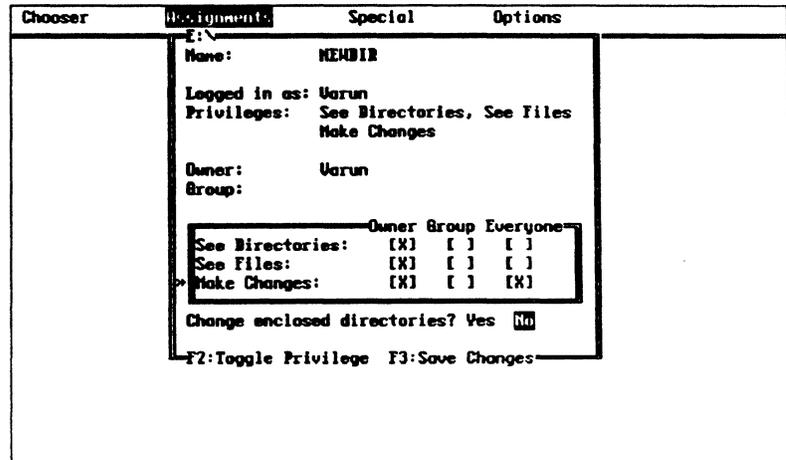
**5. Select the Make Changes/Everyone box.**

**6. Press F2 to toggle on that privilege.**

Figure 4-20 shows the settings for a drop box that everyone can use.

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■ Figure 4-20 Access privileges for a drop box



If you want the drop box to be available only to members of a particular AppleShare group, toggle on the Make Changes privilege for Group instead of for Everyone.

**7. To specify the directory's use by an AppleShare group, activate the Group pane and type the name of the group.**

If necessary, verify the name and membership of the group with your AppleShare administrator.

**8. Press F3 to set the new privileges.**

The new privileges take effect immediately.

### Setting up a bulletin board

You can set up another directory as a bulletin board, where all users can read the directory's contents, but only a small group can make changes or delete or add files.

Follow these steps to create a bulletin board:

**1. Create a new directory to use as a bulletin board.**

You can also select an existing directory for this purpose.

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**2. In the Directory window, select the directory.**

**3. Press F8 to display the access privileges for that directory.**

If you created a new directory, you are the owner and the only one with access privileges for it.

**4. Activate the Change Privileges pane.**

The matrix of privilege boxes is activated.

**5. Select the See Directories/Everyone box.**

**6. Press F2 to toggle on that privilege.**

Repeat this process for the See Files/Everyone privilege.

**7. To allow an AppleShare group to post information on the bulletin board, select the Make Changes/Group box and press F2 to toggle on that privilege.**

Any member of the group can both see directories and files, and add notices to the board.

**8. Activate the Group pane and type the name of the group.**

If necessary, verify the name and membership of the group with your AppleShare administrator.

Figure 4-21 shows the Access Privileges window with settings for a bulletin board where a group has privileges to read, post, or delete notices.

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■ Figure 4-21 Access privileges for a bulletin board

Chooser	Assignment	Special	Options	
	E:\			
	Name: BBS			
	Logged in as: BAFREL			
	Privileges: See Directories, See Files Make Changes			
	Owner: BAFREL			
	Group: AppleShare			
		Owner	Group	Everyone
	See Directories:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	See Files:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Make Changes:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Change enclosed directories? Yes <input checked="" type="checkbox"/> No			
	F2:Toggle Privilege F3:Save Changes			

9. Press F3 to set the new privileges.

The new privileges take effect immediately.

---

## Special drive, directory, and file operations

The DA performs certain file and directory operations only on AppleShare volumes. These include changing the type of information displayed in a directory, displaying and changing detailed information about a file or directory, and changing icon types.

---

### Displaying information about a drive, directory, or file

You use the Assignments window to select a drive, directory, or file and to display detailed information about it.

**1. Select the Assignments window.**

The Assignments window opens, showing a list of the active drives connected to your PC.

**2. Select the drive of the directory or file that you want to view.**

The Directory window appears, showing a list of the files and subdirectories in the current directory of the selected drive.

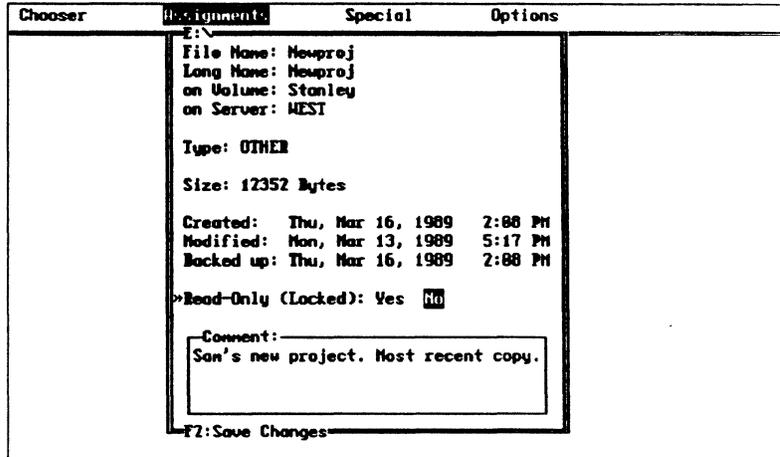
**3. Select a file or a directory from the list.**

**4. Press F2.**

If you selected a file, the File Info window opens as shown in Figure 4-22. The window shows the shorter DOS form of the filename and the longer form used by the Macintosh computer. It shows the file's location, the file type and size, relevant dates, its read-only status, and a comment pane.

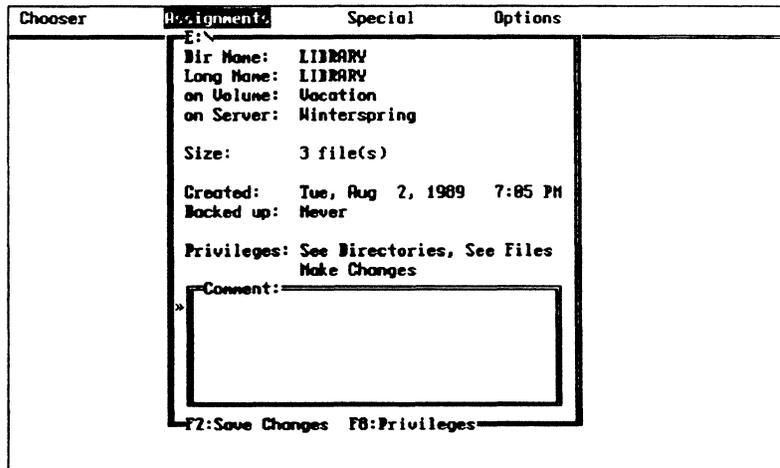
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■ Figure 4-22 The File Info window



If you selected a directory or drive, the Directory Info window opens as shown in Figure 4-23. This window shows the name, location, number of enclosed files and directories, relevant dates, your access privileges for the directory, and a comment pane.

■ Figure 4-23 The Directory Info window



## Changing the directory and file display

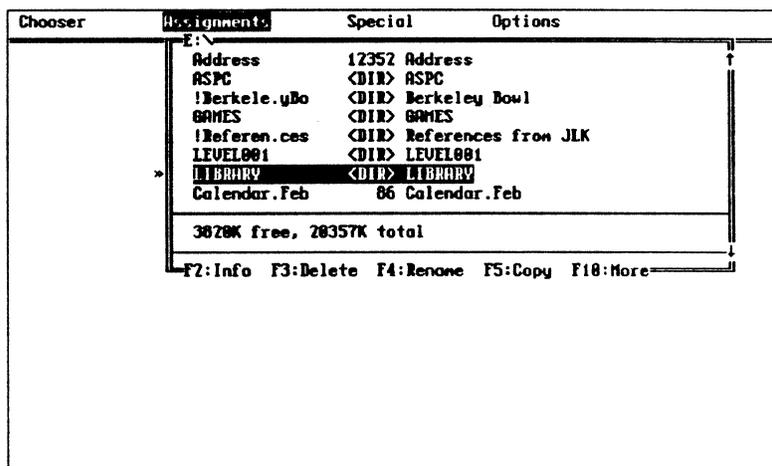
By default, the DA displays two versions of each file or directory name in the Directory window—the DOS (short) version and the Macintosh (long) version.

You can change the Directory window's listing to display only the short version of file and directory names, along with the date and time of their creation and their DOS attributes. In most instances, the long-name format (both names plus file size) will probably be the more useful directory display option.

- In the Directory window, press F9 to toggle between the short filenames and the long filenames display option.

Figure 4-24 shows the long filenames and file information.

- Figure 4-24 Long filenames in the Directory window



The DOS version of a file or directory name appears on the left and the long form of the name appears on the right. The long form is the Macintosh version, which can contain blank spaces and a greater number and variety of characters than DOS permits. The DOS version of a long Macintosh name begins with an exclamation point (!) to signify that the DOS name was derived from the name created by a Macintosh user.

---

### **Adding comments to a drive, directory, or file**

You can add notes about a file or a directory in the Comment pane of either window. This is useful when you want to write notes to yourself or others about the drive, directory or file. Both Macintosh and PC users can view the comments.

Follow these steps to add a comment about a drive, directory, or file:

**1. Display the name of the drive, directory, or file.**

**2. Press F2.**

Use the Directory window to display file and directory names or the Assignments window to display drive names.

When you press F2, the respective window opens.

**3. If necessary, press Enter to activate the Comment pane.**

A blinking cursor appears in this pane when it is active; on a monochrome display, the area for text entry is also underlined. You can use the Arrow keys and Backspace, Insert, and Delete to edit your entry. In the Directory Info window this pane is active when the window opens.

**4. Type the desired comment.**

Type in the comments that you want attached to the drive, directory, or file. The Comment pane holds up to 199 characters.

**5. Press F2 to save the comment.**

Your comment is recorded, as a message in the status line confirms. The File Info or Directory Info window stays open.

---

### **Changing the read-only status of a file**

You can change the read-only status of the file in the File Info window. This technique is useful when you want to ensure that a data file or program can't be overwritten accidentally.

**1. In the Assignments window, select a file.**

**2. Press F2 to open the File Info window.**

The File Info window opens, with the Read-Only pane active.

**3. Select Yes or No in the Read Only pane.**

If you select Yes you prevent changes to the file; a message in the status line confirms the change.

**4. Press F2.**

The new information is saved. The File Info window remains open until you press Escape.

---

**Setting extension mapping**

The Macintosh uses visual icons to represent different types of files. AppleShare PC automatically sets a Macintosh file icon type for files created on file server volumes. These type assignments are based on the three-character DOS filename extension.

Change Extension Mappings lets you select an icon type for a given file extension. This icon type is assigned to all appropriate new files created on server volumes; existing files are not affected. For example, you can set all files that you create with the extension WXT to be file type Binary; whenever you create a file whose extension is WXT on the file server, it will automatically be assigned the Binary icon.

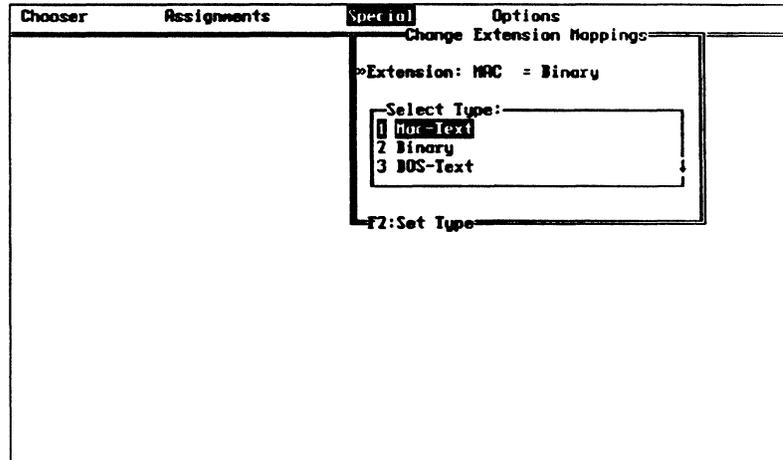
- ❖ *ANET equivalent:* You can see the complete list of file icon types and change extension mapping by using the ANET MAP command. See Chapter 7 for an explanation of the ANET program and the MAP command.

Follow these steps to view or change file extension mappings:

**1. In the Special window, select Change Extension Mappings and press Enter.**

The Change Extension Mappings window appears as in Figure 4-25. The Extension pane is active, as the blinking cursor indicates.

■ **Figure 4-25** The Change Extension Mappings window



**2. Type an extension to be mapped.**

When you type an extension, the DA displays the current icon type for that extension. The default type for unknown extensions is Binary.

The Select Type pane becomes active when you press Enter. If the icon type that appears when you type an extension is the one you want, you do not need to select a new icon type in this pane.

**3. Select a new icon type.**

**4. Press F2 to save the new icon-type assignment.**

All new files that you create with the designated extension will have the selected icon type.

---

**Changing icon types**

You can change the icon of some DOS files located on server volumes. The icon is displayed on Macintosh screens and is used to identify the file it represents. Macintosh icons cannot be displayed on a PC.

- ❖ *ANET equivalent:* You can also use the ANET TYPE command to change the icon type for a particular file. See Chapter 7 for an explanation of the ANET program and the TYPE command.

If the icon type of a file is one that the PC can create, you can change it with the DA. Follow these steps to change the icon of a file:

- 1. In the Assignments window, select the desired drive and press Enter.**

Continue the selection process in the Directory window if the file is not in the current directory.

- 2. Select the file.**

- 3. Press F2 to display the File Info window.**

The File Info window appears.

- 4. Activate the Select Type pane.**

Press Enter one or more times to activate the pane. If you can't activate the Select Type pane, it is because the file's icon type is not one that the DA recognizes. You will not be able to change the icon type.

When the pane becomes active, a list of available file icon types appears.

- 5. Select the desired file icon type and press Enter.**

The icon type of the selected file changes in the Type pane.

- 6. Press F2 to save the change.**

The new file icon type is saved, and the File Info window stays open.

---

## Ending a session

When you log off a file server, you end your session with the server and free all related drive letters attached to directories on that server. You can then use those letters with another file server or return to local application programs.

---

## Detaching a drive letter

You can detach a DOS drive letter from a server volume or subdirectory by using the Detach command in the Assignments window. This command can only be used with AppleShare volumes. You will not be able to detach a drive letter from a volume if any files on it are open.

- ❖ *ANET equivalent:* You can also use the ANET DETACH command to detach a volume from a server. See Chapter 7 for an explanation of the ANET program and the DETACH command.

Follow these steps to detach a drive letter:

**1. In the Assignments window, select the desired drive letter.**

Use the Up or Down Arrow key to select the drive.

**2. Press F3 to detach the drive letter from this directory.**

When you press F3, the Verification window appears and asks you to confirm your command.

**3. Select Yes and press Enter to confirm the detachment.**

When you select No and press Enter, the attachment stays intact.

---

## Logging off a server

If you have established more than one server connection, you can log off servers one at a time. You can use either the Chooser window or the Special window to log off of a server. You can also log off all server connections at once.

- ❖ *ANET equivalent:* You can also use the ANET LOGOFF command to log off a server. See Chapter 7 for an explanation of the ANET program and the LOGOFF command.

## Using the Chooser window

Follow these steps to end your session with the server using the Chooser window:

**1. Start the DA.**

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If the DA is memory-resident, press Alt-A. If the DA is not memory-resident, type `DA` at the system prompt.

**2. Open the Chooser menu.**

The servers to which you have active connections in the selected zone are identified with an asterisk in the File Server pane.

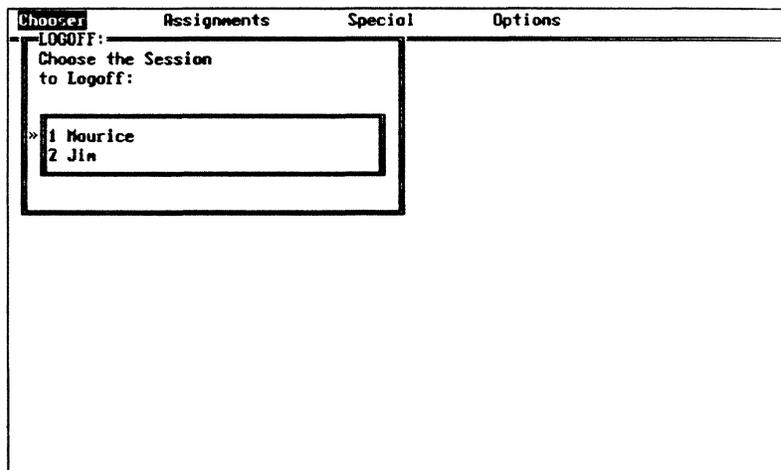
**3. Select the server from which you want to log off.**

**4. Press F3.**

If you have established only one connection with that server, the Verify window appears, asking you to confirm your Log-Off command. Skip the next instruction and continue the log-off process at step 6.

If your PC has active connections with the server under more than one user name, the Log-Off window appears. This window lists the sessions—each user name and server connection—that are currently active. (See Figure 4-26.)

■ **Figure 4-26** The Log-Off window



**5. Select the session to log off.**

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When you enter the selection, the Verification window appears.

### 6. Press Enter to confirm your log-off command.

If you select Yes the connection is broken; otherwise it remains intact.

You are now detached from the volume (or volumes) of the file server you selected.

## Using the Special window

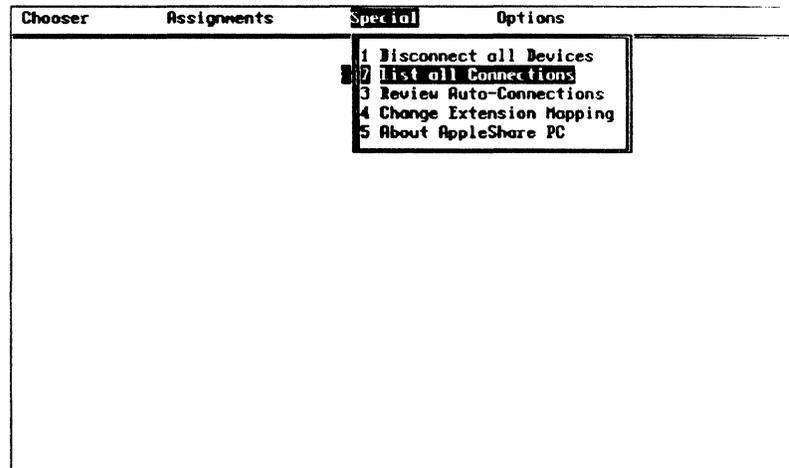
Follow these steps to log off a server using the Special window:

### 1. Select the Special window.

### 2. Select List All Connections and press Enter.

When you press Enter, the Connections window appears, showing a list of all active connections. See Figure 4-27.

■ Figure 4-27 The Special window



### 3. Select a server session.

### 4. Press F3.

When you press F3, the Verification window appears, asking you to confirm your command.

**5. Select Yes and press Enter.**

When you press Enter, the connection is broken; otherwise it remains intact.

---

**Logging off all connections**

Follow the steps listed here to log off all server connections with one command.

❖ *ANET equivalent:* You can also use the ANET LOGOFF command to log off of all connections. See Chapter 7 for an explanation of the ANET program and the LOGOFF command.

**1. In the Chooser window, select AppleShare in the Type pane.**

**2. Press F4 to begin logging off all server connections.**

The Verification window appears, asking you to confirm your command.

**3. Select Yes and press Enter to log off all server connections.**

If you select No, all connections remain intact.

---

**Logging off when the server is being shut down**

Occasionally your AppleShare administrator will have to shut down the server for maintenance. Before shutting down the server, the administrator starts a countdown, giving you time to save information and log off before the server becomes unavailable. A warning message is sent out when the countdown begins. The warning message appears at your workstation as a dialog box that tells you how much time you have to save your information and log off.

❖ *Note:* If you haven't made the AppleTalk PC Desk Accessory memory-resident, you will only hear a series of high trills when the warning message is sent. To see the message and stop the trilling sound, return to the DOS prompt and run the Desk Accessory program or ANET.

See "Logging Off a Server" earlier in this chapter for more information.

## Print Services

**A**LONG WITH YOUR NETWORK HARDWARE, APPLESARE PC ALLOWS YOU TO use network printers just as you would use a locally attached printer. If you installed the AppleTalk printer driver that comes with the AppleShare PC package, you can use Apple LaserWriter, ImageWriter®II, and ImageWriter IQ printers on the AppleTalk network system.

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AppleShare PC printing facilities enable you to

- use LaserWriter, ImageWriter II, and ImageWriter LQ printers on the network
- attach DOS LPT numbers to network printers
- reconfigure your printer connection without leaving your program (if the DA is memory-resident)
- print transparently over the network from within a program
- select from several program output types, including Epson LQ2500 and PostScript
- use the full capability of the LaserWriter when you print from a program that supports PostScript
- use Epson graphic and Courier text emulation with programs that do not support PostScript

---

### Print choices

To ensure that your documents print the way you want them to, the AppleShare PC printer driver passes information from your application to the printer in two ways. If your application output and the printer use the same printing format, the driver passes the print information from the application to the printer. For example, if you use a word-processing program that uses PostScript output and a LaserWriter printer (which takes PostScript commands), the driver passes on the program's PostScript print commands to the LaserWriter. This is called PostScript **pass-through** mode. You can also use ImageWriter pass-through mode, which sends an application's ImageWriter commands directly to an ImageWriter printer.

The driver can also **emulate** an Epson printer. It will take Epson commands from your application and translate them into PostScript commands for a LaserWriter, or into ImageWriter commands for an ImageWriter, so that the output looks like it came from an Epson printer.

When the driver is configured for Epson emulation

- Documents are printed in Courier font. Font substitution is not supported.

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- Printed documents contain only the characters included in the built-in font set of the selected printer. Unsupported characters are created as a combination of other characters, where possible. If no character can be created, another related character is substituted or, as a final option, the character appears as a blank space. (The Courier font sets built into the LaserWriter and ImageWriter printers differ slightly and are detailed in the character support tables at the end of this chapter.)
- Proportional characters are not supported.
- Italic characters are not supported on ImageWriter printers. Italic characters appear as normal characters.
- Downloadable character sets are not supported in Epson LQ2500 emulation mode.

Table 5-1 shows the default Epson print settings.

■ **Table 5-1** Epson emulation defaults

<b>Setting</b>	<b>Default</b>	<b>Measure</b>
left margin	5	1/10 inches
top margin	5	1/10 inches
bottom margin	0	1/10 inches
characters-per-inch	10	characters
paper size	11	inches
tab settings	8	characters
print quality	draft	—
lines-per-inch	6	lines
time-out	5	seconds

---

## **Application output**

As noted in the previous section, your printing application sends your document to the printer in a certain format, known as its **application output**. This is determined by the type of printer the program expects to use. Common application output types are PostScript and Epson LQ2500. Others are Epson LQ1000, Epson LQ800, Epson LQ1500, EX series, FX series, and Standard printer.

Because AppleShare PC provides both pass-through and emulation printing, it needs to know what kind of application output your program uses. You enter this information when you connect a printer.

---

## Connecting printers

Before you can use a printer on the network, you must select the type of printer you want to use and configure the software that controls it. This section describes how to do this using the DA.

❖ *ANET equivalent:* You can also connect a printer using the ANET CONNECT command. See Chapter 7 for an explanation of the ANET program and the CONNECT command.

---

### Selecting a printer

Follow these steps to select the printer you want to use on the network:

**1. Start the DA.**

Press your hot-key combination or type `DA` at the DOS prompt.

**2. Select the Chooser window.**

Use the arrow keys to return to the Chooser window if necessary.

The list of device types in the Select a Type pane includes LaserWriter, ImageWriter II, and ImageWriter LQ.

**3. Select the printer type of the printer you want to use and press Enter.**

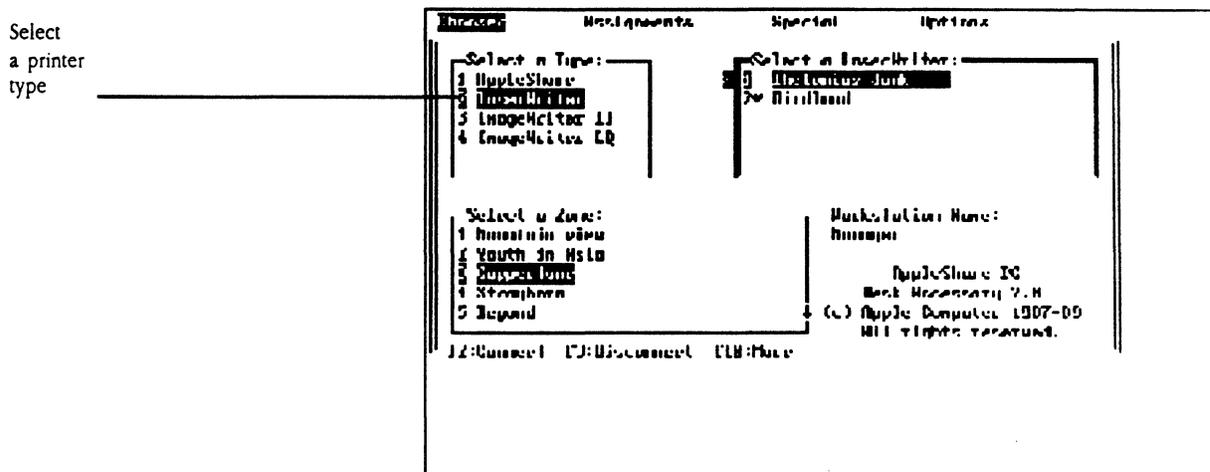
If necessary, use the Tab key until the Type pane is active.

If your network has zones, the Select a Zone pane is now active.

If your network does not have zones, the pane to select a printer is now active. Skip the next instruction, and continue with step 5.

Figure 5-1 illustrates selecting a printer from the Chooser window.

■ Figure 5-1 Selecting a printer



4. Select the zone that contains the printer you want to use and press Enter.

The pane that lists printers is now active.

5. Select the printer you want to use.

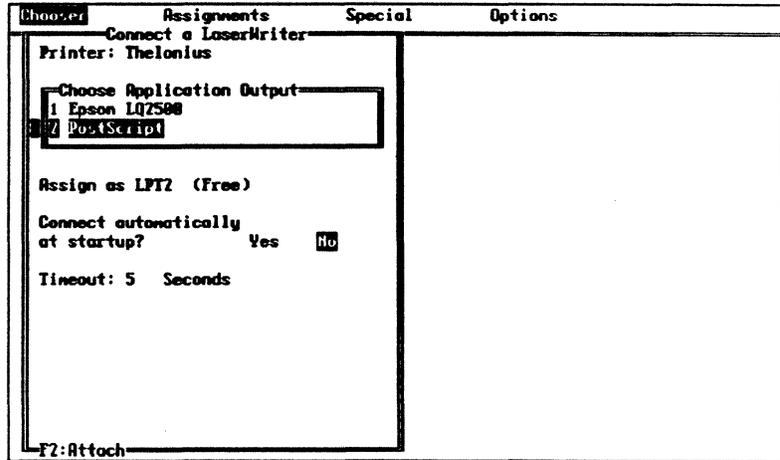
6. Press F2 to complete the printer connection.

After you press F2, the Connect window appears.

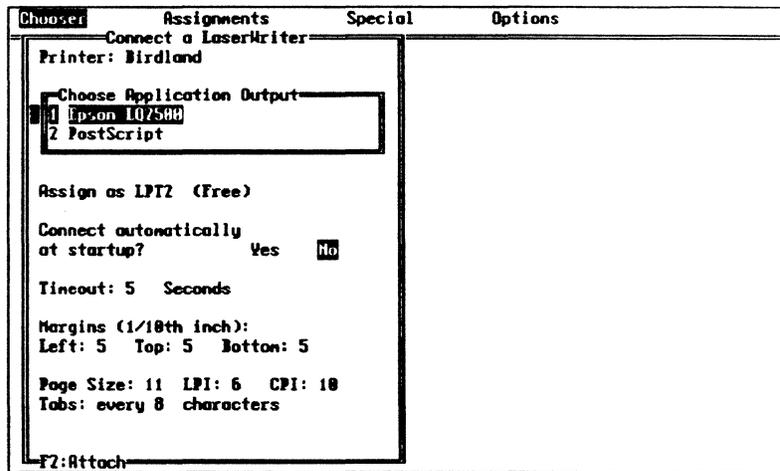
The Connect window that you see depends on the type of printer you select. If you choose a LaserWriter printer, a window similar to the one in Figure 5-2 will appear. If you select an ImageWriter printer, the window will look like the one in Figure 5-3.

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■ Figure 5-2 The Connect a LaserWriter window



■ Figure 5-3 The Connect a ImageWriter window



---

## Configuring the connection

Before you can use the printer that you are connected to, you must configure the printer driver—the program that manages the printer—so that it knows what type of output to expect from your program.

### 1. Choose your application output and press Enter.

If you selected a LaserWriter printer and your application produces PostScript output, choose PostScript. Otherwise, select Epson.

If you selected an ImageWriter printer and your application produces ImageWriter output, select ImageWriter.

If you selected an ImageWriter printer and your application does not produce ImageWriter output, select Epson.

If the program you want to print from cannot produce LQ2500 output, configure the program to produce output compatible with one of the printers in the list that follows. Use the first compatible printer in the list. The Epson LQ2500 command set is a superset of these printer command sets, and can use them as well:

- LQ1000
- LQ800
- LQ1500
- EX series
- FX series
- LX series
- RX series
- MX series
- Epson printer
- Standard printer
- Draft printer

- ❖ *ImageWriter users:* Very few PC programs produce ImageWriter output and virtually all PC programs can produce Epson output. In most cases, choose Epson application output in the Choose Application Output pane. See the user guides of the programs that you work with for more information on program output.

### 2. Type the LPT number that you want to assign to the printer and press Enter.

The next free LPT number appears in the pane, with that number's status

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in parentheses to its right. If the number assigned is acceptable to you, press Enter.

If no LPT number is available, only the cursor appears in the pane. You can move the cursor to the left and type an LPT number, but the number you type may be in use or the status notation may be "Invalid."

If you type an LPT number that is already in use and complete the attachment process, the DA will recognize your new designation and remove the previous designation for that number. If the number was attached to a local printer or parallel port, that printer or port will be unavailable until you detach the network printer assignment.

A Verification window appears, wherein you confirm the new assignment.

- ❖ *LPT numbers*: The driver allows you to choose any LPT number between 1 and 9. Note, however, that some programs only allow you to print to LPT1, LPT2, or LPT3.
- ❖ *PRN*: Some programs print to the device PRN. PRN is a synonym for LPT1. To connect a printer to the designator PRN, choose 1 as the LPT number.

### **3. Select Yes or No to connect to this printer automatically at startup.**

Use the Left Arrow key to toggle from No to Yes.

Press Enter to move to the next pane.

### **4. If you selected Epson as the application output, check the default margin, page size, and tab settings.**

The program sets initial default margins, page size, and tab spacing. You can change these default values by activating the appropriate pane and typing the new setting. Note that the program from which you're printing may set different default values that will override these settings.

### **5. Check the time-out setting.**

Time-out sets the number of seconds the driver waits for a printer command before it sends an end-of-document command. Generally, you won't change this setting unless the program you're using takes a long time to produce a graphic after it starts printing. For more information, see "Time-outs" later in this chapter.

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**6. If you've selected an ImageWriter printer, choose the print quality that you want.**

Your output will appear in the Courier font: it looks like this.

Use the Right or Left Arrow key to toggle between Draft mode and NLQ (Near Letter Quality) mode.

**7. Press F2 to attach the LPT number you selected to the printer you selected.**

You're now ready to print.

---

## Using network printers

Printing to a network printer is very much like printing to a local printer. Unlike local printing, however, you must make sure that the following conditions exist when you print to a network printer:

- The Application Output you selected in the Choose Application Output window must match the type of output from your application. For example, if you selected PostScript in the window, select PostScript output when you configure your application.
- Your program output must go to the LPT number that you selected when you established the printer connection. For example, if you set the network LaserWriter to LPT2, choose LPT2 when you direct your program output.

---

## Time-outs

AppleShare PC uses **time-outs** to manage the flow of documents to your printer. For your printer to distinguish one document from the next, the printer driver waits for a five-second interval after receiving a series of print commands from your application. If the five seconds elapse, the printer driver assumes that your document is finished printing and sends a page eject command to your printer.

Since some applications, such as word processors, need a lot of time to calculate formatted pages, adjust margins, and so on, they sometimes pause for more than five seconds while sending print commands. While this is not noticeable on a local printer, the printer driver working with a network printer misinterprets the wait, and starts a new page at inappropriate places.

---

## Changing time-outs

If your LaserWriter printer is not using the whole page to print, or if it is not printing as expected, it may be due to a timing conflict between your program and the printer. You can resolve this in two ways. Increase the time-out period of the LaserWriter, or disable the time-out function and send an end-of-document command manually.

### Increasing the time-out period

To increase the amount of time the LaserWriter waits for more print commands, perform the following step:

- **Reconfigure your connection to the network printer, and replace the time-out value in the Choose Application Output pane with a higher value.**
- ❖ *ANET equivalent:* You can also reconfigure the printer using the ANET CONNECT command. See Chapter 7 for an explanation of the ANET program and the CONNECT command.

### Sending an end-of-document command manually

To disable the time-out function and send a manual end-of-document command, take the following steps:

1. **Reconfigure your connection to the network printer, and leave the time-out field blank.**

You can also use the ANET CONNECT command to do the same thing.

2. **Print your document.**

3. **Press the end-of-document keys.**

Press Ctrl-Alt-F10 to send an end-of-document command to the printer.

△ **Important** If you disable the time-out feature, be sure to send an end-of-document command manually. If you don't, you will tie up the network printer as long as your session is active. △

---

## Changing margins

To change the margin settings of your printer, perform the following step:

- **In the Choose Application Output pane, change the margin values.**
- ❖ *ANET equivalent:* You can also change margins using the ANET CONNECT command. See Chapter 7 for an explanation of the ANET program and the CONNECT command.

---

## Disconnecting printers

You can disconnect from one printer or all network printers.

- ❖ *ANET equivalent:* You can also disconnect a printer using the ANET DISCONNECT command. See Chapter 7 for an explanation of the ANET program and the DISCONNECT command.

---

## Disconnecting from one printer

Follow these steps to disconnect a network printer:

1. **Start the DA and select the Chooser window.**

The Chooser window appears.

- 2. Select the printer type that you want to disconnect and press Enter.**

If necessary, press the Tab key until the Type pane is active.

If your network has zones, the pane titled Select a Zone is now active.

If your network does not have zones, the pane titled Select a Printer is now active. Skip the next instruction, and continue with step 4.

- 3. Select the zone that contains the printer you want to disconnect and press Enter.**

- 4. Select the printer you want to disconnect.**

The printers to which you have active connections in the selected zone are identified with an asterisk to the left of their names.

- 5. Press F3.**

When you press the Disconnect function key the Verification window appears.

- 6. Select Yes in the Verification window to disconnect.**

When you select Yes, the connection is broken.

If you select No, the connection remains intact.

---

### **Disconnecting from all printers**

Follow these steps to disconnect from all network printers:

- 1. In the Chooser window, select the appropriate printer type in the Select a Type pane.**
- 2. Press F4 to begin logging off all printer connections.**

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The Verification window appears, asking you to confirm your command.

### **3. Select Yes or No to log off all printer connections and press Enter.**

If you select No, all connections remain intact.

You can also use the Disconnect All Devices command in the Special window to disconnect your PC from all network devices, including network printers. See Chapter 6 for more information.

---

## **Adding printers**

Your workstation is initially configured to support one printer connection. If you plan to connect more than one printer, you must set aside more system memory. See "Memory Considerations" in Chapter 7 for details about how to configure your workstation.

---

## **Character support tables**

The following tables list the characters supported in the Epson LQ2500 emulation mode. Note that the lists are slightly different for the LaserWriter and ImageWriter families.

LaserWriter character sets

**Epson graphics character set**

	0	@	P	'	p	Ç	É	á
!	1	A	Q	a	q	ü		í
"	2	B	R	b	r	é		ó
#	3	C	S	c	s	â	ô	ú
\$	4	D	T	d	t	ä	ö	ñ
§	5	E	U	e	u	à	ò	Ñ
&	6	F	V	f	v	å	û	ª
'	7	G	W	g	w	ç	ù	º
(	8	H	X	h	x	è	ÿ	¿
)	9	I	Y	i	y	ë	Ö	
*	:	J	Z	j	z	è	Û	
+	;	K	[	k	{	ï	ç	
,	<	L	\	l	!	î	£	
-	=	M	]	m	}	ï	¥	¡
.	>	N	^	n	~	ÿ	¥	»
/	?	O	_	o		ÿ	f	«

Epson italics character set

0	@	P	`	p	
!	1	A	Q	a	q
"	2	B	R	b	r
#	3	C	S	c	s
\$	4	D	T	d	t
%	5	E	U	e	u
&	6	F	V	f	v
'	7	G	W	g	w
(	8	H	X	h	x
)	9	I	Y	i	y
*	:	J	Z	j	z
+	;	K	[	k	{
,	<	L	\	l	!
-	=	M		m	}
.	>	N	^	n	~
/	?	O	_	o	

0	@	P	`	p	
!	1	A	Q	a	q
"	2	B	R	b	r
#	3	C	S	c	s
\$	4	D	T	d	t
%	5	E	U	e	u
&	6	F	V	f	v
'	7	G	W	g	w
(	8	H	X	h	x
)	9	I	Y	i	y
*	:	J	Z	j	z
+	;	K	[	k	{
,	<	L	\	l	!
-	=	M		m	}
.	>	N	_	n	~
/	?	O	_	o	

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Epson international character set

USA	#	\$	@	[	\	]	^	`	{	!	}	~
France	#	\$	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	\$	§	Ä	Ö	Û	^	`	ä	ö	ü	ß
UK	£	\$	@	[	\	]	^	`	{	!	}	~
Denmark I	#	\$	@		Ø	Å	^	`		ø	å	~
Sweden	#	¤	É	Ä	Ö	Å	Û	é	ä	ö	å	ü
Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì
Spain I		\$	@	;	Ñ	¿	^	`	¨	ñ	}	~
Japan	#	\$	@	[	¥	]	^	`	{	!	}	~
Norway	#	¤	É		Ø	Å	Û	é		ø	å	ü
Denmark II	#	\$	É		Ø	Å	Û	é		ø	å	ü
Spain II	#	\$	á	;	Ñ	¿	é	`	í	ñ	ó	ú
Latin America	#	\$	á	;	Ñ	¿	é	ü	í	ñ	ó	ú

ImageWriter character sets

**ImageWriter graphics character set**

	0	@	P	'	p	Ç	É	á
!	1	A	Q	a	q	ü	æ	í
"	2	B	R	b	r	é	Æ	ó
#	3	C	S	c	s	â	ô	ú
\$	4	D	T	d	t	ä	ö	ñ
§	%	5	E	U	e	u	à	ò
&	6	F	V	f	v	ð	û	
'	7	G	W	g	w	ç	ù	
(	8	H	X	h	x	ê	ÿ	¿
)	9	I	Y	i	y	ë	Û	
*	:	J	Z	j	z	è	Ü	
+	;	K	[	k	{	ï	Φ	
,	<	L	\	l	!	î	£	
-	=	M	]	m	}	ì		ì
.	>	N	^	n		ï		«
/	?	O		o		ÿ		»

ImageWriter italics character set

0	@	P	`	p	0	@	P	`	p		
!	1	A	Q	a	q	!	1	A	Q	a	q
"	2	B	R	b	r	"	2	B	R	b	r
#	3	C	S	c	s	#	3	C	S	c	s
\$	4	D	T	d	t	\$	4	D	T	d	t
%	5	E	U	e	u	%	5	E	U	e	u
&	6	F	V	f	v	&	6	F	V	f	v
'	7	G	W	g	w	'	7	G	W	g	w
(	8	H	X	h	x	(	8	H	X	h	x
)	9	I	Y	i	y	)	9	I	Y	i	y
*	:	J	Z	j	z	*	:	J	Z	j	z
+	;	K	[	k	{	+	;	K	[	k	{
,	<	L	\	l	!	,	<	L	\	l	!
-	=	M	]	m	}	-	=	M	]	m	}
.	>	N	^	n	~	.	>	N	^	n	~
/	?	O		o		/	?	O	-	o	

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**ImageWriter international character set**

USA	#	\$	@	[	\	]	^	`	{	!	}	~
France	#	\$	à	ç	š	ˆ	`	é	ù	è	˜	ˆ
Germany	#	\$	š	Ä	Ö	Ü	ˆ	`	ä	ö	ü	˜
UK	£	\$	@	[	\	]	^	`	{	!	}	~
Denmark I	#	\$	@	Æ	Ø	Å	ˆ	`	æ	ø	å	˜
Sweden	#		É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	\$	@	\	é	ˆ	ù	à	ò	è	ì	˜
Spain I	#	\$	@	ı	Ñ	¿	ˆ	`	ñ	}	˜	ˆ
Japan	#	\$	@	[		]	ˆ	`	{	!	}	~
Norway	#		É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark II	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Spain II	#	\$	á	ı	Ñ	¿	é	`	ı	ñ	ó	ú
Latin America	#	\$	á	ı	Ñ	¿	é	ü	ı	ñ	ó	ú



## Additional Features

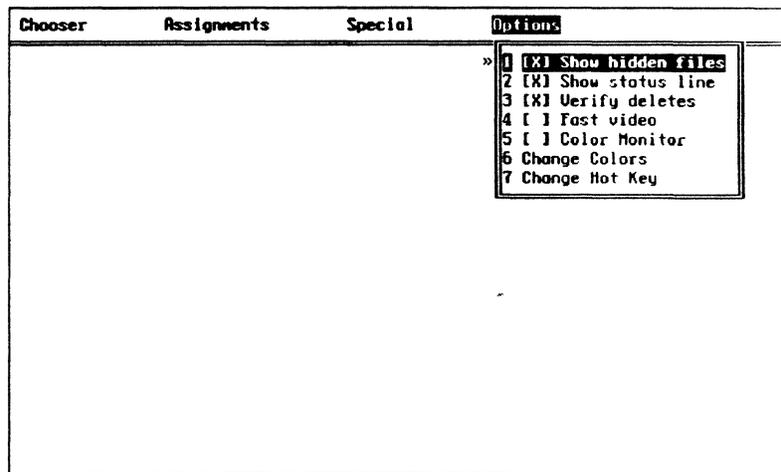
**Y**OU CAN CUSTOMIZE THE DA TO YOUR SYSTEM BY USING SEVERAL COMMANDS in the DA Options window. You can adjust the color assignments on your screen, change the hot-key combination that invokes the memory-resident DA, display hidden DOS files, and more. You can also use the Special window to execute time-saving commands such as ending sessions with all connected file servers.

---

## Customizing the DA

The Options window contains several features to customize the DA. Figure 6-1 shows the Options window.

■ **Figure 6-1** The Options window




---

### Showing hidden files

DOS ordinarily hides certain system files. Their names don't appear in the directory listing. This option lets you see the names of files in the DA that are normally hidden by DOS. This option is off when you first use the DA.

The Show Hidden Files option applies to DOS drives only.

To view hidden DOS files on a DOS drive

- **In the Options window, select Show Hidden Files and press Enter.**

Pressing Enter toggles the option on or off. An X indicates that the option is on; an empty box indicates that it is off.

---

### Showing the status line

The DA includes a status line at the bottom of the PC screen. If you are thoroughly familiar with the DA, you may wish to turn off the status line, although this is not recommended.

To set the status line on or off

- **In the Options window, select Show Status Line and press Enter.**

The option is toggled on or off.

---

### Verifying delete operations

The DA displays the optional Verification window before deleting a file. Although it may be risky to use the DA without this chance to confirm or cancel a delete operation, you can turn off the Verification window.

As a precaution, the DA displays the Verification window when you delete a directory that contains any files or subdirectories, even if you have used this option to turn off verification.

To reset the verification option

- **In the Options window, select Verify Deletes and press Enter.**

The Verification option is toggled on or off.

---

### Increasing video display speed

Some PCs use video cards that can display images and refresh the screen at higher speeds than ordinary cards. The DA is designed to take advantage of these faster cards. If you are using such a card, turn on this option.

To increase video display speed

- **In the Options window, select Fast Video and press Enter.**

The fast-display option is toggled on or off.

If you see "snow" on your screen, turn the fast-display option off.

---

### Indicating a color monitor

If your PC is equipped with a color monitor, set the Color Monitor option on. If you have a monochrome monitor, make sure this option is off.

To set the Color Monitor option

- **In the Options window, select Color Monitor and press Enter.**

The color monitor option is toggled on or off.

---

## Changing display colors and attributes

You can change the colors and screen display attributes for some parts of the Desk Accessory. Follow these steps:

**1. In the Options window, select Change Colors and press Enter.**

The Color window appears and lists the colors that you can change.

**2. Select the item you want to change.**

The item is highlighted in the window.

**3. Change the text color or attribute of the selected item.**

Press the Plus and Minus keys on the number pad to change the text color on a color monitor, or the attribute on a monochrome monitor. You can press the Plus and Minus keys repeatedly to cycle through the options.

**4. If you have a color monitor, change the background color of the selected item.**

Use the Right and Left Arrow keys to change the background color. You can press the Right and Left Arrow keys repeatedly to cycle through the possible changes.

**5. Press F2 to save the changes.**

The Disk window appears, asking if you want to save the changes in the disk version of the DA.

**6. Select Yes or No to indicate whether the changes are to be saved in the disk version of the DA.**

If you select Yes in this window, you save the changes in the version of the DA that you are using, as a message in the status line confirms. These new settings will be in effect each time you use that version (until you change them again and save the changes to the disk).

If you select No, you do not save the changes in the disk version of the DA, but the new colors and attributes will be in effect until you quit the DA or restart your PC.

---

## Changing the hot key

You use the hot-key combination to start the DA if you have installed it as a memory-resident program. The default hot-key combination is Alt-A. Valid combinations include most keys plus Alt, Ctrl, Left-Shift, and Right-Shift.

There is no way to view the current hot-key combination. If you decide to change it, be sure to write down the combination you select in case you forget it.

If you have forgotten your hot-key combination, create a new combination by following the steps to change the hot-key.

To change the hot-key combination, follow these steps:

**1. In the Options window, select Change Hot Key and press Enter.**

The Verification window appears, asking you to confirm that you want to change this keystroke combination.

**2. Select Yes, press Enter, and type the new key combination.**

The hot key is now the new combination.

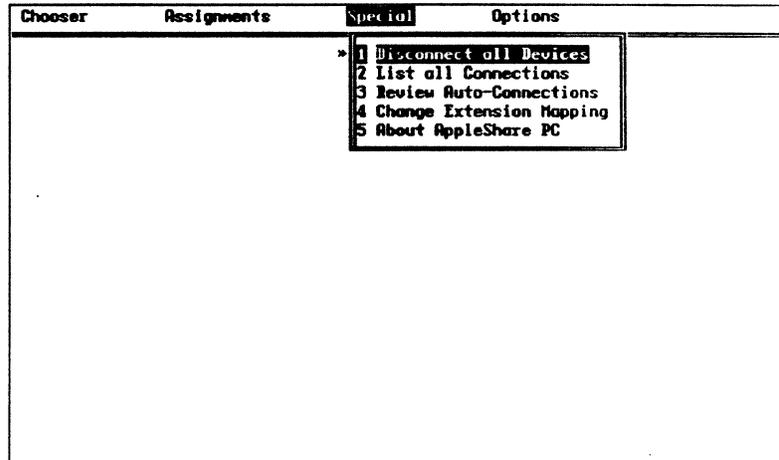
- ❖ *Choose your hot key carefully:* Be careful that the hot key you set does not interfere with normal DOS functions, or with the special functions used by your application programs.

---

## More features

This section describes features found in the Special window. It also describes how to make the DA memory-resident from your keyboard, and how to increase the number of server volumes you can use. Figure 6-2 shows the Special window.

■ **Figure 6-2** The Special window




---

### Disconnecting all devices

Disconnect All Devices lets you close all file and print server sessions, detaching all AppleShare volumes.

- **In the Special window, select Disconnect All Devices.**

Press Enter to confirm the command or press Escape to cancel it.

- ❖ *ANET equivalent:* You can also use the ANET DETACH command to detach all AppleShare volumes. See Chapter 7 for an explanation of the ANET program and the DETACH command.

---

### Listing all connections

List All Connections brings up a list of all active file server and printer sessions and related assignments.

- **In the Special window, select List All Connections.**

Press Escape to go back to the Special window, or you can select the file server session you want to end.

Press F3 to end a session with the server.

- ❖ *ANET equivalent:* You can also use the ANET ATTACH command to list all volume attachments. See Chapter 7 for an explanation of the ANET program and the ATTACH command.

---

### Reviewing or canceling auto-connections

Review Auto-Connections shows which connections are made automatically each time your PC is turned on.

- **In the Special window, select Review Auto-Connections.**

The Review Auto-Connections window lists the file server, user name, and DOS drive letter for each automatic connection.

- **To cancel an auto connection, select a server and press F3.**

The selected item is deleted, and will no longer be included in the automatic connection procedure. An automatic connection is also deleted if you create a new automatic connection that uses its DOS drive letter.

---

### Finding out about AppleShare PC

In the Special Window, select About AppleShare PC to see copyright information, the names of the programmers, and a description of memory use. Figure 6-3 shows the About AppleShare PC window.

■ Figure 6-3 The About AppleShare PC window

Chooser	Assignments	Special	Options
		About AppleShare PC AppleShare PC Desk Accessory V2.00 AppleTalk PC Print Driver V2.00 AppleShare PC Translator V2.00 AppleTalk PC Driver V2.60	
		Designed and written by Mike Quinn Mike Shoenaker John Mang Robert Lenoil John Mason	
		All programs Copr. Apple Computer, Inc. 1987-89 All rights reserved.	
		Driver Memory Pool: Free: 21874 Used: 6848 BOS Memory Pool: Free: 31792 Used: 976 Expanded Memory Pool: Free: 0 Used: 0 Press any key to continue	

## The ANET Command Interpreter

**Y**OUR APPLESHARE PC PROGRAM INCLUDES ANET, A COMMAND INTERPRETER designed to perform functions similar to the DA through batch files. This chapter covers the ANET command interpreter, writing batch files, and other tools to help you use AppleShare PC effectively.

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You use ANET to write batch files that automate logging on to and using devices on the network, and to key in network commands at your keyboard. You can use ANET commands to get information about the network and about files on the current file server. In addition, ANET and the DA commands are compatible, so that you can use them interchangeably.

ANET can work with the three parts of the Open Data-Link Interface (ODI) specification—those that allow you to use an AppleTalk network over a variety of communications cards and drivers. They are the Multiple Link Interface (MLI) drivers, the Multiple Protocol Interface (MPI) **stacks**, and the **Link Support Layer (LSL)**.

ANET consists of the following commands:

<b>Command</b>	<b>Function</b>
ACCESS	changes access privileges for a directory
ATTACH	attaches a DOS drive letter to a server volume; lists attached server volumes
AUTO	automatically logs you on to one or more file servers and printers, and automatically attaches server volumes.
CONFIGURATION	displays hardware configurations
CONNECT	connects your workstation to a network printer; lists currently connected printers
DEFAULT	sets a new default MLI driver; shows current default MLID
DETACH	detaches one or more server volumes
DISCONNECT	removes a network printer
EXIT	leaves ANET; same as QUIT
HELP	displays a synopsis of ANET commands and command syntax
LIST	lists MLI drivers, MLI stacks and Apple memory-resident programs
LOGOFF	ends a session with a server; automatically detaches all server volumes and ends the session with all servers

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LOGON	logs your workstation on to a server; lists all active sessions
MAP	allows you to view or change current extension mappings
NAME	registers your workstation name on the network; displays the workstation's current name
QUIT	leaves ANET; same as EXIT
REMOVE	allows you to remove most Apple memory-resident programs, and MPI stacks and MLI drivers
STATISTICS	displays internal statistics
TYPE	allows you to see or change a file's icon type
USE	selects a new MLI driver; shows the current MLIID in use

---

## Using ANET

You can invoke ANET directly from DOS or from a batch file. You can use ANET either for single commands or for a series of commands.

To use ANET for a single command, use the form

```
ANET commandname [parameters]
```

ANET executes *commandname* using any applicable *parameters* and exits to DOS.

To use ANET for a series of commands, type ANET and press Enter. Then enter each new command on its own line. When you finish, type the command QUIT or EXIT.

This example logs a user on and attaches two DOS server volumes.

```
LOGON S (MAINSERV) N (AK SMITH) P (BROADWAY)  
ATTACH D: \\MYSERV\REPORTS  
ATTACH E: \\MYSERV\REPORTS\MARCH
```

Descriptions for each command and its syntax are included in the later section "ANET Commands."

---

## Command syntax

Syntax statements in this section use the following format:

- Commands appear in all capital letters:

HELP

- Italics indicate a symbolic name. Substitute real arguments for these:

TYPE *filename*

- Square brackets surround optional command arguments:

TYPE *filename* [*type*]

- A vertical bar indicates that you must use only one of the options that the bar separates:

LOGOFF *sessionname* | /ALL

- An ellipsis means you can repeat an item:

DETACH *driveletter*...

- ❖ *Type \\ literally*: The double backslash is a special DOS notation telling DOS to treat the name that follows as a network device, the first element of which is the session name:

ATTACH E: \\BIG\_GUY\ODDJOB\SALES

The two backslashes are not symbolic names, and you must include them in a pathname that includes a network device.

---

## ANET commands

This section lists the format of each ANET command, examples of the command, and its short form. The short form can be used wherever the long form is used. Refer to the previous section "Command Syntax" to review the syntax format.

## CONFIDENTIAL

---

### ACCESS

ACCESS changes access privileges for a directory.

**FORM:** ACCESS *pathname* [O(*priv*["newowner"])]  
[G(*priv* ["new group"])] [E(*priv*)]

**EXAMPLES:** ACCESS E:MYDIR G(DF)  
ACCESS E:MYDIR G(=DF)  
ACCESS E:MYDIR O(CDF="John Smith")  
G(DF="Accting") E(DF-C)

**SHORT FORM:** AC

The privilege indicators (*priv*) are

- C—Make Changes to a directory's contents
- D—See Directories in directory
- F—See Files in directory

The user categories, designating to whom the privileges apply, are

- O—the directory's Owner
- G—the Group associated with a particular task
- E—Everybody, including anyone logged on as a guest

The order in which you give the categories is not significant.

The access privileges that are assigned to a directory when it is first created allow the owner See Files, See Directories and Make Changes privileges. No other privileges—to the Group or to Everybody—are assigned.

To use this command, you must already be logged on to a server, and at least one server volume must already be attached.

### Using operators with ACCESS

ACCESS has three optional operators—plus (+), minus (-), and equal (=). You usually use operators to change a previous state:

- (+) Add the specified privileges to any that exist.

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- ( - ) Take away the specified privileges from any that exist.
- ( = ) Use the specified privileges instead of any that might already have been assigned.

An operator applies to all privilege indicators to its right until another operator is used. When you use a privilege indicator without an operator preceding it—as in G(C)— + is assumed. When a privilege indicator or an operator tries to add a privilege that already exists, or take away one that doesn't exist, it's ignored.

For example, if you wanted to add the Make Changes privilege to the group's privileges after these privileges had been set, you could write

```
ACCESS E:MYDIR G(+C)
```

(No matter what privileges the group had previously with the contents of MYDIR, it now can also change what is in the directory.)

The equal sign denies (or cancels) any privilege not explicitly stated as one of its arguments. When you want to state absolutely what the privileges are, precede the privilege indicator letters with an equal sign:

```
ACCESS E:MYDIR G(=DF)
```

(No matter what privileges it already had to the contents of MYDIR, the group now can only See Directories and See Files.)

If you put only an equal sign in parentheses, you remove all privileges:

```
ACCESS E:MYDIR E(=)
```

(No matter what privileges anybody except the owner and group members previously had with the directory MYDIR, they now have none.)

### Changing owners or groups

You can also assign new owner or group names to a directory that you own by placing the argument

```
= "name"
```

within one of the privileges. In the following example the new owner of MYDIR (Primo Acme) gets full access privileges; group members and the general server public can see directories and files in MYDIR, but they are not allowed to change its contents:

## CONFIDENTIAL

```
ACCESS E:MYDIR O(CDF = "Primo Acme") G(=DF)
E(=DF)
```

To assign a new name and to take away all privileges, use a double equal sign:

```
ACCESS E:MYDIR G(=="New kids")
```

To take away a group name, use an empty string:

```
ACCESS E:MYDIR G(=="")
```

---

## ATTACH

ATTACH associates a DOS drive letter with a file server pathname. The order in which elements of the command appear is significant. You must have already logged on to a server to attach a server volume.

If you type ATTACH without arguments it returns a list of server volumes and the server pathnames to which they are attached.

**FORM:**       ATTACH [*drive letter*:\\*sessionname*\  
                  *volumename*\*pathname*]

**EXAMPLE:**   ATTACH E:\\BIG\_GUY\\ODDJOB\\SALES

**SHORT FORM:** AT

*sessionname* is the name assigned to the session when you log on

*volumename* is the name of the server volume

To determine the session name, use the ANET LOGON command with no parameters. To determine the server volume name, see your AppleShare administrator. Be sure to use the DOS short name for any names created on a Macintosh computer.

---

## AUTO

AUTO performs automatic log-on procedures and attachments that were saved by the DA program. The first time it is invoked, it also registers your workstation name on the network. To log on automatically and attach server volumes, AUTO uses the connections and user names listed under Review Auto-Connections in the DA Special window. (See "Establishing Automatic Connections" in Chapter 4 for details on creating automatic attachments.)

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If you issue the AUTO command with no options, all servers and printers are connected. If you enter the command with the PRINTERS or SERVERS option, only those services will be automatically connected.

If a password wasn't saved as part of the automatic procedure, ANET prompts you for one.

**FORM:** AUTO [PRINTERS] [SERVERS]

**EXAMPLES:** AUTO  
AUTO PRINTERS

**SHORT FORM:** AU

---

## CONFIGURATION

CONFIGURATION allows you to view configuration information about MPI stacks and MLI drivers.

**FORM:** CONFIGURATION [[ALL [STACKS|MLIDS]] |  
*MPIstackname|MLIDname*]

**EXAMPLE:** CONFIGURATION ALL

**SHORT FORM:** CONF

---

## CONNECT

CONNECT connects an LPT number to a network printer.

**FORM:** CONNECT [LPTn[:]] [N(*printername*)]  
[P(*printertype*)] [Z(*zone*)]  
[X(*translation*)] [L(*leftmargin*)]  
[T(*topmargin*)] [B(*bottommargin*)] [C(*cpi*)]  
[S(*papersize*)] [#(*tabsetting*)]  
[Q(*printquality*)] [I(*lpi*)] [D(*time-out*)]

**EXAMPLES:** CONNECT LPT1: N(Myprinter)Q(N)  
CONNECT

**SHORT FORM:** CONN

## CONFIDENTIAL

CONNECT with no parameters lists the currently connected printers. Use margin options only with Epson translation mode.

*n* is the printer number

*printername* is the name of the printer to connect

*printertype* must be Laserwriter, Imagewriter, or LQ

*zone* is the printer zone

*leftmargin* is in 1/10 inches; default is 5

*topmargin* is in 1/10 inches; default is 5

*bottommargin* is in 1/10 inches; default is 0

*cpi* is characters-per-inch and must be 10, 12, or 15; default is 10

*papersize* must be 11, 14, or A4 and defaults to 11

*tabsetting* defaults to 8

*translation* must be Epson, PostScript, ImageWriter or none

*printquality* must be N or D; N=near letter quality and D=draft

*lpi* is lines-per-inch and must be 6 or 8; default is 6

*time-out* indicates the number of seconds the printer will wait for a new character before deciding that the print session is complete.

---

## DEFAULT

The DEFAULT command sets a new MLID as the default. This is the MLID that will be used when AppleShare PC is started. When you issue the DEFAULT command, the named MLID becomes the default MLID the next time you start your computer.

DEFAULT with no parameters shows the current default MLID. If you want to use a different MLID without changing the default setting, use the ANET USE command.

**FORM:**           DEFAULT [*MLIDname*]

**SHORT FORM:** DEF

---

## DETACH

DETACH disassociates the listed DOS drive letters from file server volumes. The DETACH command does not log you off a server, nor does it close an open session. Use LOGOFF to perform these functions.

**FORM:**        DETACH *driveletter*[*driveletter*]  
                  ...

**EXAMPLE:**    DETACH D: E:

**SHORT FORM:** DET

If you use DETACH with a drive letter that isn't attached, you see the message:

This device is not redirected

---

## DISCONNECT

DISCONNECT allows you to remove a network printer by disassociating the LPT number from the printer. DISCONNECT /ALL disconnects all LPT numbers from all printers.

**FORM:**        DISCONNECT LPTn: [LPTn:] | /ALL....

**EXAMPLE:**    DISCONNECT LPT1: LPT2: LPT3:

**SHORT FORM:** DIS

## CONFIDENTIAL

---

### EXIT

EXIT exits you from ANET and returns you to DOS. It has the same effect as the QUIT command.

**FORM:** EXIT

**SHORTFORM:** E

---

### HELP

HELP presents a list of all ANET commands and their syntax. If necessary, use Ctrl-S to pause scrolling, and press any key to continue scrolling.

**FORM:** HELP

**SHORTFORM:** ?

To view help information about a particular ANET command, type HELP followed by the command.

---

### LIST

LIST allows you to list all Apple Terminate and Stay Resident programs (TSR) as well as all MPI stacks and MLI drivers. LIST with no options is the same as LIST ALL.

**FORM:** LIST [TSRS | STACKS | MLIDS | ALL]

**EXAMPLE:** LIST STACKS

**SHORTFORM:** LI

---

### LOGOFF

LOGOFF disconnects a workstation from a session.

If the server session from which you want to log off still has one or more server volumes attached, a prompt asks permission to detach them. (If you say No, LOGOFF is canceled.) When you use the /ALL option, this prompt doesn't appear.

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**FORM:** LOGOFF *sessionname* | /ALL

**EXAMPLES:** LOGOFF GOULASH  
LOGOFF /ALL

**SHORTFORM:** LOGOF

---

## LOGON

LOGON logs a workstation on to a server called *servername*.

LOGON with no parameters returns a list of all active sessions.

**FORM:** LOGON[S(*servername*)] [Z(*zonename*)]  
[U(*username*)] [P(*password*)]  
[D(*sessionname*)]

**EXAMPLES:** LOGON S(Fitsgerald) U(Duke) P(spring)  
LOGON S(Diane's server)  
LOGON

**SHORTFORM:** LOGON

△ **Important** If you use any argument, then one of those arguments must be S(*servername*). △

The order of the arguments is not significant.

In the following example, Duke with the password *spring* logs on to the server named Fitzgerald:

```
LOGON S(Fitsgerald) U(Duke) P(spring)
```

If you give only the server name argument, LOGON creates a session and registers you as a guest.

When you log on without the D option, the session name becomes the server name with spaces changed to underscores, characters unacceptable to DOS stripped away, and the length of the name truncated to 15 characters.

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You can force the session name to be any legal DOS name by specifying it in the argument `D(sessionname)`. This capability is useful in batch files to ensure a unique known session name for attaching server volumes.

- ❖ *Quotation marks and parentheses:* Arguments in parentheses must be enclosed in quotation marks if the argument contains one or more of the following characters: `< > \ )`. In addition, all embedded double quotation characters must be themselves doubled. For example, `A<"` becomes `"A<"""`.

### Multiple session names

You can create more than one session with the same server. This happens when you log on to the same server from your PC with two or more user names. Assuming that you use only the `S(servername)` parameter, the name of the first session that you create is the same as your server name (except for the character changes and deletions mentioned earlier to shorten the name to 15 legal DOS characters). Each subsequent name appends a number to the end of the name, starting with the number 1 (as in MARGIE1). Each additional session increments this number (MARGIE2, MARGIE3, and so on) up to the limit set by REDIR. (See "Increasing Sessions and Server Volume Attachments" later in this chapter.)

---

### MAP

MAP associates the specified *filetype* to each file with the extension *extension* that you create on a server volume after you issue the command. It has no effect on files already on the server.

You use MAP for two purposes: to set the Macintosh icon type and creator for a PC-created file so that Macintosh users can see an appropriate icon for that file, and to specify those extensions that identify DOS text files or Macintosh text files. (These files can be converted from one type to the other during copying.)

## CONFIDENTIAL

**FORM:** MAP [*extension* [*filetype*]]

**EXAMPLES:** MAP  
MAP DOC  
MAP DOC BINARY

**SHORT FORM:** M

If you issue the MAP command with no arguments, it reports all current extensions already defined and their icon types. If you use MAP with just *extension*, you see the icon type for the extension:

ANET MAP TXT

Type for extension 'txt' is DOS-Text

The default icon type for all files created on the server is Binary.

△ **Important** Changing a file's icon type does not change the file's contents. For details on Macintosh file structure, see *Inside Macintosh*. △

---

### NAME

NAME registers your workstation on the network under the name you give. (The administrator uses that name for troubleshooting the network.)

If the workstation name includes spaces, you must enclose the whole name within double quotation marks.

Unlike other parameters for ANET, *workstationname* can contain any characters; it can be up to 31 characters long.

If the name you enter is already being used by another workstation running the same DOS version on the network, ANET appends a digit to the name that you enter; for example, if WAYNE is the name, it becomes WAYNE1, another WAYNE becomes WAYNE2, and so on.

If you issue NAME with no arguments, ANET shows the workstation's current name.

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**FORM:** NAME [*workstationname*]

**EXAMPLES:** NAME MyStation  
NAME "Accounting Dept Workstation"  
NAME

**SHORT FORM:** N

---

**QUIT**

QUIT exits from ANET and returns to DOS. It has the same effect as the EXIT command.

**FORM:** QUIT

**SHORT FORM:** Q

---

**REMOVE**

REMOVE allows you to remove most Apple TSRs, as well as Apple MPI stacks and MLIDs.

**FORM:** REMOVE ALL | *modulename* [*modulename*]...

**EXAMPLE:** REMOVE APRINT

**SHORT FORM:** R

You can remove any of the modules displayed in the ANET LIST command. If you plan to remove more than one module, you must remove them in the order that they are displayed in the LIST command.

If you load other TSRs in memory after the AppleShare PC files, you will not be able to execute the REMOVE command.

The ANET REMOVE ALL command removes all AppleShare PC files from memory that are loaded after REDIR.EXE, MINSES.EXE, and SHARE.EXE.

REDIR.EXE, MINSES.EXE, and SHARE.EXE cannot be removed with the REMOVE command.

---

**STATISTICS**

STATISTICS allows you to view statistics from the LSL, MPI stacks, and MLI drivers.

**FORM:**        STATISTICS [LSL | *MPIstackname* |  
                  *MLIDname*]  
                  STATISTICS ALL [STACKS | MLIDS]

**EXAMPLES:**  STATISTICS LSL  
                  STATISTICS ALL MLIDS

**SHORT FORM:**  S

STATISTICS LSL retrieves statistics from the Link Support Layer.  
STATISTICS ALL prints all statistics for all stacks. ALL STACKS or ALL MLIDS  
prints statistics for all stacks present or for all MLIDs present, respectively.

You can view legal stack and driver names by using the ANET LIST  
command.

---

**TYPE**

TYPE changes or displays the specified file's icon type. The command word  
TYPE must be followed by a legal DOS pathname that ends at a file on a  
network server volume.

You can't change the icon type of a file unless its present type is known to  
AppleShare PC.

To use this command, you must already be logged on with at least one  
server volume attached.

**FORM:**        TYPE [*filename* [*filetype*]]

**EXAMPLES:**  TYPE Q:MYFILE.TXT BINARY  
                  TYPE D:MYFILE.DOC  
                  TYPE \\MYSESS\MYDIR\MYFILE.TXT

**SHORT FORM:**  T

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- ❖ *File types:* A Macintosh text file ends each line with a carriage return character. A DOS text file ends each line with a carriage return and a line feed character. The Binary type implies nothing about the file's contents. Macintosh text files are what Macintosh text processing programs produce, and DOS text files are what PC text processing programs produce.

### Using partial syntax

If you issue the TYPE command with only a filename, you get the file's type:

```
TYPE D:MYFILE.TXT
```

ANET reports

The file's type is DOS-TEXT

The following example changes the type of the MYFILE.TXT file on volume D to Binary:

```
TYPE D:MYFILE.TXT BINARY
```

If you were now to call for the file's type, ANET would report:

The file's type is BINARY

---

## USE

USE allows you to temporarily use a loaded MLID other than the default driver. It does not change the designated default driver. If you want to change the default driver, use the ANET DEFAULT command.

Before you issue a USE command, disconnect all file servers and printers with ANET DISCONNECT and ANET LOGOFF.

**FORM:**       USE *MLIDname* [#*instancenumber*]  
                  [Z(*zonename*)] [H(*hint*)]

**SHORT FORM:** U

*instancenumber* specifies which card to use if you have more than one of the same type of communications card.

*zonename* is the name of your zone on an EtherTalk or TokenTalk network.

*hint* is a suggested identification number for your network node.

If you specify a parameter, your NET.CFG file is modified to reflect those changes.

You can change your workstation's network zone with the zonename parameter.

You can view all loaded MLI drivers by using the ANET LIST command.

---

## Batch file tips

ANET commands can be executed from batch files at startup time. This section contains a number of tips to help you get the most out of batch files and ANET.

---

### Using text files for ANET commands

To use ANET most efficiently in a batch file, use this syntax:

ANET @*filename*

The special symbol @ (Shift-2 on most keyboards) tells ANET to read its commands from *filename*, a text file that contains a list of ANET commands. For example, a batch file called LOGME.BAT might contain:

```
LOGON S(CLASSICS) U(JARRETT) P(ART)
ATTACH D:\\CLASSICS\\LANDE
ATTACH E:\\CLASSICS\\LANDE\\CRONKITE
```

This code says to log Jarrett on to the Classics server with the password ART, and then to attach drive letter D to the directory LANDE and drive letter E to directory CRONKITE—a subdirectory within LANDE.

Assuming that the batch file has the name LOGME, Jarrett could log on at the DOS prompt by typing

```
ANET @LOGME
```

- ❖ *Concerned about security?* The first line of the example shows that the password (GAF) is part of the batch file. For security purposes, you might decide not to include the password in the batch file. In that case, ANET automatically prompts for the password at the appropriate time.

---

**Modifying your  
AUTOEXEC.BAT file**

You might want to load AppleShare PC at startup, or edit your AUTOEXEC.BAT file for some other purpose after you have installed AppleShare PC. If you do, be careful of the order in which you execute AppleShare PC installation files. Use the batch file created by the installation program as a guide. It calls files in this order:

LSL

any MLI drivers you selected

AARP—this is only loaded if you selected an MLID other than  
LocalTalk

ATALK

ASP\_WS

ASHARE

MINSES

REDIR

PAP\_WS

APRINT

ANET AUTO

DA/R —added if you selected memory-resident DA

△ **Important** If your AUTOEXEC.BAT file calls memory-resident programs, you must load ATALK, ASHARE, MINSES, REDIR, and DA/R before you load another memory-resident program. Some memory-resident programs block the DA if they're installed first. Also note that ASHARE must generally be loaded after other network drivers.

If you want to remove the memory-resident AppleShare files, and your AUTOEXEC.BAT file loads other TSRs after the Apple TSRs or you load other TSRs manually, you will not be able to remove them. You must remove the TSRs listed last in the AUTOEXEC.BAT file first. △

If your MLIDs use other communications card drivers, you may need to edit your AUTOEXEC.BAT file to load their required drivers before loading the MLIDs.

---

## Increasing sessions and server volume attachments

The AppleShare PC installation program configures your workstation to support two file server connections, each with one attached volume. If you want to log on to more than two servers at the same time from the same workstation, or attach more than one volume, you must reconfigure the REDIR.EXE program that comes with AppleShare PC. The Redirector supports up to four active servers and allows up to six volumes to be attached.

- To set the number of allowable active server sessions, add or modify a line in your AUTOEXEC.BAT file using the form

```
REDIR /S:n
```

where *n* is the number of allowable active sessions. For example, to allow three active sessions, in your AUTOEXEC.BAT file, enter

```
REDIR /S:3
```

- If you want to attach more than four server volumes to your workstation, reconfigure the Redirector using the form

```
REDIR /L:m
```

where *m* is the number of attachments, greater than or equal to the number of allowable active sessions. You can have up to six volumes attached simultaneously.

- To set both the allowable active sessions and the number of server volumes, use the form

```
REDIR /S:n /L:m
```

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See the following section, "Memory Considerations," for information about memory allocation if you plan to connect more than two file server volumes.

---

### Memory considerations

The installation program sets memory allocation for the driver memory pool used by AppleShare PC. The allocation is based on your system configuration. You might need to change this setting based upon how you normally use services.

The installation program creates a NET.CFG file that contains a MEMPOOL statement that declares the number of bytes of memory to set aside for AppleShare PC. The value in your MEMPOOL statement depends on what services you installed. For example, if you installed all AppleShare services, your MEMPOOL statement might say

```
MEMPOOL=9K
```

To adjust the amount of memory allocated, modify this statement according to the amount of resources you plan to use, as discussed below.

△ **Important** Whenever you change CONFIG.SYS, NET.CFG, or AUTOEXEC.BAT, you must restart the system. It is the only way that DOS or AppleShare PC can put the changes into effect. △

---

#### With color graphics

If you are not in Expanded Memory Manager (EMM) mode, the DA is memory-resident, and you are using a color graphics screen, you must add 15K to the default setting for the memory pool.

---

#### With additional DOS drives

By default, DOS recognizes only five drive letters. If you want to use more than five drive letters so that you can attach additional server volumes, use the LASTDRIVE statement in your CONFIG.SYS file to change the default setting. (Consult your DOS reference manual if you are not sure how to do this.)

For each *pair* of additional server volumes that you plan to use simultaneously, add 1K to the memory pool.

---

**With additional printers**

AppleShare PC sets aside memory for one printer connection. Each additional printer connection requires that an additional 5K of memory be added to the memory pool.

❖ *Getting memory pool information:* To determine the amount of memory in the driver memory pool, the DOS memory pool, and the expanded memory pool, select About AppleShare PC in the DA Special window.

For example, if you want to add four server volumes to your system, you are using color graphics, and you have no EMM, then add 17K to the memory pool (2K for the four server volumes plus 15K for color graphics).

For details about the structure of the NET.CFG file, see Appendix C.

---

**Making the DA memory-resident**

You can make the DA memory-resident at any time. To do so, at the DOS prompt, type

DA /R.

△ **Important** Do not make the DA memory-resident while you are running a multitasking environment such as TopView, Microsoft Windows, or DESQview. Instead, run the DA from the DOS prompt. △

---

## Helping the DA find related files

If you move the DA support files (DA.HLP, DA.DTA, and DTA.OVL) so that they aren't in the same directory as DA.EXE, and if they are not in one of the directories listed in the DOS path, you'll have to use the SET DA command at the DOS prompt. SET DA tells the DA where to find these files. Use the form

```
SET DA=DOSdriveletter:\pathname
```

For example, to tell the DA that DA.HLP is on drive C: in the directory named Support, at the DOS prompt you'd enter

```
SET DA=C:\Support
```

You can also add the SET DA statement to your AUTOEXEC.BAT file so that this is done automatically when you start up.



## Troubleshooting

**T**HIS CHAPTER IDENTIFIES AND OFFERS SOLUTIONS FOR SOME OF THE COMMON problems you may encounter when you work with AppleShare PC. The four sections discuss problems that you may have when you start up, when you log on, after you have logged on, and when you work with third-party software.

---

## Error messages at startup time

Before you can use AppleShare PC, the AppleShare PC software must successfully load into your computer's memory. An unsuccessful load is usually the result of modules that are missing or run out of order.

If you start your system using the AUTOEXEC.BAT and the batch files created by the installation program, the AppleShare PC files will be loaded in the necessary order. If you run batch files that you created, load modules from the DOS prompt, or inadvertently delete or move some of the installation program files, you may not be able to start AppleShare PC.

---

### Attempting to load MLIDs

Error messages that indicate unsuccessful attempts to load MLI drivers can be due to inaccurate descriptions of a communication card's configuration during the installation process or conflicting use of memory by communications cards, expanded memory cards, and EGA/VGA video cards.

Check with your communications card's installation manual for its correct DIP switch settings. Then reinstall AppleShare PC and make sure that your configuration selections are appropriate for the card.

If you still get error messages, speak with your network administrator.

---

### Attempting to load APRINT

Most problems that occur when you try to load APRINT are caused by the absence of other files necessary for APRINT to run. If you are running a batch file that you created, edit it so that the mentioned file is loaded first. If you are running APRINT from the DOS prompt, run the mentioned file first.

If one of the following error messages appears when you attempt to load APRINT, follow the suggestion provided:

- **The AppleTalk stack is not installed. You must run ATALK.COM.**  
Run ATALK.COM before you run APRINT.
- **The loaded AppleTalk stack does not support APRINT. You must run PAP\_WS.COM.**  
Run PAP\_WS.COM before you run APRINT.

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Run PAP\_WS.COM before you run APRINT.

- **The AARP module must be loaded before APRINT can load. The MLID Link-Level driver you are using requires the AARP protocol. Execute AARP.COM and run APRINT again.**

Run AARP.COM before you run APRINT.

- **The AppleShare print driver is already loaded.**  
You tried to load APRINT after it was already loaded.
- **The default MLID Link-Level driver specified in your NET.CFG file is not loaded. You must load it before the AppleTalk stack can be used.**

Load the MLID that you specified as the default. You can issue the ANET DEFAULT command to view your current default MLID or issue the ANET USE command to use a different driver.

- **The Buffers section of your NET.CFG file specifies buffers that are too small to use with this media. If you used the AppleShare PC INSTALL program to install the software, this error should not have occurred. To correct it, edit the NET.CFG file and make the second number on the "Buffers xx xxx" line larger by 10 or so and reboot your computer.**

See "Memory Considerations" in Chapter 7 for further information about increasing memory buffers and see Appendix C for details about the NET.CFG file.

---

### Attempting to load the DA

Like APRINT, most problems that occur when you try to load the AppleShare PC Desk Accessory (DA) are caused by the absence of other files necessary for the DA to run. If you are running a batch file that you created, edit it so that the mentioned file is loaded first. If you are loading the DA from the DOS prompt and the error message displays, run the mentioned file first.

If one of the following error messages appears when you attempt to load the DA, follow the suggestion provided:

- **The Link Support Layer (LSL) must be loaded first.**

Run LSL before you load the DA.

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- **The AppleTalk Protocol Stack (ATALK) must be loaded first.**  
Run ATALK before you load the DA.
- **The AppleShare PC Desk Accessory is already loaded.**  
You have already loaded the DA.
- **WARNING: DA.DTA file was not found. Hot key will be Alt-A until DA.DTA is found.**  
Make sure that DA.DTA is in the proper directory. See "Helping the DA Find Related Files" in Chapter 7.
- **The DA.HLP file could not be found.**  
Make sure that DA.HLP is in the proper directory. See "Helping the DA Find Related Files" in Chapter 7.
- **The file DA.OVL must be present to run DA.**  
Make sure that DA.OVL is in the proper directory. See "Helping the DA Find Related Files" in Chapter 7.
- **The default MLID Link-Level driver specified in your NET.CFG files is not loaded. You must load it before the AppleTalk stack can be used.**  
Load the MLID that you specified as the default. You can issue the ANET DEFAULT command to view your current default MLID.
- **The AARP module must be loaded before DA can run. The MLID Link-Level driver you are using requires the AARP protocol. Run AARP.COM and try DA again.**  
Run AARP before you load the DA.
- **There is not enough memory to load the zone list.**  
Try adding 1 or 2K to the MEMPOOL statement in the NET.CFG file. See "Memory Considerations" in Chapter 7 for further information about increasing memory buffers and see Appendix C for details about the NET.CFG file.
- **There is not enough memory to read in the DA.DTA file**  
Try adding 1 or 2K to the MEMPOOL statement in the NET.CFG file. See "Memory Considerations" in Chapter 7 for further information about increasing memory buffers and see Appendix C for details about the NET.CFG file.

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- **The network is not responding properly. A bridge is probably down.**

See your AppleShare administrator.

- **An error occurred initializing the AppleTalk stack.**

See your AppleShare administrator.

---

### Attempting to load ASHARE

If one of the following error messages appears when you attempt to load ASHARE, follow the suggestion provided:

- **There is not enough memory to load.**

Try adding 1 or 2K to the MEMPOOL statement in the NET.CFG file. See "Memory Considerations" in Chapter 7 for further information about increasing memory buffers and see Appendix C for details about the NET.CFG file.

- **DOS version 3.1 or greater is required.**

To run AppleShare PC, your computer must run DOS version 3.1 or later.

- **The loaded AppleTalk stack does not support AppleShare workstations. You must run ASP\_WS.COM before ASHARE.**

Load ASP\_WS before you run ASHARE.

- **ASHARE is already installed.**

You do not need to load ASHARE because it is already installed.

---

### Problems logging on

Most problems that you encounter when you log on to the server have to do with startup disks—the result of improperly installed AppleShare PC software—or a current startup disk that doesn't have AppleShare PC software installed on it.

---

### The DA doesn't appear

If the DA doesn't appear, any of the following conditions may be the cause:

- **An AppleShare PC file is missing or damaged.**

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The following are the AppleShare files that must be on your startup disk for AppleShare PC to work. (If you are using two floppy disks, some files may be on your Application Disk.) If any of these are missing, reinstall AppleShare PC as described in Chapter 2.

- ATALK.COM—the AppleTalk protocol stack
- ASHARE.COM—the AppleShare PC translator
- MINSES.EXE—the network session interface software
- REDIR.EXE—the DOS redirector
- DA.COM—the AppleShare PC DA
- DA.OVL—more of the AppleShare PC DA
- DA.DTA—the data file for the DA program
- DA.HLP—the help file for the DA program
- ANET.EXE—the command line interpreter
- LSL.COM—the Link Support Layer
- NET.CFG—the driver configuration file
- PAP\_WS—Printer Access Protocols
- ASP\_WS—AppleTalk Session Protocols
- AARP—the network addressing protocols
- the appropriate MLID

△ **Important** The installation program places the AppleShare PC files in a directory on your startup disk and tells AppleShare PC where to find the files it needs. Do not move the AppleShare PC files. If you need to put them in a different directory, rerun the installation program. △

■ **AppleShare PC cannot find one of the required AppleShare PC files.**

If you install AppleShare PC files in a specified directory, the installation program inserts a statement in your AUTOEXEC.BAT that references the location of those files. If you move any of these files to another directory, change the path in the AUTOEXEC.BAT statement to reflect their current location.

- **You did not start up from the AppleShare PC Startup Disk.**

Insert your "AppleShare PC Startup Disk" and restart your computer.

- **The hot key has been changed.**

If you don't know or can't remember the hot-key combination, you can change it. See "Changing the Hot Key" in Chapter 6.

- **Your AUTOEXEC.BAT file has been changed.**

Reinstall AppleShare PC. See "About Installation" in Chapter 2 for more information.

---

### **The hot key doesn't bring up the DA**

If you press the hot key and nothing happens, make sure that you have made the DA memory-resident.

If you hear a tone when you press the hot key and the DA doesn't appear, any of the following conditions may be the cause:

- **DOS is busy.**

Wait a moment; then press the hot key again.

- **You are using an unsupported graphics mode.**

The DA doesn't support all graphics modes, such as EGA graphics. Try leaving graphics mode; then press the hot key again.

- **The DA does not have enough memory to run.**

Try increasing the amount of driver memory. See "Memory Considerations" in Chapter 7 for more information.

---

### **The server isn't listed in the Chooser window**

If a server isn't listed in the Chooser window, any of the following conditions may be the cause:

- **The server you're looking for is not in the zone you've selected.**

Try looking in another zone.

- **The server isn't connected to the AppleShare network or has been shut down for maintenance.**

Check with your AppleShare administrator.

- **There is a problem in the AppleShare network between your PC and the server you want to use.**

See your cabling system guide for more information.

- **The name of the server has been changed.**

Check with your AppleShare administrator.

---

### **The server doesn't respond**

If you select a server and it doesn't respond as expected, any of the following conditions may be the cause:

- **The server is handling a lot of requests.**

If the server is handling a lot of requests from the network, it can take 30 to 40 seconds for it to respond.

- **You loaded an incompatible memory-resident program.**

If the server still doesn't respond after two minutes and you have not received an error message or seen the activity indicator blink, you may have loaded a memory-resident program that is incompatible with AppleShare PC files.

Check your AUTOEXEC.BAT file and make sure that it calls the DA (and other AppleShare related files) before it calls any other memory-resident software. If you're calling another memory-resident program first, change the order. AppleShare generally should load into memory before any other memory-resident programs.

---

### **The server won't accept your registered user name or password**

If you select a server, but can't log on with your registered user name or password, any of the following conditions may be the cause:

- **The administrator has not given you access to the server.**

Check with your AppleShare administrator.

- **You're typing your name or password incorrectly.**

Check with your AppleShare administrator to see exactly how your registered user name and password should be typed. Type your password—using uppercase and lowercase characters—exactly as they were given to you by your AppleShare administrator.

- **The Caps Lock or Num Lock key on your keyboard is down.**

Your password must be typed exactly as it was given to you by your AppleShare administrator.

---

**The server is currently not available**

If you select a server, but find that it is currently not available, any of the following conditions may be the cause:

- **The administrator is shutting down the server and has initiated a countdown.**

You cannot log on to the server if the server will shut down in five minutes or less. At first, it may appear as if the server won't accept your registered user name or password, but eventually a message will tell you that the server has been shut down.

- **The server is currently being used by the maximum number of users it allows.**

You cannot log on until someone else logs off.

---

**Your computer failed to access the server at startup**

If you have selected the Connect Automatically at Startup option for one or more server volumes, but your startup disk failed to access the server at startup time, then any of the following conditions may be the cause:

- **The server has been taken out of service.**

Check with your AppleShare administrator.

- **There's a problem in the AppleShare network between your PC and the server you want to use.**

Check with your cabling system guide.

- **The DA.DTA file has been deleted or changed.**

Replace the file and go through a manual registration to reset the file's automatic log-on data. See "Establishing Automatic Connections" in Chapter 4.

- **The volume or directory you're trying to connect to no longer exists.**

---

## **Problems encountered once you have logged on**

Most problems you encounter while you are working with the server are the result of your having insufficient access privileges for the directory you want to work with. For more information on access privileges, see "Access Privileges" in Chapter 4.

Many DOS programs do not operate correctly in an environment with restricted access privileges. If you are having problems, try placing the application and all its files in a private directory to which you have full access (the See Files, See Directories, and Make Changes privileges).

---

### **A volume or directory doesn't open**

If you have a volume or directory name in a Chooser or Assignments window that you are unable to open, you may not have access privileges to that volume. When you try to open the volume, an error message says that you don't have access privileges.

Ask your network administrator about the volume or ask the owner of the volume to grant you access privileges.

---

### **A subdirectory doesn't appear**

If you're looking for a subdirectory in a directory but can't find it, any of the following conditions may be the cause:

- **The subdirectory is in another directory, or located on a different volume.**
- **The subdirectory may be on a different server.**
- **The subdirectory is nested in a directory for which you do not have the privilege See Directories.**
- **Someone deleted or renamed the subdirectory.**

---

### **A program on the server doesn't run**

If you've stored a program on the server and can't run it successfully, any of the following conditions may be the cause:

- **The program may require other files to be in the same directory.**

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Check the program's documentation.

- **The program may require that you have See Files and Make Changes privileges for the directory in which it is stored.**

Use the Assignments window to change the access privilege settings for the directory that contains the program you want to use, and try again. (See Chapter 4 for details on changing access privileges.)

- **The program has a copy-protection scheme that is incompatible with AppleShare file server software.**

Check the program's documentation or consult the program's developer.

- **You need to configure the program so that it allows simultaneous access by multiple users.**

Mark the program and its related program files as "read-only" using the DOS ATTRIB command or the DA, or store it in a directory to which no one else has the Make Changes privilege.

---

### You are unable to copy a directory

If are unable to copy a directory stored on the server, any of the following conditions may be the cause:

- **You do not have sufficient access privileges to the directory you want to copy.**

To copy the entire contents of a directory, you must have the See Directories and See Files privileges for that directory and for all directories nested within it at any level. You can copy only what you can see. Use the Assignments window to check the access privilege settings for each directory you plan to copy. (See Chapter 4 for more information on access privileges.)

- **You do not have sufficient access privileges to the directory to which you want to copy.**

Try copying the directory to a disk at your workstation, or check your access privileges to the destination directory.

---

### You are unable to copy to a directory

If you are trying to copy to a directory stored on the server and you receive an error message that says "The destination path does not exist," any of the following conditions may be the cause:

- **You tried to copy to a directory for which you do not have the Make Changes privilege.**
- **The directory has been deleted or renamed by some other user.**

---

**You are unable to rename a file**

If you are unable to rename a file stored on the server, any of the following conditions may be the cause:

- **The file has just been renamed by another user.**
- **You don't have the Make Changes privilege for the directory that contains the file.**
- **The file is locked.**

---

**You are unable to open a file**

If you are unable to open a file stored on a server volume, any of the following conditions may be the cause:

- **You don't have the Make Changes privilege for the directory that contains the file.**

Some programs need to create temporary files in the same directory that contains the file you're working with. Check your access privileges to the directory. Try moving the file to a directory to which you have the Make Changes privilege.

- **Another user is working with the file.**

Wait a few moments; then try to open the file again.

---

**You are unable to save changes to a file**

If you're working with a file stored on the server and can't save changes you've made, any of the following conditions may be the cause:

- **You don't have the privilege to make changes in the directory that contains the file.**

To save a file in a directory, your privileges for the directory must include Make Changes. In the Assignments window, use the privileges commands to check the access privileges for the directory you want to save to.

- **The server has been unexpectedly interrupted.**

See your AppleShare administrator.

- **There's a problem with the cables.**

See your AppleShare administrator.

- **Another user has the file open.**

Many programs will allow only the user who first opened a file to make changes to it when two or more users have the same file open at the same time. Try saving the file under a different filename.

- **The file has been marked "read-only."**

Try saving the file using a different filename.

---

**You are unable to delete a directory from DOS**

If you are unable to delete a directory from DOS, any of the following conditions may be the cause:

- **You do not have sufficient access privileges for all of the directory's contents.**

To delete a directory, you must have the Make Changes privilege for the directory and any subdirectories that it contains. In addition, if the directory you're trying to delete is a subdirectory, you must have the privilege to make changes within the parent directory, too.

- **The directory you're trying to delete may contain a subdirectory owned by another user for which you don't have the Make Changes privilege.**

Move the subdirectory out of your directory.

- **Someone may be working within the directory you're trying to delete.**

If you've determined that you have the privileges required to delete the directory and still can't, try again later.

---

**You are unable to quit, save, or continue your application**

If you're working with a program that is stored on the server and you are unable to quit, save, or continue your application, any of the following conditions may be the cause:

- **File service has been unexpectedly disconnected.**

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The program you're using is probably unable to get the information it needs to continue. In this case, you usually see an alert. See your AppleShare administrator.

- **You don't have the privilege to make changes in the directory that contains the file.**

To save a newly created file in a directory, your privileges for the directory must include Make Changes. Run the DA and use the Assignments window Info command to check the access privileges for the directory to which you want to save.

- **The memory allocated for the driver you are using is insufficient.** See "Memory Considerations" in Chapter 7 for more information.

---

### You receive a message that your server connection has been lost

If you receive a message that your server connection has been lost, any of the following conditions may be the cause:

- **The cable connection between your workstation and the server has been broken.**
- **Your connection with the server was unexpectedly broken.**

Try logging on again, or check with your AppleShare administrator.

---

### You receive a message that a network error has occurred

If your program is interrupted by a message of the form:

```
NET??? <message description>
```

```
Abort, Retry, Ignore?
```

a critical DOS network error has occurred.

Try pressing R to retry the operation. If the message appears again, press I to ignore the error, or A to cancel your program.

---

### You hear a repeated trilling sound

If you hear a repeated trilling sound and you are not working with the memory-resident DA, a server that you are connected to has sent you a message that it is shutting down or that your connection has been lost. Run the DA or ANET to display the message.

---

## **Problems running third-party software**

If you have difficulty running a software program that uses the AppleTalk protocol stack, you may need to make it compatible with previous versions of the stack. To do this, load COMPAT.COM right after the AppleTalk files when you run your software program.



A P P E N D I X A

---

## The DA Keyboard Commands

**T**HIS APPENDIX REVIEWS KEYBOARD COMMANDS THAT YOU CAN USE WITH THE AppleShare PC Desk Accessory (DA).

---

## General keyboard commands

Use the following keys or key combinations within the DA windows, list panes, and toggle panes:

- **Enter**  
Move to the next pane or field in a multipane window. In a single-pane window, it invokes the next window (if any). Movement from pane to pane is always from top to bottom. Enter also toggles Option window check boxes on and off.
- **Escape**  
Cancel the current command or move back one level. Escape causes you to quit the DA from the Chooser, Assignments, Special, and Options windows.
- **Ctrl-C**  
Quit the DA from anywhere in the program.
- **Shift-Tab**  
Move to the previous pane.
- **Tab**  
Move to the next pane in a multipane window.
- **Left and Right Arrow**  
Move from one window to the next. Left and Right Arrow keys are also used to select items in a multiple-choice pane or list; for example, Registered User or Guest in the Log-On window, and background choices in the Option window's Change Colors item.
- **Up and Down Arrow**  
Highlight next item in a list.
- **PgUp and PgDn**  
Move up or down to the next page of the list. A page is as deep as the display area of a pane or window.
- **Ctrl-PgUp and Ctrl-PgDn**  
Move to the top or bottom of a list.
- **Home**  
Move to the top of the current window.

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- **Ctrl-Home**  
Move to the top of the current list.
- **End**  
Move to the end of the current window.
- **Ctrl-End**  
Move to the end of the current list.
- **F10**  
Display more commands available for the current window.
- **F1**  
Bring up the DA Help window.
- **Number and character keys**  
Select the corresponding item in a list pane and move to the next pane.

---

## Edit pane keyboard commands

You can use the following keys or key combinations within an edit pane:

- **Left and Right Arrow**  
Move one character in the respective direction.
- **Ctrl-Left Arrow and Ctrl-Right Arrow**  
Move one word in the respective direction. The delimiter is the space or backslash (so you can use it in ordinary text or when editing pathnames).
- **Home**  
Move the cursor to the first character of the current line.
- **End**  
Move the cursor past the last character of the current line.
- **Backspace**  
Delete the character to the left of the cursor.
- **Ctrl-Backspace**  
Delete everything to the left of the cursor.
- **Delete**  
Delete the character on which the cursor rests and shift any text to the right of the cursor to fill the gap.

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- **Insert**  
Insert a blank at the current cursor position without overwriting text.
- **Any printing character**  
Overwrite the character on which the cursor rests and move the cursor right.

A P P E N D I X B

---

## International Character Set

**T**HIS APPENDIX DISCUSSES APPLESARE PC SUPPORT FOR THE USE OF international and graphics character sets, and date and time displays.

AppleShare PC version 2.0 was designed for use with AppleShare File Server software version 2.0, but it may also be used with AppleShare File Server software version 1.1, provided that you are aware of the issues discussed in this appendix.

---

## International and graphics characters

Macintosh and DOS computers have different ways of internally storing **graphics characters**—the graphics characters, symbols, and characters with diacritical marks such as â or ë.

---

### Precautions

You'll need to take some precautions concerning graphics characters if Macintosh and DOS users share any files on an AppleShare file server running AppleShare version 1.1, and if these characters are present in any file or directory name on the server. If you are using AppleShare File Server software version 2.0, this problem does not exist because DOS-format filenames stored on the server do not contain any graphics characters.

---

### Filenames that contain diacritical marks

DOS stores all filenames in capital letters by converting filenames containing lowercase characters to uppercase. In this process, DOS generally changes a lowercase character with a diacritical mark to its uppercase equivalent without the diacritical mark. This could produce unwanted results.

For example, assume that a server on your system contains one file named Noël and another named Noel. If you were to log on to this server from a PC and type the command to delete the first of these files,

```
del Noël
```

DOS would internally translate this filename to NOEL because E is how DOS stores ë. DOS would then delete the file named Noel instead of the file you intended to delete.

To avoid such situations, use the DA to rename files whose names contain diacritical marks. This changes the filename for users of both PC and Macintosh workstations. You may also rename the file from a Macintosh workstation so that the first 11 characters of the filename do not contain diacritical marks.

---

## Changing filenames

It is recommended that you rename directories and files that are accessed by PCs if those names contain diacritical marks.

Follow the steps in Chapter 4 to rename a file. When you rename a file from the DA, it displays the uppercase characters that DOS stores, and does not allow you to use any character that does not have a Macintosh equivalent.

You can also change filenames from any Macintosh using AppleShare File Server software if access privileges on the file server allow you to do so. However, it is recommended that you use the DA from a PC, because it accepts only valid DOS characters.

---

## Character conversions while copying

The conversion and format issues described here apply to AppleShare File Server software version 2.0 as well as version 1.1.

When you copy a file between your PC and an AppleShare file server, remember that DOS and the Macintosh store graphics characters differently.

To correct this difference, you can convert the format by using the conversion command in the DA Copy window, or with the Apple File Exchange program located on the *Macintosh Utilities* disk.

Converting text formats from DOS to Macintosh is described in "Converting a File While Copying" in Chapter 4. When you convert a file, graphics characters in the copied file are converted to corresponding characters as shown in the character mapping table in the next section.

If no corresponding DOS character exists for a Macintosh character in the original file, or no corresponding Macintosh character exists for a DOS character, and you selected the appropriate conversion from the Copy window, your system inserts a replacement graphics character. If possible, this is the corresponding character in the other system's format. If not, a character is assigned in its place to guarantee that the file can be converted back to its original form if desired.

The need to convert formats is inherent in working with two different operating systems and is not resolved by AppleShare 2.0.

---

## Character mapping table

The following character mapping table, Table B-1, conforms to DOS Code page 437. In each vertical section of the table, the first two columns represent the hexadecimal and decimal values corresponding to the DOS character, which is shown in the third column. The fourth and fifth columns show the decimal value and Macintosh character to which the DOS character is mapped, respectively.

The first vertical section of the table has two additional columns that show the decimal value and uppercase character that DOS stores. (Characters in the middle and right-hand sections of the table do not have uppercase equivalents and do not change during DOS capitalizing, so the two additional columns do not appear in these sections.)

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- Table B-1 DOS and Macintosh character mapping

---

## Date and time displays in Appleshare PC

The dates and times displayed by AppleShare PC version 2.0 conform to the display format of the country designated by the DOS operation system.

The affected display parameters are

- order of month, day, and year
- separating character between month, day, and year
- 12-hour or 24-hour time
- separating character between hours and minutes

Be aware that the order of the day, month, and year differs among countries. For example, the U.S. interpretation of 11-12-89 is November 12, 1989, while the French interpretation is December 11, 1989.

## The NET.CFG File

**T**HIS APPENDIX DESCRIBES THE NET.CFG FILE THAT IS CREATED BY THE installation program when you install AppleShare PC. What the file contains depends on how you choose to configure the MLIDs during the interactive installation process. NET.CFG contains memory allocation figures, buffer sizes, and information to be used by AppleShare PC and the MLIDs.

While the installation program tailors NET.CFG to the configurations you specify during installation, you may have to edit NET.CFG if you add color graphics to your system, if you need to access more than one network printer, or if you want to access more than two server volumes at once. You can also modify NET.CFG if you are a developer and want to install your product on your system.

See "Memory Considerations" in Chapter 7 for details concerning how to modify your NET.CFG file to allow for color graphics and additional DOS drives and printers.

The NET.CFG file provides information that helps implement the Open Data-Link Interface (ODI) specification, which allows you to use an AppleTalk network over a variety of communication cards and drivers. The three pieces of the ODI specification are the Multiple Link Interface (MLI) drivers, the Multiple Protocol Interface (MPI) stacks, and the Link Support Layer (LSL).

---

## The structure of NET.CFG

The NET.CFG file has three kinds of sections: the Link Support section, the Protocol Stack section and the Link Driver section. NET.CFG contains only one Link Support section; it describes the buffer sizes and the amount of memory allocated for AppleShare PC. NET.CFG can contain multiple Protocol Stack sections. There must be one Protocol Stack section for each protocol stack installed on your system. NET.CFG must also contain one Link Driver section for each MLID installed.

The sections may appear in any order, and the lines that contain parameters within the sections may appear in any order.

Each section begins with a section heading that starts in the first column. Lines within the section start with a keyword and cannot continue to the next line. Blank lines and comment lines that begin with a pound symbol (#) are ignored and can appear anywhere in the NET.CFG file. The words in NET.CFG are case-insensitive.

The structure of a section is as follows:

```
Section Heading
  Keyword parameters
  Keyword parameters
  .
  .
  .
```

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The rest of this appendix describes the three sections of the NET.CFG file and gives a sample NET.CFG file.

---

**Link Support section**

The Link Support section configures buffers and the size of the memory pool.

**Heading:** LINK SUPPORT

**Keywords:** BUFFERS, MEMPOOL

**Keyword: BUFFERS**

**Form:** BUFFERS *numberofbuffers buffersize*

**Example:** Buffers 5 640

The Link Support Layer reserves memory to be used for holding packets received on the network. The first parameter of the BUFFERS statement specifies how many buffers to reserve. The second parameter specifies how large the buffers are. The size of the buffers depends upon the type of network and the protocol used. AppleTalk buffers must have a minimum size as shown in Table C-1.

■ **Table C-1** Minimum size requirements of AppleTalk buffers

---

<b>network</b>	<b>minimum</b>
LocalTalk	603
EtherTalk	622
TokenTalk	640

---

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**Keyword: MEMPOOL**

**Form:** MEMPOOL *memorypoolsize*

**Example:** MemPool 17k

The Link Support Layer sets aside a block of memory called MEMPOOL to be used by protocol stacks. The AppleTalk stack needs at least 1K of memory and needs an additional 1K for every *two* server volumes that are connected. Each printer connection requires 7K, and if the DA program is memory-resident and is popped up on a graphics screen, an additional 15K is required.

---

**Protocol Stack section**

Every ODI protocol has a Protocol Stack section heading that you use in your system. Only the contents of the Protocol AppleTalk section are described here.

**Heading:** PROTOCOL *protocolname*

**Keywords:** BIND, DEFAULT, AARP

**Keywords: BIND and DEFAULT**

**Form:** BIND | DEFAULT *MLIDname*  
[*#instancenumber*] [H(*hint*)]  
[Z(*zonename*)]

**Example:** BIND LTALK\$ #1 H(90)

The AppleTalk stack looks for the line beginning with DEFAULT to determine which MLID to use. Use the ANET USE command to tell AppleTalk to use an MLID other than the default.

Every MLID that you use with AppleTalk must have a DEFAULT or BIND line. Only one line in the section can begin with the word DEFAULT; all others must begin with the word BIND.

The MLID name must appear immediately after the word DEFAULT or BIND. You can find out the names of all the loaded MLIDs by using the ANET LIST command.

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For MLIDs that can support two of the same type of communications cards in the machine at the same time, the instance number is used to determine which card this line applies to. For example, if you have two LocalTalk cards, running #1 would indicate the first card. If the instance number is omitted, one is assumed.

The AppleTalk stack uses the Z parameter to determine in which zone the workstation will reside. This parameter is optional and can be used only for non-LocalTalk MLIDs.

The network administrator sets up which zones are available for your machine. You can use the ANET USE command to change this field of the NET.CFG file without having to use a file editor. If the Z parameter is not specified, the AppleTalk stack will choose a zone automatically.

The H parameter is a 6-digit hexadecimal number that is used as a hint for determining the AppleTalk network address. It is used only for non-LocalTalk MLIDs. The first four digits specify a network number, and the last two digits specify the node ID. If the H parameter is not specified, the AppleTalk stack will choose a network address automatically.

Whenever the ANET program is run, it will automatically check to see if the H or Z fields for the MLID in use is accurate or if it needs to be changed. If necessary, your NET.CFG file is updated.

### Keyword: AARP

**Form:** AARP MLIDname [# instancenumber]  
[H(AARPhardwaretype)]  
[L(lengthofaddress)]  
[B(AppleTalkaddress)]

**Example:** AARP ETHER\$ #1 H(0001) L(6)  
B(090007FFFFFF)

An AARP line is required for every non-LocalTalk MLID. It provides the AppleTalk stack with information about how the network is implemented.

For MLIDs that can support two communications cards of the same type in your computer at the same time, the instance number is used to determine which card this line applies to. If the instance number is left out, one is assumed.

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The H parameter specifies the AARP hardware type.

The L parameter specifies the length of physical addresses.

The B parameter specifies the address to be used for AppleTalk broadcast packets.

Table C-2 lists the values for Ethernet and TokenTalk networks.

■ **Table C-2** Some parameter values for the AARP statement

<b>network</b>	<b>hardware type</b>	<b>address length</b>	<b>broadcast address</b>
<b>EtherTalk</b>	<b>0001</b>	<b>6</b>	<b>090007FFFFFF</b>
<b>TokenTalk</b>	<b>0002</b>	<b>6</b>	<b>C00040000000</b>

---

**Link Driver section**

The entries in the Link Driver sections of the NET.CFG file specify the hardware configuration of your communications card. The interrupts, DMA channels, I/O port addresses, and memory addresses must be specified.

**Heading:** LINK DRIVER *MLIDname*

**Keywords:** INT, MEM, PORT, DMA, PROTOCOL

Some MLIDs may be designed to operate differently depending upon the presence of some entries. For example, the MLID for 3 Com EtherLink II Ethernet card uses one of three different transfer modes to copy information to and from the communications card. If there is a MEM entry, memory-mapped transfers are used. If there is a DMA entry, Direct Memory Access transfers are used. Otherwise, port I/O is used. This flexibility allows you to choose the transfer mode that is best for your computer. Memory mapped is fastest for '286- and '386-based machines, and DMA is fastest for XT class machines. Neither mode may be usable if it conflicts with other communication cards in your computer.

**Keyword:** INT

**Form:** INT #[1 | 2] *interruptnumber*

**Example:** INT #1 3

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If the MLID uses a hardware interrupt, this line specifies which interrupt is used.

### Keyword: DMA

**Form:** DMA #[1 | 2] *DMAchannelnumber*

**Example:** DMA #1 3

The DMA line specifies the DMA channel number.

### Keyword: PORT

**Form:** PORT #[1 | 2] *startingportnumber*  
*numberofportaddresses*

**Example:** PORT #1 240 8

The PORT line specifies which I/O ports are used by the card.

### Keyword: MEM

**Form:** MEM #[1 | 2] *startingmemoryaddress*  
*lengthofmemory*

**Example:** MEM #1 c8000 200

The MEM line indicates the range of memory in paragraphs (16 bytes) that the card may use.

### Keyword: NODE ADDRESS

**Form:** NODE ADDRESS *nodeID*

**Example:** NODE ADDRESS 75

The NODE ADDRESS line is used only for LocalTalk MLIDs. It is used by the MLID as a hint at which AppleTalk node address the card should acquire. If this line is left out, the MLID will choose a node address at random.

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**Keyword: PROTOCOL**

**Form:** PROTOCOL *protocol name protocolID*

**Example:** PROTOCOL AppleTalk AA080007809B

There may be one or more protocol lines depending upon which protocol stacks are going to use the MLID.

For MLIDs used by AppleTalk, there must be two protocol entries, one for AppleTalk itself and one for the AARP protocol. The protocol IDs depend upon the type of network used. Table C-3 lists the values for the PROTOCOL entries for systems on an EtherTalk and a TokenTalk network. These values happen to be the same, but this may not be true for other network types.

■ **Table C-3** Protocol ID numbers

<b>network</b>	<b>AppleTalk</b>	<b>AARP</b>
EtherTalk	AA080007809B	AA0000080F3
TokenTalk	AA080007809B	AA0000080F3

---

**Sample NET.CFG file**

```
Link Support
  BUFFERS 5 640
  MEMPOOL 17k
```

```
Protocol AppleTalk
  BIND LTALK$ #1 H(90)
  DEFAULT ETHER$ #1 Z(Engineering) H(03E790)
  AARP ETHER$ #1 H(0001) L(6)B(090007FFFFFF)
  BIND TOKEN$ #1 H(089890)
  AARP TOKEN$ H(0002) L(6) B(C00040000000)
```

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Link Driver LTALK\$  
DMA #1 3  
PORT #1 240 8  
NODE ADDRESS 90

Link Driver ETHER\$  
INT #1 2  
DMA #1 2  
MEM #1 c8000 200  
PORT #1 310 10  
PORT #2 710 10  
PROTOCOL AppleTalk AA080007809B  
PROTOCOL AARP AA00000080F3

Link Driver TOKEN\$  
INT #1 3  
MEM #1 dc000 200  
MEM #2 e0000 200  
PORT #1 a20 4  
PORT #2 2f3 1  
PROTOCOL AppleTalk AA080007809B  
PROTOCOL AARP AA00000080F3



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## Glossary

**access privileges:** The privileges to see, open, and make changes to directories and their contents; they are given to or withheld from users. By setting access privileges, you can control access to confidential information stored in directories on a server.

**active pane:** That part of the AppleShare PC Desk Accessory window in which the next action will take place. The pointer always appears to the left of the active pane.

**administrator:** The person who sets up the server, registers users and their passwords, creates groups, and maintains the server.

**AppleShare file server:** A file server that consists of a Macintosh computer, AppleShare software, and one or more hard disks.

**application output:** The format in which a printing application sends documents to a printer. It is usually determined by the type of printer the application expects to use.

**attach:** To establish a connection between a DOS drive letter and a file server volume or network printer.

**boot:** Another way to say *start up*.

**cable:** An insulated bundle of wires. Examples are serial cables, disk drive cables, and LocalTalk cables.

**Chooser window:** A window provided by AppleShare PC that allows you to log on to a file server or network printer.

**desk accessory (DA):** A "mini-application" that is usually memory-resident.

**device:** Any piece of equipment that can be attached to a network—a Macintosh, PC, LaserWriter, file server, or other peripheral.

**DIP switch:** A small switch that can be set manually for two different values (usually On or Off).

**directory:** A file that contains a list of the names and locations of other files stored on a disk. These other files may themselves be directories (called *subdirectories*).

**driver:** A program that controls the operations of a peripheral device, such as a communications card.

**edit pane:** A pane within the AppleShare PC Desk Accessory that contains text fields that you can edit by using standard editing conventions.

**electronic mail:** A service that allows network users to send messages and files to each other. Electronic mail often includes abilities to send, receive, sort, and save messages.

**emulate:** To operate in a way identical to a different system. For example, the AppleShare PC printer driver can emulate an Epson printer by translating an application's Epson printer commands for the LaserWriter. The resulting output looks similar to Epson output.

**Ethernet:** A high-speed local area network environment that consists of a cable technology and a series of communication protocols.

**EtherTalk network:** A type of AppleTalk network that uses AppleTalk protocols in an Ethernet environment. Compare **LocalTalk network** and **TokenTalk network**.

**Everyone:** For the purpose of assigning access privileges, the user category that includes any user with access to the server, whether logged on as a registered user or as a guest.

**extension mapping:** The association of a specified file type with a particular DOS extension.

**file server (server):** A device that allows users to store and share documents, folders, and applications over a network. See also **AppleShare file server**.

**file services:** Services that allow you to access shared files and use disk drive space on server volumes. AppleShare PC file services, for example, allow you to maintain directories and files on a server volume and assign access privileges to maintain security and privacy.

**folder:** A holder of documents, applications, and even other folders on a Macintosh computer. Folders act as directories and subdirectories, allowing you to organize information.

**graphics characters:** The graphics characters, symbols, and characters with diacritical marks such as â or ë.

**Group:** For the purpose of assigning access privileges, the user category that includes members of groups set up by the AppleShare administrator.

**guest:** A user who is logged on to the server without a registered user name and password. A guest cannot own a directory.

**hot key:** The key (or key combination) that you press to start the AppleShare PC Desk Accessory when it is memory-resident. See also **memory-resident**.

**icon:** An image that graphically represents an object, a concept, or a message on a Macintosh computer. For example, a document is represented by a picture of a page; a folder is represented by a picture of a folder.

**icon type:** A visual file identifier that AppleShare PC creates for display on Macintosh screens.

**internet:** Two or more networks interconnected by **routers**. Networks in an internet can share information and services.

**internet router (router):** A device that allows data to cross between two AppleTalk networks, such as a LocalTalk and an Ethertalk network.

**LAN:** See **local area network**.

**Link Support Layer (LSL):** Part of the Open Data-Link Interface specification that is the interface between the MLI drivers and MPI protocol stacks.

**list pane:** A pane within the AppleShare PC Desk Accessory that contains a list of choices.

**local area network (LAN):** A group of computers connected for the purpose of sharing resources. The computers on a local area network are typically joined by a single type of transmission cable and are located within a small area such as a single building or section of a building.

**LocalTalk network:** A type of AppleTalk network that uses the connection software and hardware built into Macintosh computers. Compare **EtherTalk network** and **TokenTalk network**.

**log off:** To disconnect a workstation from a server.

**log on:** To access a server from a workstation and identify yourself. You can then use a volume on the server.

**long name:** The name of a file or directory as it appears on a Macintosh. See also **short name**.

**Make Changes:** The access privilege that allows a user to make changes to a directory's contents.

**memory-resident:** Residing in RAM and initiated by pressing a hot key. When you quit a memory-resident program you return to where you were just before you initiated the program.

**Multiple Link Interface (MLI):** An interface that is part of the ODI specification and implemented by a communications card driver (MLID.) The interface allows the driver and the application it works with to be used with a variety of communications cards.

**Multiple Link Interface Driver (MLID):** A communications card driver that conforms to the ODI specifications and that can exchange information with a variety of protocol stacks.

**Multiple Protocol Interface (MPI):** An interface that is part of the ODI specification and implemented by protocol stacks. This interface allows the software to be used with a variety of communications card drivers (MLIDs) that conform to the MLI specification.

**network:** A collection of interconnected, individually controlled computers and peripheral devices, together with the hardware and software used to connect them. A network allows users to share peripheral devices such as printers and file servers.

**network administrator:** The person responsible for setting up and maintaining the network.

**network path:** A path of the form  
`\\sessionname\volumename\pathname.`

**Open Data-Link Interface (ODI):** A specification that includes the Multiple Link Interface (MLI) and the Multiple Protocol Interface (MPI) and that allows a variety of cards and drivers that conform to ODI to be used with AppleShare PC.

**Owner:** For the purpose of assigning access privileges, the user category that includes only the owner of a directory or volume.

**packet:** A unit of data that has been formatted for transmission across a network. A packet may contain a stand-alone unit of information or one portion of a longer transmission, such as a document file.

**pane:** Part of a window. See also **edit pane**, **list pane**, and **toggle pane**.

**pass-through:** A mode of a printer driver that sends an application's print commands directly to the printer.

**password:** A unique word or set of characters that must be entered before a registered user at a workstation can access a volume on the server.

**peripheral device:** A piece of hardware such as a printer that is used in conjunction with a computer and is under the computer's control. A peripheral device is often but not necessarily physically separate from the computer. Such a device often requires a card and device driver.

**primary group:** The AppleShare group with whom you most often share the files you store on the server. Primary groups are designated by the administrator.

**print server:** A combination of software and hardware that temporarily stores documents sent to it over the network and manages the printing of those documents.

**print services:** The services provided by a print server that allow users to share printers on a network. A print server manages the flow of documents to be printed. A LaserWriter is an example of a device that provides print services.

**protocol:** A formal set of rules for sending and receiving information between communicating devices.

**protocol stack:** A hierarchical set of software modules that implement formal sets of rules for sending and receiving information over a network. The AppleTalk protocol stack is designed to provide portable, modular networking functionality.

**registered user:** A user who has been given a user name and password by the AppleShare administrator.

**registered user name:** The name assigned by the AppleShare administrator to log on to a server.

**See Directories:** The access privilege that gives the right to see directories within a directory.

**See Files:** The access privilege that allows a user to read and copy files and programs in a directory.

**server volume:** A hard disk that is attached to and used by the file server. A volume has a name and a volume directory with the same name.

**session:** A connection between a workstation and a file server or printer.

**short name:** The name of a file or directory as it appears on a PC. Short names follow DOS naming conventions.

**spooler:** A utility that writes a representation of a document's printed image to disk or to memory, schedules it to print in a queue of other jobs, and then prints it.

**spooling:** A service provided by a printer server. See **spooler**.

**stack:** See **protocol stack**.

**startup disk:** The disk containing DOS files that you use to start your computer.

**Terminate and Stay Resident (TSR):** An application or program that can be installed and remain in memory while you run other applications. The AppleShare PC Desk Accessory is an example of a TSR.

**time-out:** The period of time that a printer driver waits after receiving a series of print commands. After this period of time has elapsed, the driver may assume that the document has ended and may send a page-eject command to the printer.

**toggle pane:** A pane within the AppleShare PC Desk Accessory that enables you to toggle between two choices by pressing the Right and Left Arrow keys.

**token ring network:** A local area network in which access to the network is controlled by a unique signaling sequence called a token.

**TokenTalk network:** A type of AppleTalk network that uses AppleTalk protocols in a token ring environment. Compare **LocalTalk network** and **EtherTalk network**.

**troubleshoot:** To locate and correct an error or the cause of a problem or malfunction in hardware or software.

**user name:** A name that identifies the person using the workstation.

**window:** An enclosed block of information that appears on the screen in a memory-resident program.

**workstation name:** A name that identifies your PC to the AppleTalk network.

**zone:** A conceptual grouping of devices in an AppleTalk internet that makes it easier to locate and access network services. The network administrator defines zones during the router setup process. To use or access a device, a user selects the zone to which the device belongs.

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### THE APPLE PUBLISHING SYSTEM

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