Apple IIGS® System 6 User's Reference

Installer

ProDOS

TEACH

Applications

System 6 IIGS

Apple IIGS® System 6 User's Reference

Apple Computer, Inc.

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Radio and television interference

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple's instructions—it may cause interference with radio and television reception.

This equipment has been tested and complies with the limits for a Class B computing device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation.

You can determine whether your computer is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio. (That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)
- Install a rooftop television antenna with a coaxial cable lead-in between the antenna and the television.

If necessary, consult your authorized Apple dealer or an experienced radio/television technician for additional suggestions.

You may find helpful the following booklet, prepared by the Federal Communications Commission: How to Identify and Resolve Radio-TV Interference Problems (stock number 004-000-00345-4). This booklet is available from the U.S. Government Printing Office, Washington, DC 20402.

△ **Important** Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC certification and negate your authority to operate the product. This product was tested for FCC compliance under conditions that included the use of shielded cables and connectors between system components. It is important that you use shielded cables and connectors to reduce the possibility of causing interference to radios, television sets, and other electronic devices. For Apple peripheral devices, you can obtain the proper shielded cables from your authorized Apple dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance. △

Preface About This Book

This manual tells you how to use System 6, system software for the Apple® IIgs® computer. System software enables you and your Apple IIgs computer to communicate.

This manual assumes that you've set up your Apple IIgs and that you've had some practice with basic skills that give instructions to your computer. It also assumes that you're working with at least two disk drives—either two 3.5-inch drives, or one hard disk and one 3.5-inch drive. If you haven't already, you should use the *Apple IIgs Owner's Guide* to set up your computer and complete the hands-on tutorial or use the tour disk, *Your Tour of the Apple IIgs*. You can use this manual when you want to do something that the other materials didn't cover, when you want a quick reminder about a task you've already learned, or to get a better sense of all the things you can do with your computer.

What's in this book

The Preface provides chapter descriptions and information about conventions used in this book. Chapter 1 gives you an idea of what you can expect from System Software 6. The other chapters contain reference material. The book is designed to help you locate what you need, without having to search around when you have a question.

Here's what you'll find in this book:

- Chapter 1, "Overview of System 6," tells you about some of the important features of your system software, describes what's on your disks, and reviews some basic skills you use to work with your computer.

- Chapter 2, "Using the Installer," begins the reference portion of the manual and provides step-by-step instructions for using the Installer application to update or create startup disks.

- Chapter 3, "Using the System 6 Finder," tells you about the Finder™ desktop and explains how to work with menus, windows, and icons.

- Chapter 4, "Working With Disks," explains how to prepare and work with the disks you'll be using with your computer.

- Chapter 5, "Working With Files and Folders," describes the tasks you can do to organize your files into folders.

- Chapter 6, "Working With Applications," gives you guidelines for working with the software programs that you'll use to create your own files. It also includes a brief hands-on tutorial to give you some practice with an application.

- Chapter 7, "Using the Desktop Control Panels," explains the options you have for customizing many aspects of the way your computer works.

- Chapter 8, "Using the Archiver," tells you how to use the Archiver program, which makes backup copies of your files, and how you can later restore files from the backups.

- Chapter 9, "Using the Advanced Disk Utility," explains the program that you can use to perform maintenance operations on disks, especially hard disks.

- Chapter 10, "Using Universal Access," provides information about System 6 programs specifically designed to make it easy for individuals with special needs to use the Apple IIGS.

- Chapter 11, "Controlling Multimedia Devices," explains how to use System 6 media control software to work with multimedia equipment connected to your computer.

- Chapter 12, "Networking the Apple IIGS," describes what you need to know about to use the Apple IIGS as part of a network of computers.

- Chapter 13, "Troubleshooting," describes how to solve some of the more common problem situations encountered by new computer users.

- Appendix, "System Messages," describes the situations that generate some of the more commonly encountered system messages.

Conventions used in this book

The following paragraphs illustrate several typographical conventions that are used in this book to help make learning easier.

When a new term is defined, the term appears in **boldface** type. Such terms are defined in the glossary as well. The glossary also defines many related terms that don't appear in the text.

▲ **Warning** Warnings like this one alert you to situations in which you might damage your equipment or lose data if you don't follow the instructions carefully. ▲

△ **Important** Material set off like this is essential; read it before continuing. △

◆ **By the way** Paragraphs like this one contain interesting sidelights or information for specific audiences. ◆

In illustrations of screens, a blue arrow is used to show the action of pressing, a blue check mark is used to show the action of clicking, a double blue checkmark is used to show the action of double-clicking, and a dotted blue line indicates something being dragged (see Figure P-1).

Throughout the manual, keyboard shortcuts are often provided for selecting menu commands. For example, to close a window, you'll be reminded that you can use the
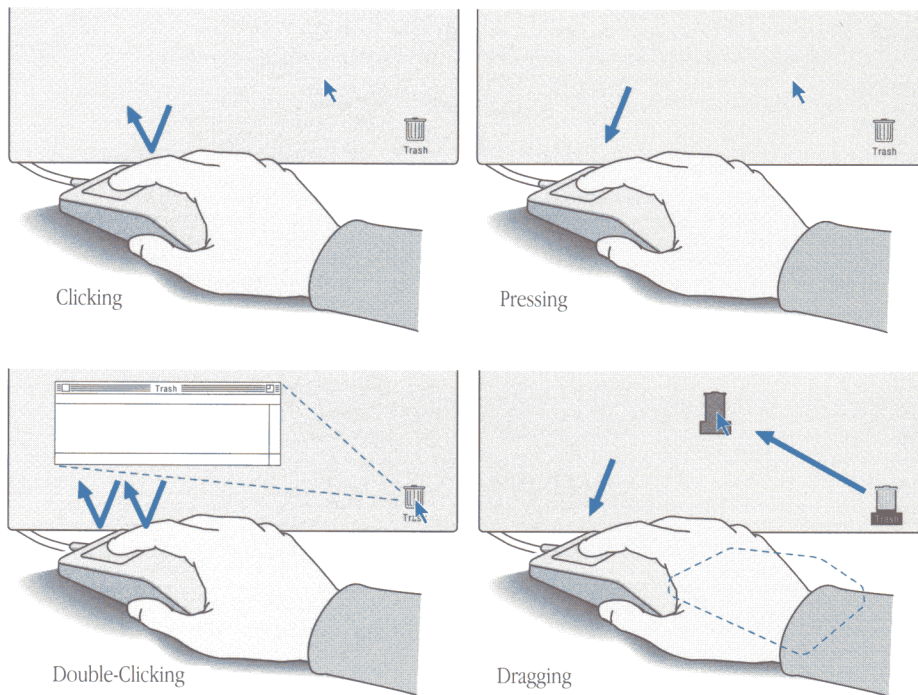
Figure P-1 Symbols for the actions of clicking, pressing, and double-clicking, and a dotted line indicating dragging

keyboard shortcut, Command-W. Such shortcuts involve pressing and holding down the Command key (the key with an outline of an apple and this symbol: ⌘) while you press the shortcut key.

You don't have to read the chapters in this book in any particular order. The topics covered, and the tasks associated with each topic, are described independently. Associated with each task are the numbered steps (printed in boldface type) describing the actions you must take to perform that task. If you just want a quick refresher to help you complete a task you haven't done lately, just read the bold type and do what it says. Some tasks are so basic that all you need to know is how to do them. In other cases, you'll find comments or explanations in plain text following a step. You can decide whether you want—or need—to read this information.

If you have other devices attached to your computer, refer to the manuals that came with those devices for instructions on using them correctly. Also, be sure to look through the manual that came with the applications you'll be using with your computer.

Welcome to the IIGs
System 6.0
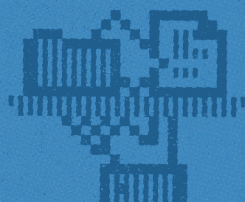
1 Overview of System 6

System 6 is the product of years of Apple® II experience and provides you with a computing environment that's easy to learn, easy to use, and flexible enough to encourage your own growth as a computer user.

Read this chapter to find out what you can expect from System 6, so that you don't miss out on any of the possibilities it provides for making the most of your Apple IIGS® computer.

This chapter provides information on these topics:

- getting to know System 6
- learning about the System 6 disks
- exploring features and benefits of System 6
- reviewing software and computer techniques

Getting to know System 6

You can feel comfortable about learning to use Apple IIGS System 6; it's designed to make it easy and convenient to use a powerful computer—combining the best of the Apple computing environments.

Making it easy

The Apple IIGS Finder™, a System 6 program, makes it easy to use your computer. Even if you have experience with other computers, you'll probably have to learn some new skills. However, after you've learned them, you'll use them every time you use your computer. The **Finder** uses easy-to-understand visual symbols, called **icons** and **menus**, that allow you to work with your computer in many of the same ways you work at a desk.

The Finder also provides you with a **Help window** (see Figure 1-1), available whenever you're working in the Finder **desktop**. If you need a reminder about how to perform a task in the Finder, Help is only a couple of clicks away. You'll be able to start learning to use applications to create your own documents right away—System 6 includes Teach, a word-processing program that takes advantage of System 6 features. For details about using Teach, see Chapter 6, "Working With Applications," on page 135.

```
▤▢▬▬▬▬▬ Finder Help ▬▬▬▬▬
 Topic │ Using Help         ▼ │
┌─────────────────────────────────┬──┐
│ To get information on different Finder features, │⇧│
│ choose a feature from the pop-up menu above.     │  │
│                                                  │  │
│ When there is more text than will fit in the     │  │
│ window, you can use the scroll-bar on the right to│  │
│ see the rest.                                    │  │
│                                                  │  │
│                                                  │⇩│
└─────────────────────────────────┴──┘
```
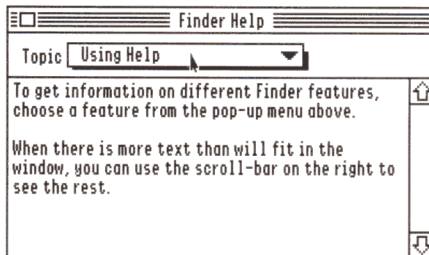
Figure 1-1 The System 6 Help window

Making it convenient

Each person has a different working style and different tasks to accomplish. System 6 is designed to accommodate personal differences by allowing you to customize the way you work with your computer.

- The System 6 Installer makes it possible for you to install either a basic set of computer tools or a customized set that corresponds to the work you'll be doing and the equipment you'll be using. For details about the Installer, see Chapter 2, "Using the Installer," on page 19.

- The Finder Preferences command lets you choose the way you want your computer to perform certain tasks and display certain information. For details about Preferences, see Chapter 3, "Using the System 6 Finder," on page 41.

- The System 6 Control Panels let you set options that control everything from your computer's beep to a laserdisc player. For details about the Control Panels, see Chapter 7, "Using the Desktop Control Panels," on page 171.

- System 6 includes programs to ensure that individuals with special needs have full access to the Apple IIGS. For details about such programs, see Chapter 10, "Using Universal Access," on page 243.

Making it compatible

You may have an interest in using files from another system with your Apple IIGS. If you have software from earlier Apple II models or if you use files from a Macintosh® computer, System 6 makes it possible to use these files. All you have to do is use the Installer to add the appropriate files to your startup disk; you and your computer can then work with a wide range of other computers as easily as you work in your own Apple IIGS environment. For details about using the Installer, see Chapter 2, "Using the Installer," on page 19. For details about using other file systems, see Chapter 4, "Working With Disks," on page 85.

Making it last

System 6 is designed to accommodate your growth and to provide for expansion of your system in the future.

- The Archiver and Advanced Disk Utility (ADU) programs give you the means to work with and protect large volumes of files that you may accumulate over time. These programs provide convenient ways to work with disks, especially hard disks. For example, you might want to divide your hard disk into sections for different uses, or you might want to make backup copies of all your valuable files. In any case, Archiver and ADU provide you with the capacity to deal with large amounts of stored information. For more information on using the Archiver see Chapter 8, "Using the Archiver," starting on page 199. For more information on using the Advanced Disk Utility see Chapter 9, "Using the Advanced Disk Utility," starting on page 223.

- You can choose from a wide range of cards and peripherals to use with your computer, increasing its memory or capabilities as it suits you. To learn about the variety of devices you can use with your Apple IIGS, see the *Apple IIGS Owner's Guide* that came with your computer.

- System 6 itself is designed for growth. It works with other multimedia equipment and file systems, making it possible for you to explore the options that allow you to use your computer in other environments.

Learning about the System 6 disks

System 6 comes stored on six 3.5-inch disks. This section lists the files you can expect to find on each of them, and how you might want to use them.

System.Disk

The *System.Disk* contains a minimum set of system files that allows you to start up your computer with a 3.5-inch disk. With the *System.Disk* you have a startup 3.5-inch disk with many of the main features and functions of System 6. Although *System.Disk* doesn't support printing, you can add printer support by using the Installer. (For more information, see Chapter 2, "Using the Installer", starting on page 19.)

Install

The *Install* disk contains a special application called the Installer, along with **updates** from which you can choose to create or add to a **startup disk**. The *Install* disk also contains a **system** that allows you to start up the computer with the *Install* disk whenever you want to add updates. For more detailed information about the Installer, see Chapter 2, "Using the Installer," on page 19.

SystemTools1

The *SystemTools1* disk contains system files that the Installer will use to customize a system on your disk. It also contains these additional files:

- *Advanced Disk Utility* (ADU) is an application that allows you to work with disks. For details, see Chapter 9, "Using the Advanced Disk Utility," on page 223.
- *BASIC.SYSTEM* is an application you can use if you want to run programs that have been written in the **Applesoft BASIC** computer language, or if you want to author your own Applesoft BASIC program.

SystemTools2

The *SystemTools2* disk contains additional system files that the Installer will use to customize a system on your disk. It also contains these files:

- *Teach* is a word-processing program you can use to create your own documents or to read documents created by others.

- *Read.Me* is a file that explains last-minute information about System 6. You can read it and print it from the Teach application.

- *Shortcuts* is a file that lists System 6 tips and shortcuts not described in this manual. You can read it and print it from the Teach application.

- *Archiver* is an application that allows you to back up and restore files and volumes. For details, see Chapter 8, "Using the Archiver," on page 199.

- *AppleTalk folder* is a set of files you'll need if you work on a network. For details, see Chapter 12, "Networking the Apple IIGS," on page 271.

Fonts

The *Fonts* disk contains Helvetica®, Times®, and Courier **fonts** in large sizes, for use with a variety of printers. Such fonts are two to five times larger than the printed output. The printer driver then scales them down to provide higher print quality.

The *Fonts* disk also contains a folder called *Goodies*. Inside Goodies, you'll find AppleBowl, the original bowling game for Apple II computers. AppleBowl is included as an interesting and entertaining bit of Apple II history.

synthLAB

The *synthLAB*™ disk contains a support application for developers who are creating programs using MIDI Synth™. It includes three basic parts: a synthesizer, a sequencer, and a MIDI driver. The documentation for synthLAB is included in a Teach document on the *synthLAB* disk.

Exploring new features of System 6

Experienced Apple IIGS users will note that System 6 contains a number of features that are new to the Apple IIGS. This section lists the principal new features or significant enhancements.

System

System 6 includes the following operating system enhancements:

- *File system support:* You can use Macintosh, ProDOS®, Pascal, or Apple II DOS 3.3 disks, exchanging data without conversion programs. For more information, see Chapter 2, "Using the Installer," on page 19.

- *Improved initializing and erasing:* Dialog boxes that allow you to initialize and erase disks have been simplified and enhanced for use with multiple file systems.

- *Improved system speed:* System 6 operates faster than previous versions.

- *Automatic disk insertion detection:* The system accepts disks as you insert them, without requiring you to click OK after each insertion.

- *Tab selection:* You can use the Tab key to move between selections in dialog boxes.

Finder

A number of features are new to the Finder desktop. Unless otherwise noted, see Chapter 3, "Using the System 6 Finder," on page 41 for more information about these features:

- *Help system:* A window with a **pop-up** menu listing various topics that you may want to learn more about.

- *Windows menu:* A special menu allowing easy navigation between multiple open windows on the desktop. You can even stack all open windows to order them quickly.

- *Preferences:* New preference options provide flexibility in system setup. In addition to the System 5.0 preference options, you can now do the following:

- Designate whether the Finder checks for the presence of disks in 5.25-inch disk drives when it starts up.

- Customize the amount of information you see about items in a window.

■ *Window information:* Open windows show file system information in addition to information about the size of the disk, tape, or folder. Depending on the preferences options selected, windows can also display information about the available volume space, name, kind, and size of files and folders shown in the window.

■ *Extensions:* System 6 provides developers with support for extensions, or programs that add functionality to the Finder. EasyMount (or "Create Server Alias") is such a Finder extension. Installed via the "Network: AppleShare" update, it allows network users to log on to a server quickly and easily. For more information about EasyMount, see Chapter 12, "Networking the Apple IIGS," on page 271.

Installer

The following features are new to the Installer application (for more information, see Chapter 2, "Using the Installer," on page 19):

■ *Easy Update:* A single-button process simplifies installation

■ *New Scripts:* A number of new options greatly increase system functionality

Applications

In addition to the Finder and BASIC.SYSTEM, five other applications are included with System 6:

■ The *Teach* word-processing application includes **styled text**, and text editing and search capabilities. For more information, see Chapter 6, "Working With Applications," on page 135.

■ The *Archiver* backup program is new to the Apple IIGS. Especially useful for hard disks, Archiver allows you to back up information to tape, floppy disk, another hard disk, or a file server (if you are connected to a network server). You can back up and restore an entire volume or selected files from a volume. For more information, see Chapter 8, "Using the Archiver," on page 199.

- The *Advanced Disk Utility* (ADU), a disk preparation program, includes these new features (for more information, see Chapter 9, "Using the Advanced Disk Utility," on page 223):

  □ *New interface*: The ADU interface is simplified for easy operation.

  □ *Extended format*: ADU allows you to prepare a hard disk for use with both the Macintosh Hierarchical File System (HFS) and ProDOS file systems.

- The System 6 *Program Launcher* is built into the system. When the Finder is not used as the startup application, the Program Launcher allows you to select and open applications.

- *synthLAB,* a support program for MIDI developers, includes a synthesizer, a sequencer, and MIDI driver. For more information, see the documentation included on the synthLAB disk.

Desk Accessories

System 6 includes two new desk accessories, or mini-applications, that you can use without leaving your main application.

- *Find File*: Helps you quickly locate files by searching all current volumes for files that match, contain, start with, or end with the filename—or partial filename—that you specify

- *Calculator*: Provides a calculator with basic math functions as well as decimal and hexadecimal conversion

Control Panels

A number of Control Panel features have been added to System 6. Individual Control Panels now provide more efficient access to features of your system. For more information about these new Control Panels, see Chapter 7, "Using the Desktop Control Panels," on page 171.

These Control Panels are part of System 6:

- *General:* Combines a number of control panels to save disk and screen space

- *Namer*: Allows AppleTalk® network users to easily rename network printers

- *SetStart:* Lets you choose an application to open automatically at startup
- *FolderPriv:* Allows you to specify default privileges for folders
- *Network:* Lets you select ProDOS 8 or GS/OS® as the startup operating system
- *Net Printer*: Allows network users to direct printing to a specific network printer

Reviewing computer techniques

This manual assumes that you've already looked at the tour that came with your computer or worked through the hands-on tutorial in the manual that came with your computer or that you're experienced with Apple IIGS or Macintosh computers. If necessary, you can turn to the chapter of this book that contains reference material about specific tasks you want to do with your computer.

If you need reminders about the basic skills you use when working with the desktop and the mouse, you'll find them in the following section.

The desktop

When you're using the Finder, the colored or shaded area that appears on the screen is called the desktop, because you use it in much the same way you use a desk. You can lay out the electronic documents and folders you want to work with, move them around, put some on top of others, and even discard the ones you no longer need. When you start up your computer with *System.Disk,* the desktop looks like the illustration in Figure 1-2. (If you start up from another disk you see a different disk icon or icon name.) The Finder is an example of a desktop application; you can learn more about it in Chapter 3, "Using the System 6 Finder," on page 41.
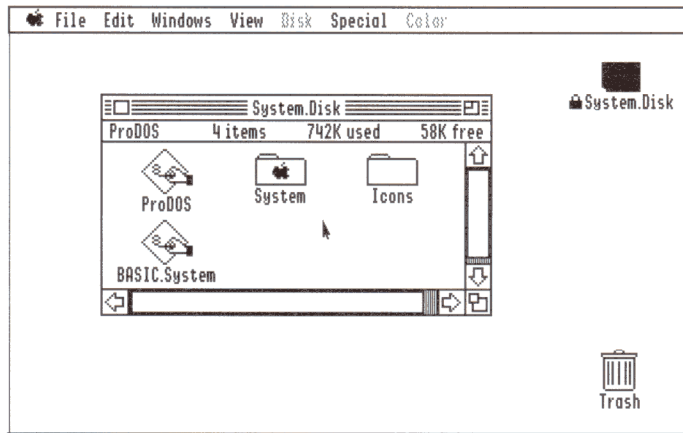
Figure 1-2 System 6 desktop after starting up from System.Disk

Icons

Icons are symbols on your computer desktop screen that correspond to the objects you use at a desk (drawers, file folders, pencils, and paper) or to something else you can select for an action, such as an application.

Disk icons are like drawers. Just as a desk drawer contains folders, documents, rulers, and paper clips, a disk contains both your work and the software tools you use to create it. Disks come in three types: hard, 3.5-inch floppy, and 5.25-inch floppy. A unique icon indicates each type.

Folder icons are like file folders. You use folders to organize and store your work with meaningful names so you can find it again later.

Application icons represent software programs. These are the tools you use to do your work. The Teach icon at left is an example of an application icon.

Document icons represent the documents, or **files**, that you create with your software programs. Many of them are shaped like a piece of paper with one corner folded down.

A few icons, such as the Trash, have functions that don't fall into the other categories. These icons have unique shapes.

Every company that creates products for the Apple IIGS designs its own icons. You'll see a new and different icon when you first use such products.

Mouse techniques

You can do most everything you need to do with your computer by using just a few mouse techniques. (Some programs, however, do not support use of the **mouse**.) Insert the *System.Disk* disk into your startup disk drive and switch on your computer to practice these techniques on the desktop of your Apple IIGS computer.

Moving the mouse

When you use the mouse, the end of the mouse where the cable is connected should be pointing away from you. Rest the heel of your hand on your desk, and move the mouse on your desk in the same direction that you want the **arrow pointer** to move on the screen.

The distances that the mouse and the **pointer** move are not necessarily the same. If the mouse moves an inch on your desk, the pointer may move more than an inch on the screen. This can be adjusted in the General Control Panel; see Chapter 7, "Using the Desktop Control Panels," on page 171 for more information.

If you run out of room to move the mouse, you can pick it up and put it down somewhere else. Moving the mouse in the air does not move the pointer on the screen. See Figure 1-3.
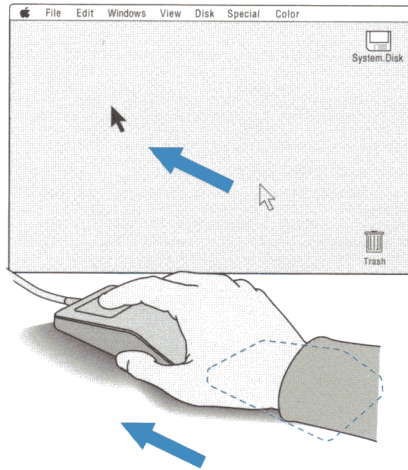
Arrow pointer moves the same direction as the mouse
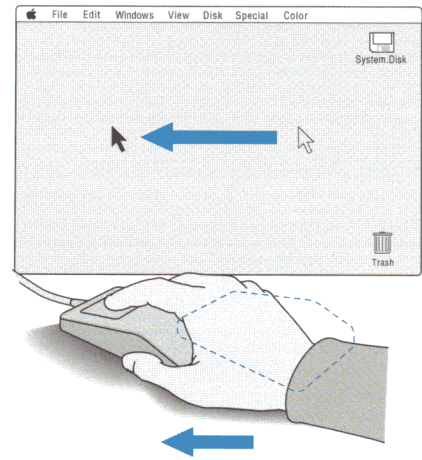
Mouse and arrow pointer may move different distances
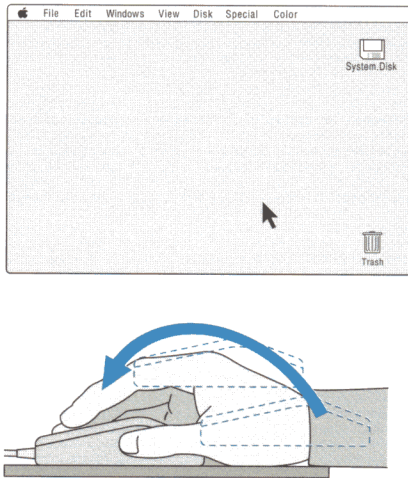
Moving mouse in the air doesn't move the pointer
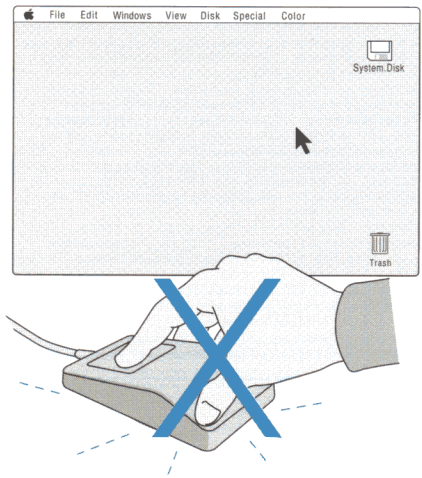
Don't press down on the mouse

Figure 1-3 Moving the arrow pointer by moving the mouse
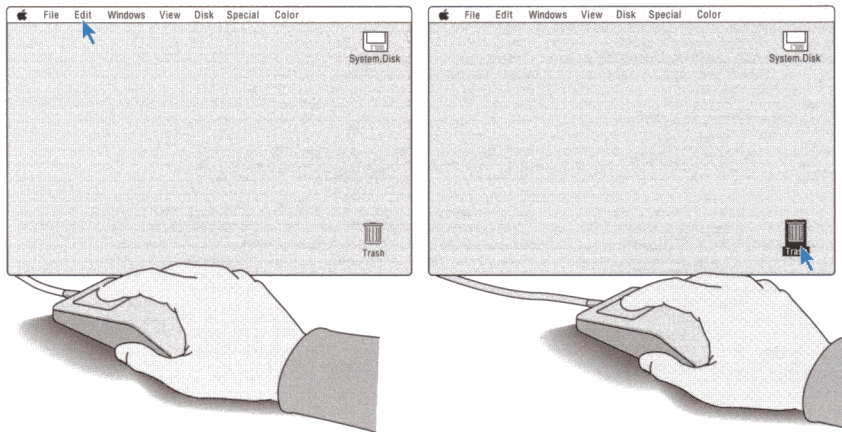
Pointing to a menu item   Pointing to the Trash

Figure 1-4 Using the mouse to point

Pointing

You *point* to an object on the desktop by moving the arrow pointer until the tip of the arrow is over the object.

Clicking

You *click* by first pointing to an object, and then pressing and releasing the mouse button once. Don't move the mouse while you click. The action you take is always the same: Position the pointer, press the mouse button, and release it. Clicking is the way you select an object upon which you want to perform an action.

Pressing

You *press* by first pointing to an object, and then pushing down steadily on the mouse button without moving the mouse.
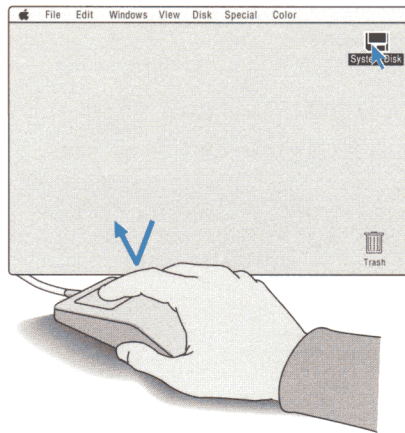
Clicking the mouse button
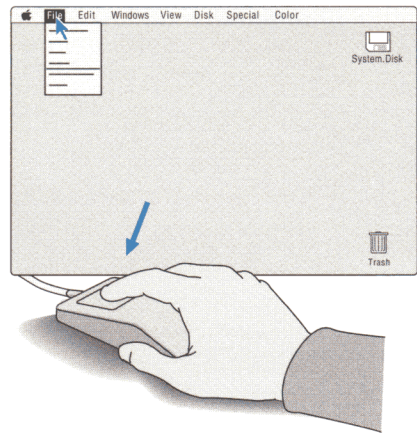
Pressing the mouse button
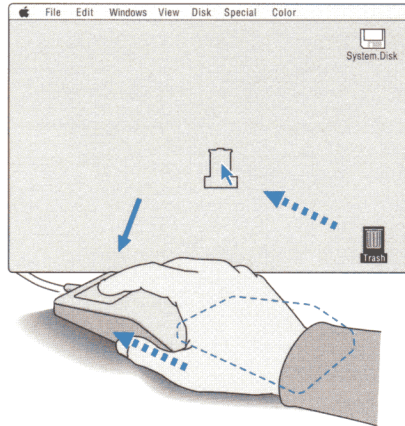
Dragging the pointer by moving the mouse
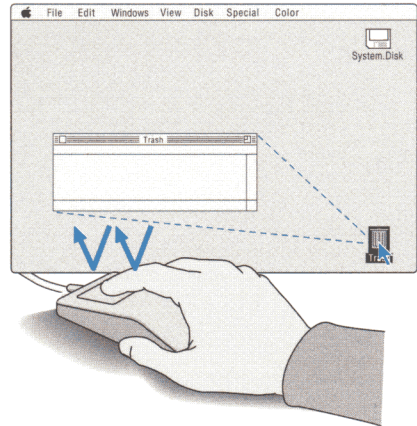
Double-clicking the mouse button

Figure 1-5 Mouse techniques

Dragging

You *drag* an object by first pointing to it, then pressing and holding down the mouse button, and then moving the mouse in the direction you want to move the object. An outline of the object moves along with the pointer. When you release the mouse button, the object moves to the new location.

Double-clicking

You *double-click* by first pointing to an object, and then clicking the mouse button twice. Don't move the mouse while you double-click. Getting the timing right sometimes takes practice. The speed of the double-click is adjustable in the General Control Panel; see Chapter 7, "Using the Desktop Control Panels," on page 171, for more information. Double-clicking a disk, folder, or application opens it.

When you double-click a disk or folder icon, its contents are displayed in a window. You can close the window by clicking once in the small box at the upper-left corner of the window. This box is called the **close box** (see Figure 1-6).When you double-click a document icon in some applications, the Finder instructs the application to open the document. (If the Finder can't locate the application, the system presents **dialog boxes** that allow you to locate the application. For more information, see "Starting up an application," on page 136.) Other applications do not support starting up by double-clicking a document; you'll have to launch the application first, and then open the document.

To close a document, you click its close box; however, the application remains open until you quit it by following the rules of the application.

Close box ——— [icon of window showing "0 items"]

Figure 1-6 The close box of a window

Menu commands

Menus are lists of actions, also called **commands**, that tell the computer what you want to do. The menus that appear across the top of the computer screen vary with each application.

To view a menu, you position the pointer on the menu title, then press and hold down the mouse button. You can choose a command by dragging down through the menu to the command you want, and then releasing the mouse button. For more information, see "Working with menus," on page 43.

There are several correct ways to do tasks on the Apple IIGS computer. In Chapter 3, "Using the System 6 Finder," Chapter 4, "Working With Disks" and Chapter 5, "Working With Files and Folders," you'll find information about the many ways you can get things done. The method you use is largely a matter of personal preference.

This chapter has given you an overview of System 6 for the Apple IIGS. The rest of the book contains reference material in specific aspects of System 6. You can refer to the appropriate chapter when you want to learn a particular task or operation.
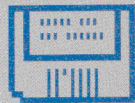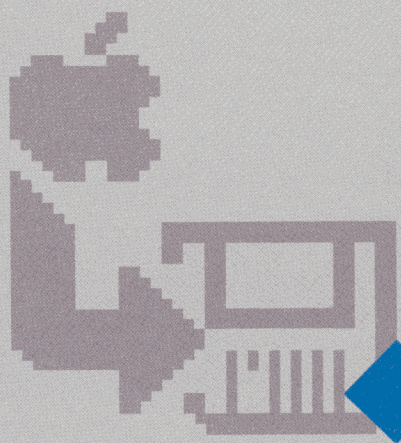
System.Disk

Installer
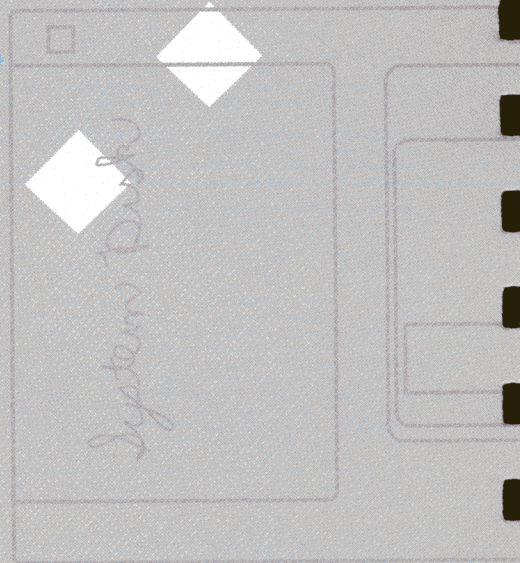
2 Using the Installer

This chapter explains how to use the Installer, a program on the *Install* disk that lets you customize startup disks, as well as install applications on any disk. You use the Installer to create or update a startup disk to include support for specific devices and capabilities you want to use with your computer. You also use it to remove capabilities you don't need. The first section of this chapter explains the Installer options.

The instructions in this chapter assume that you have at least two disk drives. One of them must be a 3.5-inch drive, and the other can be a 3.5-inch drive or a hard disk.

This chapter contains information on these topics:

- learning about Installer options
- using the Easy Update option to create or update a startup disk
- using the Customized Installation option to install or remove capabilities

Learning about Installer options

To start up your computer, you need a disk with basic **system software**—that is, the instructions necessary for the computer to start up and to work with the other components in your computer system. Such a disk is called a startup disk or **system disk**. The Installer program allows you to *create* a new startup disk, to *update* startup disks that have earlier versions of system software, or to *add* capabilities to existing System 6 startup disks. In each case, you'll be using the Installer to select updates—files that increase the computer's capability—to assemble the configuration you need. (You can also use the Installer to *remove* capabilities from existing System 6 startup disks.)

Creating a startup disk

System 6 includes a disk called *System.Disk* that contains a minimal set of files for you to use as a startup disk. However, by using the Installer program on the *Install* disk, you can create your own custom system disk, with the particular files that you need. You can then start up your new system disk, and in a few moments the computer is running the desktop interface—the Finder, your "base of operations" application. (For more information about the Finder, see Chapter 3, "Using the System 6 Finder," on page 41.)

If you want to use a **hard disk** or a **high-density** (1.4 megabyte) **floppy disk** as your startup disk, you use the Customized Installation option of the Installer to install the "System 6: Hard Disk or FDHD" update. For instructions, see page 31.

If you plan to use an 800K (**kilobyte**) floppy disk as a startup disk, you can use the Easy Update feature of the Installer. It creates a minimal installation that includes support for your monitor and floppy disk drives. If you install on a disk that already has support for printing, the Easy Update option will also automatically update your printer driver. However, if you install on a disk that doesn't already include printer support, Easy Update does not provide it. If you want support for printing, you'll need to use the Customized Installation option of the Installer.

In the case of 800K startup disks, it's especially important to note that the Finder is not required for the functioning of System 6. Because disk space is at a premium, you may want to do without the Finder to make room to add other capabilities to your disk. When the Finder is not present, the System 6 Program Launcher—built into the system—allows you to launch your applications. You can create a new system disk without the Finder by using

the Customized Installation option to install the "System 6: No Start" update. You can remove the Finder from an existing startup disk by selecting the Finder file in your System folder and dragging it to the Trash. The disk from which you remove the Finder must not be the start-up disk you are currently using.

▲ **Warning** Be careful not to remove the Finder from your original System 6 startup disks, only from backup copies you have made. That way, if you change your mind the application is still available to you. ▲

For instructions on using the Easy Update option, see page 28. For instructions on using the Customized Installation option, see page 31.

◆ **Note** Although you can also use the Easy Update option to create a minimum installation on a hard disk, using the Customized Installation option allows you to take full advantage of System 6 features. ◆

Updating a startup disk

If you purchased System 6 to upgrade your Apple IIGS and if you have a hard disk, you can use the Easy Update option of the Installer to update the system software you already use to start up your computer. The Installer is "smart"; it can tell what capabilities you use, and it updates your existing system software with the appropriate new files.

If you are an upgrade purchaser and you don't have a hard disk, you probably should create a new system disk, rather than updating your existing system disks. The System 6 files are larger than previous system files, and it's likely that there won't be enough room to update your existing 800K startup disk.

If an application startup disk doesn't include support for the Finder, you can install Finder support—*if there's enough room on the disk.* However, before installing Finder support on an application startup disk, be sure to read the following warning.

▲ **Warning** On many application disks that don't contain the Finder, the startup application is called *Start* and is in the System Folder. If that's the case with your application disk, installing the "System 6: On 800K Disk" or "System 6: Hard Disk or FDHD" updates will replace your application with the new Start file. As a result, the disk will start up with the Finder but will no longer contain your application. You can avoid the problem by installing the "System 6: No Start" update. ▲

To update an existing startup disk, you use the Easy Update feature of the Installer. For instructions, see "Using the Easy Update option," on page 28. If you are an AppleShare® user, or if you use additional **peripherals**, you also need to add the appropriate updates to your startup disk; go on to the next section to read about adding specific capabilities.

Adding capabilities to a System 6 startup disk

An 800K 3.5-inch startup disk doesn't have room for system software to support all of the peripheral devices that work with the Apple IIGS. As you add capabilities to a startup disk, the number of files loaded at startup time becomes larger and it takes longer to launch the Finder (or the application). For that reason, most startup disks contain only the system software necessary to support standard capabilities.

If you want optional capabilities that are not supported by the software on your startup disk—for example, if you want to use a device such as a hard disk or a CD-ROM drive—you use the Installer to add the necessary software update to the startup disk. If your startup disk contains capabilities that you don't need, you use the Installer to remove them.

If you want to add capabilities to—or remove them from—an existing System 6 startup disk, you use the Customized Installation feature of the Installer. For more information, read the next sections, describing the many capabilities that are available. Then go on to "Using the Customized Installation option," on page 31.

Using optional capabilities

Before you use the Installer, you must decide what capabilities you need on your startup disk. The following checklists, grouped by category, will help you determine the appropriate updates.

Disk drives and storage devices

- *If you have an Apple UniDisk™ 3.5-inch disk drive** (as opposed to an Apple 3.5 Drive or SuperDrive™), install the "Drive: UniDisk 3.5" update.

  * The easiest way to tell the difference between UniDisk drives and Apple 3.5 Drives or SuperDrives is by color: UniDisk 3.5-inch drives are white, Apple 3.5 Drives and SuperDrives are platinum, the same color as the computer.

- *If you have an Apple 5.25 Drive,* install the "Drive: Apple Disk 5.25" update.

- *If you have a SCSI hard disk,* install the "Drive: SCSI Hard Disk" update.

- *If you have a SCSI tape drive,* install the "Drive: SCSI Tape" update.

- *If you have an AppleCD SC drive,* install the "Drive: CD-ROM" update.

- *If you have an Apple II Memory Expansion Card* installed in a standard slot (in slots 1–7, not the Memory Expansion Slot), install the "Drive: Standard RAM Card" update.

Printers

- *If you have an ImageWriter® or ImageWriter II printer* connected directly to the printer or modem port, install the "Printer: ImageWriter" update. If the printer is part of an AppleShare network, install the "Printer: ATalk ImageWriter" update.

- *If you have an ImageWriter LQ printer* connected directly to the printer or modem port, install the "Printer: ImageWriter LQ" update. If the printer is part of an AppleShare network, install the "Printer: ATalk ImageWriter LQ" update.

- *If you have a LaserWriter® printer* connected directly to the computer via a LocalTalk® cable, install the "Printer: LaserWriter" update.

- *If you have a StyleWriter® printer,* install the "Printer: StyleWriter" update.

- *If you have an Epson or Epson-style printer* connected to your computer through a card in one of the internal slots, install the "Printer: Epson" update.

If your Apple IIGS is part of a network and you'll be using network printers, you need to restart your computer after installing the appropriate updates, and then select your printer via the NetPrinter Control Panel. See Chapter 12, "Networking the Apple IIGS," on page 271, for further information.

Media devices

- *If you have an AppleCD SC® drive and you want to control it via the Media Control Panel and the Media Controller desk accessory,* install the "Media Control: AppleCD SC" update.

- *If you have an AppleCD SC drive and you want to control it via the CD-Remote desk accessory,* install the "Drive: CD-ROM" update.

- *If you have an Apple Scanner,* install the "Driver: Scanner" update.

- *If you have a Pioneer laserdisc player,* install the "Media Control: Pioneer 2000," or the "Media Control: Pioneer 4200" update.

  If you have all three of the available media control devices, install the "Media Control: Everything" update.

- *If you have an Apple II Video Overlay Card,* and you want to use the VideoMix desk accessory to adjust the combination of graphics and video made possible by the card, or to display television signals or VCR output, install the "Media: VideoMix" update.

- *If you have MIDI equipment and plan on using AppleMIDI,* install the "Media: Apple MIDI" update. If you'll be using the 6850 MIDI card, install the "Media: Card 6850 MIDI" update.

For more information about the multimedia products and programs mentioned here, see Chapter 11, "Controlling Multimedia Devices," on page 261.

Applications

These updates can be installed in any folder—they need not be installed in the System Folder, or even on a startup disk.

Adv.Disk.Util The "Application: Adv. Disk Utility" update places a copy of the Advanced Disk Utility program on a disk. For information on using this program, see Chapter 9, "Using the Advanced Disk Utility," on page 223.

Archiver The "Application: Archiver" update places a copy of the Archiver disk backup program on a disk. For information on using this program, see Chapter 8, "Using the Archiver," on page 199.

Teach

The "Application: Teach" update places a copy of the Teach word-processing application program on a disk. For information on using Teach, see "Using Teach to practice application tasks," on page 150.

Apple.Bowl

The "Application: AppleBowl" update places a copy of AppleBowl, the first Apple II bowling game, on a disk. Instructions for playing AppleBowl are included within the application.

synthLAB

The "Application: synthLAB" update places a copy of the synthLAB MIDI development program on a disk. Documentation for synthLAB is included in a Teach file on the *synthLAB* disk.

Desk Accessories and Control Panels

These programs, sometimes called DAs, are "mini-applications" that you can use without leaving your main application.

- The "Desk Acc: Calculator" update installs the Calculator desk accessory, which performs the math calculations you find on any basic pocket calculator, as well as providing decimal/hexadecimal conversions.
- The "Desk Acc: Find File" installs the Find File desk accessory, which locates a file or folder on your hard or floppy disk as well as any other storage device you have on your desktop.
- The "Control Panel: Sounds" installs the Sounds desktop Control Panel, which permits a variety of sounds to be selected and linked to various computer events.

File System Translators

File System Translators (FSTs) make it possible for you to work with data from other file systems. They belong to one of two categories:

- A **read/write** FST allows you to read information from a disk into the computer's memory and also to **write** information from the computer to the disk in the same file system.
- A **read-only** FST allows you to read a file from a disk to memory. However, you cannot write information from the computer to the disk in the same file system. To write

information to disk, you must either copy the file to a read/write file system, or use an application to read the file, modify it, and then write it to a read/write file system.

The following updates are available:

- The "File System: HFS FST" update installs a read/write FST for the hierarchical file system used by the Macintosh computer.

- The "File System: DOS 3.3 FST" update installs a read-only FST for files created under the Apple II DOS 3.3 operating system.

- The "File System: Pascal FST" update installs a read-only FST for files created in the Apple Pascal development environment.

For more information on FSTs, see "Using file formats and translators," on page 109.

Fonts

The Font updates provide font sizes two to five times larger than the size displayed on the screen. Although System 6 attempts to scale fonts to the size you request via your application, installing these larger fonts allows you to get better quality output from your printer. The chart below illustrates the relationship of the larger fonts to the size you see on your screen for each specific printer.

Table 2–1   Font sizes used for various printers

Printer	Font enlargement	Screen size 10 pt.	Screen size 12 pt.
ImageWriter	2x	20	24
ImageWriter LQ	3x	30	36
LaserWriter	4x	40	48
StyleWriter	5x	50	60

The following updates are available:

- The "Fonts: All" update installs Courier 9–42, Geneva 10–24, Helvetica 9–96, Shaston 16, Times 9–96, and Venice 12, 14, and 24.

- The "Fonts: Standard" update installs Courier 9–24, Geneva 10–24, Helvetica 9–24, Shaston 16, Times 9–24, and Venice 12–24.

- The "Fonts: Minimum" update installs Courier 10 and 12, Geneva 10 and 12, Helvetica 10 and 12, Shaston 16, Times 10 and 12, and Venice 14.

◆ **Note** If you are using an 800K startup disk, you will not have room to install fonts. Shaston 8, built into your computer, is the font you'll use for printing. ◆

Special Aids

These updates install programs designed to make it easier for people with special needs to use a computer. The following updates are available:

- The "Special Aids: CloseView" update installs the CloseView desk accessory, which magnifies the screen by as much as twelve times.
- The "Special Aids: Easy Access" update installs Sticky Keys and Mouse Keys, programs that assist people who have difficulty typing or with manipulating the mouse.
- The "Special Aids: VideoKeyboard" update installs the Video Keyboard desk accessory, which provides a fully capable on-screen keyboard.

Network support

The system tools disks contain several updates specifically for network users. Before you install any of these updates, refer to Chapter 12, "Networking the Apple IIGS," on page 271, for advice on which updates you'll need, as well as for more detailed descriptions of the updates.

These are the updates that pertain to network use:

- The "Network: AppleShare" update installs networking software on a hard disk. It must be installed along with the "System 6: Hard Disk or FDHD" update.
- The "Network: AppleShare, 3.5" Disk" update installs networking and system software on an 800K floppy disk. The installation does not include the Finder.
- The "Printer: ATalk ImageWriter" update installs support for networked ImageWriter printers.
- The "Printer: ATalk ImageWriter LQ" update installs support for networked ImageWriter LQ printers.
- The "Printer: LaserWriter" update installs support for networked LaserWriter printers.

- The "Network: Local Startup" update installs networking and system software that allows you to start up over the network, assisted by a local disk.

- The "Network: Aristotle Update" updates Aristotle menu management software on the network server so that it starts up over the network more efficiently with System 5.0 or later. It should be installed by the **network administrator.**

- The "Network: Printer Namer" update provides software for naming network printers. It should be installed by the network administrator.

- The "Network: Server Startup" update provides software for starting up from a network server without using a local disk. It should be installed by the network administrator.

- The "Network: Server Quick Logoff" update provides software that allows users who start up over the network to log off by quitting their applications. It should be installed by the network administrator.

If your Apple IIGS is part of a network and you'll be using network printers, you need to restart your computer after installing the appropriate updates, and then select your printer via the NetPrinter Control Panel (see Chapter 12, "Networking the Apple IIGS," on page 271).

Using the Easy Update option

If you're creating a new startup disk on an Apple SuperDrive or a hard disk, the Installer Easy Update provides all the software Apple recommends for using an Apple 3.5-inch (800K) or 5.25-inch disk drive, a SCSI hard disk drive, the ImageWriter printer, and a modem with your Apple IIGS. If you're creating a new 800K startup disk, Easy Update provides support for floppy disk drives.

If you're using other peripheral devices, turn to "Using the Customized Installation option," on page 31, for instructions on how to install additional capabilities. If you're working on a network, turn to Chapter 12, "Networking the Apple IIGS," on page 271.

Before you begin the installation process, have these disks handy:

- *Install*
- *SystemTools1*
- *SystemTools2*

- a 3.5-inch disk (unless you're installing on a hard disk), or an existing startup disk with an earlier version of system software. (If the disk is write-protected, remove the write protection. For instructions, see "Write-protecting a disk," on page 94.)

△ **Important** You cannot install system software on a disk that is currently being used as the startup disk. The *Install* disk is a system disk; use it to start up your computer when you want to update system disks. (If you want to update a system on a startup hard disk, you can direct your computer to start up from a floppy drive. For information, see "Changing the startup drive," on page 194. You can then start up your computer from the *Install* disk.)

The Install disk must be named *Install,* and the system tools disks must be named *SystemTools1* and *SystemTools2* when they're being used with the Installer. If you've renamed either disk, you must change the names back before you can successfully use the Installer.

To prevent unintentional damage, always install new system files on a **backup copy** of your startup disk, not on the original. △

Follow these steps to use the Easy Update option:

1 **Start up the computer with the Apple IIGS Install disk.**

In a few moments you see the Easy Update screen.

```
╔════════════════════════════════════════════════════╗
║        Apple IIGS Installer - Easy Update            ║
║                                                      ║
║  Click "Easy Update" to install Apple IIGS  ┌──────────────┐
║  System Software version 6.0 on the disk    │  Easy Update │
║  ":FDHD.Disk".                              └──────────────┘
║                                                      ║
║  Click "Change Disk" if "Easy Update" is    ┌──────────────┐
║  disabled. "Easy Update" can't modify the   │  Change Disk │
║  current  startup  disk,  the  Installer    └──────────────┘
║  disks, or non-ProDOS disks.                ┌──────────────┐
║                                             │    Eject     │
║                                             └──────────────┘
║                                             ┌──────────────┐
║                                             │   Customize  │
║                                             └──────────────┘
║  v2.0    ┌──────────────┐                   ┌──────────────┐
║          │     Help     │                   │     Quit     │
║          └──────────────┘                   └──────────────┘
╚════════════════════════════════════════════════════╝
```

2 If you're creating or updating a system on a floppy disk, insert your disk into an empty drive.

If you're creating a new system, and the disk is not formatted, you'll see a dialog box, asking if you want to initialize your blank disk.

```
┌──────────────────────────────────────────────────────┐
│  ⚠  GS/OS can't read this disk (in device .APPLEDISK3.5B).  Do │
│     you want to initialize it?                        │
│                                                        │
│                            ┌────────┐  ┌────────────┐  │
│                            │  Eject │  │ Initialize │  │
│                            └────────┘  └────────────┘  │
└──────────────────────────────────────────────────────┘
```

Follow these steps to initialize a blank disk:

1. Click Initialize.
2. Type a name for the disk. (Follow the naming rules on page 91.)
3. Accept the default option, the ProDOS file system.
4. Click Initialize.

Once the disk has been formatted, you return to the Easy Update screen.

3 Click Easy Update.

You'll be prompted to insert disks as they are needed. Simply follow the instructions on the screen. A series of messages and a "thermometer" indicator keep you informed of the progress of the installation. The Installer will tell you if there is not enough room on the disk to perform the update.

◆ **Tip for two drive systems** When swapping disks during the installation procedure, it's most efficient to leave the disk that's being updated in a drive at all times, and swap the *Install* disk and system tools disks as needed. ◆

When the Easy Update procedure is complete, you see a dialog box letting you know whether the installation process was successful. If the installation process fails, the dialog box indicates the reason.

5 **Click Quit (or choose Quit from the File menu) to quit the Installer, or click Customize to install additional updates.**

If you click Quit, you see the System 6 Program Launcher, listing the contents of all the available volumes. To use your new or updated system disk, click Cancel. Choose Shut Down from the File menu; then, after the disks are ejected and the computer shuts down, insert your disk in the startup drive (if you've created or updated a floppy disk), and click Restart.

◻ *If you installed on a hard disk,* you must reset your startup slot to your hard disk. (For more information, see "Changing your startup drive" on page 194.) Then click Restart.

◻ *If you installed on a floppy disk,* insert it in the startup drive and click Restart.

If you click Customize, you see the Installer Customized Installation window. Go on to "Using the Customized Installation option," next in this chapter.

Using the Customized Installation option

This section explains how to use the Customized Installation option of the Installer to add and remove updates. Although the two procedures work independently, you can do both once you're in the Installer. (In other words, if you want to add some updates and remove others, you don't need to quit the Installer after adding updates and then start again from scratch to remove updates, or vice versa.)

Updates that add system software capabilities are called **system updates**. You can install system updates on a hard disk, a **hard disk partition**, a 3.5-inch disk, or a **file server** volume. You can't install on a CD-ROM disc; the contents of the CD-ROM disc can't be changed. (Remember, ROM stands for Read-Only Memory.) Nor should you try to install system updates on the following:

■ a 5.25-inch disk (there's not enough room for the updates you would need)

■ a RAM disk (a RAM disk loses its memory when you shut off the power to your computer)

■ an Apple II DOS 3.3 disk (Apple II DOS 3.3 is a read-only environment)

■ a Pascal disk (Pascal is a read-only environment)
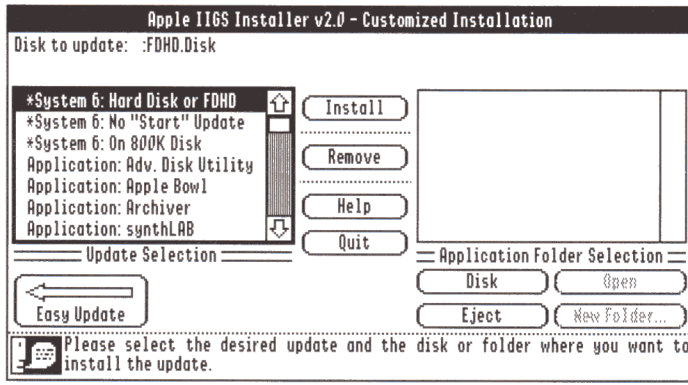
Figure 2-1 Installer customized installation screen

Updates that add applications (or update applications already on a disk) are called **application updates**. The application updates are Advanced Disk Utility, Archiver, synthLAB, Teach, AppleBowl, and the network software management application, Aristotle.

The Installer automatically places system updates in the appropriate location, so you needn't worry about specifying the correct destination. Application updates, on the other hand, can be installed anywhere on any disk (except synthLAB), provided you have the necessary disk space. When you're installing an application update, the window on the right side of the Installer Customized Installation screen (see Figure 2-1) lets you specify a destination for the update. You'll learn more about using this window in step 7 of "Adding capabilities," on page 33.

△ **Important** You cannot install system updates on a disk that is currently being used as the startup disk. The *Install* disk is a system disk; use it to start up your computer when you want to create or update system disks.

The *Install, SystemTools1, SystemTools2, Fonts,* and *synthLAB* disks must carry their original names while they're being used with the Installer. If you've renamed any disk, you must change its name back before you can successfully use the Customized Installation option.

When you use the Installer to add or remove updates on floppy disks, be sure that you're using a backup copy of the disk you're updating. When you're adding or removing

updates on a hard disk, make sure you've backed up your stored files. That way, your data will be intact if something goes wrong during the installation process. △

Before you begin the installation process, have these disks handy:

- *Install*
- *SystemTools1*
- *SystemTools2*
- *Fonts*
- *synthLAB* (if you intend to install the application)
- a disk on which to install the system updates (If the disk to be updated is write-protected, remove the write protection. For instructions, see "Write-protecting a disk," on page 94.)

Adding capabilities

Once you've decided what capabilities you want to add, follow these steps to install the necessary updates:

1 **Start up the computer with the *Install* disk.**

In a few moments, you see the Installer Easy Update window.

```
┌─────────────────────────────────────────────────┐
│         Apple IIGS Installer - Easy Update        │
├─────────────────────────────────────────────────┤
│ Click "Easy Update" to install Apple IIGS  ╭──────────╮ │
│ System Software version 6.0 on the disk    │ Easy Update │ │
│ ":FDHD.Disk".                               ╰──────────╯ │
│                                                           │
│ Click "Change Disk" if "Easy Update" is    ╭──────────╮ │
│ disabled. "Easy Update" can't modify the   │ Change Disk │ │
│ current  startup  disk,  the  Installer    ╰──────────╯ │
│ disks, or non-ProDOS disks.                ╭──────────╮ │
│                                             │   Eject   │ │
│                                             ╰──────────╯ │
│                                             ╭──────────╮ │
│                                             │ Customize │ │
│                                             ╰──────────╯ │
│ v2.0     ╭───── Help ─────╮                ╭──────────╮ │
│          ╰────────────────╯                │   Quit    │ │
│                                             ╰──────────╯ │
└─────────────────────────────────────────────────┘
```
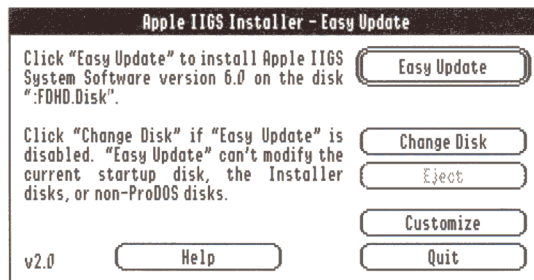
2   Click Customize to see the Customized Installation window.

You can also press the Right Arrow key to get to the Customized Installation window from the Easy Update window.

On the left, the update selection list displays an alphabetical list of the available updates.

```
┌─────────────────────────────────────────────────────────────┐
│         Apple IIGS Installer v2.0 - Customized Installation  │
│ Disk to update:  :FDHD.Disk                                  │
│                                                              │
│ ┌────────────────────────────┐    ┌──────────┐  ┌─────────┐  │
│ │*System 6: Hard Disk or FDHD│⇧   │ Install  │  │         │  │
│ │*System 6: No "Start" Update│    └──────────┘  │         │  │
│ │*System 6: On 800K Disk     │                  │         │  │
│ │Application: Adv. Disk Utility│  ┌──────────┐  │         │  │
│ │Application: Apple Bowl     │    │ Remove   │  │         │  │
│ │Application: Archiver       │    └──────────┘  │         │  │
│ │Application: synthLAB       │⇩   ┌──────────┐  │         │  │
│ └────────────────────────────┘    │ Help     │  └─────────┘  │
│ ════ Update Selection ════         └──────────┘              │
│ ┌──────────────────────────┐      ┌──────────┐  ═ Application Folder Selection ═ │
│ │  ⟵────────────           │      │ Quit     │  ┌────────┐ ┌────────┐ │
│ │   Easy Update            │      └──────────┘  │  Disk  │ │  Open  │ │
│ └──────────────────────────┘                    └────────┘ └────────┘ │
│                                                  ┌────────┐ ┌────────────┐ │
│                                                  │ Eject  │ │ New Folder…│ │
│ ┌──┐ Please select the desired update and the disk or folder where you want to │
│ │  │ install the update.                                        │
│ └──┘                                                            │
└─────────────────────────────────────────────────────────────┘
```

3   If necessary, insert the disk you want to update in an empty drive.

If the disk is not formatted, you see a dialog box, asking if you want to initialize your blank disk. Follow these steps:

1. Click Initialize.
2. Type a name for the disk. (Follow the naming rules on page 91.)
3. Select the ProDOS file system (unless you are not installing system updates).
4. Select a file format. (For information about disk formats, follow the guidelines on page 92.)
5. Click Initialize.

If the disk you insert is not blank and you want to erase it, follow these steps:

1. Click the Disk button until the name of your disk appears.
2. Choose Erase from the File menu.
3. Type a name for the disk. (Follow the naming rules on page 91.)
4. Select the ProDOS file system.

5. Select a file format. (For information about disk formats, follow the guidelines on page 92.)

In a moment, you return to the Customized Installation window.

4 **If necessary, click the Disk button until the name of the disk on which you want to install updates appears to the right of the words, "Disk to Update".**

You can also press Command-Tab to choose another disk to update.

5 **Select the updates you want to install.**

To select a single update, simply click its name in the window on the left. (You can also type the first letter of its name to jump to the updates starting with that letter, or use the Up and Down Arrows to move the selection up and down the list.)

To get information about an update, select it, and then click the Help button, choose Installer Help from the Help menu, or press Command-?.

To select two or more consecutive updates, click the first name and then hold down one of the Shift keys while you click the last name.

To select updates that aren't grouped together, click the first name and then hold down the Command key while you click each additional name.

If you've selected any application updates, a directory of the selected disk appears in the window on the right. You can press Tab to move between the update selection list and the application folder selection list. (If you haven't selected application updates, skip to step 7.)

6 **If you've selected application updates, open any necessary folders until the name of the folder in which you want to store your application appears above the window on the right.**

To open a folder, click its name or icon in the window on the right and then click the Open button. Or just double-click the name or icon.

(You can also press Command-Down Arrow to open a folder, and Command-Up Arrow to close a folder. Command-Esc takes you to the **root level** of the list.)

You can create a new folder in which to install updates by clicking the New Folder button. A dialog box appears asking you to provide a name for the new folder. Type a name and click OK.

```
Name the new folder:
┌─────────────────────────────────┐
│ Megan.Folder                    │
└─────────────────────────────────┘
              ( Cancel )  (   OK   )
```
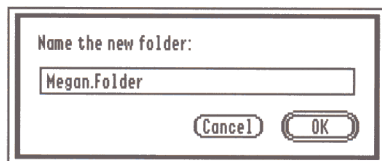
If you've selected more than one application update, select a single folder in which to install all of them. (If you want application updates to be in different folders, you must install them separately.)

◆ **Note** Installing applications in a folder is not required. If you don't open or create a folder, your applications will be installed at the root level. ◆

7 **Click Install.**

You're prompted to insert the *Install* disk and the system tools disks as they are needed. A series of messages and a "thermometer" indicator keep you informed about the progress of the installation.

◆ **Tip for two-drive systems** When swapping disks during the installation procedure, it's most efficient to leave the disk that's being updated in a drive at all times, and swap the Install disk and system tools disks as needed. ◆

When all the update procedures you selected are complete, you see a dialog box letting you know whether the installation process was successful. If the installation process can't finish, the dialog box indicates the reason.

8 **Click OK.**

9 **Click Quit (or choose Quit from the File menu) to quit the Installer, or select additional updates to install or remove.**

If you click Quit, and if you started the computer with the *Install* disk, you see the System 6 Program Launcher.

- *If you created or updated a startup disk, click Cancel*, then choose Shut Down from the File menu. After the disks eject and the computer shuts down,

  □ *If you installed on a hard disk,* you must reset your startup slot to your hard disk. (For more information, see "Changing the startup drive," on page 194.) Then click Restart.

  □ *If you installed on a floppy disk,* insert it in the startup drive and click Restart.

- *If you've installed updates other than system udpates,* click Volumes to see all the **volumes** you have on line. Select a volume and click Open (or double-click the volume name). Then select an application you want to use, and click Open (or double-click the application name).

If you want to install or remove updates, you must launch the Installer again. From the Program Launcher, select Installer, double-click to launch the Installer, then start from step 2, or go on to the next section, "Removing capabilities."

Removing capabilities

The more system updates you include on a startup disk, the longer it takes the computer to start up from that disk. And when you're working with 800K 3.5-inch disks, space is likely to be at a premium. For both of these reasons, you may want to remove capabilities that you use infrequently or not at all.

△ **Important** Don't remove any updates from the *Install* or system tools disks. You may need to use these disks as the sources of updates in the future. △

The procedure for removing capabilities is similar to that for installing them:

1 **Follow steps 1 through 4 under "Adding capabilities" (on page 33).**

2 Select the updates you want to remove.

To select a single update, simply click its name. (You can also type the first letter of its name to jump to the updates that start with that letter, or use the Up and Down Arrows to move the selection up and down the list.)

To select two or more consecutive updates, click the first name and then hold down one of the Shift keys while you click the last name.

To select updates that aren't grouped together, click the first name and then hold down the Command key while you click each additional name.

If you've selected any application updates, a directory of the selected disk appears in the window on the right. If you haven't selected application updates, skip to step 4.

```
╔══════════════════════════════════════════════════════════╗
║        Apple IIGS Installer v2.0 - Customized Installation ║
║ Application folder:  :Wade.Disk:Megan.Folder:             ║
║                        ⌐ Megan.Folder             ▼        ║
║  *System 6: Hard Disk or FDHD  ⬆  ( Install )  ▢ Apple.Bowl  ⬆ ║
║  *System 6: No "Start" Update     ┌──────────┐            ║
║  *System 6: On 800K Disk          │          │            ║
║  Application: Adv. Disk Utility   ( Remove )              ║
║  Application: Apple Bowl                                   ║
║  Application: Archiver            ( Help )                ║
║  Application: synthLAB       ⬇                           ║
║ ══ Update Selection ══            ( Quit )    ⬇           ║
║  ┌────────────────────┐   ══ Application Folder Selection ══ ║
║  │      ←────         │      ( Disk )    ( Open )         ║
║  │  Easy Update       │      ( Eject )   ( New Folder... ) ║
║  └────────────────────┘                                   ║
╚══════════════════════════════════════════════════════════╝
```

△ **Important** Some updates cannot be removed. If you select one of these, the Remove button will be dimmed and you cannot click it. △

3 Open any necessary folders until the name of the folder you want to remove an update from appears above the window on the right.

To open a folder, click its name or icon in the window on the right and then click the Open button. Or just double-click the name or icon.

(You can also press Command-Down Arrow to open a folder, and Command-Up Arrow to close a folder. Command-Esc takes you to the root level of the list.)

4   **Click Remove.**

A series of messages keeps you informed of the progress of each removal.

When the removal procedure is complete, you see a dialog box letting you know whether the removal was successful. If the removal can't be completed, the dialog box indicates the reason.

5   **Click OK.**

6   **Click Quit (or choose Quit from the File menu) to quit the Installer, or select additional updates to add or remove.**

If you click Quit, you see the System 6 Program Launcher. Click Volumes to see all the volumes you have on line. Double-click a volume name to see its contents. You can then select an application to use or you can click Cancel, and choose Shut Down from the File menu.

If you want to install or remove updates, you must launch the Installer again. From the Program Launcher, select Installer, double-click to launch the Installer, then return to step 2 of these instructions.

All the items you remove from your startup disks still exist on the system tools disks, which you should store in a safe place. Removing them from your startup disk does not mean you won't have access to them in the future. If you keep your *System.Disk, Install,* and system tools disks secure, you always have the ability to create a new system configuration for your computer.

ABCDEFGHIJKLMNOPQRSTUVWXYZ

ABCDEFGHIJKLMNOPQRSTUVWXYZ

ABCDEFGHIJKLMNOPQRSTUVWXYZ

ABCDEFGHIJKLMNOPQRSTUVWXYZ

ABCDEFGHIJKLMNOPQRSTUVWXYZ

12

3

9

7 8

4 5 6

6.0

File   Edit   Windows   View   Disk   Special   Color

Hard.Disk

| ProDOS | 11 items | 1.5 MB used | 18.9 MB free |

Disk

ProDOS   System   Icons   BASIC.System

Games   Applications   Club.Newsletter

Wade   Victor   Dale   Jenna

Trash
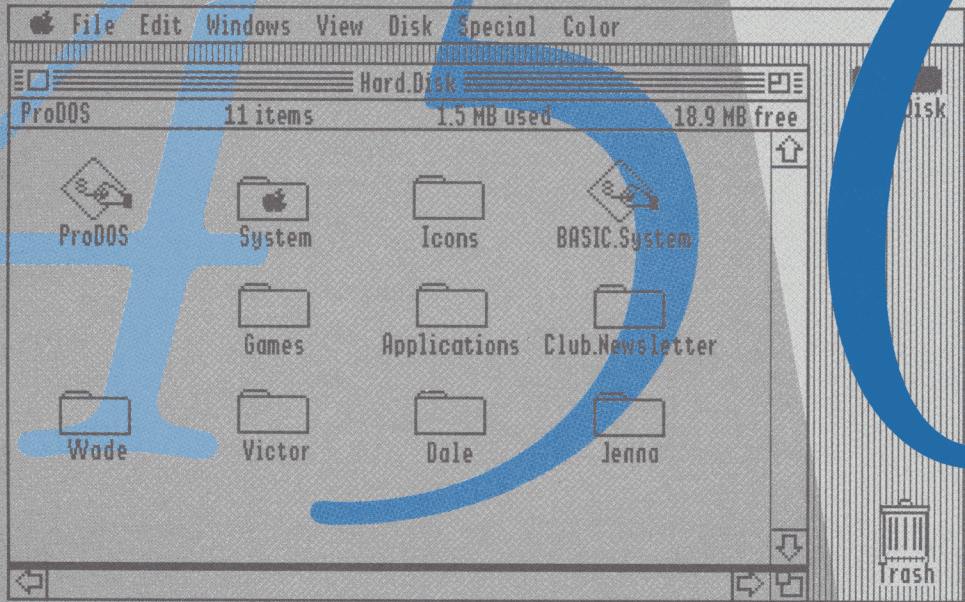
3 Using the System 6 Finder

If you haven't used the features of the Finder before, you'll want to read this chapter. It tells you how to give instructions to the computer, arrange the items on your desktop in the way that's most convenient for you, manipulate files and folders, and rename icons. Even if you've used an Apple IIGS or a Macintosh computer, this chapter contains information about desktop features that are not included in earlier Apple IIGS systems or in the Macintosh. (For information about features new to System 6, see Chapter 1, "Overview of System 6.") This chapter also provides a handy reference when you need a reminder about how to perform desktop management tasks.

This chapter contains information on these topics:

- using the Finder
- working with menus
- using menu commands
- working with windows
- working with icons

Using the Finder

The term desktop refers to the area you see on your screen when you start up the Finder application. You get to the Finder by starting up with *System.Disk* or with another hard or floppy disk on which you have installed the appropriate system update. (For information about installing system updates, see Chapter 2, "Using the Installer," on page 19.) The desktop has a menu bar at the top, a work area, assorted icons representing disks, folders, documents, and applications, as well as the Trash. The desktop is the place where you organize your work: what you want to keep, where you want to keep it, what you want to work with, what you want to duplicate or rename, and what you want to discard. Figure 3-1 shows the Finder desktop.

The Finder manages all these tasks that you'll be doing regularly:

- organizing files and folders on the desktop
- manipulating files, folders, and disks
- ejecting disks
- initializing and erasing disks
- launching applications
- getting information about your documents, folders, disks, and applications
- shutting down or restarting your computer
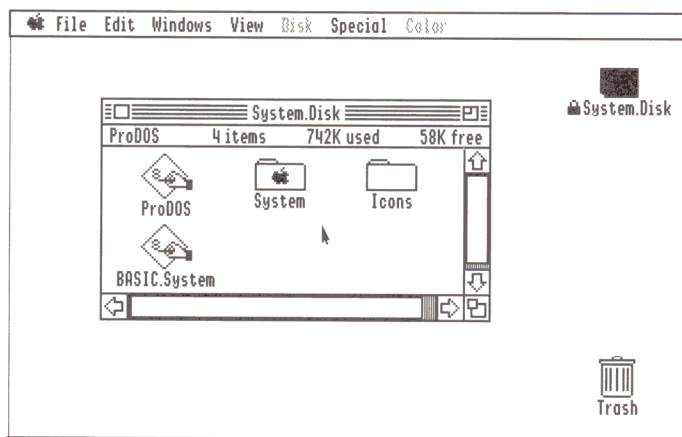
Figure 3-1 The Finder Desktop

You work in the Finder by selecting and dragging icons, by double-clicking, by choosing commands from menus in the Finder menu bar, and by typing keyboard commands that activate menu items. Just as other applications let you create and manipulate words, pictures, or numbers, the Finder lets you manipulate documents, folders, disks, and applications.

Working with menus

The Finder lets you work with your computer without having to memorize commands. All the commands you need are available to you in the Finder menus, and you can pull down a menu at any time to see which commands are there.

Pulling down a menu

Follow these steps to see the commands in a menu:

1   **Position the pointer on the title of a menu in the menu bar at the top of the screen.**

```
 File  Edit  Windows  View  Disk  Special  Color
```

2   **Press and hold down the mouse button.**

The menu comes into view. As long as you hold down the mouse button, the menu remains visible.

```
File
New Folder    ⌘N
Open          ⌘O
Print
Close         ⌘W
Close All

Duplicate...  ⌘D
Put Away      ⌘Y
Validate
```

3 **Release the mouse button.**

The menu disappears.

For a summary of the commands in each menu, see "Using menu commands," on page 45.

Choosing a command from a menu

Follow these steps to choose a command from a menu:

1 **Position the pointer on the title of a menu in the menu bar at the top of the screen.**

2 **Press and hold down the mouse button.**

The menu comes into view. (See step 2 on the previous page.) As long as you hold down the mouse button, the menu remains visible.

3 **Drag down through the menu until the name of the desired command is highlighted.**

If a command name is dimmed—that is, if it appears gray instead of black—the command can't be chosen. Commands are dimmed whenever they would have no effect; for example, if there's nothing in the Trash, the Empty Trash command in the Special menu is dimmed.

```
┌─────────┐
│ Special │
├─────────┴──┐
│ Clean Up   │
│ Empty Trash ⌘T│
│ Preferences... │
├────────────┤
│ Icon Info ⌘I│
├────────────┤
│ Shut Down... ⌘Q│
└────────────┘
```
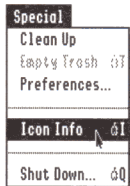
4 **Release the mouse button.**

The command you have chosen flashes and takes effect immediately.

◆ **Keyboard shortcuts** Many commands have keyboard shortcuts that let you give the command without pulling down a menu and choosing the command name. These shortcuts are listed to the right of the corresponding command names in the Finder menus.

To use a keyboard shortcut, simply hold down the Command (⌘) key while you press and then release the appropriate letter. To give the Icon Info command, for example, you can press Command-I. (You'll find a listing of other tips and shortcuts in the Shortcuts file on the *SystemTools2* disk. You can use the Teach application to read the file.) ◆

Using menu commands

The Finder menus allow you to do all your desktop-related tasks. Until you know the content of the menus by heart use the following pages to help you learn the location and function of each command.

The Apple menu
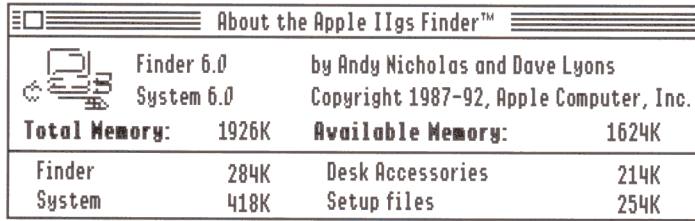
This section briefly describes each command in the Apple menu. In addition to the three commands described here, the Apple menu lists any other desk accessories that you install on your startup disk. Desk accessories are "mini-application" programs that you can use without leaving the application you're using. They are available through the Apple menu, either in the Finder or in other desktop programs that support the Apple menu.

About the Finder

Displays a box showing useful information about how system memory is currently allocated. This box shows you the total memory used by the computer and the total memory available for your use. It also itemizes the memory allocated to the Finder, System,

desk accessories, and **setup files**. The authors, version numbers of the Finder and System, and the copyright information are also displayed.

```
┌─────────────────────────────────────────────────────┐
│ ▤□══════════ About the Apple IIgs Finder™ ══════════ │
│   ┌─┐                                                 │
│  ┌┘ ├   Finder 6.0        by Andy Nicholas and Dave Lyons │
│  ⌐══╪   System 6.0        Copyright 1987-92, Apple Computer, Inc. │
│  Total Memory:    1926K   Available Memory:      1624K │
│ ├─────────────────────────────────────────────────── │
│  Finder           284K    Desk Accessories        214K │
│  System           418K    Setup files             254K │
└─────────────────────────────────────────────────────┘
```

To make the box disappear, click in the close box, the tiny box at the upper-left corner of the window.

Help

Displays a window containing a pop-up menu of help information about Finder operations.

```
┌─────────────────────────────────────────────────┐
│ ▤□══════════════ Finder Help ══════════════════ │
│                                                   │
│  Topic │ Using Help              ▼ │             │
│ ┌───────────────────────────────────────┐ ⟨⇧⟩   │
│ │ To get information on different Finder features, │ │
│ │ choose a feature from the pop-up menu above. │ │
│ │                                           │ │
│ │ When there is more text than will fit in the │ │
│ │ window, you can use the scroll-bar on the right to │ │
│ │ see the rest.                             │ │
│ │                                           │ │
│ │                                         ⟨⇩⟩ │
│ └───────────────────────────────────────┘      │
└─────────────────────────────────────────────────┘
```
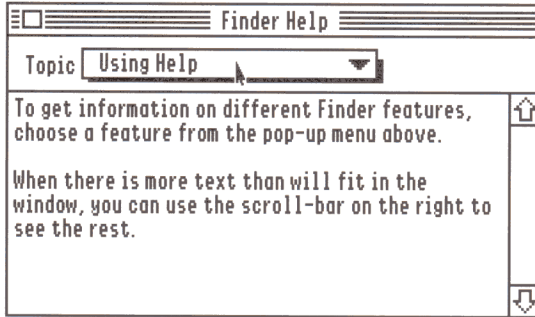
To use the menu, position the pointer on the Topic box, and then press and hold the mouse button to see your options. Drag the mouse to the option you want, and then release the mouse button. You'll see a window describing the option you chose. Some of the information is too extensive to fit into the window; use the up and down arrows to the right of the text to see all of the information. When you finish reading the information, click the closebox at the upper-left corner of the window. You now return to the Finder.

◆ **Shortcuts**   The Shortcuts file on the *SystemTools2* disk lists shortcuts you can use with System 6 software. Use the Teach application to read the file. ◆

Control Panels

Displays the desktop Control Panels, which let you customize many features of your computer. For information on how to make changes in the desktop Control Panels, see Chapter 7, "Using the Desktop Control Panels," on page 171.
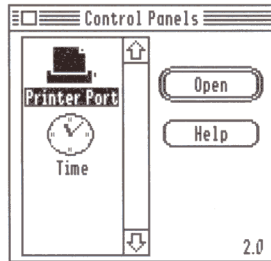
The File menu

This section gives a brief explanation of each command in the File menu. These commands help you manipulate desktop items; you use the File menu to create new folders, open icons, close windows, duplicate files and folders, print files from the Finder, and check desktop items for damage.

New Folder

Places an empty folder in the active window. The folder can then be used to hold documents, applications, or other folders. If no windows are active, the New Folder command is dimmed. For instructions on using this command, see "Creating a new folder," on page 120.

Open

Opens the selected icon or icons. If the icon represents an application, opening it usually gives you a new, untitled document. For instructions on using this command, see "Opening icons," on page 72.

Print

Allows you to select document icons from the Finder for printing. The command launches the application that produced the document and instructs it to print to a connected printer. Note that many applications don't support printing from the Finder. In such cases, you must first open the application, and then open and print your document. (Remember, if you are working with an 800K startup disk, you must install the appropriate printer update. For information about installing updates, see Chapter 2, "Using the Installer," on page 19.)

Close

Closes the active window back down to its icon—which remains selected. The next open window, if there is one, becomes the active window. For instructions on using this command, see "Closing a window," on page 66.

Close All

Closes all windows. For instructions on using this command, see "Closing a window," on page 66.

Duplicate

Makes a duplicate copy of the selected file or folder and places it in the same window as the original. Duplicates items are shown with a 2 after the name of the original. Duplicating a folder duplicates the folder and all its contents. For instructions on using this command, see "Placing duplicate copies of files and folders in the same window," on page 123.

Put Away

Returns all selected files on the desktop or in the Trash window to the window from which they were most recently moved. The Put Away command also removes disk icons from the desktop (if they are removable). Choosing Put Away sends a selected removable disk icon to the Trash, causing it to eject. For instructions on using this command, see "Putting away desktop icons," on page 75.

Validate

Lets you check a disk, a folder, or a file for damage. For instructions on using this command, see "Validating files," on page 132.

The Edit menu

This section gives a brief explanation of each command in the Edit menu. Many of these commands—the ones that help you edit text—can't be used in the Finder (except in Finder Help or the Icon Info Comment Card) but can be used with most desk accessories in which you can type text. Many graphics-based programs have similar or identical commands in their Edit menus.

Undo

Reverses your last action. The Undo command is used in applications and desk accessories.

Cut

Removes the selected material and places it in a holding area called the **Clipboard** (replacing whatever was there before). The Cut command is for use in applications, desk accessories, and Icon Info comments.

Copy

Places a copy of the selected material on the Clipboard (replacing whatever was there before) without removing the selected material from the original location. The Copy command is used in applications, desk accessories, Icon Info comments, and Finder Help.

Paste

Places a copy of the contents of the Clipboard at the insertion point without removing the contents from the Clipboard. You can paste the same item as many times as you like—until you cut or copy a new selection onto the Clipboard. The Paste command is used in applications, desk accessories, and Icon Info comments.

Clear

Removes the selected material without placing a copy on the Clipboard—whatever is on the Clipboard remains intact. The Clear command is used in applications, desk accessories, and Icon Info comments.

Select All

Selects all icons in the active window (or, if no windows are displayed, all icons on the desktop). For instructions on using this command, see "Selecting icons," on page 68.

Show Clipboard

Displays a window showing the current contents of the Clipboard. The Show Clipboard command is used in applications, desk accessories, and Icon Info comments.

The Windows menu

The Windows menu lists all the windows you open as you work with the desktop (and includes the Stack Windows command described later in this section). The Windows menu gives you a quick way to find a particular window when you have several windows open on the desktop. You can check the Windows menu to see all currently open windows in alphabetical order. The active, or frontmost, window displays a check mark next to its menu listing.

◆ **Note** Desk accessory windows are not listed in the Windows menu, nor are they stacked by the Stack Windows command ◆

To bring a window to the front, making it the active window, simply select the window from the menu. Note that if no windows are open, the menu will be dimmed and you will not be able to select any items from the menu.

Stack windows

Stacks all the windows you have open on the desktop, using the order in which you worked with them. That is, the window that was active when you chose the Stack windows command will be on top, the window that was most recently active before that will be behind the first, and so on with each successive window.

The View menu
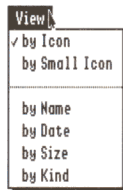
This section gives a brief explanation of each command in the View menu. These commands let you change the way directory information is displayed in a window. The current view is always indicated in the View menu by a check mark. For instructions on using the commands in the View menu, see "Changing your view of a window," on page 65.

If no windows are open, the menu will be dimmed and you will not be able to select any items in the menu.

By Icon

Displays the contents of the active window as full-sized icons, with the icon name below the icon.

By Small Icon

Displays the contents of the active window as small icons, with the icon name to the right of the icon. Viewing by small icon is useful when you have many items in a window and want to be able to see more of the icons at once.

By Name

Lists the contents of the active window alphabetically by name.

By Date

Lists the contents of the active window chronologically by date of last modification. The item most recently changed is listed first. For folders, the modification date indicates when you last added or removed an item. If you've never added or removed any items, the date you created the folder is shown. Modification dates are shown in this view even if you have indicated, via the Preferences command, that dates not be shown in windows. For information about Preferences, see page 55.

By Size

Lists the contents of the active window by size. The largest item is listed first. This view is particularly useful for seeing which files are taking up the most room on a disk. Selecting this view overrides the Preferences command to not show sizes in windows.

By Kind

Lists the contents of the active window alphabetically by type of item. If the window contains any files, this view orders them by what kind of file each one is—a BASIC application, a ProDOS 8 application, and so on. Selecting this view overrides the Preferences command to not show kinds in windows.

The Disk menu

This section gives a brief explanation of each command in the Disk menu. These commands let you perform basic procedures with your disks. For instructions on using any of these commands, see Chapter 4, "Working With Disks," on page 85.

If no disks are selected, the menu will be dimmed and you will not be able to select any items in the menu.

Initialize

Initializes the disk represented by the selected icon. Initializing a disk is somewhat like constructing a parking lot with numbered parking spaces. When the computer stores

information on the disk it uses these "parking spaces" to organize the information for easy retrieval.

▲ **Warning** Do not attempt to initialize a disk that contains information that you want to keep without first backing up the files on the disk. For more details, see Chapter 4, "Working with Disks," on page 85 or Chapter 8, "Using the Archiver," on page 199. ▲

Erase

Erases all information on the disk represented by the selected icon.

▲ **Warning** Do not attempt to erase a disk that contains information that you want to keep without first backing up the files on the disk. For more details, see Chapter 4, "Working with Disks," on page 85 or Chapter 8, "Using the Archiver," on page 199. ▲

Verify

Lets you determine whether there is physical damage to the disk represented by the selected icon. The command allows you to find out whether there are any bad **blocks** on the disk. (A block is a unit of measure used to specify the size of disks and files.) If a disk has bad blocks, you can then copy any files you can to a good disk and discard the disk with the bad blocks. Choosing Validate from the File menu tells you which files are affected by bad blocks. If the disk with bad blocks is a hard disk or a hard disk partition, see your authorized Apple dealer.

Eject

Ejects the 3.5-inch disk represented by the selected icon. This command does not, however, remove the disk's icon or its window from the desktop. (To remove the icon from the desktop, you must drag the icon into the Trash or choose Put Away from the File menu.)

If you select the icon of a disk that can't be ejected—such as a hard disk, a hard disk partition, or a 5.25-inch disk, which must be removed manually—the Eject command will be dimmed.

◆ **Hard disk users** If you have not installed the HFS file system translator, when you try to mount a hard disk that contains an HFS partition, you'll see a message asking you if you want to initialize the partition or eject it. If you select the Initialize option, your partition will be reformatted with the ProDOS file system. If you select the Eject option, your partition won't mount. (That is, you won't see it on your desktop.) ◆

◆ **CD-ROM users** You can use the Eject command to eject CD-ROMs. If a CD-ROM has partitions, you select all the partition icons and then choose Eject in order to eject the disc. To clear your workspace, you can "eject" CD ROM partitions by using the Put Away command, the Eject command, or dragging them to the Trash. (If the CD-ROM has partitions initialized for more than one file system, the Eject command doesn't work unless you have installed the appropriate FST for each partition—for example, the CD-ROM Explorer® disc that comes with the AppleCD SC drive includes both HFS and ProDOS partitions.) ◆

The Special menu

The Special menu lets you perform a variety of tasks: aligning icons, permanently discarding anything you've dragged to the Trash, setting special preferences for Finder operations, getting information about icons, and shutting down the computer.

Clean Up

Aligns all icons in the active window in an invisible grid of rows and columns. This command can be used on windows only when you're viewing the contents by icon or by small icon. If no windows are displayed, this command aligns the icons on the desktop. For instructions on using this command, see "Cleaning up the icons in a window or on the desktop," on page 74.

Empty Trash

Permanently deletes any files and folders in the Trash and frees up the space they occupied on their disks. For instruction on using this command, see "Discarding files and folders into the Trash," on page 128. If nothing is in the Trash, this command will be dimmed and you will not be able to select it.

Finder Preferences

Displays a dialog box that lets you set special preferences for certain Finder operations. When an option is turned on, an X appears in the box next to the option's name. When an option is turned off, the box next to the option name is empty. (All options are preset to be on.) Click the box to add or remove the X.

```
┌─────────────────────────────────────────────────────┐
│ Finder Preferences                                    │
│ ┌···List Views···┐  ⊠ Save Finder information onto disk│
│ ⊠ Show date         ⊠ Hide invisible files           │
│ ⊠ Show size         ⊠ When starting up, check 5.25" drives│
│ ⊠ Show kind         ⊠ Color selected icon's background│
│ ⊠ Show disk info         instead of its outline       │
│    in header                                          │
│                            ( Cancel ) (( Accept ))    │
└─────────────────────────────────────────────────────┘
```
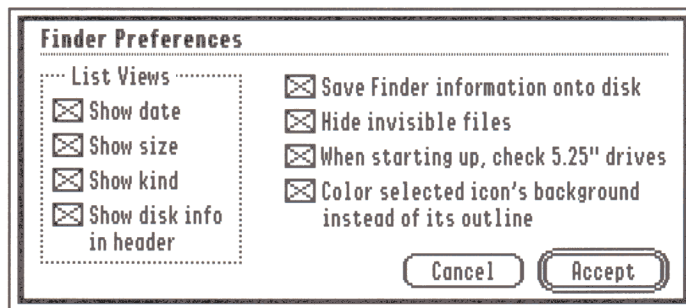
Click Accept to confirm the change and make the Finder Preferences dialog box disappear. Click Cancel if you made no changes or if you want to cancel any changes you made in the Finder Preferences dialog box.

The options in the list on the right side of the Finder Preferences dialog box are:

- *Save Finder information onto disk:* When you close a window on a disk that isn't **write-protected**, the Finder keeps track of the position and size of the window and the position and color of the icons in the window. The next time you open the window, everything will look the same as when you closed it. Similarly, when you eject a disk that isn't write-protected, the Finder keeps track of which windows were displayed; the next time you insert the disk, the same windows will automatically be displayed.

  If you don't want the Finder to keep track of this information—for example, if you want the changes you make to window size or position to be only temporary—turn this option off.

- *Hide invisible files:* Several types of files containing data of use only to the Finder or the operating system are marked as "invisible." Normally, the Finder hides such files from view.

  If you want to see those files, turn this option off.

- *When starting up, check 5.25-inch drives:* When the Finder is starting up, it checks all drives. If you want to eliminate the annoyance of attempts to read these drives, turn this option off.

- *Color selected icon's background instead of its outline:* For an explanation of this option, see "Changing the color of icons," on page 80.

The List Views box on the left of the Finder Preferences dialog box lets you customize the amount of information you see about items in a window. When you set these options, you effectively create your own display criteria for all the windows you open. However, you can always override your List View preferences for an active window by using the View menu. (See "The View menu," on page 51.) These are the options:

- *Show date:* When viewing a window by name, size, or kind, you will also see date information. If you prefer to omit date information, turn this option off.

- *Show size:* When viewing a window by name, date, or kind, you will also see size information. If you prefer to omit size information, turn this option off.

- *Show kind:* When viewing a window by name, date, or size, you will also see information about the kinds of items in the window. If you prefer to omit such information, turn this option off.

- *Show disk info in header:* When viewing a window, you will see the file system name, the number of items in the window, and the space on disk displayed in the window header. If you have the window view set to other than Icon and prefer to omit the disk information to make more room for window contents, turn this option off.

Icon Info

Displays a window showing information about the selected icon. For instructions on using this command, see "Getting information about icons," on page 78.

Shut Down

Prepares the computer to be switched off and then gives you the option of switching off the power, restarting the computer, or returning to the application (if any) from which you started the Finder. For instructions on using this command, see "Shutting down the computer," on page 149.

The Color menu

The Color menu lets you change the color of the selected icon's background and outline. For instructions on using this menu, see "Changing the color of icons," on page 80.

The Extras menu

The Extras menu appears only when you have installed updates that include Finder extensions—programs that extend the functionality of the Finder. (EasyMount, or "Create Server Alias", is such a Finder extension. Installed via the "Network: AppleShare" update, it allows network users to log on to a server quickly and easily. For more information about EasyMount, see Chapter 12, "Networking the Apple IIGS," on page 271.)
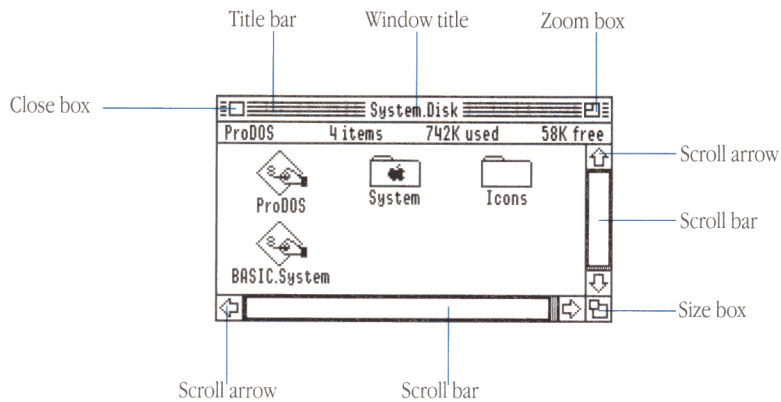
Figure 3-2 An annotated window

Working with windows

Windows give you a visual representation of the contents of a disk, a folder, or a document you create with an application. You may need to manipulate windows in order to see the information they contain. Figure 3-2 shows the parts of a window.

Making a window active

When you have two or more windows displayed on the desktop, only one window can be the active window—the location of your next action.

There are four ways to make a window active:

- You can simply click anywhere in the window. (It may be necessary to move other windows first so that a portion of the window you want to make active is visible.)
- You can choose the window you want from the Windows menu. (For more information about the Windows menu, see page 50.)
- You can double-click the icon of the folder or storage device to open it.
- You can choose a window from the pop-up shortcut. (For more information, see "Using the window pop-up shortcut," on page 61.)
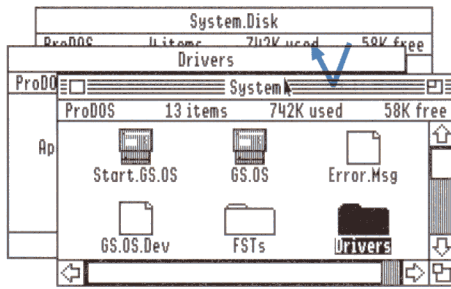
Clicking in a window
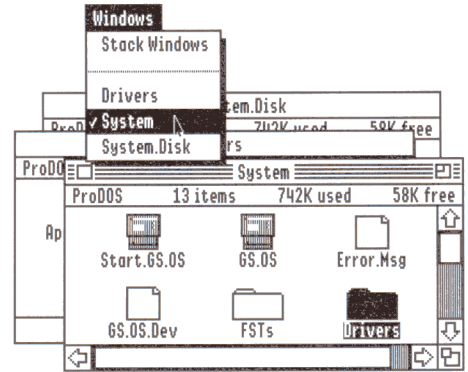
Choosing from the Window menu
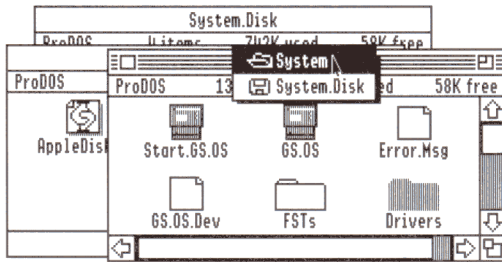
Using pop-up shortcut

Double-clicking folder

Figure 3-3 Four ways to make a window active

Note that when a window is active, the title bar at the top of the window displays ruled lines on either side of the title. When a window is inactive, the title bar displays only the title. See Figure 3-4.

Moving an active window

To move an active window, drag the window by its title bar to a new location. As you drag, an outline of the window follows the pointer. See Figure 3-5.
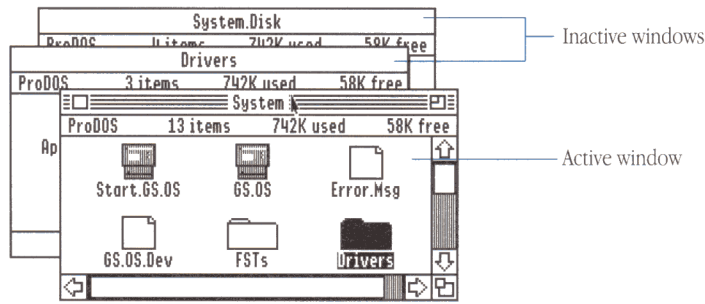
Figure 3-4 An active window and inactive windows
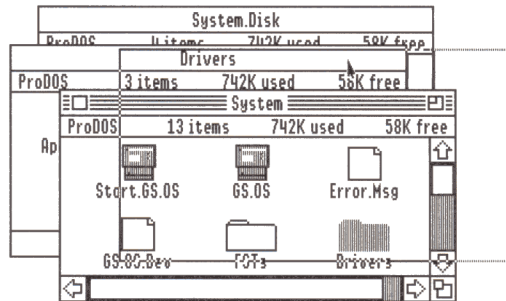
Figure 3-5 Moving an active window

To cancel the move, drag the pointer into the menu bar at the top of the desktop before releasing the mouse button; the border line will disappear, and when you release the mouse button the window will remain in its original position.

Moving an inactive window

Follow these steps to move an inactive window without making it active:

1 **If necessary, move any other windows until you can see the title bar of the inactive window to be moved.**

2 Hold down the Command key while you drag the window by its title bar to a new location.

As you drag, an outline of the window follows the pointer.

Holding down the Command key prevents the window from becoming active when you drag it. To cancel the move, drag the pointer into the menu bar at the top of the desktop before releasing the mouse button.

Using the window pop-up shortcut

When you have a number of windows open on the desktop, it's not always easy to remember where each of them came from—that is, the path of folders you opened to get to each window. The window pop-up shortcut allows you to see this hierarchical path for the active window, and to move quickly up and down it.

To use the window pop-up shortcut, follow these steps:

1 Hold down the Command key while you click anywhere in the title of the open window.

The titles of the windows you opened to get to the currently active window appear in a pop-up menu. You can see at a glance how you got to the active window.
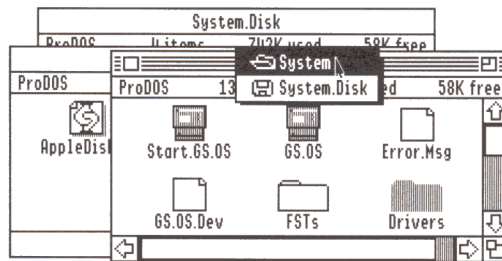
2 Choose any of the items in the menu to make it the active window.

The window that was active when you used the shortcut becomes inactive; it doesn't close.

Changing the size of a window

There are two ways to change the size of a window: by using the size box or by zooming. Using the size box allows you to make the window any size you want; zooming gives you only two possible sizes, but is faster than using the size box.

Using the size box

Follow these steps to change the size of a window using the size box:

1 **If the window you want to resize isn't active, click anywhere inside it to make it active, or choose it from the Windows menu.**

2 **If necessary, move the window until the size box in the lower-right corner is visible**.

3 **Drag the size box.**

As you drag, an outline of the window follows the pointer. Dragging horizontally changes the window's width, dragging vertically changes its height, and dragging diagonally changes both.

The new dimensions take effect when you release the mouse button.
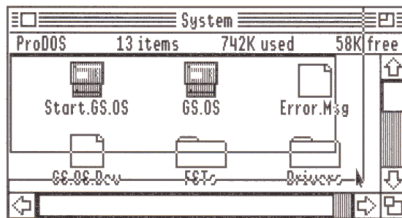
Zooming

Follow these steps to change the size of a window by zooming:

1 **If the window you want to resize isn't active, click anywhere inside it to make it active, or choose it from the Windows menu.**

2 **If necessary, move the window until the zoom box in the upper-right corner is visible.**

3 **Click the zoom box.**
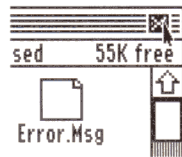
The window expands automatically to fill all but the rightmost inch of the desktop. If you click the zoom box again, the window returns to its previous size. (If you've moved or resized the window in the meantime, the second click of the zoom box will take you back to the most recent size and position—not the original size and position.)

Changing what's visible in a window

The scroll arrows, scroll bars, and proportional scroll boxes of a window let you change what portion of a window you see when the window is too small to display its entire contents at one time. When a window's complete contents are visible, both scroll bars are white, and you can't scroll.

There are five scrolling techniques. The technique you use depends on whether you want to scroll by small increments, by the windowful, by large increments, continuously, or continuously by large increments.

- *To scroll by small increments,* click the scroll arrow that points in the direction of the area you want to see.
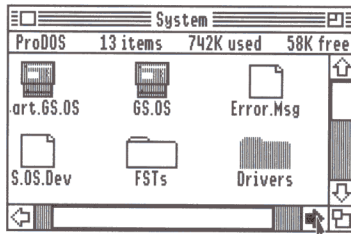
Scrolling by small increments
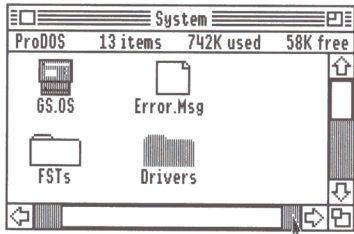
Scrolling by the windowful
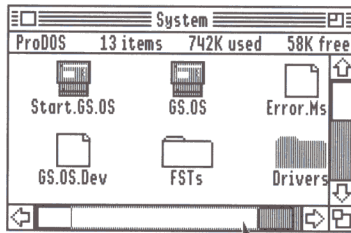
Scrolling by large increments

Figure 3-6 Scrolling techniques

- *To scroll a windowful at a time,* click one of the gray areas of the scroll bar near the arrow that points in the direction of the area you want to see.

- *To scroll by large increments,* drag the proportional scroll box to the point in the scroll bar that represents the approximate position of the area you want to see.

- *To scroll continuously,* press the scroll arrow that points in the direction of the area you want to see. As long as you hold the mouse button down, the window will scroll continuously by small increments in the direction of the arrow.

- *To scroll continuously in large increments,* press the gray area of the scroll bar in the direction of the area you want to see. The window will scroll in window-size increments until the mouse button is released.

Figure 3-6 shows scrolling by small increments, large increments, and by the windowful.

Changing your view of a window

There are six possible views for a window: By Icon, By Small Icon, By Name, By Date, By Size, and By Kind. The view you use depends on personal preference or what file information is most valuable to you. You can further customize the view you use by selecting options via the Preferences command in the Special menu (see page 54).
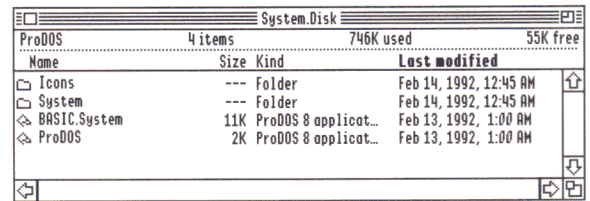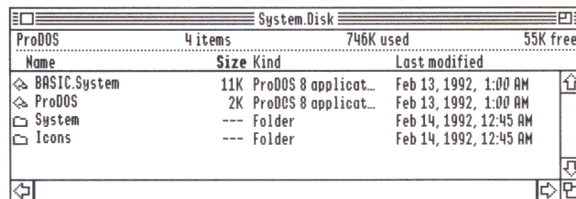
Figure 3-7   The System.Disk window displayed in each of the six views

The two icon views graphically represent the application or, in the case of documents, usually indicate the application that was used to create them. The remaining views display the contents of the window as a list and may include the size of each item listed and the date it was last modified.

Follow these steps to change your view of a window:

1 **If the window you want to change the view of isn't active, click anywhere inside it to make it active, or choose it from the Windows menu.**

2 **Choose the desired view from the View menu.**

View
✓ by Icon
by Small Icon
by Name
by Date
by Size
by Kind
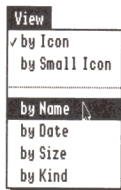
Note that when you view by Name, Date, Size, or Kind, the current view will be displayed in boldface in the window header.

Closing a window

You can close one window at a time, or you can close all windows on the desktop at once.

Closing a single window

There are several techniques for closing a single window. The technique you use depends on your personal preference. These techniques assume that the window you want to close is the active window.

Here are the techniques:

- Click the window's close box.
- Choose Close from the File menu.
- Press Command-W (the keyboard shortcut for the Close command).

◆ **Note** If the window you want to close is not active, press Option while choosing the window's title from the Windows menu. This closes the window without first making it active. ◆
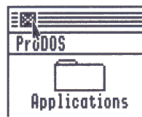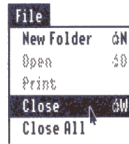
1. Click the window's close box　　2. Choose Close　　3. Press Command-W

Figure 3-8 The three techniques for closing a window

When you close the active window, the next open window (if there is one) becomes the active window.

Closing all windows at once

There are three techniques for closing all the windows at once. The technique you use depends on your personal preference.

Here are the three techniques:

- Choose Close All from the File menu
- Press Command-Option-W
- Hold down the option key while clicking the close box of the active window

Working with icons

Icons give you a visual representation of the files, folders, disks, or applications you can work with on the Finder desktop. Working with these icons is a basic part of performing tasks on your Apple IIGS.

Selecting icons

You must select an icon before you tell the computer what action to take on the icon. There are several techniques for selecting icons. The technique you use depends on whether you want to select:

- a single icon
- several icons that are grouped together
- several icons that are not grouped together
- all the icons in a window
- all the icons on the desktop

Selecting a single icon

To select a single icon, click the icon. The icon becomes highlighted, indicating that it is selected.

1. Click an icon   2. The icon becomes highlighted

Figure 3-9 Selecting a single icon

Selecting several icons that are grouped together

Follow these steps to select several icons that are grouped together:

1 **Position the pointer outside one corner of a group of icons.**

2 **Drag to the opposite corner of the group.**

As you drag, a black outline of a rectangle forms around the icons.
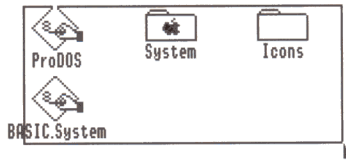
3 **Release the mouse button.**

All icons that were fully or partially within the rectangle's outline are selected immediately.

Selecting several icons that are not grouped together

Follow these steps to select several icons that are not grouped together:

1 **Click the first icon to select it.**

2 **Hold down one of the Shift keys while you click the next icon to select it.**

This process is called **Shift-clicking**.

3 **Shift-click each additional icon to select it.**

Selecting all the icons in a window

Follow these steps to select all the icons in a window:

1 **Click the appropriate window to make it the active window.**

2 **Choose Select All from the Edit menu. (Or press Command-A.)**

Command-A is the keyboard shortcut for the Select All command.

Selecting all the icons on the desktop

Follow these steps to select all the icons on the desktop:

1 **Close all the open windows on the desktop.**

You can hold down the Option key while you click the close box of the active window on the desktop to close all windows, or you can choose Close All from the File menu.

For more information, see "Closing a window," on page 66.

2 **Choose Select All from the Edit menu. (Or press Command-A.)**

Command-A is the keyboard shortcut for the Select All command.

Deselecting icons

If you change your mind about taking an action on an icon (or group of icons), or if you select an icon by mistake, you'll need to deselect the icon. There are two techniques for deselecting icons. The technique you use depends on whether you want to deselect all selected icons or only some selected icons.

Deselecting all selected icons

To deselect all selected icons, click anywhere on the desktop *except* on an icon or press the Esc key.

Deselecting some selected icons

To deselect some selected icons but leave others selected, hold down one of the Shift keys while you click each icon that you want to deselect.

Moving icons

You will frequently rearrange icons into new folders as you purchase new applications and create new document files.

Follow these steps to move icons from one place to another on the screen:

1 **Select one or more icons.**

2 **Drag the icon or icons to the desired location on the screen.**

As you drag, an outline of the icon or icons follows the pointer. Don't release the mouse button until the pointer is in the desired location. If you're dragging items into another window, for example, release the mouse button when the pointer is within the window.

Be aware of the following:

- If you drag onto a disk or folder icon, the files will be moved into that icon.
- If you drag into the menu bar, the icons will return to their original position.
- If you drag the icons onto another disk they will be copied to that disk and the icons will remain in their original position.

Opening icons

There are three techniques for opening icons. The technique you use depends on your personal preference. Figure 3-10 shows the techniques.

Here are the three techniques:

- Select the icon and choose Open from the File menu.
- Select the icon and press Command-O (the keyboard shortcut for the Open command).
- Double-click the icon.
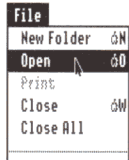
Choosing Open   Pressing Command-O   Double-click icon

Figure 3-10 Three techniques for opening icons

What happens when you open an icon depends on the type of icon (see Figure 3-11):

- When you open a 5.25-inch disk drive icon, another icon (representing the disk in that drive) appears on the desktop along with the disk drive icon.
- When you open a disk or folder icon, a window displaying the contents of that disk or folder appears on the desktop.
- When you open an application icon, the Finder starts up the application and you leave the Finder.
- When you open a document icon, the Finder starts up the application that was used to create the document, and then displays the document on your screen. This technique does not work with all applications; some require you to start up the application first, presenting you with an empty desktop and then you need to open the document from within the application.

5.25-inch disk icon   5.25-inch disk drive icon   3.5-inch disk icon   folder icon   application icon   document icon   hard disk icon

Figure 3-11 Types of icons

If the Finder isn't able to locate an application for the document—for example, if the application disk isn't in any of your disk drives—you'll see the following dialog box:
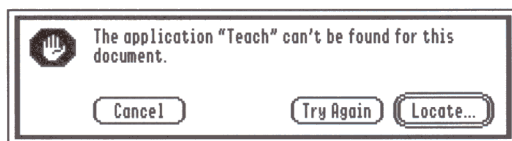
After making sure that the application disk is on line, click Try Again. If the Finder still can't locate your application, follow these steps:

1. Click Locate to see the Volumes dialog box.
2. Click Volumes to see all the volumes you have on line.
3. Select the volume where the application is located
4. Select the application and click OK.

The next time you try to open the document in the Finder, you should be successful. If not, start up the application by opening its icon rather than by opening a document.

For more information, see "Starting up an application," on page 136.

Cleaning up the icons in a window or on the desktop

Until you move them, icons in a window or on the desktop are aligned horizontally and vertically in an invisible grid. But when you move icons, you may not always realign them perfectly. You can realign them using the Clean Up command in the Special menu.

You can clean up only one window—or the desktop—at a time.

Cleaning up the icons in a window

Follow these steps to clean up the icons in a window:

1 **Click the appropriate window to make it the active window.**

2 **Choose Clean Up from the Special menu.**

The icons move into alignment.

Cleaning up the icons on the desktop

Follow these steps to clean up the icons on the desktop:

1 **Close all the open windows on the desktop.**

You can hold down the Option key while you click the close box of the active window on the desktop to close all windows, or you can choose Close All from the File menu.

For more information, see "Closing a window," on page 66.

2 **Choose Clean Up from the Special menu.**

The icons move into alignment.

Putting away desktop icons

If you find yourself needing some extra space on the desktop, you can move file or folder icons from a window directly onto the desktop and then close the window. (Moving file and folder icons onto the desktop can also be convenient when items are nested several folders deep.)

When you're ready to return icons to the appropriate windows, you can have the computer automatically put away file and folder icons you've moved to the desktop.

The Put Away command also removes icons from the desktop (if they are removable). Choosing Put Away moves a selected removable disk icon to the Trash, causing the disk to eject.

Follow these steps to use the Put Away command:

1 **Select the icons you want to put away.**

2 **Choose Put Away from the File menu. (Or press Command-Y.)**

The icons return to their previous locations—even if their windows aren't displayed on the desktop. (If the icon represents a removable disk, it moves to the Trash and the disk ejects.)

◆ **Network users** If your Apple IIGS is part of a network that includes one or more AppleShare file servers, you can't move file icons from a file server onto your desktop because other network users may need access to those files. For more information about AppleShare file servers, see Chapter 12, "Networking the Apple IIGS," on page 271. ◆

Renaming icons

You can give a new name to any disk icon or any icon in a window—unless it's write-protected or locked.

◆ **Network users** If your Apple IIGS is part of a network that includes one or more AppleShare file servers, you must have the appropriate access privileges in order to rename icons. For more information, see "Setting access privileges for a folder," on page 289. ◆

Whenever you rename an icon using the Finder, you must edit text (or type new text). And if you're using applications that include text—for example, word-processing programs—you use the same text-editing techniques that you use in the Finder. For more information about text editing, see "Using Teach to practice application tasks," on page 150.

△ **Important** Do not rename the System folder icon or any other icons in the System folder. The system looks for such files by name; if it doesn't find them, the system may not function properly. △

Follow these steps to change the name of an icon:

1 **Click the icon or its name.**

The icon and its name become highlighted.

2 **Type a new name or edit the name that's there.**

Be sure to keep the following rules in mind:

- No two icons in the same window can have the same name.
- No two disk icons on the desktop can have the same name.

For the ProDOS format, follow these rules:

- Start the name with a letter.
- Use no more than 15 characters.
- Don't use spaces.
- Don't use characters other than letters, numbers, or periods.

For the HFS format, follow these rules:

- Use no more than 27 characters for disks or 31 characters for files or folders.
- Don't use colons.

△　**Important**　If you use the Apple IIGS file system translators (FSTs) to work with files from another system, be sure to follow the file naming rules of the other system when appropriate. For more information about FSTs, see "Using file formats and translators," on page 109. △

◆　**Network users**　If your Apple IIGS is part of a network that includes one or more AppleShare file servers, the naming rules for items you store on a file server are the same as the HFS rules. However, if you plan to open your files from ProDOS 8 applications, follow ProDOS naming conventions. ◆

3　**Press Return to confirm the new name.**

The icon displays its new name. If you change your mind about the name you typed—or realize that you selected the name of another icon unintentionally—you can cancel the renaming operation by pressing the Esc (for Escape) key or by clicking anywhere outside the icon's name.

If the name you typed doesn't follow the appropriate rules, you see a message indicating that you provided an unacceptable file name. Click Edit New Name and then rename the icon with an appropriate name.

Sometimes you may want to change only a portion of the name in order to have several icons with similar names. To change only part of the name of an icon follow these steps:

1　**Click the icon or its name.**

2　**Position the pointer at one end of the part of the name you want to change.**

Note that the pointer becomes an **I-beam** when it's positioned within the word. (If it does not become an I-beam the disk may be write-protected, or locked.)

3   **Drag across the part of the name you want to change.**

The text becomes highlighted as you drag across it, indicating that it has been selected.

4   **Type the new text.**

5   **Press Return to confirm the new icon name.**

◆ **By the way** If you want to change one complete word of the disk icon name, select the icon and then simply double-click the word you want to change. The word becomes highlighted, indicating that it has been selected. Type the new word. Be sure to double-click the name and not the icon itself. (Double-clicking an icon is a shortcut for opening the icon.) ◆

For more detailed instructions on editing text, see the sections on working with text on page 154 through page 165.

Getting information about icons

Follow these steps to get information about an icon:

1   **Select one or more icons.**

2   **Choose Icon Info from the Special menu. (Or press Command-I.)**
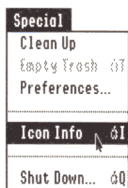
Command-I is the keyboard shortcut for the Icon Info command.

When you choose Icon Info, a window representing a spiral-bound book of index cards appears on the desktop. The first card displays general information about the icon.

```
 ≣□≣≣≣≣≣ Info on "Matt.History" ≣≣≣≣≣≣
  ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓

        ▢    Matt.History              Locked ☐

  Kind:  File Type Names
  Size:  9,195 bytes, 10K on disk


  Created:  Fri, Jan 18, 1991, 5:36 PM
  Modified: Fri, Dec 13, 1991, 2:00 PM
  [ General ][ Where ][ Comment ]
```
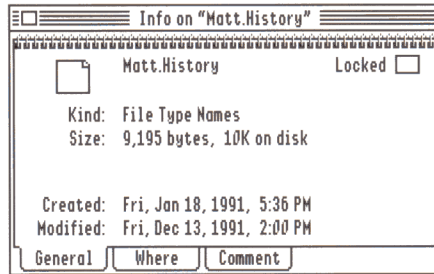
3 **For information on the icon's location, click the tab labeled WHERE near the bottom of the window.**

A new card appears on the desktop. This card lists the icon's physical location and its pathname, which is the route you take to get to the icon. (In the example, the icon is on a disk in the first 3.5-inch drive; the disk is called *Practice.Disk* and the file is called *Matt.History.* This is stored in the computer as a single name: Practice.Disk:Matt.History.)

```
 ≣□≣≣≣≣≣ Info on "Matt.History" ≣≣≣≣≣≣
  ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓

   Device:  .APPLEDISK3.5A

     Path:  :Practice.Disk:Matt.History



  [ General ][ Where ][ Comment ]
```

4 **To add a comment about the icon, or to see a comment you've written, click the tab labeled Comment near the bottom of the window.**

A new card appears on the desktop, displaying an Add Comment button.Clicking the Add Comment button presents a warning that, unless the file is placed on a server, adding comments to it will make it unusable by ProDOS 8 applications. If you want to go ahead, click Attach. An insertion point appears on the card, and you can attach your comment to

the icon. You can write anything that might help identify or explain the icon (within the limit of 199 characters).

```
 ≣▢▤══════ Info on "Matt.History" ═════▤
▐▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▁▐
   Matt's history report on the antics of Mark Twain
   and his RiverBoat friends|




    General    Where    Comment
```

◆ **Network users** If your Apple IIGS is part of a network and you choose Icon Info after selecting an icon on an AppleShare file server, you'll see another tab (labeled Access) at the bottom of the window. This tab lets you see an additional information card. For details, see Chapter 12, "Setting access privileges for a folder."

Note that the system does not always permit a Comment Card for icons on a local disk. For example, a Comment Card will not appear for folders on local disks. ◆

Changing the color of icons

If you have a color monitor, you can change the background and outline color of file, folder, and 5.25-inch disk icons. If you have a monochrome monitor, you can choose among black, white, and 14 shades of gray for the background and outline. See Figure 3-12.

Unless you want to use the same color for more than one icon, you should select a single icon in the following procedures.

Sarah.Folder   Gregory.Folder

Figure 3-12 Background and outline colors

◆ **Note** You may not be able to change the color of certain icons. An application icon that comes already colored by its publisher is an example of such an icon. ◆

Changing an icon's background color

Follow these steps to change the color of an icon's background:

1 **Click the icon to select it.**

2 **Choose the desired color from the Color menu.**

The icon becomes the chosen color.

Changing an icon's outline color

Follow these steps to change the color of an icon's outline:

1 **Click the icon to select it.**

2 **Hold down the Control key while you choose a color from the Color menu.**

The outline of the icon becomes the chosen color.

Reversing the background and outline procedures

If you change icon outlines more often than icon backgrounds, you may want to reverse the commands used to perform the two coloring procedures. Follow these steps:

1 **Choose Preferences from the Special menu.**

2   **Click the box next to the "Color selected icon's background instead of its outline" option to remove the X.**

```
┌────────────────────────────────────────────────────┐
│ Finder Preferences                                 │
│ ····· List Views ·········                         │
│  ⊠ Show date           ⊠ Save Finder information onto disk │
│  ⊠ Show size           ⊠ Hide invisible files      │
│  ⊠ Show kind           ⊠ When starting up, check 5.25" drives │
│  ⊠ Show disk info      ☐ Color selected icon's background │
│     in header             instead of its outline   │
│                           ( Cancel )  (( Accept ))  │
└────────────────────────────────────────────────────┘
```
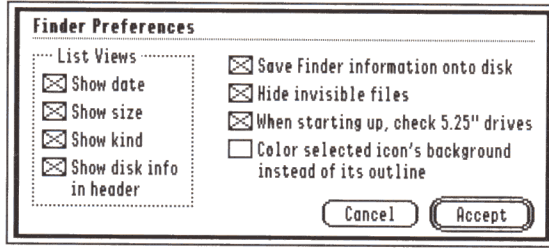
3   **Click Accept.**

Now, whenever you choose a color from the Color menu, that color will be applied to the selected icon's outline. And whenever you hold down the Control key while choosing a color from the Color menu, that color will be applied to the selected icon's background.

Locking an icon

If you lock an icon, the system will not allow you to accidentally remove, replace, or rename it. If you lock a document file, you cannot make changes to it, but you can move it to another location. If you lock a folder, you can still change files inside it, and you can move it to another location. For information about locking, or write-protecting, disks, see page 94.

◆ **Note** You cannot lock an HFS folder; the HFS file system doesn't support this function. ◆

Follow these steps to lock an icon:

1   **Select the file or folder icon you want to lock.**

2   **Choose Icon Info from the Special menu. (Or press Command-I, the keyboard shortcut.)**

You see the General card for the icon.

```
┌─────────────────────────────────────────────┐
│▤□══════ Info on "Gregory.Folder" ══════      │
├─────────────────────────────────────────────┤
│                                              │
│   ┌──┐    Gregory.Folder      Locked ⊠      │
│   └──┘                                       │
│    Kind:  Folder                             │
│    Size:  use calculate icon...              │
│                                              │
│ Contents:  use calculate icon...             │
│  Created:  Tue, Jan 21, 1992, 4:08 PM    ┌──┐│
│ Modified:  Tue, Jan 21, 1992, 4:08 PM    │▦ ││
│  ┌─────────┐┌───────┐                    └──┘│
│  │ General ││ Where │                        │
└──┴─────────┴┴───────┴────────────────────────┘
```
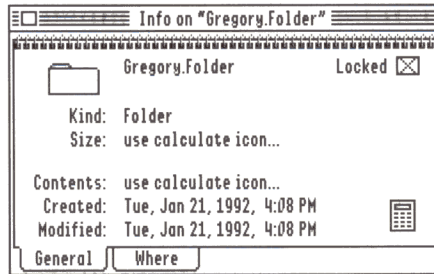
3 Click the Locked check box.

An X appears in the check box, indicating that the file or folder is now locked.

You can also check the box by typing L; typing L again removes the check.

4 Close the Icon Info window.

A lock symbol now appears to the left of the icon's name.

Unlocking an icon

Follow these steps to unlock an icon:

1 Select the icon you want to unlock.

2 Choose Icon Info from the Special menu.

You see the General Card for the icon.

3 Click the Locked check box to remove the X.

The X disappears from the box.

4 Close the Icon Info window.

The icon is now locked.

Apple IIGS
System.Disk

Version 6.0

System 6

Apple II   Diskware

Utilities
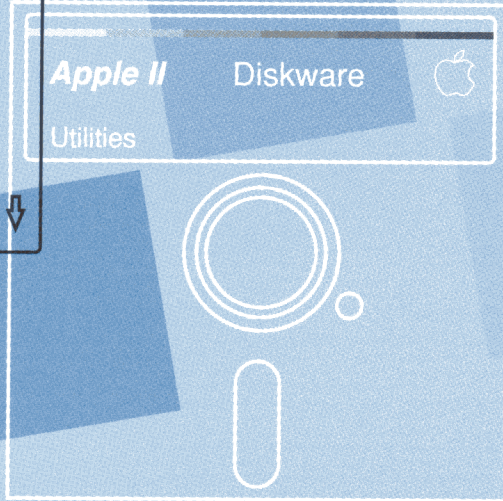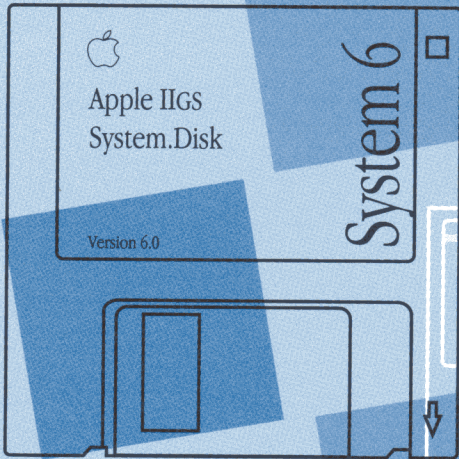
4 Working With Disks

Almost everyone will refer to this chapter from time to time. It explains how to prepare your disks, work with them, and take care of them. It also tells you about file system translators—which let you use disks from several file systems—and how to use part of your computer's memory as a disk. If you're a new user, the first four sections are basic—although even experienced users will find them handy for reference. The last two sections help you make the most of your Apple IIGS computer. This chapter contains information on these topics:

- understanding hard and floppy disks

- preparing to use disks

- working with disks on the desktop

- taking care of disks and diagnosing disk problems

- using file formats and translators

- using memory as a RAM disk

Understanding hard and floppy disks

Both hard and floppy disks store information so you and your computer can have access to it. Hard disks are sealed inside a case; floppy disks can be inserted into and ejected from a disk drive. Both kinds of disks show up as icons on your desktop, and you work with them in exactly the same way.

The major difference between hard and floppy disks is their capacity—the amount of information they can hold. Disk capacity is measured in two units:

- A kilobyte is 1024 **bytes**, and is represented by the abbreviation KB—or just K.
- A megabyte is 1024 kilobytes, and is represented by the abbreviation MB.

A convenient rule of thumb is that a full page of text takes up roughly four kilobytes (4K).

A hard disk provides a large amount of room to store information—anywhere from five megabytes to hundreds of megabytes. If you have a hard disk and you want to learn how to protect large volumes of information by making copies, see Chapter 8, "Using the Archiver," on page 199.

The types of floppy disks that you may use with your computer are 3.5-inch disks and 5.25-inch disks. The Apple IIGS supports two kinds of 3.5-inch disks: 800K disks and high-density (1.4 MB) disks. (High density disks are used only in the Apple SuperDrive, and require an Apple II 3.5 Controller Card installed in the Apple IIGS.)

800K and high-density floppy disks are physically the same size, and the differences between them are subtle. Figure 4-1 shows how you can tell them apart.

You'll have no trouble distinguishing a 5.25-inch disk, which is not only larger physically but is flexible.

It's important to know which type of disk you're working with, because not all types can be used in all floppy disk drives. As the chart shows, a floppy disk drive can take disks of the corresponding capacity, plus any smaller-capacity disks of the same type. That is, a high-density disk drive (SuperDrive) can take both 1.4 MB and 800K disks. But larger-capacity disks can't be used in smaller-capacity drives. You can't use a high-density disk in an 800K drive.
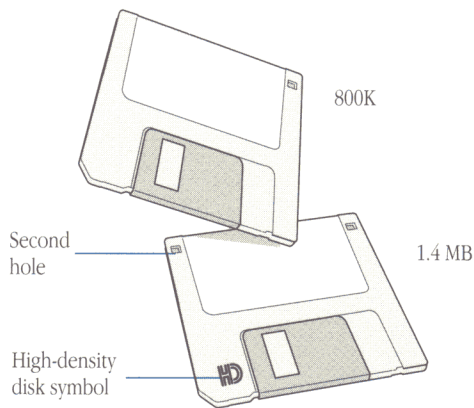
Figure 4-1 Comparison of high-density and 800K floppy disks

Disk Drive Model	Compatible Disks	
SuperDrive	HD	800K
800K Drive	HD	800K

Preparing to use disks

This section explains three tasks that you perform when using disks:

- inserting the disk
- initializing the disk
- write-protecting the disk

Initializing is something you generally need to do only once for each disk. Write-protecting a disk is optional, although it's recommended practice to write-protect your system disks

to protect them from being altered accidentally. (Don't write-protect a disk, and then try to initialize it: it won't work.)

Inserting a disk

When inserting a disk, make sure you're inserting it right side up and with the proper end entering the disk drive first.

3.5-inch disks

Follow these steps to insert a 3.5-inch disk:

1 Hold the disk with the label side up and the metal slider toward the disk drive.

2 Slide the disk into the disk drive, metal end first.

When the disk is almost all the way into the disk drive, the drive draws the disk the rest of the way in. You'll hear it click into place.
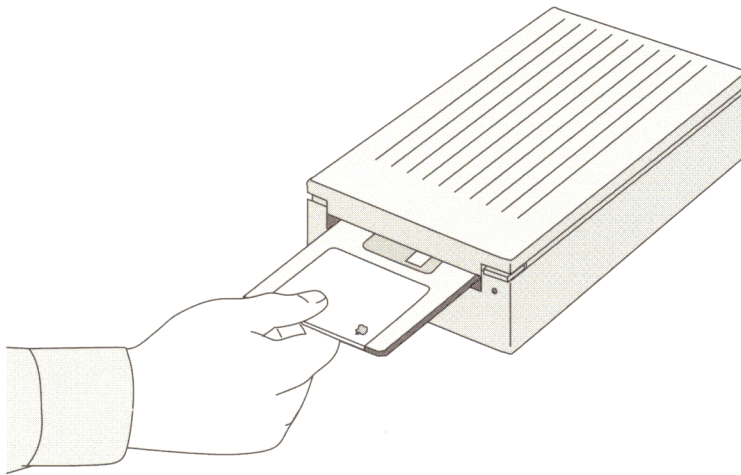
5.25-inch disks

Follow these steps to insert a 5.25-inch disk:

1 **Make sure the disk drive door is open.**

2 **Hold the disk with the label side up and the oval cutout toward the disk drive.**

3 **Slide the disk into the disk drive.**
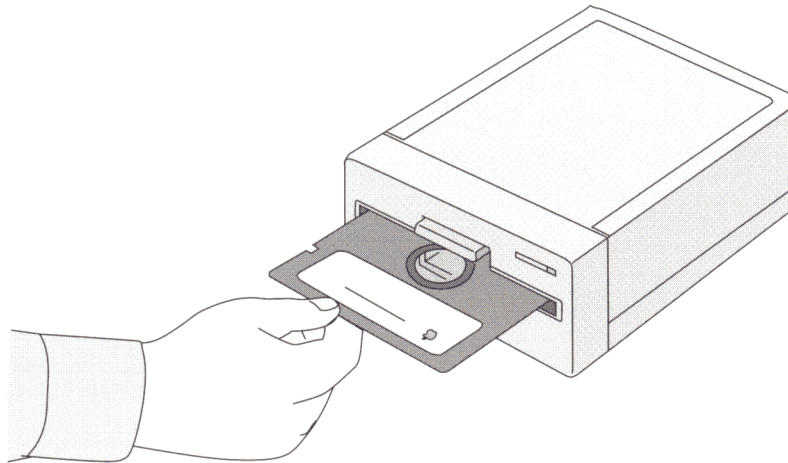
▲ **Warning** Use care when inserting the disk to ensure that the disk doesn't bend and become jammed in the drive. ▲

4 **Close the disk drive door.**

Initializing a disk

Before you can save information on a disk, the disk must be **initialized**. Initializing a disk does two things:

- It establishes a physical **format** on the disk. That is, it divides the disk into sections—somewhat like parking spaces in a parking lot—where information can be stored.
- It writes a **file system** on the disk. That is, it creates a system that organizes the sections so that the computer can keep track of where data is stored.

The Finder initializes disks in either the **Professional Disk Operating System (ProDOS)** format or the **Hierarchical File System (HFS)**, the Macintosh format. If you want to be able to use disks from the Macintosh environment, you can use the Installer to add the HFS file system translator (FST) to your startup disk. Then you can use ProDOS and HFS disks with equal ease. Keep in mind, however, that your startup disk must always be initialized in the ProDOS format; you *install* the HFS file system translator on a disk *initialized* for ProDOS. (If you're working on a network, see Chapter 12, "Networking the Apple IIGS," on page 271 for startup options.)

By the way, there are some definite advantages to using the HFS file system.

- Naming rules are more flexible; names can be longer and include spaces.
- Volumes can exceed the ProDOS 32 MB limit.
- You can easily move files between your computer and any Macintosh computer.

◆ **Note** 5.25-inch disks cannot be initialized in the HFS file format. ◆

If you don't need to use disks on both your IIGS and a Macintosh computer, you can ignore references to HFS in the sections that follow. For more information about GS/OS and file system translators, see page 109.

There are two occasions when you'll want to use the Finder to initialize a disk:

- when the disk has never been used before
- when you want to change a disk format from one file system to another (You can also do this by erasing a disk. For instructions, see "Erasing a disk," on page 103.)

You can also use the Advanced Disk Utility (ADU) program to initialize disks. It's more convenient to use the Finder to initialize disks unless you're already running the ADU

program. For instructions on initializing with the Advanced Disk Utility, see "Initializing," on page 225.

Initializing for the first time

Follow these steps to use the Finder to initialize a disk in the ProDOS or HFS format for the first time:

1 **Insert the disk you want to initialize in an empty disk drive. (If the disk is a 5.25-inch disk, you must also open the 5.25-inch disk drive icon.)**

You see the Initialize dialog box.

```
┌──────────────────────────────────────────────────────┐
│  ┌──┐  GS/OS can't read this disk (in device .APPLEDISK3.5B).  Do  │
│  │⚠ │  you want to initialize it?                          │
│  └──┘                                                   │
│                                                         │
│                        ( Eject )   ( Initialize )       │
└──────────────────────────────────────────────────────┘
```

2 **Click Initialize.**

Or, if you change your mind about initializing the disk, click Eject.

When you click Initialize, you see a dialog box asking you to name your disk.

3 **Type a name for the disk.**

For ProDOS, keep the following rules in mind:

- Start the name with a letter.
- Use no more than 15 characters.
- Don't use spaces.
- Don't use characters other than letters, numbers, or periods.
- No two disk icons on the desktop can have the same name.

For HFS, keep these rules in mind:

- Use no more than 27 characters.
- Don't use colons.

- No two disk icons on the desktop can have the same name.
- A 5.25-inch disk cannot be initialized in the HFS format.

4   **If necessary, select a file system and a disk format.**

The list on the left of the dialog box shows the file systems available on the startup disk. (Unless you have installed a file system translator for the HFS operating system, you'll see only ProDOS here. For information about file system translators, see page 109.)

The list on the right shows disk formats or disk sizes, depending on the type of disk you're trying to initialize.

When initializing a 3.5-inch disk in an Apple 3.5 Drive, you're given a choice of two formats: 800K 2:1 and 800K 4:1. The 2:1 and 4:1 labels refer to the number of rotations used to read data from the disk.

- *If you'll be using the disk primarily in an Apple 3.5 Drive,* accept the highlighted option, 800K 2:1.
- *If you'll be using the disk in both Apple 3.5 Drives and UniDisk 3.5-inch drives,* select the 800K 4:1 option.
- *If you'll be using the disk primarily in a UniDisk drive,* select the 800K 4:1 option.

◆ **By the way**   The easiest way to tell the difference between Apple 3.5 and UniDisk drives is by the color: UniDisk drives are white, and Apple 3.5 Drives are platinum (the same color as the computer). Each type of drive is also identified on its underside. ◆

If you have an Apple SuperDrive connected to an Apple II 3.5 Controller Card in your Apple IIGS, you will also be able to format your disk at 1.4 MB.

When initializing a high-density floppy disk or a hard disk, you have a choice of two formats: 1:1 and 2:1. The 1:1 option is more efficient; select the 2:1 option only if you're using an Apple SuperDrive (connected to an Apple II 3.5 Controller Card) or an earlier model SCSI card (such as the Apple II SCSI Card). If you're using the Apple II High-Speed SCSI Card for your hard drive, select 1:1. (If you're not sure about your card's requirements, check the manual that came with the card.)

5 Click Initialize or press Command-Return.

If you change your mind about initializing, you can cancel the operation by pressing the Escape key (Esc), pressing Command-Period (.), or clicking Cancel.

When the initialization is complete, the disk icon appears on the desktop with the name you provided in step 3.

Reinitializing

Follow these steps to reinitialize a disk that has already been initialized for use with the ProDOS, HFS, or another file system:

1 Insert the disk you want to reinitialize in an empty disk drive.

If the disk is a hard disk, a hard disk partition, or a RAM disk, skip this step.

2 Select the disk icon.

If the disk is a 5.25-inch disk, you must first open the 5.25-inch disk drive icon.

3 Choose Initialize from the Disk menu.

You see the naming dialog box for previously initialized disks.

```
┌──────────────────────────────────────┐
│  Initialize device .APPLEDISK3.5B    │
│  as  │Used.Disk              │        │
│  ┌─────────────┐┌─┐ ┌─────────────┐┌─┐│
│  │ ProDOS      ││⇧│ │ 800K 2:1    ││⇧││
│  │             ││ │ │ 800K 4:1    ││ ││
│  │             ││ │ │             ││ ││
│  │             ││⇩│ │             ││⇩││
│  └─────────────┘└─┘ └─────────────┘└─┘│
│   ⚠  This operation will destroy all of the │
│       information on this disk.       │
│                                      │
│   ( Cancel )        (Initialize)     │
└──────────────────────────────────────┘
```
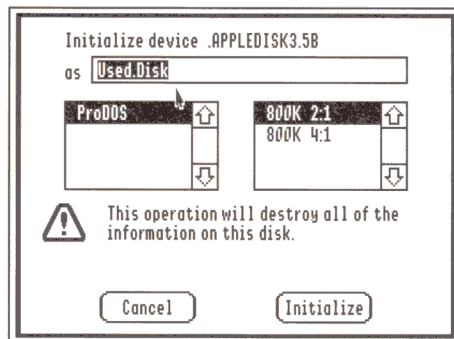
4 If you want to, type a new name for the disk.

Be sure to follow the naming rules on page 91.

5 Select a disk format.

The list on the right shows disk formats or disk sizes, depending on the type of disk you're trying to initialize. Follow the guidelines on page 92.

6 Click Initialize or press Command-Return.

If you change your mind about initializing the disk, click Cancel.

When the initialization is complete, the disk's name changes to the name you provided in step 4.

Write-protecting a disk

If you have disks with contents that you don't want to change—for example, the system disk, the installation disk, the system tools disks, application disks, or data disks with documents that don't need changes—you can write-protect the disk to prevent anyone from altering the contents. Figure 4-2 shows how to write-protect 3.5-inch and 5.25-inch disks.

3.5-inch disks

To write-protect a 3.5-inch disk, slide the write-protect tab to uncover the square opening in the corner of the disk. If you change your mind about write-protection later, slide the write-protect tab back to cover the square opening again.

5.25-inch disks

To write-protect a 5.25-inch disk, cover the notch on the side of the disk with the special adhesive label that came with the disk. If you change your mind about write-protection later, remove the label from the notch.

If an application disk doesn't have a write-protect notch, the disk has been permanently write-protected by the manufacturer.
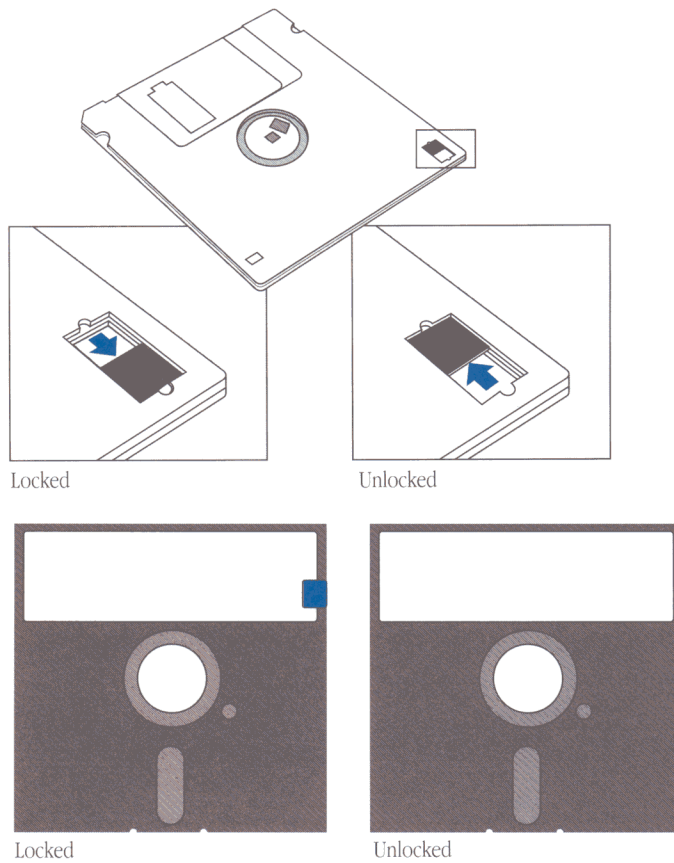
Figure 4-2 Write-protecting floppy disks

Note that write-protection on 5.25-inch disks is different from that on 3.5-inch disks. On 5.25-inch disks, you *cover* the notch to write-protect the disk. On 3.5-inch disks you *uncover* the hole to write-protect the disk.

Working with disks and disk icons

This section describes several tasks you can perform with disks on the desktop.

- opening a disk icon or disk drive icon
- copying a disk
- erasing a disk
- ejecting a disk

Opening a disk icon or disk drive icon

Three techniques allow you to open disk and disk drive icons to see their contents:

- Select the icon and choose Open from the File menu.
- Select the icon and press Command-O (the keyboard shortcut for the Open command).
- Double-click the icon.
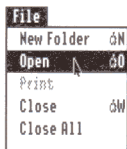
Choosing Open   Pressing Command-O   Double-clicking floppy and hard disk icons

Figure 4-3 Techniques for opening disk and disk drive icons

You can use the Finder to see the contents of 3.5-inch disks, 5.25-inch disks, hard disks, RAM disks, hard disk partitions, file server volumes, CD-ROMs, and CD-ROM partitions. Figure 4-4 shows the icon for each type of disk.

Note that Figure 4-4 shows a 5.25-inch disk drive icon as well as a 5.25-inch disk icon. If you have a 5.25-inch disk drive, the Finder displays the drive icon even when there's no disk in the drive.

To see the contents of a 5.25-inch disk, open the disk drive icon first. Then you see the disk icon, and you can open it as you would open any other icon.

Floppy disk   5.25-inch disk   5.25-disk drive   Hard disk   Hard disk partition

RAM disk   File server volume   CD-ROM   CD-ROM partition
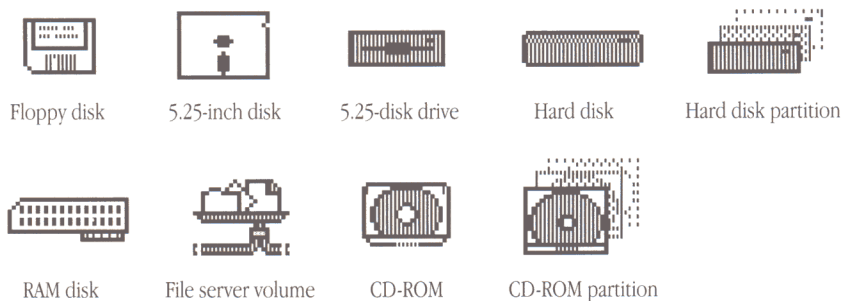
Figure 4-4 Types of disk icons

◆ **Missing icons?** If a disk icon (or a 5.25-inch disk drive icon) doesn't appear on the desktop as expected, see the troubleshooting information on page 317. ◆

Copying a disk

It's important to make a spare copy, called a backup copy, of any disk that contains information you don't want to lose. Be sure to make backup copies of your application and data disks.

◆ **Can't copy an application disk?** Most applications are protected by copyright, so it's illegal to copy them (except to make a backup copy for your own use). Some software manufacturers rely on an honor system, but others **copy-protect** their disks to prevent illegal copying and distribution of the application. If you have a copy-protected application, the manufacturer generally provides one backup copy or offers replacement of damaged disks free or at a nominal cost. ◆

The disk you're making a copy of is called the **source disk**, and the disk that will contain the new copy is called the **destination disk**. Your source disk and your destination disk don't have to be the same size—but the destination disk must be large enough to accommodate the contents of the source disk.

Copying to a disk of the same size

When copying the contents of a disk to another disk of the same size, the Finder completely replaces the contents of the destination disk with the complete contents of the source disk unless you specify otherwise. If you don't want the complete contents of the destination disk to be replaced, see "Using special copying options," on page 101 for alternative procedures.

Follow these steps to copy the contents of a disk to another disk of the same size:

1 **Insert both the source disk and the destination disk into your disk drives.**

Make sure that your source disk is locked so that you will not inadvertently erase your source material. The icons of both disks must be displayed on the desktop.

If you have only one 3.5-inch disk drive, follow these steps:

1. Insert the source disk.
2. Eject the source disk manually by pressing the eject button.
3. Insert the destination disk.

If you have only one 5.25-inch disk drive, follow these steps:

1. Insert the source disk.
2. Open the disk drive icon.
3. Eject the source disk by opening the disk drive door and removing the disk.
4. Insert the destination disk and close the door of a 5.25 disk drive.
5. Open the disk drive icon.

2 **Drag the source disk icon on top of the destination disk icon.**

If the destination disk window is displayed, you can also drag the source disk icon into the destination disk window.

You see a dialog box asking you to confirm that you want to replace everything on the destination disk with what's on the source disk.

> ⚠ Completely replace the contents of "Practice.Disk" with the contents of "Wade.Disk"?
>
> (Cancel) (Replace)

▲ **Warning** Copying a disk erases everything on the destination disk and replaces it with the contents of the source disk. Before you proceed with the copying operation, be sure that the destination disk doesn't contain any information you need. ▲

3 **Click Replace.**

Or, if you change your mind about copying, click Cancel.

A "thermometer" indicator shows the progress of the copying procedure.

If you're using only one disk drive for the copying procedure, the Finder displays a dialog box whenever it's necessary to swap disks. Follow the directions on the screen whenever you're prompted to insert a disk.

If you want to cancel the copying procedure while it's in progress, click Stop.

△ **Important** Because the Finder erases everything on the destination disk before it begins copying from the source disk, you won't be able to rescue the original contents of the destination disk by clicking Stop. And because the Finder copies information by **blocks** (rather than by files), the new information on the destination disk won't be in a usable form if you click Stop. △

Copying to a disk of a larger capacity

When it copies the contents of a disk to a disk of a larger capacity, the Finder normally places the contents of the source disk in a folder on the destination disk. The folder will have the same name as the source disk, and the other contents of the destination disk

remain intact. If you want the complete contents of the destination disk to be replaced or if you don't want the contents of the source disk to be placed in a folder, see "Using special copying options," on page 101 for alternative procedures.

Follow these steps to copy the contents of a disk to a folder on a larger disk:

1 **Insert both the source disk and the destination disk into your disk drives.**

2 **Drag the source disk icon on top of the destination disk icon.**

If the destination disk window is displayed, you can also drag the source disk icon into the destination disk window.

You see a dialog box asking you to confirm that you want to place the contents of the source disk in a folder on the destination disk.

3 **Click OK to continue.**

Or, if you change your mind about copying, click Stop.

A dialog box appears with a "thermometer" indicator that shows the progress of the copying procedure. The dialog box also shows how many files and folders remain to be copied.

If a folder with the same name as the source disk already exists on the destination disk, you see the dialog box shown here. Click the button that corresponds to your preference.
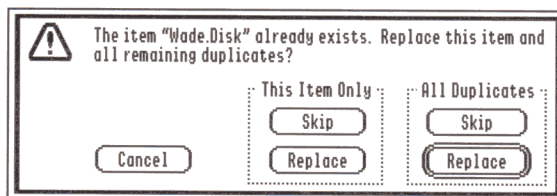
If a *locked* folder with the same name as the source disk already exists on the destination disk, you see the dialog box shown here. Click the button that corresponds to your preference.

```
┌─────────────────────────────────────────────────────────┐
│  ⚠   The item "Wade.Disk" already exists and is locked (or │
│       contains items that are locked).  Replace it anyway? │
│                                                           │
│   ( Cancel )                          ( Skip ) (( Replace ))│
└─────────────────────────────────────────────────────────┘
```

If the destination disk doesn't have enough room for all the files on the source disk, you see this dialog box.

```
┌─────────────────────────────────────────────┐
│  🤚  The disk is full.  This operation can't be │
│       completed.                              │
│                                   (( Cancel ))│
└─────────────────────────────────────────────┘
```
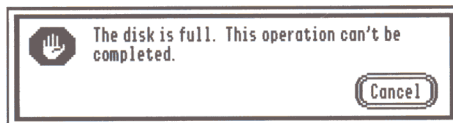
Using special copying options

When copying disks, the Finder can add the contents of the source disk to the contents of the destination disk without erasing the existing contents of the destination disk.

If you want the Finder to use such a procedure, follow these steps:

1 **Insert both the source disk and the destination disk into your disk drives.**

The icons of both disks must be displayed on the desktop.

2   **Hold down the Option key while you drag the source disk icon on top of the destination disk icon (or into the destination disk window, if it is open).**

You see the Disk Copy Alternatives dialog box.

> **Disk Copy Alternatives**
>
> ⦿ Put the contents of "Wade.Disk" in a folder on "Practice.Disk".
>
> ○ Replace the contents of "Practice.Disk" with the contents of "Wade.Disk".
>
> ○ Add the contents of "Wade.Disk" to the contents of "Practice.Disk".
>
> [Cancel]   [OK]
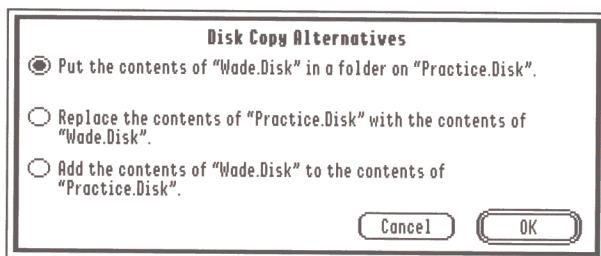
3   **Click the button next to the third option to add the contents of the source disk to the contents of the destination disk.**

If you want the contents of the source disk placed in a folder on the destination disk, select the first option.

If you decide to replace the contents of the destination disk with the contents of the source disk, select the second option.

4   **Click OK.**

A dialog box appears with a "thermometer" indicator that shows the progress of the copying procedure.

If there are items on the destination disk with the same names as items being copied, you see this dialog box for each such item.

> ⚠ The item "Wade.Disk" already exists. Replace this item and all remaining duplicates?
>
>   This Item Only   All Duplicates
>   [Skip]   [Skip]
>   [Cancel]   [Replace]   [Replace]

Click the button that corresponds to your preference. Note that the Cancel button cancels the entire copying procedure.

If there are locked items on the destination disk with the same name as items being copied, you see this dialog box for each such item.

> ⚠ The item "Wade.Disk" already exists and is locked (or contains items that are locked). Replace it anyway?
>
> (Cancel) (Skip) ((Replace))

If you click Replace, the locked item will be replaced with the item on the source disk that has the same name. If you click Skip, that item will not be copied.

Note that the Cancel button cancels the entire copying procedure.

Erasing a disk

If you want to remove all the files from a disk and you plan to use the disk again with an Apple IIGS, you should erase the disk.

△ **Important** Do not erase your disk unless you have backed up all of the data you want to keep. △

◆ **About erasing** When you erase a disk, an empty **directory**—or empty file list—is written to the disk. When you open the disk icon on the desktop, it appears that there are no longer any files on the disk because it is the directory that lets you see files on a disk. The files are still there, but without a directory they're invisible—and inaccessible, unless you know how to gain access to the data on a disk without a disk directory.

If you want to completely destroy the data on a disk so that no amount of manipulation can ever recover it, you should reinitialize the disk (if it's a floppy disk) or zero the disk. For information on zeroing, see "Zeroing," on page 230. ◆

Follow these steps to erase a disk:

1 **Select the icon of the disk you want to erase.**

2 Choose Erase from the Disk menu.

You see the Erase dialog box.
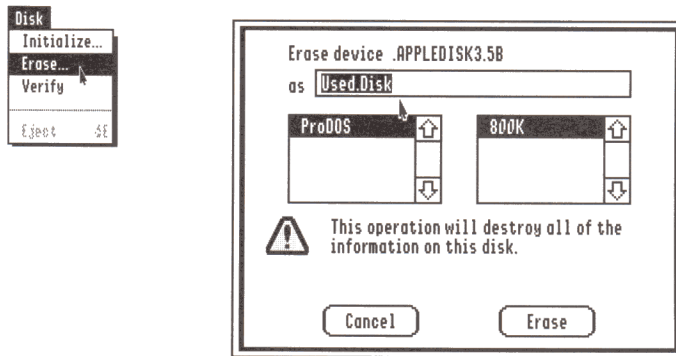
3 If you want to, specify a new name for the disk.

If you want to change the disk's name as part of the erasing process, type the new name.

4 Select a file system from the box on the left.

Unless you have installed a file system translator for the HFS file system, you see only ProDOS here. (For more information about file system translators, see page 109.)

5 Click Erase.

Or, if you change your mind about erasing the disk, click Cancel.

When the erasing is complete, the disk's name changes to the name you provided in step 3 (if you changed its name).

Ejecting a disk

There are two occasions when you use the Finder to eject disks:

- when you no longer need to work with the disk
- when you want to work with the disk later in the same work session
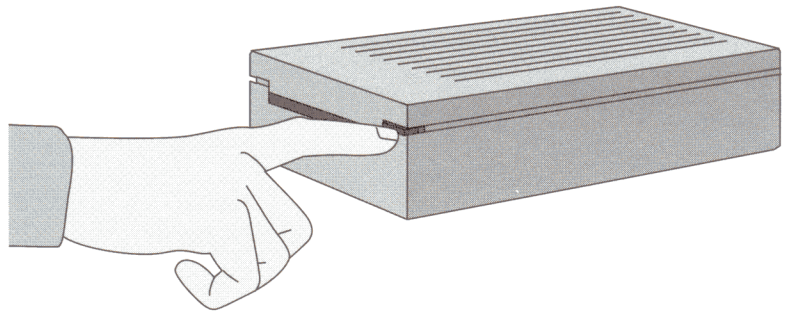
Choosing Eject   Pressing the Eject button

Figure 4-5 Ejecting a 3.5-inch disk from a disk drive

Ejecting a disk when you've finished working with it

To eject a disk you no longer want to use in this work session, drag its icon to the Trash. Dragging a disk icon to the Trash doesn't affect the information you put on the disk. However, it allows the Finder to write information to the disk, so that—assuming you have selected the Preferences option for saving Finder information—the next time you insert the disk, windows and icons will be open and located where they were when you ejected the disk. For more information about Finder Preferences, see Chapter 3, "Using the System 6 Finder," on page 41.

If you're ejecting a 5.25-inch disk, you also need to open the disk drive door and remove the disk.

Ejecting a disk without removing its icon from the desktop

You sometimes may want to have a disk icon on the desktop as part of a procedure you're following, for example, when you're copying disks using only one disk drive.

There are two ways to eject a 3.5-inch disk without removing its icon from the desktop:

- Select the icon of the disk you want to eject and choose Eject from the Disk menu.
- Press the eject button on the disk drive itself. See Figure 4-5.

Regardless of the method you use, the icon of the 3.5-inch disk remains on the desktop in dimmed form. If one or more windows for that disk are open, the icons in the windows will be dimmed.

Follow these steps to eject a 5.25-inch disk without removing its icon from the desktop:

1 **If necessary, open the 5.25-inch disk drive icon.**

The disk icon is then displayed on the desktop.

2 **Open the disk drive door and remove the disk.**

The icon of the 5.25-inch disk remains on the desktop. Unlike the icon of a 3.5-inch disk that has been ejected, however, the icon is not dimmed.

Taking care of disks and diagnosing disk problems

This section describes how to store and handle disks to prevent damage and how to find out whether a disk has been physically damaged.

Handling and storing disks

It's important to take good care of your disks so that you don't damage them (or the data stored on them). When handling and storing disks, always follow these guidelines:

- Keep your disks in a location where the temperature is between 50° F (10° C) and 125° F (52° C). Be sure to keep your disks away from very hot places (such as the dashboard of your car on a sunny day).

- Keep your disks away from magnets (do not place them on top of a monitor or a telephone—both of which use magnets).

- Protect your disks from dust. Store them upright and covered, in a plastic disk holder, a shoebox, or a similar container.

- Keep your disks dry. Don't water plants nearby or place a beverage within spilling range.

- Don't touch the exposed part of the disk itself. On 3.5-inch disks, the disk is exposed when you slide open the metal "doorway." On 5.25-inch disks, there are cutaways on each side of the disk jacket where the disk is exposed.
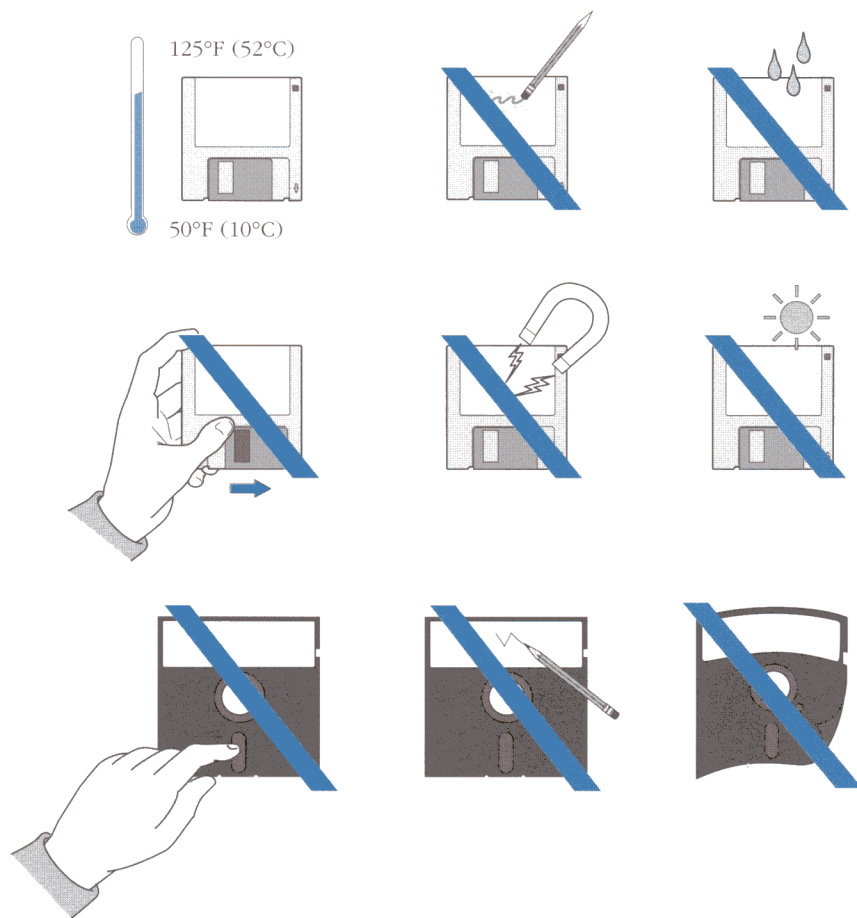
Figure 4-6 Proper care and handling of disks

- Don't use a pencil or a ballpoint pen to write on a disk label affixed to a 5.25-inch disk. (The pencil or pen might scratch the disk jacket and damage the disk itself if you press too hard.) If you need to write on a label that's already affixed, use a felt-tip pen.

- Don't use an eraser or correction fluid on a disk label affixed to a disk. (Eraser "crumbs" or flakes of correction fluid can easily get inside the disk jacket or casing and damage the disk.) If possible, remove the label and replace it with a new one; otherwise, attach a new label on top of the existing one.

- Don't bend, fold, or curl 5.25-inch disks.

Verifying a disk

If you have problems storing information on a disk or retrieving information from a disk, there may be physical damage to the disk. You can find out by using the Verify command.

Follow these steps to verify a disk:

1 Select the icon of the disk you want to verify.

2 Choose Verify from the Disk menu.

```
Disk
  Initialize...
  Erase...
  Verify
  Eject    ⌘E
```

A dialog box appears with a "thermometer" indicator that shows the progress of the verifying procedure. The dialog box also shows how many blocks remain to be verified. (A block is a unit of measure used to specify the size of disks and files.)

When the verifying process is complete, you see another dialog box indicating whether there were any bad blocks on the disk.

3 If there were no bad blocks, click OK to return to the desktop.

4 If there were bad blocks, either click OK (to see which blocks are affected) or Cancel (if you don't care which blocks are affected).

If a disk has bad blocks, copy any files you can to a good disk and then discard the disk with bad blocks. (Try the Validate command to find out which files are affected by the bad blocks. For instructions, see "Validating files," on page 132.) If the disk with bad blocks is a hard disk or a hard disk partition, see your manual for that disk drive or your authorized service provider.

Using file formats and translators

GS/OS can recognize ProDOS disks and disks initialized for some other file systems. If you want to use disks initialized for other file systems, modules called file systems translators (FSTs) make it possible. Use the Installer to add FSTs to your system software (see Chapter 2, "Using the Installer," on page 19, for instructions).

FSTs provide a broad range of compatibility with your Apple IIGS; they allow you to use file systems from earlier models of the Apple II computer, from the Macintosh file system, or from networking and CD-ROM environments. It's important to remember, however, that FSTs transfer data; they don't translate applications. For example, with the HFS FST installed, you can insert a Macintosh disk, then read and work with the data it contains. You cannot, however, work with a Macintosh application; you work with your data by using one of the GS/OS applications you use with your Apple IIGS computer.

Although you can use your HFS disks in a ProDOS environment, you probably won't be using ProDOS disks on the Macintosh unless you have a Macintosh LC with an Apple IIe Card installed. (To learn about other options for using ProDOS disks in the Macintosh environment, see the *Macintosh User's Guide*.) Similarly, if you're working with the HFS file system so that you can also use your data on a Macintosh computer, you can't give an HFS disk to a friend who uses an Apple IIe computer (which uses the ProDOS 8 system).

FSTs belong to one of two categories: Read/write FSTs and read-only FSTs. A read/write FST allows the computer to read information from a disk and also to write information to the disk. That is, you can make changes to the disk such as creating, deleting, and renaming files. At present, three read/write file systems are available under GS/OS:

- ProDOS, used by most Apple II applications
- HFS, used by Macintosh computers
- AppleShare, used by AppleShare file servers (a networking FST)

A read-only FST allows you only to read a file from disk. You can then either copy it to a read-write file system, or use another application to read it and—if you modify it—write it to a read-write file system. You cannot write information from the computer to the disk in these file systems. Three read-only FSTs are available:

- Pascal, used on early Apple II computers
- DOS 3.3, also used on early Apple II computers
- High Sierra/ ISO 9660, used on CD-ROM drives

GS/OS is designed to support other file systems as the appropriate FSTs become available.

Using memory as a RAM disk

This section explains how to use part of your computer's memory as a RAM disk. There are two ways of making RAM disks:

- Using system memory from your computer.
- Using an expansion card that you can install in one of your computer's slots. An example of such a disk is the Apple IIe Memory Expansion Card.

In most ways, a RAM disk is like other disks, but some important differences are explained here.

Understanding RAM disks

When you designate a portion of the computer's memory as a RAM disk, the computer treats that memory as if it were a physical disk. The advantage of using a RAM disk is that the computer can get information from it much faster than from a disk in a disk drive.

Disadvantages include the fact that anything stored on the RAM disk is lost when you switch off the computer's power. That is, the RAM disk can only be used for the current work session. Also, your application does not have access to the memory currently assigned to RAM disk.

Many applications require a great deal of RAM, some need as much as a megabyte (1024K). Before you designate any memory as a RAM disk, refer to the manuals that came with your applications to learn how much memory they require. When setting RAM disk size (as explained in the next section), be sure to leave enough memory available for your application.

If an application needs more memory than your RAM disk setting has left available, you see a message to that effect. If something you try to store on the RAM disk needs more memory than you've assigned to the RAM disk, you see a message to that effect. In either case, you may want to resize the RAM disk for future work sessions. (Changes to RAM disk

size don't take effect until you shut down and switch off the computer, and then start up again.)

◆ **Note** RAM disks are initialized, by default, as ProDOS volumes. You can, if you want, reformat the RAM disk as a HFS volume. See "Initializing a disk," on page 90. ◆

▲ **Warning** Anything you store on the RAM disk will be lost when you switch off the computer's power. Make sure you save a copy of all documents on a floppy disk or a hard disk before you resize the RAM disk or before you switch off the computer. ▲

Setting RAM disk size

Before you can use any of the computer's memory as a RAM disk, you must use the RAM Control Panel to specify how much memory you want to set aside. Follow these steps:

1 **Choose Control Panels from the Apple menu to get to the desktop Control Panels.**
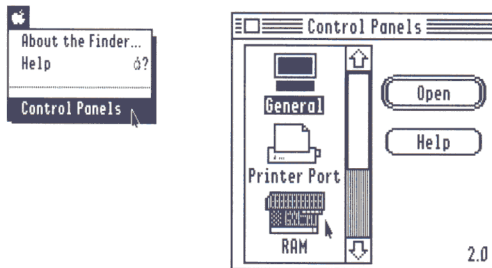
You can also use the text Control Panel. For instructions, see the manual that came with your computer.

2 Select the RAM icon in the Control Panels.

You may have to scroll through the Control Panels to find the RAM disk icon.

```
┌─────────────────────────┐
│ ▤□════ RAM ════════      │
│  RAM Disk:   RAM Cache:  │
│     ┌──┐        ┌──┐     │
│     │⇧ │        │⇧ │     │
│     ├──┤        ├──┤     │
│ 512K│▓▓│    0K  │▓▓│     │
│     │▓▓│        │▓▓│     │
│     ├──┤        ├──┤     │
│     │⇩ │        │⇩ │     │
│     └──┘        └──┘     │
│                          │
│  Memory in use:    1614K │
│  Available memory:  561K │
│  Max block size:    469K │
│  □ Resize after reset    │
└─────────────────────────┘
```
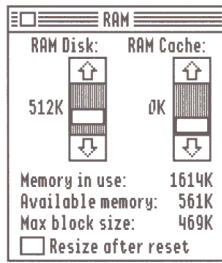
3 Set the RAM disk size.

Drag the scroll box in the RAM Disk scroll bar to the location you want. (Clicking the scroll arrows or the gray areas above and below the scroll box will also change the setting.)

You can change the size of the RAM disk in increments of 32K.

4 Close the RAM Control Panel window by clicking its close box, and then close the Control Panels window.

5 Quit any application you're using.

6 Shut down and switch off the computer.

If you're in the Finder, you can use the Shut Down command in the Special menu. For instructions on using this command see, "Shutting down the computer," on page 149.

If you're in the System 6 Program Launcher, click Cancel and choose Shut Down from the File menu.

If neither of these options are available, simply turn off your computer.

7 Start up your computer in the usual way.

When you start up, the new RAM disk size will be in effect. You can select your RAM disk icon and choose Get Icon Info from the Special menu to check the size of your RAM disk.

Specifying the location of the RAM disk

ProDOS 8 applications will ask for the location of your RAM disk by slot and drive number. If you don't use ProDOS 8 applications, you can probably skip this section.

The RAM disk always appears to be in slot 5, just as a 3.5-inch drive connected to the disk drive port does. The following rules explain how to determine the drive number of your RAM disk.

- Your first 3.5-inch disk drive is drive 1.
- The RAM disk takes precedence over all but the first 3.5-inch disk drive. (However, should the RAM disk be used for startup, the RAM disk is drive 1.)
- If you have a total of three "slot 5" devices, slot 2 acts as an overflow slot (unless it contains an active disk card), so that the third device appears to be in slot 2, drive 1.

  For example, if you have two 3.5-inch disk drives and a RAM disk, your first 3.5-inch drive is drive 1, the RAM disk is drive 2, and your second 3.5-inch drive is slot 2, drive 1.
- If your application doesn't recognize your disk drive, contact the application publisher to find out whether a more recent version is available.

Using the RAM disk

You use the RAM disk in much the same way you use any other disk. You can copy applications and documents to it and run applications from it.

This section describes the special steps you need to follow when using a RAM disk and the ways in which a RAM disk functions differently from other disks. All the instructions in this section assume that you've already set up a RAM disk, as explained in "Setting RAM disk size," on page 111.

◆ **By the way** Some applications include copy protection schemes that require you to insert your master copy of the program before you can copy to the RAM disk. ◆

Running an application from the RAM disk

Running an application from the RAM disk allows the application to run faster and reduces the number of times you need to swap disks during saving or copying operations.

Follow these steps to run an application from the RAM disk:

1 Copy an application (and its startup files) to the RAM disk.

Drag all the icons (except document icons) from the application disk onto the icon (or into the window) of the RAM disk.
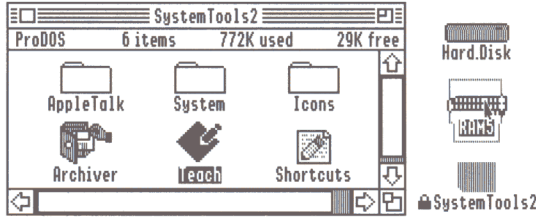
If you copy more than one application's files to the RAM disk, you might want to put the files for all but one application in separate folders. (This avoids the problem of duplicate file names in the main directory of the RAM disk.)

2 If necessary, open the RAM disk icon.

3 Open the application icon.

The application starts up in the usual manner.

Storing documents on the RAM disk

You can store documents on your RAM disk the same way you save them on a regular disk. Just remember that the RAM disk is only a temporary storage media.

▲ **Warning** Save any documents on the RAM disk on to a 3.5-inch disk, a 5.25-inch disk, or a hard disk before you switch off the computer's power, or your documents will be lost. ▲

- If your application presents a directory dialog box when you give a save command, click the Volumes button, select the RAM disk from the list of volumes, give the document a name (or accept the existing name), and save the document.

- If your application asks for the slot and drive number, refer to the guidelines in "Specifying the location of the RAM disk," on page 113 earlier in this chapter.

- If the application asks for a **pathname**, type a slash, the name of your RAM disk, another slash, and the name of the document, for example, /NAME/DOC. (If you didn't rename the RAM disk, its name is *RAM5*.) If you want to save the document in a folder on the RAM disk, add the folder name to the pathname, thus:

/RAM.DISK.NAME/**FOLDER.NAME**/DOCUMENT.NAME

This chapter has provided basic information about disks. When you're ready to learn more about disks, turn to Chapter 8, "Using the Archiver," on page 199, and Chapter 9, "Using the Advanced Disk Utility," on page 223. Chapter 8 teaches you how to make backup copies of your files, and then restore them from the backups. Chapter 9 explains how to perform various operations on disks (especially hard disks).
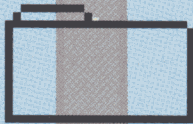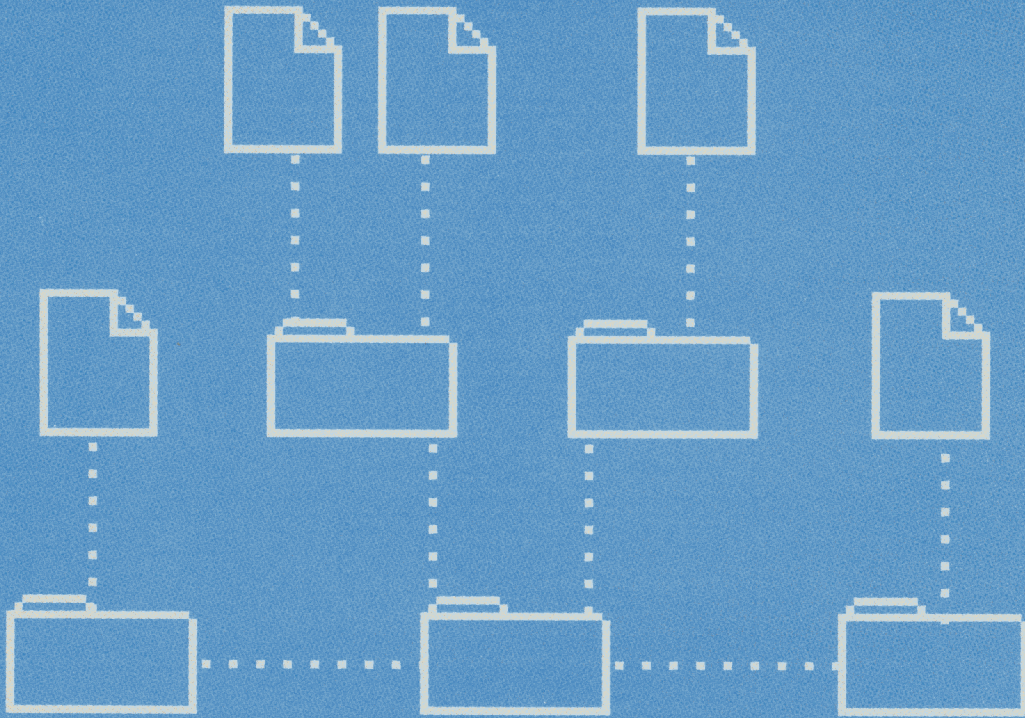
5 Working With Files and Folders

If you're not yet familiar with using files and folders in the Finder to organize information on disks, this chapter explains the skills you'll use. It's also a handy reference about how to perform any file and folder management task.

This chapter contains information on these topics:

- opening and closing folders
- creating new folders
- moving and copying files and folders
- discarding files and folders
- protecting files and folders

Opening and closing folders

Files are collections of information stored on disks. They can be documents that you create with applications. They can also be applications, or even system software.

Each file has a name, and you can organize your files into accessible groups of information by collecting them into folders.

Putting files in desktop folders is like putting paper documents in file folders: it focuses your attention on a subset of related information so that you don't have to search through everything on a disk to find the documents you need. Figure 5-1 shows a representative sample file hierarchy.

In some Apple IIGS applications, you may encounter the term **subdirectory**. A subdirectory is the same as a folder.
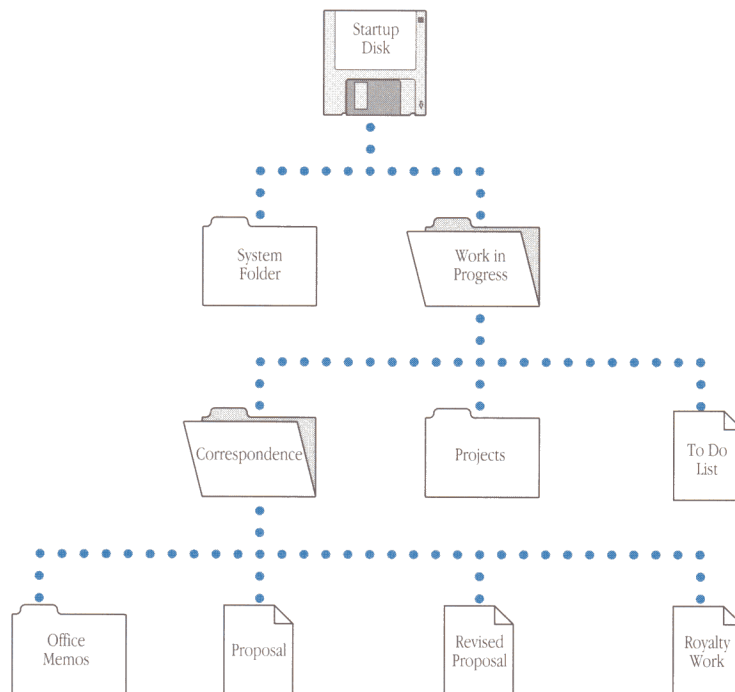
Figure 5-1 Three levels of folders and documents on a floppy disk

Opening a folder icon

Folder icons can be opened to see what's inside.

There are three techniques you can use to open an icon:

- Select the folder icon and choose Open from the File menu.
- Select the folder icon and press Command-O (the keyboard shortcut for the Open command).
- Double-click the folder icon.

Choose Open   Press Command-O   Double-click icon
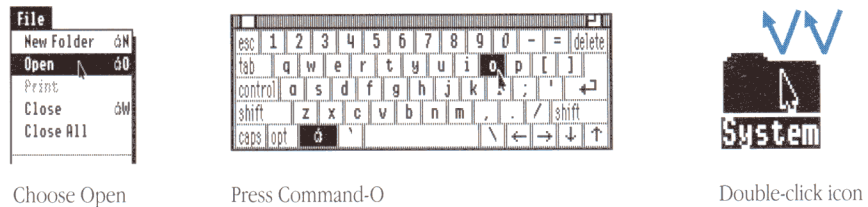
Figure 5-2 Three techniques for opening an icon

Regardless of the technique you use, a window with the same name as the folder icon appears on the desktop. Inside the folder window, you see either icons with names under them or a list of names representing all the items in the folder.

Closing a folder window

When you no longer want to see what's in a folder, you can close the folder window using one of the following techniques (see Figure 5-3). These techniques assume that the window you want to close is the active window.

- Click the window's close box.
- Choose Close from the File menu.
- Press Command-W (the keyboard shortcut for the Close command).

◆ **Note** If you want to close an inactive folder window without selecting it, press the Option key while you choose the title of the open window from the Windows menu. ◆
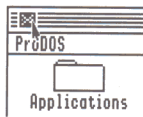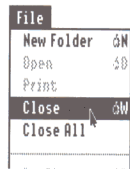
Click close box   Choose Close   Press Command-W

Figure 5-3 Three techniques for closing a folder window

Regardless of the technique you use to close the folder, the window collapses back into its icon.

Opening a folder by tunneling

Tunneling is a shortcut that lets you work faster on the desktop. Basically, it allows you to do two tasks at one time: You close the active folder's window at the same time you open another folder.

To open a folder by tunneling, press the Option key and hold it down while you double-click the folder you want to open. The active window closes, and the window for the selected folder opens.

Creating a new folder

Follow these steps to create a new folder:

1 **Open the disk icon and any folders necessary to display the window in which you want to create the new folder.**

When the window you want is the active window, you're ready to create the folder.

2 Choose New Folder from the File menu (or press Command-N:)

A folder called *Untitled* appears in the active window. (You may need to scroll or enlarge the window to see it.)
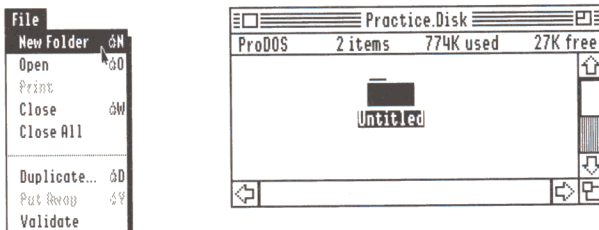
◆ **By the way** If there was already a folder called *Untitled* in the window, the new folder will be called *Untitled.A*. This process continues until the Finder reaches Untitled.Z. If all possible names through Untitled.Z are taken, you can't create any more new folders in the window without first renaming one of the untitled folders. ◆

3 Type a new name or edit the name Untitled.

Be sure to follow the naming rules on page 91.

◆ **Network users** If your Apple IIGS is part of a network that includes one or more AppleShare file servers, follow the ProDOS naming rules for items you store on a file server to retain the ability to copy the file back to your Apple IIGS without changing the name of the file. ◆

4 Press Return to confirm the name.

Moving and copying files and folders

You can move a file or a folder to another location on the same disk, or to a different disk. When you move a file or folder to another disk, the file or folder will actually be copied.

Throughout this section, you see the terms *source disk, source folder, destination disk,* and *destination folder.* The source disk or folder contains the item(s) you're copying. The destination disk or folder will contain the item(s) after you move or copy it (them).

Moving files and folders to another location on the same disk

Follow these steps to move one or more items to another location on the same disk:

1 **Open the disk and any folders necessary to see the items you want to move.**

Make sure the destination folder or window is visible.

2 **If you're moving more than one item, hold down the Shift key while you click each item you want to move.**

All items to be moved must be in the same window. If you want to move items from different windows, you must repeat the procedure for each window.

3 **Drag the selected items to the destination folder icon or into the disk window.**

When the destination folder icon becomes highlighted, or when the pointer is within the window, release the mouse button. The highlighting tells you that the items you're moving will be placed inside the folder.
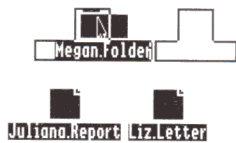
If the destination folder already contains items with the same name as items you're moving, you see this dialog box.

```
┌─────────────────────────────────────────────────┐
│  ⚠   The item "Juliana.Report" already exists. Replace  │
│      this item?                                    │
│                                                    │
│                        (  Cancel  ) ( Replace )   │
└─────────────────────────────────────────────────┘
```

If the destination folder already contains locked items with the same name as items you're moving, you see this dialog box.

```
┌─────────────────────────────────────────────────────┐
│  ⚠   The item "Juliana.Report" already exists and is locked (or  │
│      contains items that are locked). Replace it anyway?        │
│                                                        │
│  ( Cancel )              (  Skip  ) ( Replace )       │
└─────────────────────────────────────────────────────┘
```

Click the button that corresponds to your preference. Note that the Cancel button cancels the entire moving procedure.

Placing duplicate copies of files and folders in the same window

Making duplicate copies of items can be useful in two ways: making backup copies of files and folders, and creating a file that you can revise without changing the original.

Follow these steps to place duplicate copies of files or folders in the same window:

1 **Open the disk icon and any folders necessary to see the items you want to duplicate.**

2 **Select the item(s) you want to duplicate.**

All the items you duplicate must be in the same window. If you want to duplicate items in more than one window, you must repeat the procedure for each window.

3   **Choose Duplicate from the File menu. (Or press Command-D, the keyboard
    shortcut for the Duplicate command.)**

You see the Duplicate dialog box.

```
┌─────────────────┐
│ File            │
│ New Folder   ⌘N │
│ Open         ⌘O │
│ Print           │
│ Close        ⌘W │
│ Close All       │
│─────────────────│
│ Duplicate... ⌘D │
│ Put Away     ⌘Y │
│ Validate        │
└─────────────────┘
```

```
┌──────────────────────────────────────────────┐
│  ┌──┐   Duplicating the item "Renee.Story".   │
│  │  │                                          │
│  └──┘                                          │
│  New name: │Renee.Story2                    │  │
│   ┌────────────┐    ┌──────────┐ ┌──────────┐ │
│   │   Skip     │    │  Cancel  │ │    OK    │ │
│   └────────────┘    └──────────┘ └──────────┘ │
└──────────────────────────────────────────────┘
```

4   **If you like, type a new name or edit the name that's there.**

Be sure to follow the naming rules on page 91.

5   **Click OK or press Return.**

If you selected only one item in step 2, the Duplicate dialog box disappears and a few
moments later you see both the original and the duplicate copy in the window. The
duplicate copy appears diagonally below and to the right of the original. You can skip step 6.

If you selected more than one item in step 2, the Duplicate dialog box disappears and a few
moments later reappears for the next selected item. Go on to step 6.

6   **Repeat steps 4 and 5 each time the Duplicate dialog box appears.**

If you change your mind about duplicating one of the selected items, click Skip instead of
OK when the Duplicate dialog box for that item appears. If you change your mind about
duplicating all the selected items, click Cancel.

When the Duplicate dialog box disappears after the last duplication, you see the duplicate
copies.

Placing copies of files and folders on a different disk

When you copy items onto another disk, you can place the copies either in the disk directory or in a folder on the disk. Follow these steps:

1 **If you're copying the items into a folder, make sure the destination folder icon or window is visible.**

If your destination disk is a floppy disk, you must first insert it in any empty drive. If it is a 5.25-inch disk, open the disk drive icon.

2 **Open the source disk icon and any folders necessary to see the items to be copied.**

If the source disk is a floppy disk, you must first insert it. If it is a 5.25-inch disk, open the disk drive icon.

If you have only one disk drive of the appropriate size, you must eject the destination disk manually—by pressing the eject button (for 3.5-inch drives) or by opening the disk drive door and removing the disk (for 5.25-inch drives)—before inserting the source disk.

▲ **Warning** Do not open the door of a 5.25-inch drive if the red "in-use" light on the drive is illuminated; you may damage your disk. ▲

3 **If you're copying more than one item, hold down the Shift key while you click each item you want to copy.**

All items to be copied must be in the same window. If you want to copy items from different windows, you must repeat this procedure for each individual window.

4 Drag the items you want to copy onto the icon (or into the window) of the destination folder or disk.

When the destination folder or disk icon becomes highlighted, release the mouse button. The highlighting tells you that the copies will be placed inside the folder or disk.
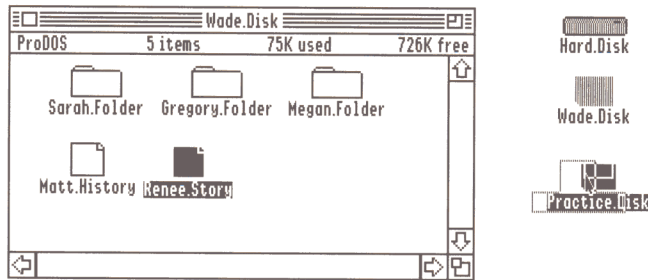
If you're using only one disk drive for the copying procedure, the Finder displays a dialog box whenever it's necessary to swap disks. Follow the directions on the screen whenever you're prompted to insert a disk.

If the destination folder or disk already contains items with the same name as items you're copying, you see this dialog box.

If the destination folder or disk already contains locked items with the same name as items you're copying into that folder or disk, you see this dialog box.
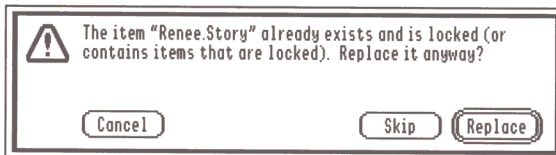
Click the button that corresponds to your preference. Note that the Cancel button cancels the entire copying procedure.

Using special moving options

When moving items, the Finder normally displays the dialog boxes shown in the previous steps the first time it encounters an item in the destination folder that has the same name as an item you're moving. If you want to, you can give the Finder instructions for handling files and folders with duplicate names before you begin the moving procedure. You can select from the following options:

- The Finder can prompt you each time it encounters a duplicate name.
- The Finder can keep you from replacing duplicate items.
- The Finder can replace all items with duplicate names. (This is what the Finder does unless you specify otherwise.)
- The Finder can allow you to cancel a moving procedure.

To select the copying option you want to use, follow these steps:

1 **Hold down the Option key while you drag the items you want to move on top of the icon (or into the window) of the destination folder or disk, and release the mouse button.**

You'll see the File Copy Alternatives dialog box.

```
┌─────────────────────────────────────────┐
│  ╔═══════════════════════════════════╗  │
│  ║      File Copy Alternatives       ║  │
│  ║  ┌─────────────────────────────┐  ║  │
│  ║  │   Replace items case by case │  ║  │
│  ║  └─────────────────────────────┘  ║  │
│  ║  ┌─────────────────────────────┐  ║  │
│  ║  │    Skip all duplicate items  │  ║  │
│  ║  └─────────────────────────────┘  ║  │
│  ║  ┌─────────────────────────────┐  ║  │
│  ║  │   Replace all duplicate items│  ║  │
│  ║  └─────────────────────────────┘  ║  │
│  ║          ┌──────────┐             ║  │
│  ║          │  Cancel  │             ║  │
│  ║          └──────────┘             ║  │
│  ╚═══════════════════════════════════╝  │
└─────────────────────────────────────────┘
```
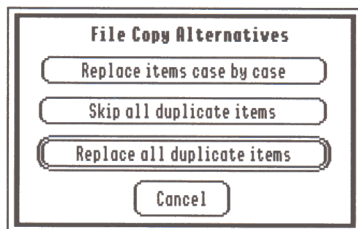
2 **Choose an option and click OK.**

If you change your mind, click Cancel.

Discarding files and folders

The Finder lets you discard a file or folder whenever its icon is visible on the desktop. To discard a file or folder you simply drag it to the Trash icon.

Discarding files and folders into the Trash

Follow these steps to discard items into the Trash:

1 **If necessary, open the folder or disk that contains the items you want to discard.**

2 **If you want to discard more than one item, select all the items to be discarded.**

All items to be discarded must be in the same window. If you want to discard items from different windows, repeat this procedure for each window.

3 **Drag the items you want to discard on top of the Trash icon or into the Trash window.**

When the Trash icon becomes highlighted, release the mouse button. The highlighting tells you that the items you're discarding will be placed in the Trash.

When you've dragged the items to the Trash, the Trash icon has bulging sides, indicating that there's something in the Trash.
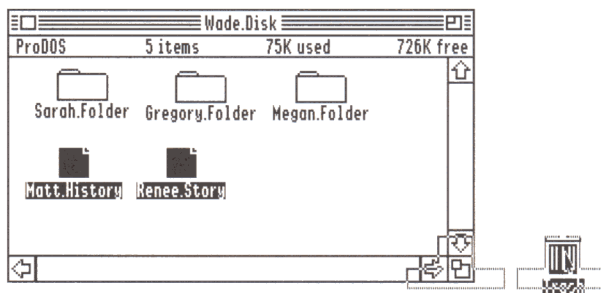
If you attempt to discard a locked file or folder, you are warned that the file or folder is locked before you're permitted to discard the item. See "Locking a file or folder," on page 131.

Recovering files and folders from the Trash

When you discard an item into the Trash, it stays there until:

- you choose the Empty Trash command from the Special menu
- the Finder automatically empties the Trash

As long as an item is still in the Trash, you can recover it.

The Finder may empty the Trash if you do any of the following:

- throw away something else
- open an application
- copy files
- eject a disk (by dragging the disk icon to the Trash)
- shut down or restart the computer

▲ **Warning** Even if you don't do any of the above tasks, the Finder will empty the Trash when it needs the disk space allocated to items in the Trash. You see no warning; items in the Trash are considered ready to be discarded. If you change your mind after dragging a file or folder to the Trash, recover the item immediately. ▲

Follow these steps to recover items from the Trash:

1 **Open the Trash icon.**

2 **If necessary, scroll until you can see the items you want to recover.**

3 **Select all the items you want to recover.**

4   Choose Put Away from the File menu.

File
New Folder ⌘N
Open   ⌘O
Print
Close   ⌘W
Close All

Duplicate... ⌘D
Put Away   ⌘Y
Validate

The icons return to their original locations.

If you prefer, you can drag the icons to different locations instead of using the Put Away command.

Emptying the Trash

As long as an item remains in the Trash, the disk space that the item occupies remains unavailable. If you want to free up that disk space, you can empty the Trash. Once you do so, the items that were in the Trash are removed permanently.

Special
Clean Up
Empty Trash ⌘T
Preferences...

To empty the Trash, select the Empty Trash command from the Special menu (or press Command-T, the keyboard shortcut). The Trash icon no longer has bulging sides, indicating that it is now empty.

Protecting files and folders and diagnosing problems

This section describes how to lock files and folders to prevent removing, renaming, or replacing them; how to unlock files and folders; and how to find out whether files are damaged.

Although you cannot rename, replace, or remove a locked file or folder, you can move it to another location. You can also put files inside a locked folder.

If you have a hard disk that is partitioned, you can lock the individual partitions; if your hard disk is not partitioned, however, you cannot lock the disk itself. Note that locking disks (also called write-protecting disks) is not the same as locking files and folders. For information about write-protecting disks, see page 94.

Locking a file or folder

Locking a file or folder ensures that you won't accidentally remove, replace, or rename it. If you drag a locked file into the Trash, or try to replace it during a copying or moving operation, the Finder displays a dialog box asking you to confirm your decision.

The Finder will not permit you to change the name of a locked icon.

Follow these steps to lock a file or folder:

1 **Select the file or folder you want to lock.**

Note that the HFS file system allows you to lock files, but not folders.

2 **Choose Icon Info from the Special menu (or press Command-I, the keyboard shortcut).**

You see the General card for the icon.

3 **Click the Locked checkbox.**

```
┌─────────────────────────────────────────┐
│ ▤□ ════════ Info on "Megan.Folder" ═══════ │
│ ▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨ │
│   ┌────┐    Megan.Folder      Locked ☒    │
│   └────┘                                   │
│     Kind:  Folder                          │
│     Size:  use calculate icon...           │
│                                            │
│  Contents: use calculate icon...           │
│   Created: Tue, Jan 21, 1992, 4:11 PM   ▦  │
│  Modified: Thu, Jan 23, 1992, 7:35 PM      │
│ ┌ General ┐┌ Where ┐                       │
└─────────────────────────────────────────┘
```
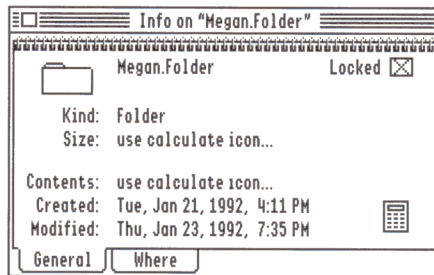
An X appears in the checkbox, indicating that the file or folder is now locked. Another way to check the box is to press the L key. If you press it again, the X disappears.

4 **Close the Icon Info window.**

Unlocking a file or folder

Follow these steps to unlock a locked file or folder:

1 Select the icon of the file or folder you want to unlock.

2 Choose Icon Info from the Special menu.

3 Click the Locked checkbox to remove the X.

Or press the L key for the same effect.

4 Close the Icon Info window.

Validating files

If you're having trouble opening a file, or if a file's information is difficult to read, you may want to use the Validate command to check for other bad files on the disk.

Follow these steps to validate files:

1 Select the items you want to validate.

You can select file icons, folder icons, disk icons, or any combination. When you select a folder or disk icon, the Finder will validate all the files in that folder or on that disk.

2 Choose Validate from the File menu.

A dialog box appears with a "thermometer" indicator that shows the progress of the validating procedure. The dialog box also shows how many files remain to be validated. (If you want to cancel the validation process, click Cancel.)

When the validation is complete, you see another dialog box indicating whether there were any bad files on the disk.

3 If there were no bad files, click OK.

4 **If there were bad files, click either OK (to see a list of the files) or Cancel (if you don't want to see a list).**

Move any good files to another disk, and then throw away the floppy disk with the bad files. If you validated a hard disk, see the manual that came with your hard disk.

◆ **Note** The Validate command makes a limited check of the files. If you are having trouble with a disk, and Validate indicates the files are OK, you should use the Verify command to check the disk blocks. For information about the Verify command, see "Verifying a disk," on page 108. ◆
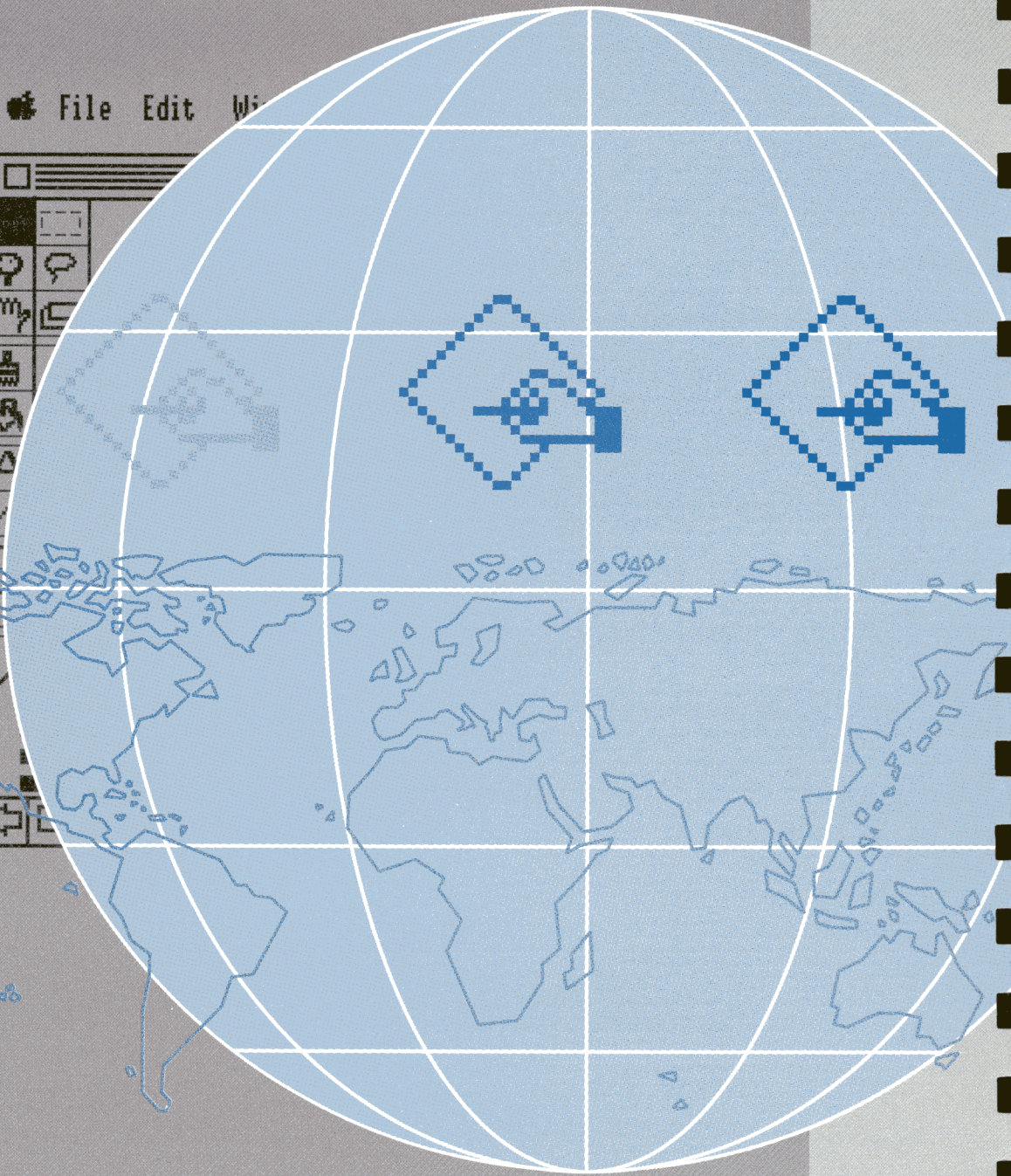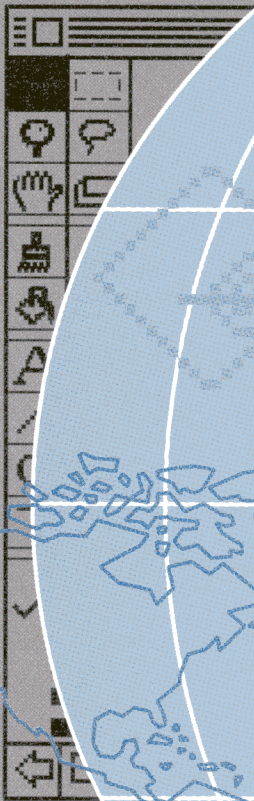
6 Working With Applications

Applications are programs that perform a specific function, such as word processing, database management, graphics, or telecommunication. Documents are the products of the work you do with applications on your Apple IIGS computer. This chapter includes a short hands-on tutorial using Teach, a word-processing application that comes on the System 6 *SystemTools2* disk.

Not all applications work in exactly the way described in this chapter, so be sure to read the manual that came with each program for specific instructions.

This chapter contains information on these topics:

- starting up an application
- switching applications
- saving documents
- printing documents
- ending a work session
- using Teach to practice application tasks

Starting up an application

This section explains how to start up applications and how to switch from one application to another. You can perform each of these tasks whether or not you're using the Finder.

Later in this chapter, you have the opportunity to practice these tasks by using an actual application. Or you can turn now to the hands-on exercise, "Using Teach to practice application tasks," on page 150, and come back to the rest of this chapter for reference as you need it.

When you're using the Finder

The Finder lets you start up applications quickly and easily without having to restart the computer (which takes more time).

The easiest way to start up an application is from the Finder. If your application disk doesn't include the Finder, you may prefer to launch the program directly from its startup disk rather than using a Finder-based startup disk.

There are two ways to start up an application from the Finder:

- Open the application icon.

  When you open an application icon (the Teach icon in this example), the Finder starts up the program.

  After a few moments, you see the opening screen of your application. Some applications present a new, untitled document as the opening screen. Others present a title screen. Still others present a blank desktop.

  Refer to the manual that came with your application for instructions on using the program.

- Open the icon of a document created with the application.

  When you open a document icon, the Finder tries to start up the application used to create the document. If the Finder is successful, the program will start up in a few moments, and you'll see the document you opened.

You won't always be able to start up an application from a document icon. If the disk containing the application used to create the document is not in one of your disk drives, or if it's in a 5.25-inch disk drive whose icon has not been opened, you see one of the following dialog boxes. You also see one of these dialog boxes if the application has been renamed or moved to a different disk or folder and the Finder has been unable to locate it.

```
┌─────────────────────────────────────────────────┐
│  ┌─┐   The application "Teach" can't be found for this │
│  │✋│   document.                                  │
│  └─┘                                              │
│     ( Cancel )          ( Try Again ) (( Locate... )) │
└─────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────┐
│  ┌─┐   An application can't be found for this    │
│  │✋│   document.                                  │
│  └─┘                    (( Cancel ))              │
└─────────────────────────────────────────────────┘
```
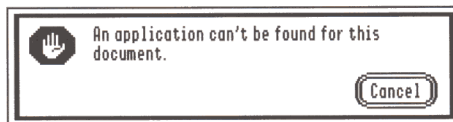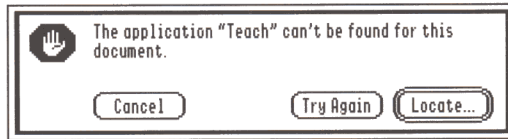
If the application won't open, try one of the following solutions:

- Make sure that the disk containing the application is in one of your disk drives. Then click Try Again.

- If the program is in a 5.25-inch disk drive, click Cancel. Make sure that the disk drive door is closed and that you have opened the disk drive icon to display the disk icon on the desktop. Then try opening the document again.

- If you don't have the necessary application available, click Cancel.

◆ **Note** Some applications do not support starting up by double-clicking a document. If none of the procedures here work, check the documentation that came with the application. ◆

If the Finder is unable to associate the document with the application used to create it, you see this message:

```
┌─────────────────────────────────────────────────┐
│  ┌─┐   The application "Teach" can't be found for this │
│  │✋│   document.                                  │
│  └─┘                                              │
│     ( Cancel )          ( Try Again ) (( Locate... )) │
└─────────────────────────────────────────────────┘
```
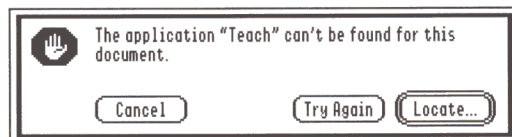
If you see this message, follow either of the following sets of steps:

1   **Click Locate.**

The Volumes dialog box appears.

2   **Click Volumes.**

The available volumes are displayed.

3   **Select the volume where the application is located.**

4   **Select the application and click OK.**

The next time you try to open the document in the Finder, you should be successful. If not, continue to start up the application by opening its icon rather than by opening a document.

For a second method, follow these steps:

1   **Click OK.**

2   **Start up the application by opening its icon.**

3   **Open the document from within the application.**

The next time you try to open the document in the Finder, you should be successful. If not, continue to start up the application by opening its icon rather than by opening a document.

When you're not using the Finder

If you are working with a System 6 startup disk that doesn't include the Finder, you start up to the System 6 Program Launcher, built into your system software.

Follow these steps to start an application from the Program Launcher:

1   **Click Volumes to see all volumes you have on line.**

Make sure you've inserted the disk that contains your application.

2 **Open the volume where the application is located.**

You can double-click the volume name or click it once and then click Open.

3 **Open the application.**

Double-click the application name or click it once and then click Open.

△ **Important** Many application disks, particularly those with older applications, don't include the Finder or System 6. Such a disk is still a startup disk, however, and you can start the program directly from the disk. With your computer switched off, insert the application disk in your startup drive, and then switch on the computer. For information on how to proceed from this point, see the manual that came with your application. △

Switching applications

Switching applications is particularly easy when you're using the Finder. But you can also switch from one program to another when you're not using the Finder.

Switching applications when you're using the Finder

Follow these steps to switch from one application to another when you're using the Finder:

1 **Save any documents you've been working with.**

For information on saving, see "Saving documents," on page 142 in this chapter, or refer to the manual that came with your application.

2 Quit the application.
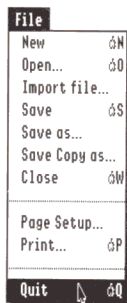
Choose the Quit command from the File menu. You return to the Finder desktop. (You may be prompted to insert the system disk or the application disk before you return to the Finder.)

```
File
New          ⌘N
Open...       ⌘O
Import file...
Save          ⌘S
Save as...
Save Copy as...
Close         ⌘W

Page Setup...
Print...      ⌘P

Quit          ⌘Q
```

3 Eject the current application disk.

To eject a 3.5-inch disk, drag its icon to the Trash. To eject a 5.25-inch disk, drag its icon to the Trash, then open the disk drive door and remove the disk.

4 Insert the new application disk.

◆ **Unexpected message?** You may see a message saying that GS/OS recognizes the file system on the disk as one for which you have not installed the file system translator (FST). If you see such a message, your application probably uses the Pascal or Apple II DOS 3.3 file system—two older operating systems for which GS/OS has file system translators. Or you may have inserted an HFS disk (a disk initialized for the Macintosh operating system), for which GS/OS also has a file system translator. To work with data from HFS files by using a ProDOS application, you can install the required translator on your startup disk. Use the appropriate customized installation update of the Installer. (You cannot, however, use Macintosh applications on the Apple IIGS.)

For information about installing FST updates, see Chapter 2, "Using the Installer," starting on page 19. For more information about FSTs, see "Using file formats and translators," on page 109. ◆

5 Open the disk and any necessary folders until the window containing the application icon is displayed.

See the manual that came with the application to identify the application icon.

6 Open the new application.

In a few moments you see the opening screen of the application.

Switching applications when you're not using the Finder

If you are working with a System 6 startup disk that doesn't include the Finder, you switch applications by using the System 6 Program Launcher, built into your system software.

Follow these steps to switch applications from the Program Launcher:

1 Save any documents you've been working with.

For information on saving, see "Saving documents," on page 142 in this chapter, or refer to the manual that came with your application.

2 Quit the application.

For the appropriate command, refer to the manual that came with your application.

When the application quits, you see the System 6 Program Launcher.

3 Click Volumes to see all volumes you have on line.

Make sure you've inserted the disk that contains the application you want to use.

4 Open the volume where the application is located.

You can double-click the volume name or click it once and then click Open.

5 Open the new application.

Double-click the application name or click it once and then click Open.

△ **Important** Many application disks, particularly those with older applications, don't include the Finder or System 6. Such a disk is still a startup disk, however, and you can start the program directly from the disk. To switch applications, eject the startup disk after saving any documents you've been working with. Then insert the next application disk in the startup drive, and press Command-Control-Reset to restart the computer (see Figure 6-1).

Figure 6-1 Restarting the computer by pressing Command-Control-Reset

That is, hold down Command (the key marked with both the outline of an apple and this symbol: ⌘) and Control, then press and then release Reset (the key marked with a triangle Δ); when you hear a beep, release Command and Control. (Be sure to hold down the Command and Control keys until you hear the beep. Otherwise, the procedure won't work.) △

In a few moments you see the opening screen for your application. For information on how to proceed from here, see the manual that came with your application.

Saving documents

While you're working with a document, the information you enter is stored in the computer's RAM. But because RAM is temporary memory, you could lose that information, for example, if there's a power failure or if you accidentally pull the power cord out of the outlet. That's why it's important to save your work at regular intervals.

You save your work on a disk. It can be a 3.5-inch disk, a 5.25-inch disk, a hard disk, a hard disk partition, or a file server volume. If there's room on your application disk, you may want to save documents there. Or you might prefer to keep documents on separate disks, called data disks.

To save a document on a disk, you choose the Save command from the appropriate menu in your application. When you do so, the program asks you where you want to save the document. There are three ways that a program is likely to ask for this information:

- *If the application uses the desktop interface,* it will probably present a directory dialog box, which lets you move about in the different levels of folders on your disk to specify the desired location.

- *If the application is text-based,* it may ask you to specify a slot and drive number, or it may ask you to specify a pathname—that is, a series of names listing the path the computer must follow to reach the desired location.

When you save a document, you can give it any name you like, provided there isn't already a document by that name on the same disk or in the same folder, and provided the name conforms to the ProDOS, HFS, or application's rules for naming documents. You should be able to find the rules for your program in the manual that came with it.

If you don't know the ProDOS, HFS, or application's rules for naming documents, follow the naming rules on page 91.

Saving by using a directory dialog box

In most graphics-based applications, you're presented with a directory dialog box when you give a Save or Save As command. Directory dialog boxes generally have four main features:

- an icon and pathname indicating the currently selected disk or folder
- a list showing the directory of the currently selected disk or folder
- a box where you type the name of the document to be saved
- a set of buttons that let you give commands to the computer

Follow these general steps to save a document using a directory dialog box. Different applications implement the features of the directory dialog box in different ways. If these steps don't correspond to what you see on the screen, refer to the manual that came with your application.

1 Choose Save As from the File menu.

The directory dialog box appears.

```
┌──────────────────────────────────────┐
│ ▼ 🖫 SystemTools2 (ProDOS)            │
│ 19 free of 800K.        ┌──────────┐  │
│ ⌐⋐ Adv.Disk.Util    ⇧   │ Volumes  │  │
│ ⌐⋐ BASIC.System         └──────────┘  │
│ 🗀 Icons                ┌──────────┐  │
│ 🗀 System               │New Folder│  │
│ ⌐⋐ Teach                └──────────┘  │
│                         ┌──────────┐  │
│                         │  Open    │  │
│                     ⇩   └──────────┘  │
│                         ┌──────────┐  │
│ Save the file as:       │  Close   │  │
│                         └──────────┘  │
│ ┌──────────────────┐    ┌──────────┐  │
│ │ Untitled         │    │  Save    │  │
│ └──────────────────┘    └──────────┘  │
│                         ┌──────────┐  │
│                         │  Cancel  │  │
│                         └──────────┘  │
└──────────────────────────────────────┘
```
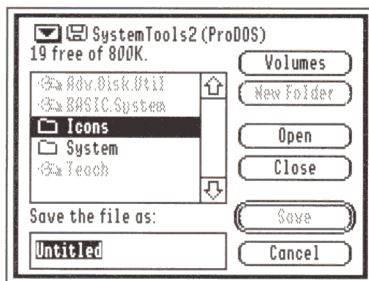
The first time you save a document, you also have the option to use the Save command. In either case, you will be able to name your document. (When you make further changes to a named document, you use the Save command; you use the Save As command only if you want to *rename* or *relocate* your document.)

2 Click the Volumes button to see a list of all the available volumes.

The list shows you all the disks you have available.

3 Select the disk on which you want to save your document, and click Open.

You see a list of the available folders on the selected volume.

4 If necessary, open the folder where you want to save the document. (If the folder is nested inside other folders, you have to open all the necessary folders.)

To open a folder, click its name or icon in the directory window and then click the Open button. Or just double-click the name or icon.

◆ **Network users** If your Apple IIGS is part of a network that includes an AppleShare file server, you can't use this dialog box to save a document in someone else's **drop folder**. Instead, you must save and close the document and use the Finder to drag the document's icon into the drop folder icon. For more information on drop folders, see "Using folders on a file server volume," on page 289 in Chapter 12. ◆

5 **Give the document a name.**

The name of the document may already be highlighted ("Untitled" for a new document). If it is, and if this is the first time you're saving the document—or if you want to save an existing document with a new name—type the new name in the box provided. If the text box is not already highlighted, you must click the text box to position the insertion point before you start to type. Follow the naming conventions on page 91 for the appropriate file format. If you are making changes to an existing document, you won't have to retype it unless you want to change the name.

6 **Click the Save button.**

Your document is saved on the disk.

Saving by using a pathname

Some text-based applications let you save documents in folders. To do so, you supply a pathname, which begins with the name of the disk on which the file is stored, followed by the names of any folders in which the file is nested, and ends with the name of the file itself.

GS/OS allows you to use pathnames beginning with a slash (/) or a colon (:) separator. If you're using a ProDOS 8 application, however, you must use a slash.

△ **Important** The separator character you use to begin a pathname must be the same as the character you use to separate the parts of that pathname. For example, if you use a colon at the beginning of a pathname, you must use colons to separate all parts of the pathname. △

The pathname /Personnel/Sales/Sanchez/Status.Report, for example, corresponds to a document called *Status.Report* in a folder called *Sanchez*, which is stored in a folder called *Sales* on the disk called *Personnel*.

If you don't use folders, the pathname for a document is formed from the disk name and the document name. For example, the pathname for a document called *Fujiko.10.28.91* on a disk called *Letters* would be /Letters/Fujiko.10.28.91.

To cut down on your typing time—and on the opportunities for typing errors—many applications let you specify a prefix. As the name suggests, a prefix is the first part of a pathname. The prefix can be just the disk name, or it can include one or more folder names

as well. The manual that came with your application will tell you whether you can use prefixes and how to set a prefix.

Saving by using slot and drive number

If an application asks for a slot number and a drive number when you choose its Save command, it's asking which slot corresponds to the drive that contains the destination disk, and whether that drive is the first or second drive connected.

◆ **By the way** Applications that ask for the slot and drive number do not let you save a document in a folder. The document is automatically saved in the disk root directory. ◆

Disk drives connected to the disk drive port

If the disk where you want to save your document is in a drive connected to the disk drive port, specify slots as follows:

- slot 5 for a 3.5-inch drive
- slot 6 for a 5.25-inch drive

For each type of drive, the drive connected directly to the computer is drive 1. The second drive, if there is one, is drive 2.

If you're using some of the computer's memory as a RAM disk, the RAM disk corresponds to slot 5. The drive numbers of 3.5-inch drives may be different from the above description; for more information, see "Setting RAM disk size," on page 111.

◆ **More than two 3.5-inch drives?** If you have more than two 3.5-inch drives connected to the disk drive port, slot 2 can act as an "overflow" slot for the additional drives. The third 3.5-inch drive corresponds to slot 2, drive 1, and the fourth 3.5-inch drive corresponds to slot 2, drive 2. ◆

Disk drives connected to controller cards in internal slots

If the disk to which you want to save your document is in a drive connected to a card in an internal slot, specify the number of the slot that contains the card. The drive connected directly to the card is drive 1. The second drive, if there is one, is drive 2. If you are using partitions, the first partition is drive 1 and the second partition is drive 2.

Printing documents

When you're working with documents in an application, the application determines the way you do such basic tasks as creating, saving, and printing documents. The procedures for such tasks can vary greatly from application to application. You usually print your documents from within the application you use to create them. For specific instructions, refer to the manual that came with your application.

◆ **Network users** If your Apple IIGS is part of a network and you use printers on the network, be sure to read "Printing over the network" in Chapter 12. ◆

Ending a work session

This section describes the procedures you follow when you're ending a work session:

- quitting an application
- shutting down

Quitting an application

When you're ready to conclude a work session with a particular application, follow these steps to quit:

1 **Save any documents you've been working with.**

See "Saving documents," on page 142 or refer to the manual that came with your application.

2 **Quit the application.**

Choose the Quit command from the File menu.

If you started the application from the Finder, you return to the Finder desktop. If you started the application directly from a disk that doesn't include the Finder, the System 6 Program Launcher will start up.

If your application doesn't have a Quit command, try one of these methods. Start with the first method in the list, and try the methods in sequence until you find one that works.

- Press Command-Q (for Quit).
- Press Control-Q.
- Press Q.
- Check your application manual for other methods.
- Insert a different startup disk in your startup drive and press Command-Control-Reset.

If none of these methods works, eject all disks, switch off the computer, and then switch on the computer again.

Shutting down the computer

When you're using the Finder and are ready to end a work session at the computer, follow these steps to shut down the computer:

1 **Choose Shut Down from the Special menu.**

   If you will be shutting down from the Program Launcher, click Cancel, then select Shut Down from the File menu.

   You see the dialog box shown. The option labeled "Shut Down (turn off system power)" is selected.
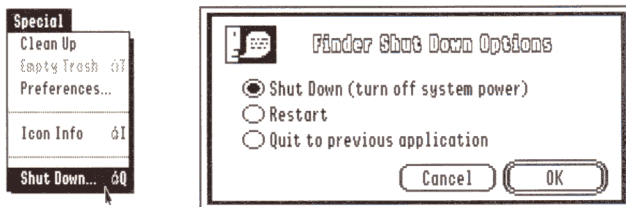
2 **Click OK.**

   The computer ejects any disks in your 3.5-inch disk drives (and CD-ROM drives), and a message appears letting you know that it's safe to switch off the power.

   If you change your mind about shutting down after you've clicked OK, reinsert your startup disk and click the Restart button on the screen. The computer starts up again from the startup disk.

3 **Switch off the computer and the monitor.**

   Shutting down by the using the Shut Down command is the proper way to end a work session. The Shut Down command allows the system to save information necessary to maintain a well-ordered desktop.

Using Teach to practice application tasks

Teach is a word-processing application that comes with your system software. It lets you read, write, edit, save, and print your own text documents. You can also use it with the instructions in this hands-on tutorial to learn the basic tasks of working with an application. The Teach program is on the Apple IIGS *SystemTools2* disk.

◆ **By the way** Teach also provides a means for Apple Computer and other software developers to make sure that the information you get about a new product is as up-to-date as possible. When you see a Read Me document on your screen, it contains last-minute information that couldn't be included in the manual. You use Teach to gain access to this Read Me information. ◆

In the following sections, you'll be using Teach to learn how to do these tasks, common to most applications:

- starting an application
- creating a document
- saving your work
- editing text
- printing from within an application
- importing files from other applications

Before you start working with Teach, copy the application from the *SystemTools2* disk to a blank, formatted disk; name the new disk "Teach." For instructions, see "Initializing a disk," on page 90, and "Moving and copying files and folders," on page 122.

Starting the Teach application

After copying Teach to a new disk, follow these steps to start up the program:

1 **Start up your computer with your startup disk.**

2 **Insert the newly-created disk that contains Teach.**

If you are using only one drive, you'll have to eject the startup disk before you insert the Teach disk.

3 **Open the Teach icon by double-clicking it.**

You can also select the icon, and then choose the Open command from the File menu.

Like most applications, Teach has its own menus and its window has a title bar, close box, size box, zoom box, and scroll bars. Also like many applications, Teach always opens with an "Untitled" window when you launch Teach. You create whatever you want with the application and then name the document when you save it.

Creating a document

Now that you've started Teach, you can create a document.

On the screen, a blinking vertical bar marks the insertion point, where text you type will be inserted. If you make a mistake, use the Delete key to erase characters back to where the mistake is, and then start typing again.

1 **Use the keyboard to type this sample paragraph:**

```
The excitement of using a computer for the first time is
no longer unique in this age of technology. In the years
to come, more people will be using computers on a daily
basis. Computers can currently be found in almost every
office. The computer revolution has just begun.
```

2 **As you type, do not press the Return key when you get to the end of a line.**

Most applications that let you enter and edit text—such as word-processing applications—start the new lines for you. It's a feature called "word wrap," so called because if a word is too long to fit at the end of one line, the word wraps around to the next line automatically.

You'll have a chance later to learn more about adding and editing text, but now give the document a name and save it.

Saving your work

This procedure gives the document a name of its own and puts a copy of it (with that name) on the selected disk. It is stored there, as is, until you decide to rename it, change it, or delete it.

1 **Choose Save As from the File menu.**

The directory dialog box appears prompting you to type the name of your document in the text box. Because the text box is selected (highlighted), the name you type will replace

"Untitled" automatically. There's no need to use the mouse to position the pointer in the text box.

File
New	⌘N
Open...	⌘O
Import file...	
Save	⌘S
Save as...	
Save Copy as...	
Close	⌘W
Page Setup...	
Print...	⌘P

⏷ 🖫 Teach (ProDOS)
749 free of 800K.

🗁 Teach ⬆

(Volumes)
(New Folder)
(Open)
(Close)

Save the file as:

Untitled
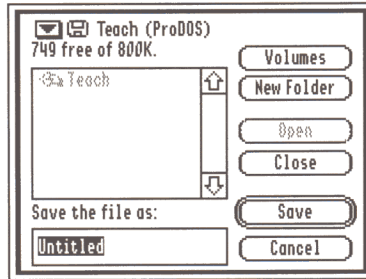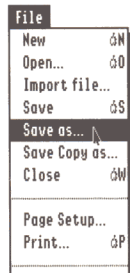
(Save)
(Cancel)

2 **Type** `Memo1` **in the text box.**

3 **Click the Save button.**

Your document is saved on the disk just as it appears on the screen. After the computer saves the document, the title bar shows the name you just gave it.

With your work saved on the disk, you can quit the Teach application and return to the desktop.

◆ **Note** Some applications, notably HyperCard IIGS, save automatically during the work session. Check the documentation that came with your program to see if it has an automatic save feature. ◆

4 **Choose Quit from the File menu.**

File
New	⌘N
Open...	⌘O
Import file...	
Save	⌘S
Save as...	
Save Copy as...	
Close	⌘W
Page Setup...	
Print...	⌘P
Quit	⌘Q

Teach
ProDOS	2 items	53K used	747K free

Teach   Memo1
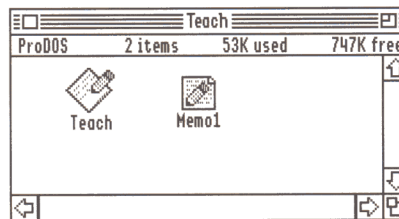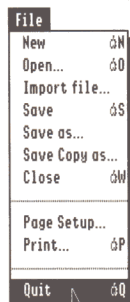
The desktop appears again. But now the icon of your new document appears in the window of your disk.

This new icon represents the document you created, and below it is the name you gave it. When you work on this document again, you select and open the icon just like any other icon.

Most documents you create will have an icon particular to the application you used to create them, so you can tell which application you used to create each of your documents.

Now you've created and saved a document. In the next section you'll learn how to modify a document by revising the memo you've written.

Inserting text

When you want to add text to what's already there, you can make insertions without disturbing the existing text.

Follow these steps to insert text:

1 Open the Memo1 icon.

Opening the document you want to work on also starts the Teach application you need to do the work. You don't have to open the application first and then open the document.

If the Finder is unable to find the appropriate application on disk, follow the steps on page 138.

The Teach program starts, and the document you saved earlier reappears, just as it was when you saved it.

2 Position the insertion point in front of the *c* in the word computer, then click.

You're moving the insertion point to where you want to add text. The blinking vertical bar, called the insertion point, marks where the text you type will be inserted. If you make a

mistake in positioning the insertion point, you can reposition it either by clicking somewhere else or by pressing the arrow key to move the insertion point left or right.

```
┌──────────────────────────── Memo1 ────────────────────────────┐
│ □                                                          ⊟  │
├───────────────────────────────────────────────────────────┬───┤
│ The excitement of using a computer for the first time is no longer unique in │ ⇧ │
│ this age of technology. In the years to come, more people will be using      │   │
│ computers on a daily basis. Computers can currently be found in almost       │   │
│ every office. The computer revolution has just begun.                        │   │
└───────────────────────────────────────────────────────────────┘
```

3 **Type** `personal.`

```
┌──────────────────────────── Memo1 ────────────────────────────┐
│ □                                                          ⊟  │
├───────────────────────────────────────────────────────────┬───┤
│ The excitement of using a personal computer for the first time is no longer │ ⇧ │
│ unique in this age of technology. In the years to come, more people will be │   │
│ using computers on a daily basis. Computers can currently be found in        │   │
│ almost every office. The computer revolution has just begun.                 │   │
└───────────────────────────────────────────────────────────────┘
```

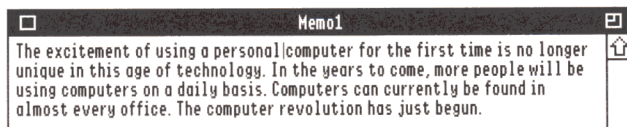What you type appears at the insertion point. (Don't forget to add a space after personal.) You probably noticed that when you added text, the words on the other lines rewrapped to accommodate the extra word.

Selecting text

You select text in order to delete it or replace it. In certain applications, such as word processors, you also select text in order to copy it or to modify some aspect of it (such as its size or typeface).

There are four techniques for selecting text:

- dragging
- clicking and Shift-clicking
- double-clicking
- choosing Select All from the Edit menu (Or Command A, the keyboard shortcut)

You'll probably use different techniques depending on the length of the text to be selected. The first two techniques work in all circumstances, so you can stick to one of those methods if you find it convenient. The last technique selects all the text in the entire document, so use it carefully.

Dragging to select text

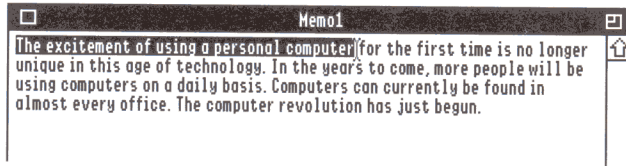This technique is best suited to selecting parts of words or short passages.

Follow these steps to select text by dragging:

1 Position the pointer at one end of the text to be selected.

Note that the pointer becomes an I-beam when it's positioned within the text window.

2 Drag across the text.

The text becomes highlighted as you drag across it, indicating that it has been selected.

```
┌─┬──────────────────────────────Memo1──────────────────────────────┬─┐
│ □                                                                  │⌐│
├────────────────────────────────────────────────────────────────┬──┤
│ The excitement of using a personal computer for the first time is no longer │⇧│
│ unique in this age of technology. In the years to come, more people will be │ │
│ using computers on a daily basis. Computers can currently be found in       │ │
│ almost every office. The computer revolution has just begun.                │ │
│                                                                  │  │
│                                                                  │  │
└────────────────────────────────────────────────────────────────┴──┘
```

3 Release the Mouse button.

Clicking and Shift-clicking to select text

This technique is best suited to selecting long passages.

Follow these steps to select text by clicking and Shift-clicking:

1 Click at the beginning of the text to be selected.

2 Hold down one of the Shift keys while you click at the other end of the text to be selected.

All the text between the point of clicking and the point of Shift-clicking becomes highlighted, indicating that it has been selected.

3 Release the Shift key.

Double-clicking to select text

This technique is used when you want to select complete words. If the text to be selected is part of a word—or begins or ends in the middle of a word—you must use one of the other methods of selecting text.

To select a word, double-click it. The word becomes highlighted, indicating that it has been selected.

To add an adjacent word to what you've already selected, hold down one of the Shift keys while you click the adjacent word. The highlighting extends to include the adjacent word as well. (You can continue adding adjacent words indefinitely by repeating this technique.) Dragging will also select adjacent characters, as long as you hold down the Shift key while you drag.

Choosing Select All to select test

This technique is used to select all the text in a document.

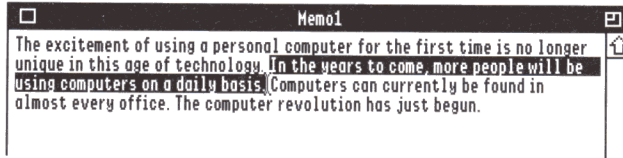| Edit |
|---|
| Undo |
| Cut ⌘X |
| Copy ⌘C |
| Paste ⌘V |
| Clear |
| **Select All** ⌘A |
| Find... ⌘F |
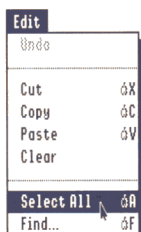
Choose Select All from the Edit menu. All the text of the memo is now highlighted. Click anywhere in the memo to deselect all the text.

Editing text by cutting and pasting

Follow these steps to modify a document by cutting and pasting:

1 **If necessary, open the Memo1 icon.**

2   **Select the entire second sentence by positioning the I-beam after the period that follows the word *technology* and dragging to the end of the sentence.**

```
┌─────────────────────────────────────────────────┐
│ □                    Memo1                    ⊟ │
├─────────────────────────────────────────────────┤
│ The excitement of using a personal computer for the first time is no longer  ⇧
│ unique in this age of technology. In the years to come, more people will be
│ using computers on a daily basis. Computers can currently be found in
│ almost every office. The computer revolution has just begun.
│                                                  █
└─────────────────────────────────────────────────┘
```

Move the insertion point to the beginning of the phrase you want to copy and click. Drag the mouse to the right and down until you have selected all the text you want. (Be sure you include the period at the end of the sentence.) If you move the pointer off the sentence, you might select more than just the sentence. If this happens, just reposition the insertion point and start dragging again.
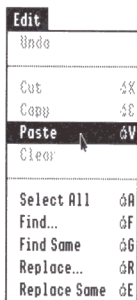
3   **Choose Cut from the Edit menu.**

```
┌──────────┐
│ Edit     │
│ Undo     │
├··········┤
│ Cut    ⌘X│
│ Copy   ⌘C│
│ Paste  ⌘V│
│ Clear    │
└──────────┘
```
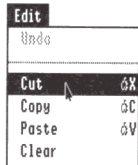
The sentence vanishes. Whenever you choose Cut or Copy from the Edit menu, whatever you cut or copy is put in a holding place called the Clipboard, ready for you to paste to a different location if you want. You use Copy when you want to leave the selected text where it is and put a copy of it somewhere else. Copy works just like Cut, except it leaves the text you selected in the document.

4   **Move the insertion point by clicking after the period that follows the word *office*.**

5   **Choose Paste from the Edit menu.**

```
┌──────────────────┐
│ Edit             │
│ Undo             │
├··················┤
│ Cut          ⌘X  │
│ Copy         ⌘C  │
│ Paste        ⌘V  │
│ Clear            │
├··················┤
│ Select All   ⌘A  │
│ Find...      ⌘F  │
│ Find Same    ⌘G  │
│ Replace...   ⌘R  │
│ Replace Same ⌘E  │
└──────────────────┘
```

The contents of the Clipboard—in this case, the sentence you just cut—are pasted into the location you selected.

The contents also stay on the Clipboard until you replace them by choosing Cut or Copy again (or shut down the computer). This means you can continue to paste them. You can paste within one document, between two documents created with the same application, or between documents created with different applications. For example, you can draw a picture with a graphics program and use it in a report you create with a word-processing program.

Deleting text

Follow these steps to delete text:

1 **Select the text you want to delete.**

See "Selecting text," on page 155 earlier in this chapter for review.

2 **Press the Delete key.**

You can also use the Clear key or Control-X.

In addition to the standard procedure, there are three keystroke commands that let you make specific kinds of deletions:

- To delete the character to the left of the insertion point, simply press Delete.
- To delete the character to the right of the insertion point, press Control-F.
- To delete all the text to the right of the insertion point, press Control-Y.

Replacing text

Follow these steps to replace existing text with new text:

1 **Select the text you want to replace.**

2 **Type the new text.**

When you type the first character of the new text, the selected text disappears. What you type replaces it.

Changing the font, size, or style of document text

You may want to change the look of your document by changing the font (the typeface), or the size and style of the text. In this section, you practice changing the look of your memo. These steps assume the Memo1 file is open and the window is active.
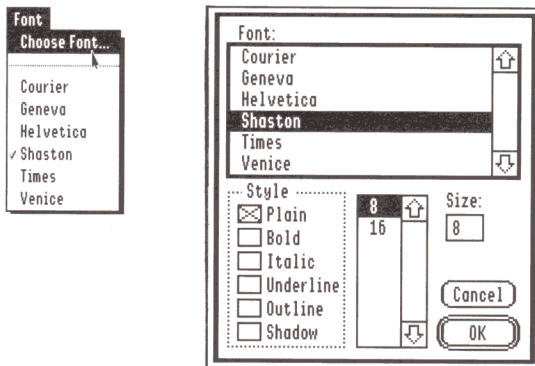
1 **Choose Select All from the Edit menu.**
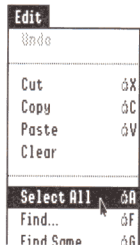
All the text of the memo is now highlighted.

2 **Select Choose Font from the Fonts menu.**

A dialog box appears, listing options you have for fonts, font style, and font size. The font you're using now is already highlighted, the Plain style is selected, and the 8-point font size is selected.
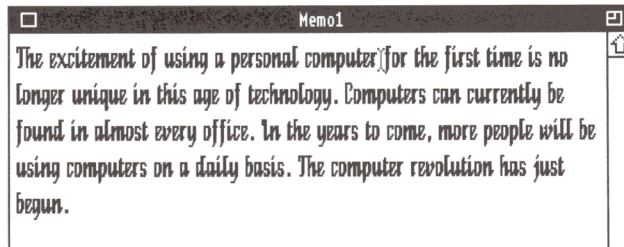
3 **Change your font options.**

If the Fonts update is not installed on your startup disk, you won't be able to select a new font. Go on to the next section. (For information about installing the Fonts update, see Chapter 2, "Using the Installer," starting on page 19.)
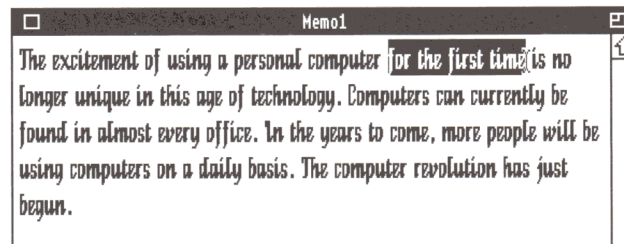
1. Double-click the Venice font to select it.
2. Click in the box to the left of the word Bold.
3. Click in the Size text box to position the insertion point, and type "10."
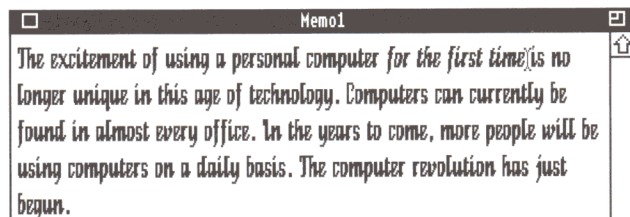
4 **Click OK to confirm your font selections.**

When you return to your memo, clicking outside the highlighted area deselects the text that you highlighted in step 1. Notice that the typeface is different, the size of the type is larger, and the memo is displayed in boldface.

The excitement of using a personal computer for the first time is no longer unique in this age of technology. Computers can currently be found in almost every office. In the years to come, more people will be using computers on a daily basis. The computer revolution has just begun.

5 **Position the pointer at the beginning of the word** *for* **in the first sentence and drag to the end of the word** *time***.**

The excitement of using a personal computer for the first time is no longer unique in this age of technology. Computers can currently be found in almost every office. In the years to come, more people will be using computers on a daily basis. The computer revolution has just begun.

6 **This time, choose Italic from the Style menu.**

Style	
Plain	⌘T
✓Bold	⌘B
Italic	⌘I
Underline	⌘U
Outline	
Shadow	

The excitement of using a personal computer *for the first time* is no longer unique in this age of technology. Computers can currently be found in almost every office. In the years to come, more people will be using computers on a daily basis. The computer revolution has just begun.

The phrase *for the first time,* is now further emphasized in your memo.

You may want to experiment with other fonts, styles, or sizes that change the look of your memo. You can change font style and size by choosing the Choose Font command in the Fonts menu, or by choosing the appropriate commands in the Style and Size menus.

Changing all occurrences of a word

Sometimes you may want to change all occurrences of a word or a string of words in your documents. Many applications allow you make such changes easily with replacement tools. This section explains how to use the Replace command of the Teach application to make all the changes at the same time, instead of making them one by one. These steps assume you have the Memo1 file open and the window is active.

1 **Click once in your memo to make sure no text is selected.**

2 **Choose Replace from the Edit menu.**

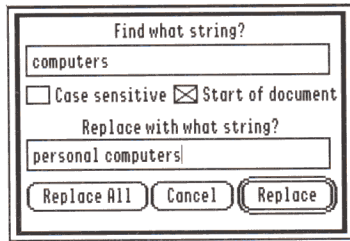A dialog box appears, prompting you for the word or string of words you want to replace.
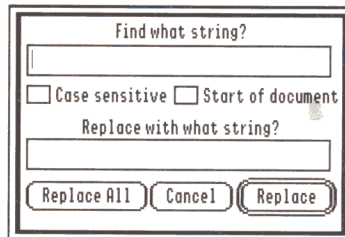
3 **Type** `computers` **in the first text box.**

In this case, it's not important whether the word computers begins with an upper- or lower-case letter; don't select the "Case sensitive" box.

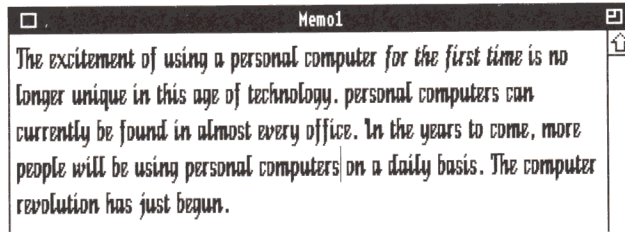Click "Start of document" to have Teach start its search at the beginning of your file.

4 **Type** `personal computers` **in the second text box.**

```
┌─────────────────────────────────────┐
│          Find what string?          │
│ ┌─────────────────────────────────┐ │
│ │ computers                       │ │
│ └─────────────────────────────────┘ │
│ ☐ Case sensitive  ☒ Start of document│
│       Replace with what string?     │
│ ┌─────────────────────────────────┐ │
│ │ personal computers|             │ │
│ └─────────────────────────────────┘ │
│ ( Replace All ) ( Cancel ) (( Replace ))│
└─────────────────────────────────────┘
```

5 **Click Replace All.**

Clicking Replace All changes all occurrences of the word *computers* to *personal computers.*

Clicking Replace would change only the first occurrence. You could then choose Replace Same from the Edit menu to make the same change on the next occurrence.

```
┌──────────────────────────────────────────┐
│ □ .              Memo1                ⊟   │
│ ──────────────────────────────────── ⇧   │
│ The excitement of using a personal computer for the first time is no │
│ longer unique in this age of technology. personal computers can │
│ currently be found in almost every office. In the years to come, more │
│ people will be using personal computers| on a daily basis. The computer │
│ revolution has just begun.                │
└──────────────────────────────────────────┘
```
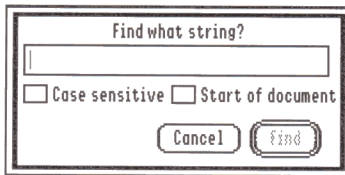
Remember that different applications may handle replacement functions in a different way. Refer to the manual that comes with your application.

Finding words or strings of words

In some cases, you may want to find certain words or strings of words in your document without necessarily making changes to them. In this section, you use the Find command of the Teach program to locate a word, and then you can decide whether to make a change or not.

1 **Click once in your memo to make sure no text is selected.**

2 Choose Find from the Edit menu.

Edit	
Undo	
Cut	⌘X
Copy	⌘C
Paste	⌘V
Clear	
Select All	⌘A
Find...	⌘F
Find Same	⌘G
Replace...	⌘R

```
Find what string?
┌──────────────────────────┐
│                          │
└──────────────────────────┘
☐ Case sensitive  ☐ Start of document
        ( Cancel )  ( find )
```

A dialog box appears, prompting you for the word or string of words you want to find.

3 Type `personal computers` **in the text box.**

It's not important whether the words *personal computers* begin with an upper- or lower-case letter; don't select the "Case sensitive" box.

Click "Start of document" to have Teach start its search at the beginning of your file.

4 Click Find.

5 When Teach finds the first occurrence of the phrase, decide whether to delete the word *personal* **before** *computers***.**

If you want to, position the insertion point before the word *computers*, and then use the Delete key to delete the word *personal* and a space.

Or, you may not want to make any change.

6 Choose Find Same from the Edit menu to locate the next occurrence of the word and decide whether to change it.

Edit	
Undo	
Cut	⌘X
Copy	⌘C
Paste	⌘V
Clear	
Select All	⌘A
Find...	⌘F
Find Same	⌘G
Replace...	⌘R
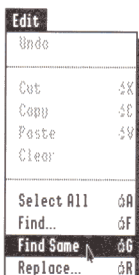
You can repeat this process as many times as you need to go through your entire document.

Saving a document under a different name

Now that you've edited your original memo, you need to save your revision. When you're finished making changes to a document, you have three choices for saving: Save, Save As, and Save Copy As.

You can choose Save from the File menu, and the revised document is saved with the same name you gave the original. That's fine if you don't want to keep a separate copy of the original document. But you may want to save the revision and keep the original, too. (For example, you may have a form letter that you keep as a template; you can personalize the letter and save different versions with new names.) To do this, you choose the Save As command from the File menu. The Save As command can also be used to save your document to a different folder or disk.

Use the Save Copy As command to create a copy of your active document, and then continue working on the document without having changed its name. To do this, you choose the Save Copy As command, name the copy, and save it on disk. You then return to your active document, which still has its original name. You can also use the Save Copy As command to save documents in different file formats.

Follow these steps to save your document with a different name:
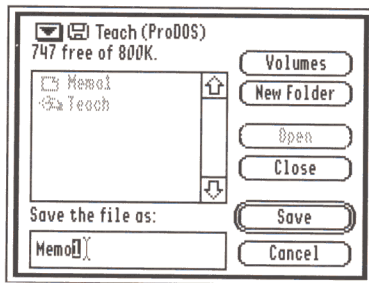
1 **Choose Save As from the File menu.**
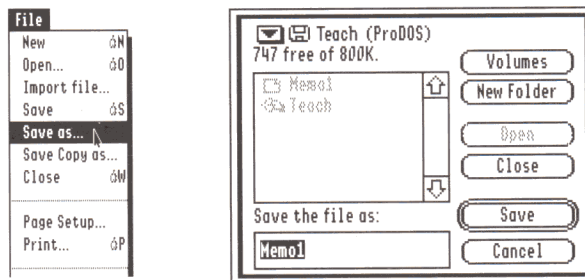
The directory dialog box appears. The name of the original document appears highlighted in the text box.

You can edit the names of documents just as you would other text. Or if you prefer, you can just type a new name for the document rather than edit the old one.

2 **Position the pointer in the word** *Memo1* **between the** *o* **and the** *1* **then click and drag to the end of the title.**

The text becomes highlighted.

```
┌─────────────────────────────────┐
│ ▼ 💾 Teach (ProDOS)              │
│ 747 free of 800K.    ┌──────────┐│
│ ┌──────────────┐▲    │ Volumes  ││
│ │ ▢ Memo1       ⬆    └──────────┘│
│ │ ◈ Teach      │    ┌──────────┐ │
│ │              │    │New Folder│ │
│ │              │    └──────────┘ │
│ │              │    ┌──────────┐ │
│ │              │    │  Open    │ │
│ │              │⬇   └──────────┘ │
│ └──────────────┘    ┌──────────┐ │
│                     │  Close   │ │
│ Save the file as:   └──────────┘ │
│ ┌────────────┐      ┌──────────┐ │
│ │ Memo1  ⌶   │      │  Save    │ │
│ └────────────┘      └──────────┘ │
│                     ┌──────────┐ │
│                     │ Cancel   │ │
│                     └──────────┘ │
└─────────────────────────────────┘
```

3 **Type** 2.

Typing over the selected text replaces it automatically.

4 **Click the Save button.**

You've saved the revised memo with a new name. Notice that the title bar changed to show the name you just gave the revised memo. Your original document is still stored, unaltered, with its own name.

Printing a document from within an application

To print a document from within an application, the program must be open and the document must appear in an active window. Your saved memo is now ready for printing, assuming you have a printer connected to your computer and the appropriate printing software installed on your startup disk. (If you're working with an 800K startup disk, you must install the appropriate printer updates. For information about installing updates, see Chapter 2, "Using the Installer.")

Follow these steps to print your memo:

1 **Choose Page Setup from the File menu to set printing options such as page orientation and paper size.**

The Page Setup Dialog box appears. After setting your printing options, click OK.

File	
New	⌘N
Open...	⌘O
Import file...	
Save	⌘S
Save as...	
Save Copy as...	
Close	⌘W
Page Setup...	
Print...	⌘P

ImageWriter / Printer   v4.2

Paper Type: US Letter......8.5"x11"

Reduction: Full Size

Height: ☐ No Vertical Gaps
         ☐ Vertical Condense

Orientation:

Cancel
OK
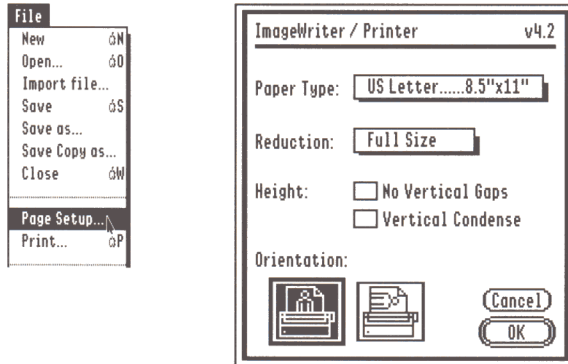
2 **Choose Print from the File menu.**

In most programs, one or more dialog boxes appear. You can click the various options to control the way your printed document will look. What the options allow, and how you use them, depends on the application you're using. Refer to the manual that came with the application.

△ **Important** In order to print you must first select the appropriate printer from the desktop Control Panel. See Chapter 7, "Using the Desktop Control Panels," starting on page 171. △

Importing files from other applications

If you like working in the Teach program, you may want to bring text from documents you have created in other programs into Teach. You can import documents from any of the following applications:

- AppleWorks® GS
- AppleWorks 3.0
- MacWrite® 5.0 (from AppleShare or if you have installed the HFS FST)

While you have Teach running, follow these steps to import files from one of the supported applications:

1 **Choose Import File from the Teach application's File menu.**

A dialog box appears, listing the import options and prompting you to locate and select a file.
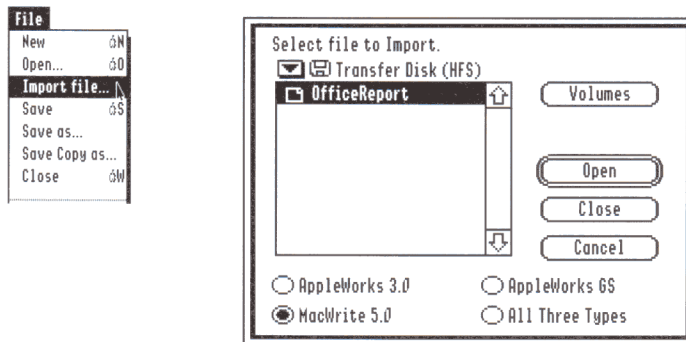
2 **Select the application that created the file you want to import, and then locate and select the file from the list.**

3 **Click Open.**

The document appears, and you can work with it in the Teach application.

Quitting Teach

When you've finished working with an application, quitting closes all windows and takes you completely out of the program. If you have forgotten to save your work, you usually see one or more dialog boxes that remind you to do so.

To quit Teach or any other application, choose Quit from the File menu. You return to the desktop, where you see both the icon for your original document and an icon for the revised memo with the name you just gave it.

Keep in mind that this chapter provides only a basic introduction on how to use applications. Remember to consult the manual that comes with any application you purchase; each one will have its own rules and conventions.

General

Media Ctrl

Net Printer

Network

Open

Help

General

Modem Port

Keyboard

Sound

12 11 1

10 2 3 4

9

3 5 6 7

8

4

10 11 12 7 13 5 14

6

17 18 19 20 21

24 25 26 27 28

7 Using the Desktop Control Panels

The desktop Control Panels let you customize various aspects of the Apple IIGS computer to suit your own needs and preferences. You can change the volume level of the computer's sound, the pitch of the computer's beep, the responsiveness of both the mouse and the keys on the keyboard, the flashing of the pointer or insertion point, and many other features. You can also use the Control Panels to set up connections to other equipment you use with your computer. The Control Panels even let you track the date and time.

This chapter contains information on these topics:

- opening the Control Panels
- making changes to the Control Panels settings
- working with individual Control Panels
- leaving the Control Panels

About the Control Panels

The desktop Control Panels feature is a new desk accessory (NDA)—that is, a "mini-application" that's available when you are using most applications. The settings for many of its options are stored in special, battery-powered RAM and some are stored on the startup disk. Unlike ordinary RAM, the battery-powered memory retains what's stored in it even after the computer's power is switched off. As a result, the changes you make to Control Panel settings are saved for future sessions.

△ **Important** If the battery is running low, the Control Panel automatically restores the original settings. If this happens, have your authorized Apple service provider replace the battery, then you can change the settings back to your preferences. △

Although this chapter details only the desktop Control Panels, there is another way to set Control Panel options: The *text Control Panel* is a classic desk accessory (CDA) that operates in the text environment. To get to the text Control Panel, hold down the Command and Ctrl (Control) keys while you press and then release the Esc (Escape) key. If you need information about the text Control Panel, refer to the owner's guide that came with your computer.

The next two sections explain how to open the desktop Control Panels and how to make changes to the settings. The remainder of the chapter explains all the options you can set in the desktop Control Panels and what the different settings mean.

Opening the desktop Control Panels

You can open the desktop Control Panels from the Finder or from any application that has an Apple menu.

Follow these steps to get to the desktop Control Panels:

1 **Start up the computer.**

2 **When the Finder desktop (or your application desktop) appears, choose Control Panels from the Apple menu.**

In a moment the Control Panels window appears.
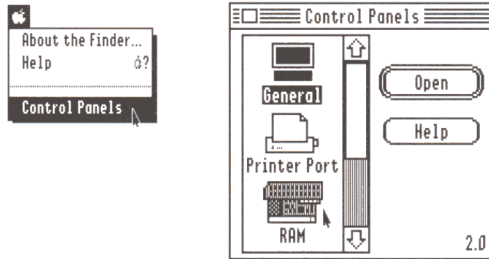
The column on the left shows the icons of the various Control Panels. The icons that appear depend on which updates you've added to your startup disk by using the Installer.

- *If you've installed the 800K update or the AppleShare, 3.5 Disk update* on a floppy disk (via the Customized Installation), most of the Control Panels described in this section won't appear. Because of space constraints, these updates install an abbreviated version of system software that doesn't include most of the Control Panel categories. You see only the AppleShare and RAM Control Panels, as well as the Control Panel for the network printer update you installed (if any).

  If you want to make changes to Control Panels that don't appear, you may be able to use the text Control Panel. For information about the text Control Panel, refer to the owner's guide that came with your computer.

- *If you've installed the AppleShare, AppleTalk ImageWriter, AppleTalk ImageWriter LQ, or LaserWriter update,* you see the corresponding category of printer options in addition to all the categories described in this section. For information about networking options, see Chapter 12, "Networking the Apple II," starting on page 271.

Making changes to the desktop Control Panels

When you want to make changes to a Control Panel, click the icon of a Control Panel you want to change, and click Open. You can also open the icon by double-clicking it, or by clicking it and then pressing Return.

You may have to scroll to find the Control Panel icon you want. You can also use the up and down arrows to search the list.

The Control Panel opens in a window that lists its options. (You can open as many Control Panels as you like, dragging the windows to other locations on the desktop to suit your convenience.)

The technique you use to change a setting depends on the option:

- Options that have only two settings—on or off—use a checkbox. An X in the checkbox indicates that the option is turned on.

  To change an option represented by a checkbox, click the box to add or remove the X.

- Options that have two or more settings use a **pop-up menu** or **radio buttons**. In pop-up menus, the current setting is displayed in a box to the right of the option name. Other settings remain out of sight until you display the menu. (You can tell that an option uses a pop-up menu if a shadow appears behind the box to the right of the option name.)

  To change an option represented by a pop-up menu, position the pointer on the current setting (or on the option name), press the mouse button to display the pop-up menu, drag through the menu until the setting you want is highlighted, and then release the mouse button. The pop-up menu disappears, and the new setting appears in the box. If you do not want to make a choice, drag outside the menu and release the mouse button. The default setting for any pop-up menu is shown in italics.

  Radio buttons are small circles to the left of option settings. You can tell that a setting is currently selected if it has a solid black circle inside the button. To select a setting that uses radio buttons, click inside the button next to the setting you prefer.

- Options that have a continuous range of settings (such as the sound volume level) use a scroll bar. The position of the proportional scroll box within the scroll bar indicates the current setting relative to the entire range.

  To change an option represented by a scroll bar, drag the scroll box to a new location. (Clicking the scroll arrows or the gray areas above and below or to either side of the scroll box will also change the setting.)

- Some options use windows to list all possible selections—highlighting the current selection. An example is the DC (for Direct-Connect) Printer Control Panel. The options listed in the window depend on which printer updates you've installed on the startup disk.

To change a selection in a window, click the new selection.

- Time options require you to select what you want to reset (such as the year, the month, or the date), and then click arrows—up or down—until you reach the appropriate setting.

△ **Important** Some of the changes you make in the control panel do not take effect until you restart your computer. △

Working with individual Control Panels

This section describes the desktop Control Panels. Some of them, clearly noted in the section headings, are available only from the desktop—not from the text Control Panel. Others are available from the text Control Panel, but with different names. If you see no qualifying note in the heading, you can assume that a Control Panel is available from both the desktop and the text Control Panel.

Keep in mind that when an option is described as "turned off," the checkbox for the option is not selected. (That is, the checkbox is not marked with an X.)

DC Printer

◆ **Note** DC Printer is found only in the desktop Control Panels. ◆

If you print with a local printer (that is, a printer connected directly to your computer), you use the *DC Printer* Control Panel (for Direct-Connect) to specify the printer's type and the port to which the printer is connected. In addition to selecting a port in the *Select a Port* window, you must make sure that the port is activated in the *Slots* Control Panel (see

page 191), and that the port is configured properly in the *Printer Port* or *Modem Port* Control Panel.
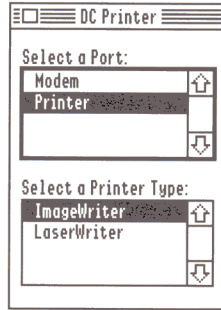
The *Select a Printer Type* window lists all types of printers for which you installed a local printer update. (For more information, see "Adding capabilities to a System 6 startup disk," on page 22.)

General

◆ **Note** The General Control Panel is found only in the desktop Control Panels. Many of these functions can also be set in the text Control Panel under Keyboard, Mouse, and System Speed. ◆

This Control Panel includes a number of options you can customize.
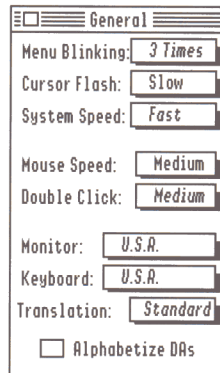
Menu Blinking

This option controls the number of times that a menu command blinks when you choose it. The blinking indicates that the command has been selected; you may prefer to have more blinks to be certain you've made the choice you intended or fewer blinks so that the computer can start the operation more quickly.

Cursor Flash

This option lets you adjust the interval between flashes of the cursor or insertion point. If the interval is so long that the insertion point isn't noticeable enough, change to a faster setting. If the interval is so short that the insertion point is distracting, change to a slower setting.

System Speed

You use the System Speed option to set the computer's speed. Fast refers to a maximum speed of 2.8 megahertz (MHz), the top speed possible on the Apple IIGS without the addition of an accelerator card accessory. Normal refers to a maximum speed of 1 MHz, the top speed of earlier models of the Apple II family.

Change the setting to Normal only when the fast speed throws off an application's timing or keeps it from running properly. If you change from Normal to Fast after starting up an application, you may have to restart the computer for the Fast setting to take effect.

Mouse Speed

When you move the mouse across your desk, the pointer moves a corresponding distance across the screen. Increasing the Mouse Speed setting makes the pointer move farther for the same movement of the mouse—giving the impression that the pointer moves faster. This feature is especially useful if you're short on desk space.

Double Click

If your attempts to double-click don't accomplish what they're supposed to, you should change to a slower or faster setting.

Monitor

When you use text-based applications, the Monitor option lets you choose from several character sets that allow the monitor to display special characters required in languages other than English.

Keyboard

The way keys are laid out on a typewriter's keyboard is not the same in every country—and for good reason. Different languages use letters with varying frequency; for example, French uses the letter *q* much more often than English does. So French keyboards have the Q key in a more accessible location than the upper-left corner.

◆ **By the way**   In addition to the Keyboard option in the General Control Panel, there are a number of keyboard features you can customize in the Keyboard Control Panel. ◆

Even in the United States, keyboard layout isn't universal. Most people learn to type with the *Qwerty keyboard*, named after the first six keys on the top row of letters (properly called the **Sholes keyboard**).

You may have learned with the **Dvorak keyboard**—a keyboard arranged to increase typing speed and efficiency by locating the most frequently used keys in the home row. The Dvorak keyboard is also called the *American Simplified Keyboard*. (See Figure 7-1.)

With the Keyboard option you can set your Apple IIGS to recognize any of a number of standard keyboard layouts, including the Dvorak keyboard. So if you're used to typing with

Figure 7-1   The Dvorak keyboard layout

something other than the Qwerty keyboard, you won't have to go back to the hunt-and-peck stage to use your Apple IIGS.

Translation

When the Translation option is set to Standard, you can use the Option key in conjunction with other keys to generate international language characters. This feature has an effect in graphics-based applications only.

In most cases, holding down the Option key while you press another key generates a special character automatically. A few commonly used **diacritical** marks require a two-step process:

1 **Hold down the Option key while you press the E key to generate the "´" diacritical mark.**

The diacritical marks available on the Apple IIGS are shown over the corresponding keyboard character on the keyboard. The following characters are available: é, ü, î, ñ, and on your keyboard next to the spacebar, is ` .

2 **Type the letter to which you want to add the diacritical mark.**

The letter with its mark appears.

Alphabetize DAs

When this option is selected, your desk accessories appear in alphabetical order.

Keyboard

The Keyboard Control Panel lets you customize the way your keyboard responds when you press the keys. You can adjust a variety of keyboard features.

Speed

When you hold down a key instead of pressing and releasing it, the key repeats, *like thisssssssssssss.* You use the Speed option to change the speed at which keys repeat.

Keyboard

```
┌─────────────────────────────┐
│ ▤□▥▥ Keyboard ▥▥▥           │
│  Speed:      15 Chars/Sec    │
│  Delay:       .75 Sec        │
│  Dual Speed:  Normal         │
│                              │
│  ☐ Keyboard Buffering        │
│  ☐ Shift Caps/Lowercase      │
│  ☐ Fast Space/Delete         │
│  Keyboard Mouse:             │
│  Initial Delay:  0.75 Sec    │
│  Acceleration:   6.0 Sec     │
│  Speed:   180 Pixels/Sec     │
└─────────────────────────────┘
```
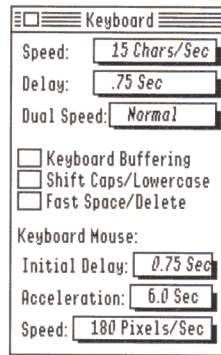
Delay

You use the Delay option to change the amount of time it takes from the time you first hold down a key until the key starts repeating. You can also turn off the repeat feature.

Dual Speed

When you hold down any arrow key, the insertion point moves continuously in the direction of the arrow. Using the Dual Speed option, you can double the speed at which the insertion point moves.

First, set Dual Speed to Fast. Then, when you want to use the faster speed, hold down the Control key while you press the arrow key you want. (When Dual Speed is set to Fast, the cursor's speed is normal except when you hold down the Control key.)

Keyboard Buffering

The **keyboard buffer** keeps track of keystrokes when the computer is busy and can't deal with them immediately. The buffer can keep track of up to 19 keystrokes. (After that, keystrokes are ignored.) This feature lets you type a series of instructions to the computer while the computer is doing something else—performing calculations, for example.

△ **Important** Some applications designed for use with both the Apple IIe and the Apple IIGS won't work when Keyboard Buffer is turned on. If you have trouble using an Apple IIe–compatible application, try turning this option off. △

Shift Caps/Lowercase

Ordinarily, when you press Caps Lock, every character you type is capitalized; to get lowercase characters, you must release Caps Lock.

If you're typing a document that's mostly uppercase but has an occasional lowercase character, it can be inconvenient to have to keep releasing the Caps Lock key. The Shift Caps/Lowercase option makes typing such a document easier.

When this option is turned on, press Caps Lock and begin typing your document. Whenever you need a lowercase letter, press one of the Shift keys as you type the letter.

Fast Space/Delete

When you hold down the Space bar, the space character repeats like any other character, and you get a row of spaces. Likewise, when you hold down the Delete key, successive characters are deleted until you release the key.

When Fast Space/Delete is turned on, you can double the speed of spacing and deleting. For the faster speed, hold down the Control key while you hold down Space or Delete.

Keyboard Mouse

Keyboard Mouse options let you customize the way the pointer behaves when you're using the **Mouse Keys** feature (not the mouse attached to your keyboard). (For information on using Mouse Keys, see page 247.) If the Mouse Keys feature is not activated, these options have no effect.

- *Initial Delay* lets you change the amount of time it takes from the time you first hold down a key until the key starts repeating. This setting affects only keys used as Mouse Keys.

- *Acceleration* lets you change the amount of time it takes for the pointer to reach its maximum speed when using Mouse Keys.

- *Speed* lets you change the maximum speed at which the pointer will move when using Mouse Keys.

Media Control

◆ **Note** Media Control is found only in the desktop Control Panels. ◆

If you used the Installer to add one of the media control updates to your startup disk, the Media Control Panel allows you to set up connections to multimedia equipment: the AppleCD SC CD-ROM, and the Pioneer 2000 and 4200 families of laserdisc players. You select a channel, the type of media device to which the channel is connected, and the port through which the communication occurs. For more information about the Media Control Panel, see Chapter 11, "Controlling Multimedia Devices," starting on page 171.

Modem Port and Printer Port

Most of the ports on the back panel of the Apple IIGS are set up to work with a particular type of device, at one speed and in one format. But the modem port and the printer port let you connect a wide variety of devices, each with its own special requirements. You can change the settings for these ports with the Modem Port and Printer Port Control Panels. The options in each category are the same; this shows the Modem Port Control Panel.

◆ **Network users** If your Apple IIGS is part of a network, you see fewer options for the port through which you made the network connection. Whenever slot 1 or slot 2 is set to AppleTalk, only four options appear for the corresponding port. For example, if slot 1 is set to AppleTalk instead of Printer, you see only four Printer Port options. ◆

The modem port is preset to work with the Apple Personal Modem. The printer port is preset to work with the ImageWriter and LaserWriter printers, as well as with the many other serial printers that receive information in the same way.

If you have a modem or printer from a manufacturer other than Apple, you may need to modify the settings for the port to match the requirements of your modem or printer. This is known as "configuring the port." Try using your modem or printer before changing any of the settings. If it works, you've saved yourself some time. If it doesn't, the problems you notice (lost characters and so on) may help you figure out which settings need to be adjusted. (See your printer or modem manual for troubleshooting solutions.)

◆ **By the way** If you do change your settings, you can always restore them to the default settings by clicking the Standard Settings button. ◆

Table 7–1 Standard Setting

Function	Modem	Printer
Parity	None	None
Baud	1200	9600
Line Length	Unlimited	Unlimited
Data/Stop	8-1	8-1
Delete LF after CR*	Off	Off
Add LF after CR	Off	On
Buffering	Off	Off
Echo	Off	Off
DCD Handshake	On	On
DSR/DTR Handshake	On	On
XON/XOFF Handshake	Off	Off

*LF is an abbreviation for line feed; CR is an abbreviation for carriage return.

Some applications automatically regulate the transfer of information to a peripheral device, overriding the current settings for a port. If an application asks you to supply details about how the printer or remote computer wants to receive information (using terms such as baud, data bits, and stop bits), it will use the settings you give it, overriding the Control Panel settings for the port.

Some applications present a list of printer types from which they ask you to choose. If that's the case, you know that the application uses the settings you give it, overriding the Control Panel settings for the port.

◆ **Tip** If your printer isn't on the application's list, try selecting each of the printers on the list and then printing. Your printer may have the same configuration as one of those on the list. If your document comes out the way you expected it to, just select that printer each time you want to print, and you won't need to configure the printer port. ◆

If an application doesn't ask for details about the settings needed to communicate with the remote computer—or if it doesn't present you with a list of printer types to choose from—the application will use the modem port or printer port Control Panel settings.

The following sections explain what the various specifications mean and how to decide what settings to choose. If you don't understand some of the settings, just follow the recommendations given at the end of each section.

Parity

To make sure that your data isn't misinterpreted or garbled during transmission, some devices expect to receive one extra bit after every character. That bit is called the parity bit. The word parity derives from the Latin word for equal, and parity checking is a way of making sure that what's sent matches what's received. If it doesn't match, the receiving computer asks the sender to retransmit or announces an error.

If the transmitting and receiving computers agree on odd parity as a way of checking for errors, your computer must append an extra bit (either 0 or 1) so that the character has an odd number of 1's. For example, in the American Standard Code for Information Interchange (**ASCII**), the 7-bit code for the letter A is 1000001, which has an even number of 1's. The computer appends an extra 1 to make the total of 1's an odd number. The

receiving computer checks the total number of 1's in each character. If that total is odd, chances are the message is OK; if it's even, there was an error in transmission.

If the computers agree on even parity, the computer appends an extra bit (again, 0 or 1) to make the total number of 1's an even number.

You can select one of three parity settings: Odd, Even, or None. Most devices don't use parity checking, so if you're unsure about what to select, choose None.

Baud

The rate of data transmission is measured in a unit called **baud**, which is roughly equal to bits per second. The Apple IIGS can send and receive information at speeds ranging from 50 baud to 19,200 baud. It's important to make sure the computer and the printer or modem agree in advance on the rate at which the bits will be traveling.

You usually find baud listed on a specifications page in the manual that came with your printer or modem. When you know what baud the device uses, select the same rate for the computer by using the Baud option.

Line Length

The Line Length option determines the number of characters your printer will print per line before generating a **return character** (returning to the left margin to start a new line).

Many applications let you set the line length within the application. If that's the case— or if you find the computer adding return characters where they don't belong—choose Unlimited and the computer won't try to control line length.

If, on the other hand, your printer ignores the right margin and prints right off the page, you can use the Line Length option to insert a return character after every 40, 72, 80, or 132 characters.

If you're connecting a modem, leave the line length set to Unlimited.

Data/Stop

The computer sends and receives each character of data through the modem port or printer port as a string of bits. There are several systems for representing a character; some take five bits, some six, seven, or eight. These bits convey actual information and are known as **data bits**.

There are also different ways of indicating that the string of bits representing a character has ended; some systems require one bit, some two. These bits mark the completion of a character, so they are known as **stop bits.**

The manual that came with your modem indicates how many bits the modem uses to represent a character (it's often 8) and how many bits it uses to indicate that it has stopped sending one character and is about to send the next (it can be 1 or 2).

In the text Modem Port Control Panel, this option is called Data/Stop Bits.

Delete LF after CR

Some printers and applications automatically generate a **line feed** (LF)—that is, they go down to the next line—after each return character. Others don't.

If you try printing a document and everything comes out unintentionally double-spaced, you may need to cancel the extra line feed. Start with the easiest solution, which is to turn off the application's line feed setting. If that doesn't work, turn on the Delete LF after CR option in the Modem Port Control Panel. If neither of those suggestions solves the problem, turn off the automatic line feed switch on the printer. (For instructions on turning off the line feed switch on the printer, consult the manual that came with your printer or ask your service provider for assistance.)

If you're connecting a modem, this option should be turned off.

Add LF after CR

If you try printing a document and all the lines print on top of each other, you may need to add a line feed after each **carriage return.**

Start with the easiest solution, which is to turn on the application's line feed setting. If that doesn't work, turn on the Add LF after CR option in the Control Panel. If neither of those suggestions solves the problem, turn on the automatic line feed switch on the printer. (For instructions on turning on the line feed switch on the printer, consult the manual that came with your printer or ask your authorized Apple service provider for assistance.)

If you're connecting a modem, this option should be turned off.

Echo

When you send a message through your modem, you can have the modem display the message on your own screen as well as sending it to the remote computer. This is called **echoing.**

In most cases, you won't need to turn on the Echo option because the computer you're sending the message to will send a copy of the message back to your computer as a way of confirming that it received your message. If you turn on the Echo option and the other computer sends a copy, you see double—two characters for every one you send.

How do you know whether to have your modem echo the message you send? If the remote computer uses a full-duplex modem, it will send a copy of the message back to your computer. Most information services use full-duplex modems. If you're communicating with a full-duplex modem, turn off the Echo option.

If the remote computer uses a half-duplex modem, on the other hand, it won't send a copy of the message as it receives it. If you're communicating with a half-duplex modem and you want your computer to display your message on the screen as it's sent, turn on the Echo option.

If you don't know what kind of modem is on the other end of the phone line, turn on the Echo option. Then, if you find that every character in your outgoing message shows up twice, turn the option off again.

Buffering

The buffer is a special area in RAM that holds information until the computer or peripheral device is ready to deal with it.

If you lose information when you use your modem, turn on the Buffering option. If you don't lose information, leave this setting off unless the manual that came with your modem tells you to turn it on.

Handshake signals

When your computer begins to communicate with another computer via a modem, it sends a signal saying, in effect, "I'm about to send you some information." And the other computer responds with a signal saying, in effect, "I'm ready when you are" or "Give me a second to catch up." These exchanges are called **handshake signals**.

DCD, DSR/DTR, and XON/XOFF are all handshake signals. DCD stands for Data Carrier Detect, DSR for Data Set Ready, and DTR for Data Terminal Ready. XON and XOFF are ASCII characters. XOFF tells the transmitting device to halt transmission of characters. XON tells the transmitting device to resume transmission of characters.

Don't change these settings unless the manual that came with your modem specifically tells you to set them in a particular way. Clicking the Standard Settings button will set all of the modem selections to the default setting.

Monitor

The Monitor Control Panel lets you customize the way information is presented on the screen. Most of the options are geared primarily toward text-based applications. (These settings can also be made in the text Control Panel under Display.)

```
               ┌─────────────────────────┐
┌─────────┐    │▤□▦▦ Monitor ▦▦▦│
│▓▓▓▓▓▓▓▓▓│    │ Type:    │  Color   │ │
│▓▓▓▓▓▓▓▓▓│    │ Columns: │  80      │ │
└─────────┘    │ Text:    │  White   │ │
  Monitor      │ Back:    │Medium Blue││
               │ Border:  │Medium Blue││
               └─────────────────────────┘
```
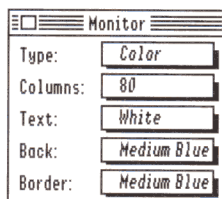
Type

If you're using a color monitor, set this option to Color. If you're using a monochrome monitor, set this option to Monochrome. This setting only effects composite video but can also impact the quality of the image.

Columns

When you're using applications that display information in text mode, the Apple IIGS can display either 40 columns or 80 columns per line of text. If you choose 40 columns, the characters are twice as wide as the characters you get when you choose 80 columns. The characters are bigger and therefore easier to read. In the 80-column mode, more of the document you're working with appears on the screen, and the document more closely resembles a typewritten document.

If you use your Apple IIGS with word-processing or spreadsheet application programs, it's usually a good idea to set the Columns option to 80. In fact, some applications require an 80-column display.

Some applications override the Control Panel setting. For example, many games and educational applications are designed for a 40-column display.

Text/Back/Border

If you have a color display, you can choose from 16 screen colors for your text, background, and border. If you have a monochrome monitor, you can choose among black, white, and 14 shades of gray.

The text and background color settings affect only text-based applications. The border color setting affects all applications.

One category of color monitors, called **composite color monitors,** switches to dark-and-light mode to display text. (These monitors don't have high enough resolution to display text clearly in color.)

When you're using a composite color monitor with a text-based application, the text and background colors you selected show up as shades of gray instead of colors. Only the border is displayed in color.

◆ **By the way** Some graphics-based applications display text in a portion of the graphics screen—usually the bottom four lines of the screen. When you're using a composite color monitor with such an application, you *will* see the text and background colors that you selected. ◆

Printer Port

The Printer Port options are the same as the Modem Port options. See "Modem Port and Printer Port," on page 182.

Printer Port

RAM

The RAM Control Panel lets you set up a **RAM disk** and a **RAM cache**—both of which can help make the computer work more efficiently.
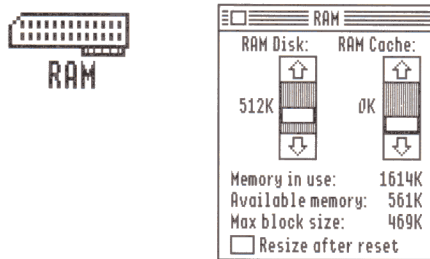
RAM Disk

You can designate a portion of the memory in your Apple IIGS to be used as a RAM disk—that is, as **random-access memory** that the computer treats as a disk. For more information on RAM disks, see page 110.

△ **Important** A new RAM Disk setting doesn't take effect until you shut down and switch off the computer, and then start up again. As a result, decreasing the maximum RAM disk size won't erase what's already stored on the RAM disk during the current work session, but once you shut down the computer the contents of the RAM disk will be erased. △

If your computer has ROM 3, the RAM Control Panel provides an option called "Resize after reset." When selected, this option allows you to *restart* your computer after making changes to the RAM Disk setting—instead of *shutting down* and *switching off* the computer. Nevertheless, it is good practice to shut down and switch off power to your computer after changing the RAM Control Panel settings.

RAM Cache

Found only in the desktop Control Panel, the RAM Cache option lets you set aside (or *cache*) part of the computer's RAM for use by the operating system. The operating system uses the memory in the cache to store information about the location of files on your disks (directory information). By storing this information in RAM the first time a file is opened

during a work session, the operating system can find the information much more quickly the next time.

SetStart

Found only in the desktop Control Panel, the SetStart Control Panel lets you choose an application to open automatically at startup. You can choose the Finder option, the Current Application option (that is, the application you were using when you opened the SetStart Control Panel), or the Select Application option (to see a list of available applications). The next time you start up the computer, the application you specify in the SetStart Control Panel opens automatically.

Slots

The Slots Control Panel options let you activate the slots and ports in your computer. And you can use the Startup option to change your startup disk drive.
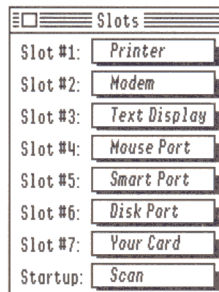
Activating slots and ports

Applications designed for Apple II computers that don't have ports expect to find peripheral devices connected to slots inside the computer. In order for such software to work with the Apple IIGS, each port on the Apple IIGS is designed to emulate, or act like, a slot containing a card.

Because each port emulates a specific slot, you can't have both the port and the corresponding slot active at the same time. You activate one or the other by setting the Slots options accordingly. When a slot is activated, the words *Your Card* replace the words describing the port.

△ **Important** Changes to the Slots options won't take effect until you restart the computer. △

It's a good idea to make a note when you change a slot setting. That way you won't have to return to the Slots Control Panel to see whether the slot or the port is activated. Fill in the chart on the inside back cover of your manual with the slot arrangements you make.

The following list summarizes the appropriate settings for your slots. For each slot, only one setting is possible at a time. If none of the corresponding conditions applies for a given slot, it doesn't matter what setting you use for the slot.

- Slot 1 (corresponds to printer port)
  - If you have a printer (or any serial device other than a modem) connected to the printer port, set to Printer.
  - If you have a modem connected to the printer port, set to Modem.
  - If your Apple IIGS has ROM 3 and is part of a network, and if you made the AppleTalk network system connection through the printer port, set to AppleTalk.
  - If you have a device connected to an interface card in slot 1, set to Your Card.
- Slot 2 (corresponds to modem port)
  - If you have a modem (or any serial device other than a printer) connected to the modem port, set to Modem.
  - If you have a printer connected to the modem port, set to Printer.

□ If your Apple IIGS has ROM 3 and is part of a network, and if you've made the AppleTalk network system connection through the modem port, set to AppleTalk.

□ If you have a device connected to an interface card in slot 2, set to Your Card.

- Slot 3 (corresponds to built-in text display)

Unless the manual that came with a peripheral device specifically recommends installing its interface card in slot 3, leave slot 3 empty and leave the slot set to Text Display (or, in the text Slots Control Panel, to Built-in Text Display).

On earlier models of the Apple II family, slot 3 was used for 80-column cards—cards that made it possible to display text in the 80-column mode instead of the standard mode at that time, 40-column. By contrast, the Apple IIGS has built-in 80-column capability.

To allow earlier Apple II software to work with the Apple IIGS, the built-in 80-column capability was designed to emulate a card in slot 3. Using slot 3 for an interface card interferes with the computer's simulation of an 80-column card in that slot, and may interfere with text display as a result.

- Slot 4 (corresponds to keyboard/mouse port)

□ If you have a mouse or other device connected to the keyboard/mouse port (either directly or via the keyboard), set to Mouse Port.

□ If you have a device connected to an interface card in slot 4, set to Your Card.

△ **Important** Even if slot 4 is set to Your Card, the computer will recognize a keyboard connected directly to the keyboard/mouse port. Some applications won't recognize any devices other than a keyboard connected directly to the keyboard/mouse port. △

- Slot 5 (corresponds to disk drive port for 3.5-inch drives)

□ If you have one or more 3.5-inch disk drives connected to the disk drive port, set to Smart Port.

□ If you have a device connected to an interface card in slot 5, set to Your Card.

◆ **Note** If you've connected a UniDisk 3.5-inch disk drive to a card in slot 5, you must set System Speed to Normal in the General options. (This does not apply to the Apple II 3.5 Disk Controller Card.) ◆

- Slot 6 (corresponds to disk drive port for 5.25-inch drives)
  - If you have one or more 5.25-inch disk drives connected to the disk drive port or if you have your 5.25 drive daisy-chained to a 3.5 drive, set to Disk Port.
  - If you have a device connected to an interface card in slot 6, set to Your Card.
- Slot 7 (no corresponding port)
  - If your Apple IIGS is part of a network and you made the AppleTalk network system connection through the printer or modem port, set to AppleTalk. (This setting is optional—you have access to AppleTalk even if slot 7 is set to Your Card—but some network-aware applications may expect slot 7 to be set to AppleTalk and will have compatibility problems if that isn't the case.)
  - If you have a device connected to an interface card in slot 7, set to Your Card.

Changing the startup drive

When you switch on the Apple IIGS (and assuming your startup slot is set to the default setting *Scan*), the first thing the computer does is check its slots for a disk drive controller card—an interface card that controls one or two disk drives. It looks first in the highest-numbered slot. If it doesn't find a disk drive card there, it looks in the next-highest-numbered slot, and so on until it finds one. When it finds a disk drive card, it checks the disk drives connected to that card for a startup disk. This method of looking for a startup device is called scanning.

This process occurs even if your disk drives are connected to ports. (From the computer's point of view, ports look just like slots with cards in them.) A 5.25-inch drive connected to the disk drive port looks like a disk drive connected to a card in slot 6. A 3.5-inch drive connected to the disk drive port looks like a disk drive connected to a card in slot 5.

For example, if you have both types of drives connected to the disk drive port, the computer looks for a startup disk in the 5.25-inch drives before it looks for one in the 3.5-inch drives. That's why you can remove the disks from your 5.25-inch drives and open the disk drive doors if you want the computer to start up from a disk in a 3.5-inch drive.

There may be other times when you want to bypass a disk drive connected to a higher-numbered slot and start up from a disk drive connected to a lower-numbered slot. If a hard disk drive is connected to the higher-numbered slot, for example, you can't bypass it in the same ways you can bypass 5.25-inch disks.

However, you can use the Startup option to change your startup drive. Simply change the Startup setting from Scan (the standard setting) to the number of the slot corresponding to the device you want to start up from. For example, if you are using hard and floppy drives, with your hard drive in slot 6 or 7, setting startup to slot 5 will cause the computer to start up from the floppy drive rather than the hard drive.

In addition to Scan and the slot options, you can set Startup to RAM Disk, ROM Disk, or AppleTalk once the option is installed. Starting up from a RAM disk means restarting the computer with an application or system disk image that you've copied onto the RAM disk. Given the amount of memory the GS/OS operating system requires, however, starting up from a RAM disk usually isn't practical.

Starting up from a ROM disk means starting up from an application permanently stored on a memory expansion card. There are no applications stored on the Apple IIGS Memory Expansion Card, so unless you've purchased a memory expansion card from another manufacturer, you shouldn't set Startup to ROM Disk.

Starting up from AppleTalk means starting up from a file server volume. For more information, see "Starting up over the network without a local disk," on page 284, and "Starting up over the network with a local disk," on page 288.

It's a good idea to make a note of your startup slot (on the inside back cover of this guide). That way you won't have to return to the Slots Control Panel to see which slot is your startup slot.

Sound

Depending on the applications and peripheral devices you have, you can use your computer to play sounds and even simulate human speech. The computer also uses sound whenever it alerts you with a beep.
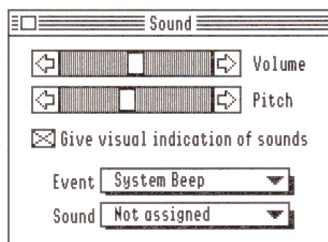
You use the Sound options to adjust the volume level of sounds produced by the computer and to change the pitch of the computer's beep. Drag the scroll box to adjust the settings. For each change, you hear an example beep. Keep adjusting until you're satisfied with the volume and pitch.

Giving Visual Indication of Sounds

If you have difficulties hearing the alert beeps made by the system, you can have the border around the desktop flash when an alert is sounded.

Assigning sounds and events

Using the Event and Sound pop-up menus, you can assign unique sounds to specific computer system events.

Time

◆ **Note** These settings are found under *Clock* in the text Control Panel. ◆

You use the Time options to set the computer's built-in calendar and clock. You can also change the format in which the date and time are displayed.
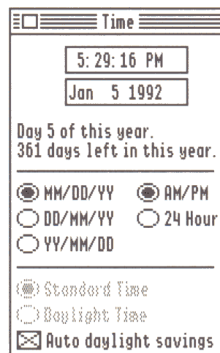
Use the radio buttons to select the way you want the date to appear—month/day/year, day/month/year, or year/month/day. Radio buttons are also used to select how time is

displayed—12 hour (A.M./P.M.) or 24 hour. Your system will automatically make adjustments for Daylight Savings Time—simply check the box next to the Auto daylight savings option. Otherwise, you can select Standard Time or Daylight Time by clicking the appropriate radio button.

To adjust the setting for time and date, click on the hour, minute, or second (or month, day, or year) and click the up or down arrows until the desired setting is displayed.

Once you've set the date and time correctly, you won't need to change these settings very often. The clock is even programmed to account for the extra day in leap years.

Time settings in the desktop Time Control Panel take effect immediately. If you notice that the clock isn't keeping accurate time, ask your authorized Apple service provider to install a new battery.

Installed networking options

If you installed any networking updates, the Control Panels will display icons for the corresponding options—AppleShare, Namer, Network Printer, and so on. For information on selecting network devices and services in the desktop Control Panels, refer to Chapter 12, "Networking the Apple IIGS," on page 271.

Leaving the Control Panels

When you've changed all the settings you want, you're ready to leave the Control Panels. Close all open Control Panel windows. If you want to, you can leave individual Control Panels open, having closed others (including the Control Panels window itself).
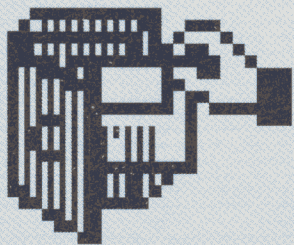
8 Using the Archiver

The Apple IIGS Archiver is a flexible tool that you can use to back up and restore the information you store in files. Archiver allows you to back up an entire volume or to back up selected files from a volume, and to later restore those volumes or files.

If you don't have a hard disk, you may want to skip this chapter. Backing up 3.5-inch or 5.25-inch disks to other disks of the same size is most easily done via the Finder. For information about making copies of files and disks, see "Copying a disk," on page 97 in Chapter 4, and "Moving and copying files and folders," on page 122 in Chapter 5.

This chapter contains information on these topics:

- opening the Archiver program

- setting Archiver preferences

- backing up entire volumes

- backing up file-by-file

- restoring files from Archiver file-by-file backups

- restoring volumes from entire volume Archiver backups

- marking files automatically

Learning about backup and restore operations

This chapter uses the term *volume* to refer to a disk or server where files can be stored, the terms *drive* and *device* to refer to the physical device that receives the backup, and *disk* and *tape* to refer to the physical media that you insert in the drive or device.

The Apple IIGS Archiver program makes it easy to transport a large amount of information between different systems. It lets you back up information from any GS/OS-compatible source volume (including CD-ROM discs and AppleShare volumes). You can back up to a disk drive, a tape drive, or a GS/OS file on a device connected to an Apple IIGS computer or on an AppleShare volume. Archiver can automatically accommodate naming differences required by different file systems. (For more information about file systems and translators, see page 109.)

When you back up to drives that use removable media, Archiver keeps track of the various pieces—the **backup set**. Later, when you insert media for restoring, Archiver recognizes the proper order of the backup set; it prompts you for the proper piece of the backup set at the proper time, making it impossible for you to disturb the restoration by inserting the wrong piece of media at the wrong time.

When you back up to disks, Archiver automatically erases or formats the destination media, adding to the reliability of the backup procedure. And when you back up to disks in an Apple 3.5 Drive, special Archiver backup routines provide extraordinary speed.

If Archiver encounters a piece of unusable destination media, it allows you to try another disk or tape without restarting the entire backup operation. If Archiver encounters a write error while backing up to a file, the backup stops.

In the case of file-by-file backup, if Archiver encounters a read error during the actual backup process, it reports the error, and gives you the option to continue or discontinue the backup procedure. Archiver also gives you the option of an uninterrupted backup, which records read errors but continues the procedure. Any errors that occur are reported in the error summary window after the backup is completed.

Entire volume backup and restore

Volume backup is useful only when you plan to restore to the same hard disk or to volumes of the same size (such as floppy disks). You won't have room to restore your volume to a smaller disk, and—because the process over-writes an entire volume—restoring to a larger disk wastes space that becomes unavailable.

If you select a ProDOS or HFS volume for backup, Archiver can perform a "smart" backup—saving you time and disk space by backing up only those blocks that contain data. When you select any other local volume—such as DOS 3.3, Pascal, or High Sierra—Archiver backs up all blocks of the volume. (To back up AppleShare files, you must use the file-by-file method.)

You can restore your entire volume backups to any volume that is large enough to contain the volume you want to restore, provided it is not the startup volume and contains no open files.

When you perform an entire volume backup procedure, Archiver provides the option to compress the backup. If your primary concern is speed, you can disable the compression option.

File-by-file backup and restore

File-by-file backup gives you the flexibility to back up as few or as many files as you like. After you have made your first file-by-file backup, you can then back up files on an "as needed" basis; Archiver will automatically identify files that have been modified since your last backup. That way, you don't have to take the time to back up all your files. When you use the file-by-file method, Archiver doesn't require that you restore all the files you back up; you can select the files you want to restore. You can also restore files to any other volume (as long as it has adequate space) without over-writing the contents of that volume.

You can have Archiver automatically select your files for backup or restore—from a set of criteria that you define, based on any combination of *file type, name of file,* or *modification date.*

An Archiver backup keeps your files organized as well as secure. As you back up files from a volume, Archiver maintains the folder structure of the original volume.

Opening the Archiver Program

This discussion assumes your Archiver program is located on the *SystemTools2* disk.

1 **Insert the *SystemTools2* disk in a disk drive.**

2 **Open the *SystemTools2* disk icon.**

3 **Copy the Archiver program to your hard disk.**

For instructions on copying files and folders, see Chapter 5, "Working With Files and Folders," starting on page 117.

4 **Eject the *SystemTools2* disk from the disk drive.**

5 **Open the Archiver icon on your hard disk.**

When you see the Welcome to Archiver screen, you're ready to begin working with Archiver.

```
Archiver
```

```
Welcome to Archiver!

○ Back up entire volume
◉ Back up files
○ Restore backup

        OK
```

Setting Archiver Preferences

Archiver preferences are set to accommodate most user's needs. If—after you use the Archiver program—you find that you have special requirements, Archiver allows you to set preferences for the way you backup and restore.

Follow these steps to set Archiver preference options:

1 **Choose Preferences from the Special menu.**

The Archiver Preferences screen appears, with preset options that are designed to accommodate most users.
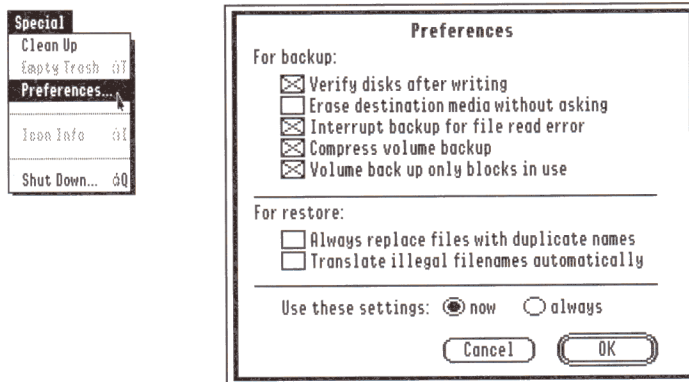
Note that the Preferences menu command is available from any of the main backup or restore screens, as well as from the Welcome to the Archiver screen.

2 **Set your backup preferences.**

The backup options are described here with explanations of their appropriate uses. An X in the checkbox indicates that the option is turned on.

- *Verify disks after writing:* Turning this option off is not recommended. Do so only if you are backing up a large amount of data to disks in an Apple 3.5 Drive, and you don't want Archiver to take the time after backup to verify that the disks were written and can be read. All other disks or tapes are automatically verified.

- *Erase destination media without asking:* Turn this option on if you don't want Archiver to prompt you for confirmation that each destination volume can be erased and formatted for Archiver backup use.

- *Interrupt backup for file read error:* Turn this option off if you want file-by-file backup to proceed uninterrupted even if read errors occur. Such errors are then summarized in an error window after backup is complete. Reading and writing errors always cause

an entire volume backup to quit, so you will have to use file-by file backup if the Archiver encounters errors during an entire volume backup.

- *Compress volume backup*: Compression of entire volume backup conserves space on your destination disks or tapes. Compression takes extra time, so you may want to turn the option off if your primary concern is backup speed.

- *Volume backup only blocks in use*: Turning this option off is not recommended. Do so only if you want to back up all the blocks of a ProDOS or HFS volume, regardless of whether they are marked as in use in the directory. Note that this option does not apply to DOS 3.3, Pascal, or High Sierra volumes; all blocks from volumes of these file systems are always written. (You can back up AppleShare files only by using the file-by-file method.)

3 Set your restore preferences.

There are two restore preferences; they affect file replacement and translation.

- *Always replace files with duplicate names*: Turn this option on if you don't want Archiver to ask you to confirm replacement of files of the same name on the destination volume.

- *Translate illegal filenames automatically*: Turn this option on when you want Archiver to translate filenames from two different file systems. When the option is off, you are prompted to provide names for the backup files and folders that require translation. (If you're working with only one file system, this option is not relevant.)

4 Set your preference for the Archiver settings.

If you want the option settings to define only the current backup or restore operation, click Now. The settings will not be saved when you leave Archiver. You need to reset your Preferences the next time you open the Archiver application.

If you want the options settings to be stored for all subsequent uses, click Always. Note that these settings will only be saved by the copy of Archiver currently in use, and cannot be used if you run Archiver from a write-protected volume.

5 When you've set all your preferences, click OK.

You can now turn to the appropriate section in this chapter which describes the action you'll be performing.

Backing up an entire volume

Entire volume backups must be restored to a volume at least as large as the backup volume. Restoring to a volume that is larger will permit you to use the data, but unused space will be unavailable. To prevent this, use standard-size volumes, such as floppy disks or a hard disk of the same size as the volume you backed up. However, even hard disks of the same size have various block configurations; it's best to use entire volume backup only for backups of the same hard disk to which you intend to restore.

△ **Important** Do not use the volume backup feature to back up a hard disk before partitioning that volume. If you plan to partition your hard disk or restore to another hard disk, use file-by-file backup and select all files rather than using the volume backup. △

◆ **Note** Entire volume backup can be performed only on a local volume. That is, it can never be performed on an AppleShare volume. Data on AppleShare volumes can be backed up only by using the file-by-file method. ◆

Follow these steps to back up an entire volume with Archiver:

1 **Open the Archiver program.**

2 **Click Back up entire volume, and then click OK.**

In a moment, you see a window that prompts you for information about the backup operation you want to perform.

```
┌──────────────────────────────────────────────────┐
│                  Volume Backup                     │
│   Backup from:  ( Volume )    ▐▋▋▋▋▋▋▋▋▋▋▌         │
│                               :Hard.Disk           │
│  ───────────────────────────────────────────────   │
│   Backup to:   ⦿ Device  ( Device )    ▐▋▋▋▋▋▌     │
│                ○ File    ( Identify )              │
│                                        .DEV2        │
│                                  (Contains :Backup1)│
│  ───────────────────────────────────────────────   │
│                        ( Cancel )  (( Back Up… ))   │
└──────────────────────────────────────────────────┘
```
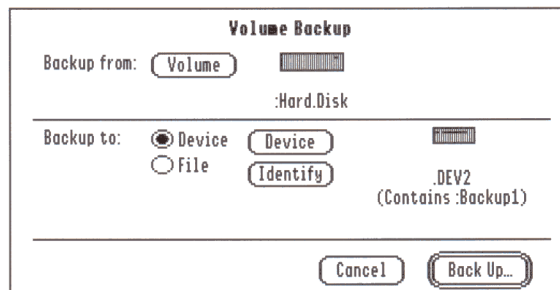
3   **Click the Volume button or press Tab until the name of the volume you want to back up appears in the top section of the window.**

4   **Select the destination option you want to use for your backup material.**

If you want to back up to a disk or tape drive, select the Device option on the left. If the device displayed at the right of the window is not the one you want to use for your backup, click the Device button or press the Right Arrow key until the correct device appears. Clicking the Identify button activates the "in use" light on most devices, which makes it easy to distinguish between similar drives of the same type.

△   **Important** Archiver will not back up to 5.25-inch disk drives or AppleShare volumes when the Device option is selected. △

If you want to back up to a file, select the File option to back up to a GS/OS file. Then click the File button; you see a dialog box that prompts you to name the file, locate a place to store it, and save the file. Follow these steps:

1.   If you like, type a name for the file. (You can also accept the default name provided by Archiver.) Archiver will not allow you to create this file on your source volume.

2.   Click the Volumes button to see a list of all available volumes.

3.   Select the volume on your destination drive and click Open. (You can also open a volume by double-clicking.)

4.   Open any folders necessary to locate a place for storing your new file. (Select a folder and click Open, or double-click a folder.)

5.   If you want to create a new folder to store your file, click in the text box to position the insertion point, type a name for the folder, and click the New Folder button.

6.   Once you've located a place to store it, type a name for your file, and click Save.

5   **When you have set the volume to back up and located the destination device or file, click the Back Up button or press Return.**

The Entire Volume Backup window appears, listing the source and destination volumes you have selected, and noting the size of the material to be backed up.
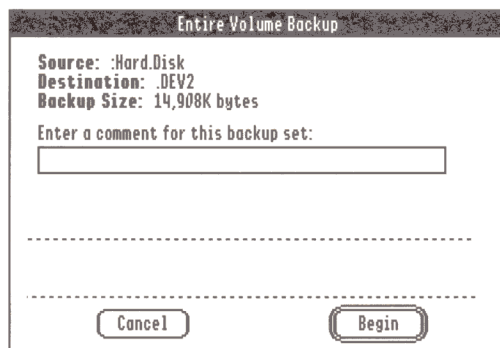
```
╔══════════════ Entire Volume Backup ══════════════╗
║                                                   ║
║  Source:  :Hord.Disk                              ║
║  Destination:  .DEV2                              ║
║  Backup Size:  14,908K bytes                      ║
║                                                   ║
║  Enter a comment for this backup set:             ║
║  ┌─────────────────────────────────────────────┐ ║
║  │                                             │ ║
║  └─────────────────────────────────────────────┘ ║
║                                                   ║
║                                                   ║
║  - - - - - - - - - - - - - - - - - - - - - - - -  ║
║                                                   ║
║                                                   ║
║  - - - - - - - - - - - - - - - - - - - - - - - -  ║
║                                                   ║
║  (  Cancel  )              (  Begin  )            ║
╚═══════════════════════════════════════════════════╝
```

If you have a large amount of material to back up, be sure you have enough disks or tapes to insert, or that there is enough room on your destination media to complete the backup. If you're backing up to a 3.5-inch drive, you may need to have a number of blank disks handy. Be sure that the media you are using is not write-protected and that there is no data you want to keep since the backup will over-write anything that is on the media.

It's good practice to rotate your backup media. That is, instead of using the same disks or tapes again and again to back up a volume, use one set for your first backup; then use a different set for your next backup. Rotate the two (or more) sets. That way, if something happens to your most recent backup, you still have an earlier version of your volume.

If you are not backing up to a file and you choose a hard disk as a destination device, Archiver asks you to confirm that you want the contents replaced. You can cancel and choose a different destination device, or you can continue with the operation.

If you are backing up to a file, make certain your destination device has enough free space to store the backup file.

6 **If you want to enter a comment for your backup set, type it in the first text box.**

Entering a comment will help you identify your backup set when you restore. Your comment can be anything you want, as long as it's no more than 40 characters long. Dates and the name of the volume are useful for distinguishing backups.

Archiver also assigns a name to each piece of media in the set. The first piece will be named ARCHIVER.00001, the second, ARCHIVER.00002, and so on.

7 **Click Begin or press Return.**

If your backup is large enough to require more than one disk or tape, you're prompted to insert additional media as needed. A "thermometer" bar indicates the progress of the backup.

If you click Cancel or press the Escape key, you may have to wait a moment while Archiver recognizes your request. You'll be asked to confirm that you want to discontinue the operation. If you want to proceed, you can click Continue; the backup will proceed.

If Archiver encounters an unusable disk or tape, you see a message asking you to try another disk or tape or to cancel the backup operation.

▲ **Warning** If Archiver encounters a source error, the backup stops. Your source volume is probably damaged; Archiver cannot back it up. In such a situation, it's best to perform a file-by-file backup so that you can restore your files to a volume that is in good condition. You may want to try another drive, just to make sure that the problem is not with the drive you're using.

   If Archiver encounters a destination error while backing up to a file, either your destination media or your destination device may be the problem. Reformat your media and try again. If the backup fails a second time, replace your destination media. If you are still unable to back up your volume, your destination device may be defective; try another device. ▲

8 **When you see a dialog box indicating a successful backup operation, click Quit or press Return.**

To return to the Welcome to Archiver screen for another backup or restore operation, click Continue.

Backing up file-by-file

Follow these steps to back up selected files with Archiver:

1 **Open the Archiver program.**

2 **Click Back up files, and click OK or press Return.**

In a moment, you see the Selected Files Backup window, which prompts you for information about the backup operation you want to perform.

```
                    Selected Files Backup
    Backup from:  ( Volume )      [||||||||||||]
                                  :Hard.Disk
    Backup to:    ● Device  ( Device )        [||||||||]
                  ○ File    ( Identify )       .DEV2
                                         (Contains :Backup1)

                              ( Cancel )  (( Files... ))
```
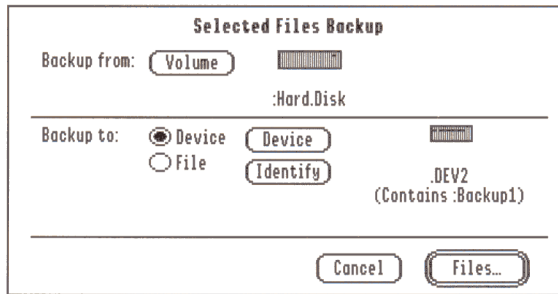
3 **Click the Volume button or Tab key until the name of the volume that contains the files you want to back up appears in the top section of the window.**

4 **Click the destination option you want to use for your backup material.**

If you want to back up to a disk or tape device, and the device displayed at the right of the window is not the one you want to use for your backup, click the Device button until the correct device appears. Clicking the Identify button activates the "in use" light on most devices, which makes it easy to distinguish between similar drives of the same type.

△ **Important** Archiver will not back up to 5.25-inch disk drives or AppleShare volumes when the Device option is selected. △

If you want to back up to a file, select the File option to back up to a GS/OS file. Then click the Files button; you see a dialog box that prompts you to name the file, locate a place to store it, and save the file. To locate the place you want to store your file, follow these steps:

1. Click the Volumes button to see a list of all available volumes.

2. Select the volume on your destination drive and click Open. (You can also open a volume by double-clicking it.)

3. Open any folders necessary to locate a place for storing your new file. (Select a folder and click Open, or double-click a folder.)

4. If you want to create a new folder to store your file, click in the text box to position the insertion point, type a name for the folder, and click the New Folder button.

5. Once you've located a place to store it, type a name for your file, and click Save. (Do not use a filename that already exists on your backup volume.)

5 When you have set the volume to back up and located the destination device or file, click the Files button or press Return.

A dialog box appears, asking if you want to use a saved file list. The first time you back up selected files, you won't have such a list. Click No to continue the program. (You learn how to create a saved file list in step 6.)

A message appears, telling you that the directory of the source volume is being read; then a window appears, with the disk directory.

```
 File  Edit  Special

Directory of :Hard.Disk (13,037K bytes)
To be backed up to .DEV2
✓ ProDOS                                          ⬆
   System
   Icons
✓ BASIC.System
✓ Finder.Data
✓ Finder.Root
   Club.Newsletter
   Games
   Robin                                    ▶
   Dale                                           ⬇
┌ File info ─────────────────────────────
 ProDOS 8 application ($00FF)   402 files marked    ( Mark )
 1,481 bytes                    13,037K bytes     ( Unmark )  ( Cancel )
 Modified on Mon, 10/21/91, 14:48  Approx. 33 disks needed  ( Auto... ) ( Back Up )
```
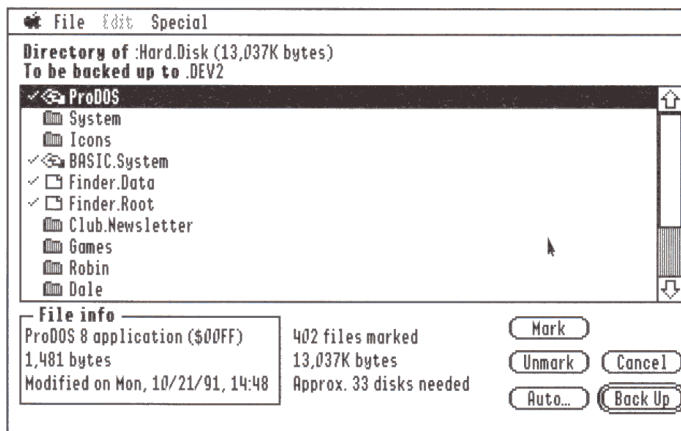
6 Mark the files you want to back up.

Marking files is a two-step process. First you select a file by clicking it once; then you click the Mark button (or press Command-M). Likewise, to unmark a file, you select it, and then click Unmark (or press Command-U). Pressing Command-A will select all files for marking or unmarking. Some visual cues help you keep track of which files are marked:

- A checkmark appears next to the name of a file to indicate that it has been marked.

- A checkmark appears next to a folder that has been marked (selecting all its files).

- A folder icon changes to an open folder when the folder is opened by double-clicking. The icon changes back to a closed folder when the folder is closed by double-clicking.

- A folder appears gray when some—or all—of its files are marked, but the folder itself is not marked.

◆ **Note** If you have used Archiver to back up files from this volume before, any files you have created or modified since the last backup are automatically marked for backup. You can unmark such files if you like. ◆

As you select files, the File Info box in the lower-left corner lists type, size, and date information about the file or group of files currently highlighted.

To the right of the File Info box, you see the total number of files marked, their cumulative size, and an estimate of the number of 3.5-inch disks or tapes that will be needed for the backup. If you are backing up to a file no estimates will be given.

To mark or unmark files, select their filenames and then click either the Mark or the Unmark button. The following selection procedures are available:

- *To select two or more consecutive files,* select the first filename and then hold down one of the Shift keys while you select the last filename.

- *To select two or more files that aren't grouped together,* select the first filename, and then hold down the Command key while you select each additional filename.

- *To select all the files in a folder,* select the folder name.

- *To select any (or all) of the files in a folder,* double-click the folder to open it. The files it contains appear indented below the folder; you can select them in the usual way.

To have files marked automatically according to criteria that you define, follow the steps in "Marking files automatically," on page 218 later in this chapter.

To save the files you've marked as a Saved File List, choose Save File List from the File menu. You'll be prompted to name the Saved File List, which retains all the filenames and their hierarchy, the state of opened and closed folders, and the marked or unmarked status of the files. You can then conveniently back up these files again at a later time.

7 **When you finish marking all the files you want to back up, click Back Up or press Return.**

The File Backup window appears, listing the source and destination you have selected, and noting the cumulative size of the files to be backed up.

If you have a large amount of material to back up, be sure you have enough disks or tapes to insert, or that there is enough room on your destination media to complete the backup. If you're backing up to a 3.5-inch drive, you may need to have a number of blank disks handy. Be sure that the media you are using is not write-protected and that there is no data you want to keep on the media since the backup will over-write anything that is on the media.

It's good practice to rotate your backup media. That is, instead of using the same disks or tapes again and again to back up your files, use one set for your first backup; then use a different set for your next backup. Rotate the two (or more) sets. That way, if something happens to your most recent backup, you still have an earlier version of your files.

8 **If you want to enter a comment for your backup set, type it in the first text box.**

Entering a comment will help you identify your backup set when you restore and distinguish it from other backup sets. Your comment can be anything you want, as long as it's no more than 40 characters long. Dates and the name of the volume are useful for distinguishing backups.

Archiver also assigns a name to each piece of media in the set. The first piece will be named ARCHIVER.00001, the second, ARCHIVER.00002, and so on.

9 **Click Begin.**

If you're backing up to a 3.5-inch disk drive or a tape drive, you're prompted to insert disks and tapes as needed. A "thermometer" bar indicates the progress of the backup.

If you click Cancel, you may have to wait a moment while Archiver recognizes your request. Then you're asked to confirm that you want to discontinue the backup. If you want to proceed with the backup, click Continue. If you click Stop to discontinue the backup you will return to the starting screen of the Archiver program.

If Archiver encounters an unusable disk or tape, you see a message asking you to try another disk or tape or to cancel the backup operation.

If Archiver encounters errors during the backup operation, what happens depends on the setting you selected via the Preferences command in the Special menu (see page 202):

- *If you accepted the "Interrupt file backups for file read errors" setting,* you see a message informing you that the file could not be read, and asking you if you want to continue or discontinue the backup. If you continue, Archiver records the read errors. When the backup is complete, Archiver gives you the option to see a list of all files that could not be successfully archived. You may want to make a note of such files.

- *If you deselected the "Interrupt file backups for file read errors" setting,* Archiver doesn't interrupt the backup to report the read error. Read errors are recorded and reported when the backup is complete. You may want to make a note of files that are not archived.

- *If Archiver encounters an error while backing up to a file,* either your destination media or your destination device may be the problem. Reformat your media and try again. If the backup fails a second time, replace your destination media. If you are still unable to complete the backup, your destination device may be defective; try another device.

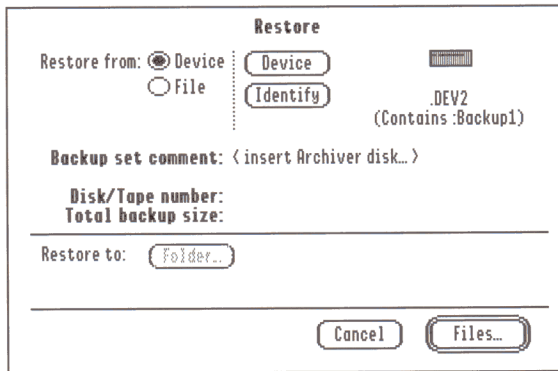10 **When you see a dialog box indicating a successful backup operation, click Quit.**

When the operation is complete, you are notified if errors occurred and asked if you want to see the error summary window. If you open the error summary window, you can click on any of the files listed to see the specific error encountered when reading that file.

You can click Continue to return to the Welcome to Archiver screen for another backup or restore operation.

Restoring files from Archiver file-by-file backups

Follow these steps to restore files with Archiver:

1 **Open the Archiver program.**

2 **Click Restore backup. Then click OK or press Return.**

In a moment, you see the Restore window, which prompts you for information about the restoration you want to perform.

```
                              Restore
   Restore from: ● Device    [ Device  ]        [▭▭▭▭▭▭]
                 ○ File       [ Identify ]         .DEV2
                                            (Contains :Backup1)

      Backup set comment:  〈 insert Archiver disk... 〉

        Disk/Tape number:
        Total backup size:
   _____

   Restore to:    [ Folder... ]

   _____

                                   [ Cancel ]   [[ Files... ]]
```
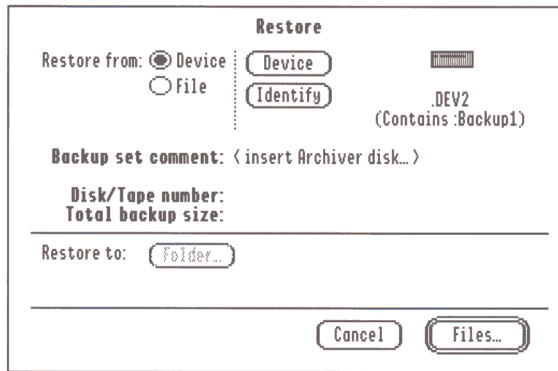
3   **Click the source option you want for the backup set you want to restore.**

If you want to restore from disk or tape, click the Device button or the Right Arrow key until the name of the device that contains your backup set appears on the right.

If you want to restore the backup set from a file, select the File option to restore from a GS/OS file. Click the File button; a dialog box appears that allows you to specify the location of the backup file you want to restore.

△   **Important**   You must insert the first piece of media from your backup set and select it before Archiver can begin the restoration. If you insert the wrong disk, Archiver prompts you to insert the first one. If you can't locate all the pieces of your backup set, Archiver cannot complete the restoration. △

4   **Click the Folder button.**

A dialog box appears, prompting you to locate and name a new folder to which you can restore the backed up files.

5   **Name the new folder and where it is to be created, and click OK (or press Return).**

△ **Important** Make sure that there is enough free space on the destination device to hold all of the material you intend to restore. △

6 Click Files.

A window appears with a directory that lists the files in your file-by-file backup set.

```
 File  Edit  Special
─────────────────────────────────────────────────
Backup set: Memo backups (3,005 bytes)
To be restored to :Hard.Disk:Club.Newsletter:DalesMemos
┌─────────────────────────────────────────────┬──┐
│ ⊟ Dale                                       │⇧ │
│   ▭ RevisedMemo                              │  │
│   ▭ ClubMemo                                 │  │
│   ▭ NewMemo                                  │  │
│   ▭ Memo1                                    │  │
│                                              │  │
│                                              │  │
│                                              │  │
│                                              │⇩ │
├──────────────────────────┬───────────────┬──┴──┤
│ ┌ File info              │               │  Mark │
│ Folder ($000F)           │ 0 files marked│       │
│ 0 bytes                  │ 0K bytes      │ Unmark  Cancel │
│ Modified on Sun, 1/26/92, 13:30 │        │  Auto…  Restore │
└──────────────────────────┴───────────────┴─────┘
```
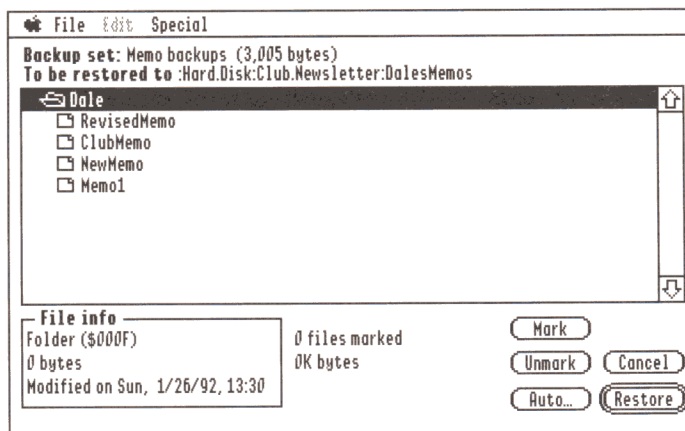
7 Mark the files you want to restore.

You don't have to restore all the files in your backup set. You mark or unmark files for restoration in the same way you mark or unmark them for backup. Follow the guidelines on page 210, or—if you want your files marked automatically according to criteria you define—follow the instructions for marking files automatically, page 218.

As you select files, the File Info box in the lower-left corner lists size, date, and type information about the file or group of files currently highlighted.

To the right of the File Info box, you see the total number of files marked, and their cumulative size.

8 When you finish marking all the files you want to restore, click Restore.

A window appears, listing the source and destination you have selected, and noting the cumulative size of the files to be restored.

9 Click Begin.

You are prompted to insert disks or tapes as needed. A "thermometer" indicates the progress of the restore operation.

If you click Cancel, you may have to wait a moment while Archiver recognizes your request. Then you're asked to confirm that you want to discontinue the restore procedure. If you want to proceed with the restoration, click Continue.

▲ **Warning** If Archiver encounters an error, the restoration stops; a message tells you whether the error occurred on the destination or the source device.

If Archiver encounters a source error, your backup set is probably damaged; Archiver cannot restore it. You may want to try another drive, just to make sure that the problem is not with the drive you're using.

If Archiver encounters a destination error, either your destination media or your destination device may be the problem. Reformat your media and try again. If restoration fails a second time, replace your destination media. If you are still unable to restore, your destination device may be defective; try another device. ▲

10 **When you see a dialog box indicating a successful restore operation, click Quit.**

You can click Continue to return to the Welcome to Archiver screen for another backup or restore operation.

Restoring volumes from entire volume Archiver backups

Follow these steps to restore entire Archiver volume backups:

1 **Open the Archiver program.**

2 **Click Restore backup, then click OK or press Return.**

In a moment, you see the Restore window, which prompts you for information about the restoration you want to perform.

```
                          Restore
Restore from: ● Device    ( Device )        [░░░░░░░]
              ○ File      ( Identify )        .DEV2
                                        (Contains :Backup1)

  Backup set comment: 〈 insert Archiver disk… 〉

     Disk/Tape number:
     Total backup size:
  _____

Restore to:  ( Folder… )

  _____

                                ( Cancel )   ( Files… )
```

3 **If necessary, click the Device button or the Right Arrow key until the name of the device from which you want to restore your material appears at the top right of the window.**

If you want to restore the material from a file, click File. A dialog box appears, prompting you to specify the file from which you want to restore your data.

4 **Click the Volume button or press Tab to select the volume to which you want to restore your data.**

The selected volume must be large enough to hold all of the data you are restoring.

▲ **Warning** The selected volume will be completely overwritten by the restoration process. Even its name will be the same as that of the volume originally backed up. Make sure that the volume you select doesn't contain data you want to keep. If you are in doubt, quit Archiver and use the Finder to confirm that all of the files are expendable. Back up any files you need. ▲

5 **Click Restore or press Return.**

Unless you have set the preferences to not notify you, a message appears, asking you to confirm that you want to replace your destination volume with the contents of the volume

backup. After checking to make sure you've specified the correct source and destination volumes, click Continue.

The Restore window appears, listing the source and destination volumes you have selected, and noting the size of the volume to be restored.

6 **Click Begin.**

You'll be prompted to insert disks or tapes as needed.

A "thermometer" indicates the progress of the restore operation.

If you click Cancel, you'll be asked if you want to continue or discontinue the operation.

▲ **Warning** If Archiver encounters an error, the restoration stops; a message tells you whether the error occurred on the destination or the source device.

If Archiver encounters a source error, your backup set is probably damaged; Archiver cannot restore it. You may want to try another drive, just to make sure that the problem is not with the drive you're using.

If Archiver encounters a destination error, either your destination media or your destination device may be the problem. Reformat your media and try again. If restoration fails a second time, replace your destination media. If you are still unable to restore, your destination device may be defective; try another device. ▲

7 **When you see a dialog box indicating a successful restore operation, click Quit.**

You can click Continue to return to the Welcome to Archiver screen for another backup or restore operation.

Marking files automatically

When you back up or restore using the file-by-file method, you can have the files marked (or unmarked) automatically according to criteria you define. The Auto-Mark dialog box lets you combine options including file types, file names, and last modification date, to identify the files you want to mark (or unmark).

Follow these steps to have Archiver mark your files automatically:

1 **Click the Back up button in the Selected Files backup window or click the Restore button in the Restore window.**

If you're backing up files, follow steps 1-5, starting page 208.

If you're restoring files, follow steps 1-6, starting page 213.

A window appears listing the files you can select.

2 **Click Auto.**

The Auto-Mark window appears, with a number of pop-up menus that allow you to set criteria for files to be marked (or unmarked) automatically.
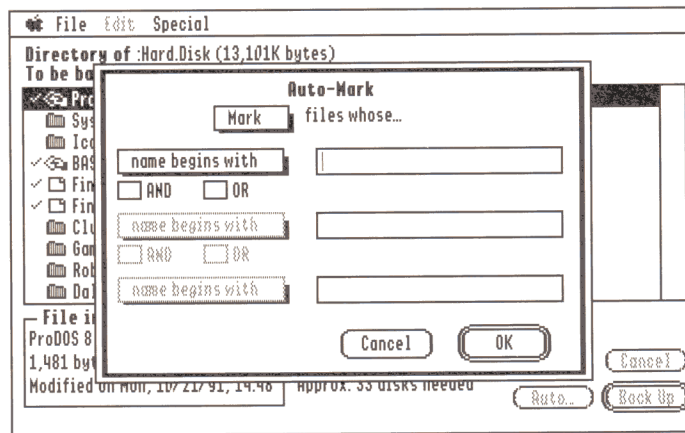
3 **Choose whether to mark or unmark files.**

If you want to mark files, the current setting of the first box—Mark—is correct.

If you want to unmark files, position the pointer on the Mark box, hold down the mouse button to display the pop-up menu, drag to the Unmark setting, and then release the mouse button. The pop-up menu disappears, and the new setting appears in the box.

4   Use the upper set of boxes to define your first criterion.

You choose a category from the box on the left, and then specify selection criteria information in the box on the right.
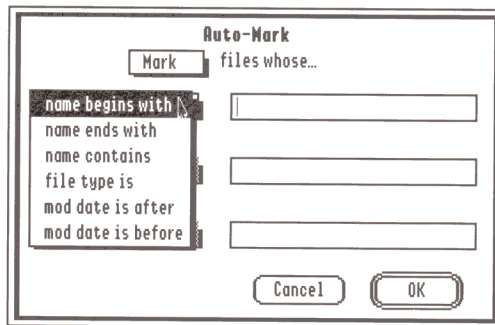
Position your pointer on the first box in the left column where the current setting is shown, then hold down the mouse button to display the pop-up menu, drag to the setting you want, and release the mouse button. You can choose from these options:

- *File type is* Use this option to select all files in the selection window that match the file type you then designate in the corresponding box in the right column. When you choose the *file type is* option, the box on the right becomes a pop-up menu, allowing you to choose the file type you want.

- *Name begins with, contains, or ends with* Use one of these options to select all files that start with, contain, or end with the character or characters you type into the corresponding box in the right column.

- *Modification date before or after* Use these options to select all files that were modified before or after the date you set in the corresponding box in the right column. When you select either of the modification date options, the box on the right displays a date format. Select the month, day, year, or time, and then click the arrows—up or down—until you reach the setting you want.

5   If you want to add to your file selection criteria, click *and* or *or* and continue in the second and third sets of boxes.

Clicking *and* will mark files that belong to the logical intersection of the criteria you describe in the boxes.

Clicking *or* will mark files that belong to the union of the criteria you describe in the boxes.

For example, if you want to mark all Apple IIGS word-processor files that were modified after January 1, 1991, whose names begin with the letter "J," you're looking for files in the intersection of those categories. You'll select the word *and*.

If you use the qualifier, *or,* you'll mark all the files in each of the categories. In the example, you end up with a much larger selections of files: all Apple IIGS word-processor files, all files that were modified after January 1, 1991, and all files whose names begin with the letter "J."

If you were to select *and* between the first two criteria of the example, and then select *or* between the last two, the example selection would mark all Apple IIGS word-processor files that were modified after January 1, 1991 and all files that have filenames beginning with the letter "J."

6 **When you've finished defining your criteria, click OK.**

The files that match your criteria are marked or unmarked, as you have specified.

◆ **Note** Auto mark can be used repeatedly to specify various groups of files or interspersed with manual file selection. ◆

7 **Continue your backup or restoration process.**

If you are backing up files, go to step 8 of "Backing up files," page 212.

If you are restoring files, go to step 9 of "Restoring files," page 215.

Apple IIGS
SystemTools1

Version 6.0

System 6

Apple IIGS
SystemTools

Version 6.0

System 6

Apple IIGS
SystemTools1

Version 6.0

System 6
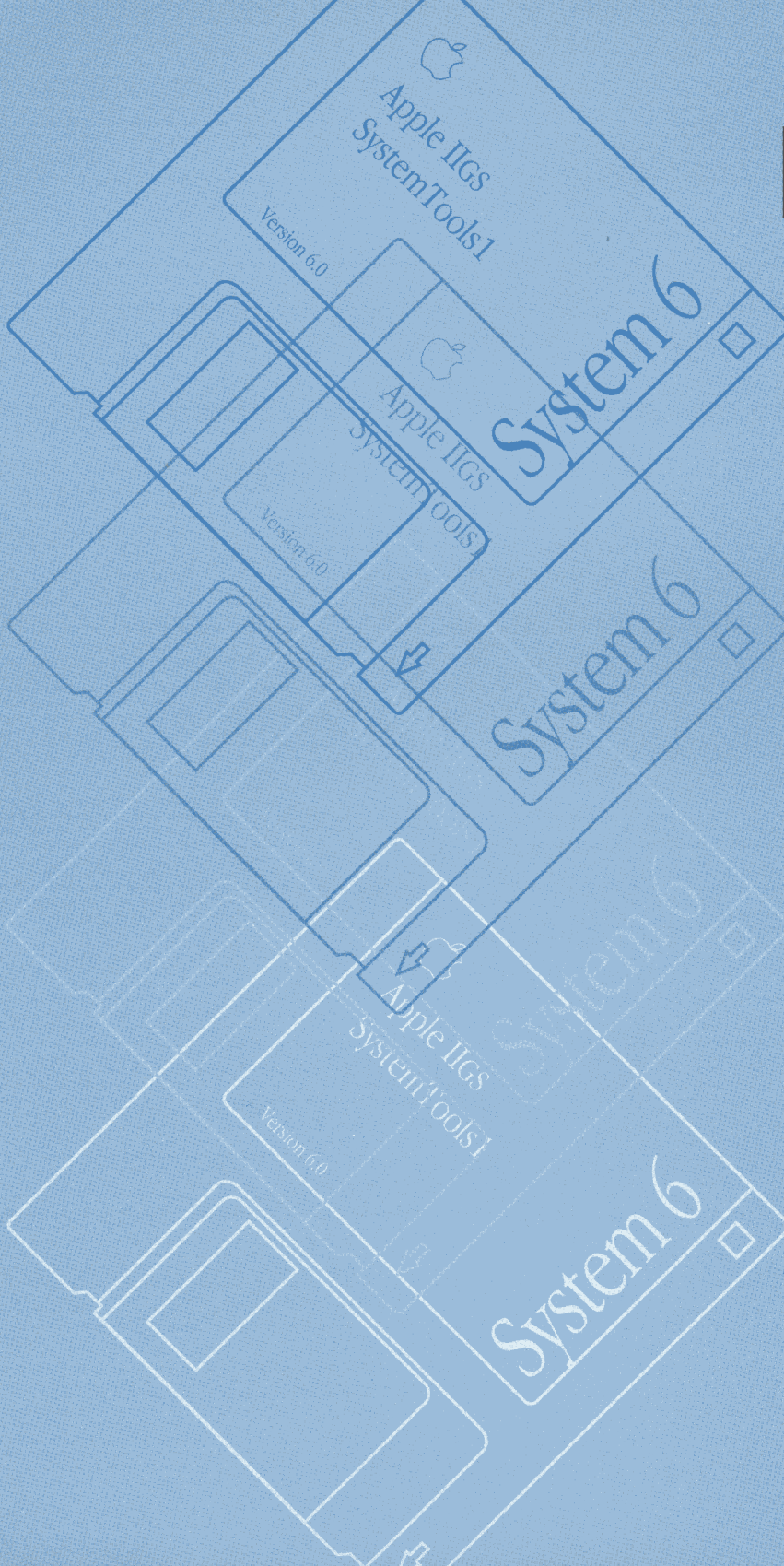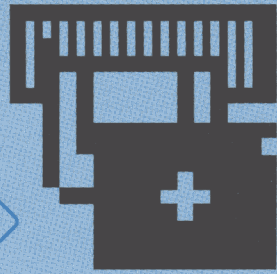
9 Using the Advanced Disk Utility

The Advanced Disk Utility is primarily used for hard disks and provides convenient disk preparation functions. It even allows you to prepare a hard disk for use on a Macintosh computer.

If you don't have a hard disk and you don't want to zero any disks, you can skip this chapter.

This chapter contains information on these topics:

- understanding and launching the Advanced Disk Utility
- initializing a disk
- erasing a disk
- zeroing a disk
- partitioning a hard disk
- getting information about a disk

Understanding Advanced Disk Utility Functions

The Advanced Disk Utility (ADU) program includes four functions: initializing, erasing, zeroing, and partitioning.

◆ **Note** You can erase and initialize any disk by using the Finder (as long as the disk is not the startup disk). Zeroing a disk—in effect, erasing all of the data on a disk—is available only in the Advanced Disk Utility. Partitioning—that is, dividing a SCSI hard disk into separate sections—can be done only in the Advanced Disk Utility. If you want to **hard format** a disk that you plan to connect to a Macintosh computer, you can do so only by creating a single partition in the Advanced Disk Utility. ◆

If you think of the information you want to store on your disk as so many cars to be parked, a brand new disk is like a parking lot with no lines to divide the spaces. There's no organizational structure for the information, and the computer can't find data without such a structure. That's why disks must be prepared to store information.

Here's how the four functions of the Advanced Disk Utility fit into the parking lot analogy:

- *Initializing* a disk is like painting lines to separate the parking spaces and then adding a number to each space: It divides the disk into discrete areas (called tracks and sectors) and establishes an organizational system (called a file system) to keep track of what information goes in which space.

- *Erasing* a disk is like removing all the cars from the parking lot: The tracks and sectors remain, so the disk is able to receive new data from any application that uses the file system chosen during the erasing procedure.

- *Zeroing* a disk is like removing the cars and painting over the numbers of the parking spaces. Only the tracks and sectors remain; the file system is eliminated. A disk that has been zeroed must be initialized again before it can store information.

- *Partitioning* a hard disk is like dividing one large paved surface into several smaller parking lots. Each partition can be initialized with its own file system, just as each of the smaller parking lots can be numbered with its own numbering system. You can even establish a partition in HFS format so that you can use the hard disk on a Macintosh computer.
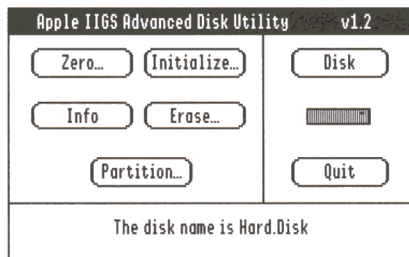
Figure 9-1 The Advanced Disk Utility screen

Launching the Advanced Disk Utility

Keep in mind that you cannot perform ADU functions on the startup disk. It may be necessary to change the startup slot setting in the Slots Control Panel so that the computer will start up from a drive other than the disk on which you'll be using ADU functions. For instructions, see "Changing the startup drive," on page 194 in Chapter 7.

The Advanced Disk Utility is located on the *SystemTools1* disk.

All four functions start from the Advanced Disk Utility screen, shown in Figure 9-1. To get to this screen, locate the Adv.Disk.Util icon and double-click it to launch the program.

From the Advanced Disk Utility, you can initialize, erase, zero, or partition a disk. You can also use the Info button to get information about any disk. Go on to the appropriate section for further instructions.

Initializing

Initializing a disk prepares it to receive information. It divides the disk into tracks and sectors (sections where information can be stored) and writes a file system on the disk. Applications that use the file system can then store and find data on the disk.

▲ **Warning** Initializing erases all data on a disk. Don't initialize a disk if it contains any information you want to keep. ▲

Initializing a disk with the Advanced Disk Utility has exactly the same effect as initializing a disk with the Finder. Unless you're already using the Advanced Disk Utility for another reason, it's generally more convenient to use the Initialize command in the Disk menu of the Finder when you want to initialize a disk.

◆ **Note** If your hard disk is not partitioned, initializing it in the Finder or in the Advanced Disk Utility imposes a hard format, after which the hard disk will no longer work with a Macintosh computer unless you repartition it. If you want a hard format (usually only when your hard disk has been used before and you need to ensure its reliability) and you plan to connect your hard disk to a Macintosh computer, you can do so by creating one partition on your hard disk. Turn to "Partitioning," on page 231. ◆

The following instructions assume that you're starting from the Advanced Disk Utility screen. If you aren't, follow the steps in "Launching the Advanced Disk Utility" earlier in this chapter.

Follow these steps to initialize a disk:

1 **Select the disk you want to initialize.**

Click the Disk button (or press Tab) until the name of the disk you want to initialize appears at the bottom of the Advanced Disk Utility screen. (It may be necessary to eject the *System.Disk* disk or the *SystemTools1* disk and insert the disk you want to initialize.)

2 **Click Initialize.**

You see a dialog box asking you to name your disk.

3 **Type a name for the disk, using the appropriate naming conventions.**

Be sure to follow the naming rules on page 91. Should you deviate from the rules, they will appear at the bottom of the dialog box for reference. If you want to keep the existing name, go on to the next step.

4   If necessary, select a file system and a disk format.

The list on the left of the dialog box shows the file systems available on the startup disk. (Unless you have installed a file system translator for the HFS operating system, you'll see only ProDOS here. For information about file system translators, see page 109.)

The list on the right shows disk formats or disk sizes, depending on the type of disk you're trying to initialize.

When initializing a 3.5-inch disk in an Apple 3.5 Drive, you're given a choice of two formats: 800K 2:1 and 800K 4:1. The 2:1 and 4:1 labels refer to the number of rotations used to read data from the disk.

- *If you'll be using the disk primarily in an Apple 3.5 Drive,* accept the highlighted option, 800K 2:1.

- *If you'll be using the disk in both Apple 3.5 Drives and UniDisk 3.5-inch drives,* select the 800K 4:1 option.

- *If you'll be using the disk primarily in a UniDisk drive,* select the 800K 4:1 option.

◆ **By the way**   The easiest way to tell the difference between Apple 3.5 and UniDisk drives is by the color: UniDisk drives are white, and Apple 3.5 Drives are platinum (the same color as the computer). Each type of drive is also identified on its underside. ◆

If you have an Apple SuperDrive connected to an Apple II 3.5 Controller Card in your Apple IIGS, you will also be able to format your disk at 1.4 MB.

When initializing a high-density floppy disk or a hard disk, you have a choice of two formats: 1:1 and 2:1. The 1:1 option is more efficient; select the 2:1 option only if you're using an Apple SuperDrive (connected to an Apple II 3.5 Controller Card) or an earlier model SCSI card (such as the Apple II SCSI Card). If you're using the Apple II High-Speed SCSI Card for your hard drive, select 1:1. (If you're not sure about your card's requirements, check the manual that came with the card.)

◆ **Note**   Hard disk interleave options are presented only if the disk being initialized has not been partitioned. ◆

5 **Click Initialize or press Command-Return.**

After a few moments you return to the Advanced Disk Utility screen. A message at the bottom of the screen tells you whether the initialization was successful. If initializing was not successful, see the troubleshooting information on page 313.

If you want to partition, initialize, erase, or zero another disk, turn to the appropriate set of instructions. If you're finished using the Advanced Disk Utility, click Quit or choose Quit from the File menu (or press Command-Q).

Erasing

If you want to remove all the files from a disk you should erase it. When you erase a disk, an empty directory is written to the disk. When you open the disk icon on the desktop, file and folder icons no longer appear—because it is the directory that lets you see files and folders on a disk. The files are still there, but without a directory they're invisible—and inaccessible, unless you know how to find the data on a disk without a disk directory.

Erasing a disk with the Advanced Disk Utility has the same effect as erasing a disk with the Finder. Unless you're already using the Advanced Disk Utility for another reason, it's generally more convenient to use the Erase command in the Disk menu of the Finder when you want to erase a disk.

If you're using a floppy startup disk and you used the Installer to install the "File System: HFS FST" update, the Advanced Disk Utility allows you to select the file system with which you plan to use the disk after you erase it. Otherwise, the disk will be in the ProDOS format.

◆ **Note** If you want to completely destroy the data on a disk so that no amount of software manipulation can ever recover it, you should zero the disk rather than erase it. For instructions, see "Zeroing," on page 230 later in this chapter. ◆

The following instructions assume that you're starting from the Advanced Disk Utility screen. If you aren't, follow the steps in "Launching the Advanced Disk Utility," on page 225 earlier in this chapter.

Follow these steps to erase a disk:

1 Select the disk you want to erase.

Click the Disk button (or press Tab) until the name of the disk you want to erase appears in the description at the bottom of the Advanced Disk Utility screen. (It may be necessary to eject the *System.Disk* disk or the *SystemTools1* disk and insert the disk you want to initialize.)

◆ **By the way** If the selected disk has not been initialized, the Erase button is dimmed and you can't erase the disk. ◆

2 Click Erase.

You see the Erase dialog box.
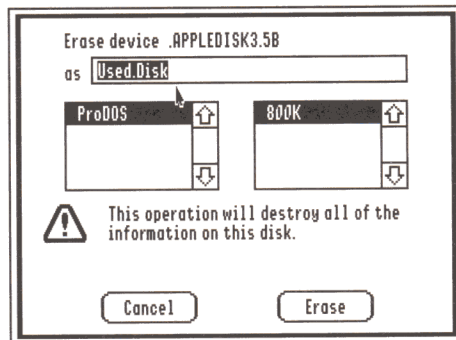
The window on the left shows the available file systems; the one for which the disk was initialized is highlighted. Select the one for which you plan to use the disk after you erase it.

The window on the right shows the size of the disk.

3 Type a name for the disk, using the appropriate naming conventions.

Be sure to follow the naming rules on page 91. When you begin typing, a summary of the naming rules appears at the bottom of the dialog box for reference. Should you deviate from the rules, a message appears telling you the name given is unacceptable—try again. If you want to keep the existing name, go on to the next step.

4   Click Erase or press Command-Return.

After a moment you return to the Advanced Disk Utility screen. A message at the bottom of the screen tells you whether the erasing was successful. If erasing was not successful, see the troubleshooting information on page 313.

If you want to initialize, erase, zero, or partition another disk, turn to the appropriate set of instructions. If you're finished using the Advanced Disk Utility, click Quit or choose Quit from the File menu (or press Command-Q).

Zeroing

Zeroing a disk wipes out everything on the disk. Unlike erasing, zeroing eliminates not only the disk directory, but also all the files and the file system. Only the tracks and sectors remain, and a character pattern is written to them—making it impossible to recover the data. After zeroing, a disk must be reinitialized before it can receive new data.

In most cases, erasing a disk is sufficient. But there may be times when you need to zero a disk rather than erase it. If you have highly confidential information that you want to destroy, for example, erasing may not be a sufficient precaution.

Since erasing removes only the disk directory (leaving the files invisible but intact), someone with a lot of computer knowledge may be able to reconstruct the files on an erased disk. When you zero a disk, on the other hand, the computer actually writes over all the data (along with the file system), so no one can reconstruct the information that was there without special hardware.

Because zeroing involves writing over everything on a disk, it can take a long time—especially if you want to zero a large-capacity disk such as a hard disk or a hard disk partition. As a result, you probably won't want to zero disks unless it's important to do so.

The following instructions assume that you're starting from the Advanced Disk Utility screen. If you aren't, follow the steps in "Launching the Advanced Disk Utility," on page 225 earlier in this chapter.

Follow these steps to zero a disk:

1 Select the disk you want to zero.

Click the Disk button (or press Tab) until the name of the disk you want to zero appears at the bottom of the Advanced Disk Utility screen. (It may be necessary to eject the *System.Disk* disk or the *SystemTools1* disk and insert the disk you want to zero.)

2 Click Zero.

A dialog box appears warning you that zeroing will destroy everything on the disk and may take a long time.

3 Click Zero to proceed with the zeroing operation.

You see the messages "Setting up buffers" and then "Zeroing disk...This could take a while" at the bottom of the Advanced Disk Utility screen.

When zeroing is complete, a message at the bottom of the screen tells you whether the operation was successful. If zeroing was not successful, see the troubleshooting information on page 313.

4 Reinitialize the disk.

When zeroing is complete, you must reinitialize the disk before it can receive new data. Follow the steps on page 227.

If you want to initialize, erase, zero, or partition another disk, turn to the appropriate set of instructions. If you're finished using the Advanced Disk Utility, click Quit or choose Quit from the File menu (or press Command-Q).

Partitioning

When you partition a hard disk, you are in effect dividing it into a number of smaller disks. The physical hard disk doesn't change, of course, but the computer recognizes each partition as if it were a separate disk. You can initialize, erase, or zero one partition without affecting the others. And you can even use different file systems on the different partitions.

Hard disk icon   Hard disk partition icon

Figure 9-2 Hard disk and hard disk partition icons

For example, you might want to use part of your hard disk for the ProDOS file system, and part for the HFS file system. That way, you can store your data from the Macintosh environment on the same disk as your data from the ProDOS environment. If you have an external hard disk, you can connect it to either your Apple IIGS or to a Macintosh computer providing a complete interchange of data.

▲ **Warning** Once you connect your hard disk to a Macintosh computer, you must run the Apple HDSC Setup program from the Macintosh and use the "Update" function to update your disk with necessary information. Refer to the manual that came with your HDSC Setup utilities. ▲

Partitions have their own icons (see Figure 9-2), which look similar to hard disk icons but represent the fact that the partition is part of a hard disk, and not a physically separate disk. A partition icon functions like any other disk icon; you can select it and use the commands in the Disk menu to initialize, erase, or verify the corresponding partition, and all the same restrictions apply to it as apply to other disk icons.

◆ **Note** It is possible for a hard disk to have only one partition. In this case, it will still have a regular hard disk icon. ◆

Using Partitions

If you have a SCSI hard disk larger than 32 megabytes (MB) and want to initialize it for use with ProDOS 8 applications, you can use partitions to take advantage of the disk's full storage space.

Under the ProDOS file system, the number of partitions allowed on a device varies from 8 to 32, depending on the size of the device. Table 9–1 illustrates how these rules apply to hard disks of various sizes.

Table 9–1 Maximum partitions available in various hard disk capacities

Disk size	Maximum partitions
20 MB	8
40 MB	8
80 MB	8
100 MB	8
256 MB	8
320 MB	10
512 MB	16
640 MB	20
800 MB	25
1 GB and up	32

You may find it convenient to use partitions simply as an organizational device. If two people use a hard disk, for example, you may want to create a partition for each person. If you've already partitioned your hard disk with the HDSC Partition program on the *Apple II SCSI Card Utilities* disk, you don't need to repartition it with the Advanced Disk Utility. But there are two potential advantages to doing so:

- You can create an HFS partition making your hard disk compatible with Macintosh computers. However, you must make your first partition a ProDOS volume if you want to use the drive as your startup drive for your Apple IIGS.

- If you're using a large capacity hard disk (over 128 MB), the larger number of partitions allowed by the Advanced Disk Utility may let you take advantage of storage space that would be wasted if you used the HDSC Partition program.

The HDSC Partition program lets you have up to four partitions of 32 MB each corresponding to a single SCSI card. With the Advanced Disk Utility, on the other hand, you can have as many as 32 partitions on each SCSI hard disk connected to the SCSI card provided you have the disk capacity. (See Table 9–1 for details.)

△ **Important** Partitioning erases all the data on all partitions on a hard disk. For that reason, partitioning is something you probably want to do only when you first install a new hard disk.

Note that ProDOS 8 applications can use no more than 14 devices. If you have a large number of devices connected to your computer, this may limit the number of ProDOS 8 partitions that will function with ProDOS 8. △

If you should ever need to repartition a hard disk, be sure to make a backup copy of everything on the disk first. The Apple IIGS Archiver on your *SystemTools2* disk makes it easy to back up a hard disk. It accommodates file system differences, including naming variations, and maintains the structure of your files in the backup. The Archiver copies your data onto sets of 3.5-inch disks, onto another hard disk, or onto tape. For more information, see Chapter 8, "Using the Archiver," starting on page 199.

You can also use the backup programs on the *Apple II SCSI Card Utilities* disk or the *Apple II High-Speed SCSI Card Utilities* disk, or you can even use the Finder to back up your hard disk onto another hard disk or onto sets of 3.5-inch disks.

Partitioning your hard disk

The following instructions assume that you're starting from the Advanced Disk Utility screen. If you aren't, follow the steps in "Launching the Advanced Disk Utility," on page 225 earlier in this chapter.

Follow these steps to partition a hard disk:

1 **Select the hard disk you want to partition.**

Click the Disk button (or press Tab) until the name of the hard disk you want to partition appears at the bottom of the Advanced Disk Utility screen. (You won't be able to partition any disk already in use, such as the startup disk or the disk from which you launch the ADU program.) If the hard disk has not yet been initialized, the message at the bottom of the screen says "Uninitialized or no disk in drive."

If you're repartitioning a hard disk, select any partition of the hard disk.

2 Click Partition.

You see a dialog box reminding you that partitioning will destroy all data on all partitions on the hard disk and asking whether you really want to partition the hard disk.

Click Cancel if you want to stop the partitioning process.

3 Click OK to continue with the partitioning operation.

You see the Partition dialog box.
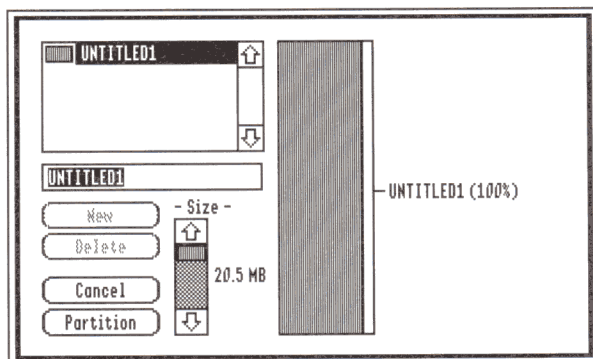
Note that the dialog box has a button labeled *Partition.* This button saves all changes you make in the dialog box. Don't click this button until you've created, named, and sized all the partitions you want. Once you click this button, you won't be able to add, delete, or resize any partitions without starting the partitioning process over from the beginning.

4 Name the first partition.

When the Partition dialog box first appears, it includes only one partition, called *UNTITLED1.* (If the hard disk has been partitioned before, you may see the names of the existing partitions.)

This name appears in both the partition list (the window in the upper-left corner) and in the name box below the partition list.

Type a new name for the partition. Although partitions have no naming conventions, the name you type will appear as the default name when you initialize the volume. At that point (step 13), you need to follow conventions for the file system you select for your volume. If

you want the partition and the volume to have the same name, keep the appropriate file system naming conventions in mind as you name the partition.

Once you assign a name to a partition, you can't change it without repartitioning the entire hard disk. You can change the name of the icon that corresponds to the partition—just as you can rename any other disk icon in the Finder. However, although you may rename the icon, the name you see in the partition dialog box is the one you originally assigned.

5 **Set the partition's size.**

The bar graph to the right of the partition list shows how the space on the hard disk is divided. A different color (or shade of gray if you have a monochrome monitor) is used for each partition you create.

The scroll bar to the right of the four buttons lets you change the size of the selected partition. You can change the partition size in increments of 0.5 MB. To change the size, reposition the scroll box within the scroll bar using any of the following methods:

- *To move through the scroll bar one increment (that is, 0.5 MB) at a time,* click the upper scroll arrow (to increase the size) or the lower scroll arrow (to decrease the size).

- *To move through the scroll bar four increments (that is, 2.0 MB) at a time,* click the shaded area above the scroll box (to increase) or below the scroll box (to decrease).

- *To move quickly through the scroll bar,* drag the scroll box to the desired location. (Then, if necessary, use the previous techniques to adjust the partition size.)

When you reposition the scroll box within the scroll bar, the corresponding segment of the bar graph changes to reflect the new percentage of total space allocated to the selected partition.

6 **Press Return to confirm the name and size you specified.**

The partition name changes from UNTITLED1 to the name you provided in step 4.

7 **Click New to create the next partition.**

A new partition named *UNTITLED1* appears in the list. (If you didn't rename the previous UNTITLED1 partition, the new partition will be named *UNTITLED2*.) In addition, the bar graph now shows a new partition, in the new color (or shade of gray). The scroll box in the scroll bar also shows the new partition's color.

If all of the available space has been used on the hard disk, you will not be able to click New again; go on to step 12.

8 **Name the new partition.**

Type a new name.

9 **Set the new partition's size.**

Reposition the scroll box in the scroll bar (using any of the methods described in step 5) to the partition size you want.

If you try to assign more than the total amount of unassigned space on the hard disk, you hear a beep and the ADU will automatically adjust the size to the remaining space.

10 **Press Return to confirm the name and size you specified.**

Skip to Step 13 if this is all you want to do.

11 **Repeat steps 7 through 10 to create additional partitions as needed.**

Create only as many partitions as you really need. The more partitions you use, the slower your computer's access to information on the hard disk will be.

Keep in mind that eight is the maximum number of partitions for disks of 300MB or less (see Table 9–1 on page 233).

When all space on the hard disk has been allocated, the Partition dialog box looks like this:.
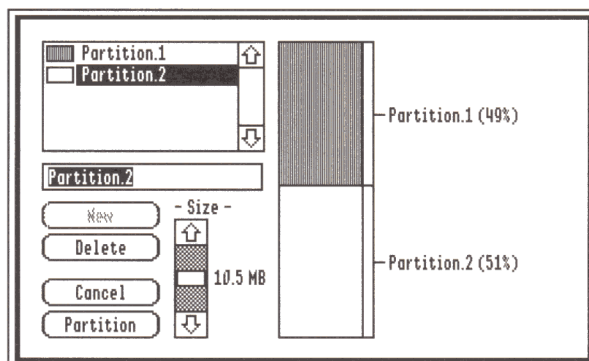
12 Make any final changes to partition names and sizes.

If you change your mind about a partition name, or decide that a partition should be larger or smaller, select the name in the partition list and make the necessary change. (Be sure to press Return to confirm the change.)

If you've already allocated all the space on the hard disk and then decide that you want to enlarge a partition, you must first select a different partition and reduce its size accordingly.

If you decide to eliminate a partition altogether, select its name in the partition list and click Delete. (You can delete all but one partition; when you have only one remaining, the Delete button is dimmed.)

Before you go on to step 13, make sure that you've allocated all the space on the hard disk. Any space left unallocated when you click Partition will be wasted—unless you go back and repartition the entire hard disk.

13 Click Partition.

A dialog box appears for the first partition. The window on the left shows the available file systems. If you installed the HFS file system translator, you'll see ProDOS and HFS. Otherwise, you see only the ProDOS file system. Select a file system for your volume. Remember that the first partition must be initialized as a ProDOS volume if you plan to use the hard disk as a startup drive. (For information on installing translators, see Chapter 2, "Using the Installer," starting on page 19)

If the partition name you assigned doesn't follow naming conventions for the file system you assign to this volume, type a name that follows the appropriate rules.

The window on the right shows the size you assigned this partition.

```
Initialize device .APPLESCSI.HD02.00
    as  [Partition.1]

    [ HFS    ⇧]    [ 10 MB    ⇧]
    [ ProDOS  ]    [          ]
    [        ⇩]    [         ⇩]

    /!\  This operation will destroy all of the
         information on this disk.

    [ Cancel ]        [ Initialize ]
```
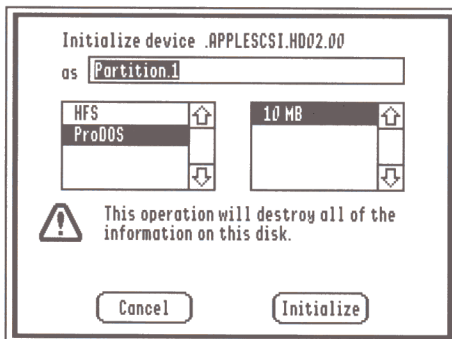
◆ **Note** If you've set up only one partition, a dialog box appears, asking you if you want a hard format. Click No unless you require a hard format to ensure that any detectable defects are removed from the disk. After the hard format, a dialog box appears, asking if you plan to connect your disk to a Macintosh computer. If you click Yes, special additional formatting requires about 128K on your hard disk. If you click No, the button you click in step 14 is Erase, instead of Initialize. ◆

In some cases, you may see a message stating that ADU was unable to load the Macintosh driver, and that HFS partitions will not be usable on Macintosh computers. Should you receive this or other error messages, turn to the troubleshooting information starting on page 313.

14 **Click Initialize or press Command-Return.**

The partition is initialized for use with the file system selected above.

After a moment, the same dialog box appears for the next partition.

◆ **Note** If you click Cancel instead of Initialize, the partition will still be created, but it won't be initialized, and its icon won't be given the name you assigned in the Partition dialog box. To initialize the partition later, follow the instructions in "Initializing," on page 225 earlier in this chapter. ◆

15 **Repeat step 14 for each additional partition.**

When you've initialized the last partition, you return to the Advanced Disk Utility screen. A message at the bottom of the screen tells you whether the partitioning was successful. If partitioning was not successful, see the troubleshooting information on page 313.

If you click the Disk button (or press Tab) to cycle through the available volumes, you see a partition icon corresponding to each partition you created. If you clicked Cancel in step 14 for any partition, the message at the bottom of the screen will say "Uninitialized or no disk in drive" when that partition is selected.

If you want to partition, initialize, erase, or zero another disk, turn to the appropriate set c instructions. If you're finished using the Advanced Disk Utility, click Quit or choose Quit from the File menu (or press Command-Q).

Getting information about a disk

Whenever the Advanced Disk Utility screen is visible, you can easily get all the important information you might want to know about the disk. You can see the name of the disk, the size of the used portion of the disk, the amount of room still available, the file system, and the name of the device that contains the volume. If the disk you want to know about is a hard disk, you can also see a list of the names of all the partitions it contains. If the disk is write-protected, you see a lock icon next to the disk icon.

Follow these steps to get information:

1 From the Advanced Disk Utility screen, select the disk about which you want information.

Click the Disk button (or press Tab) until the name of the disk appears at the bottom of the Advanced Disk Utility screen.

2 Click Info.

You see the Info dialog box.

```
Disk:        :Hard.Disk
Used:        15103K
Available:   5757K
File system: ProDOS
Device name: .APPLESCSI.HD01.00
Partitions:
No partitions on this disk.

OK
```
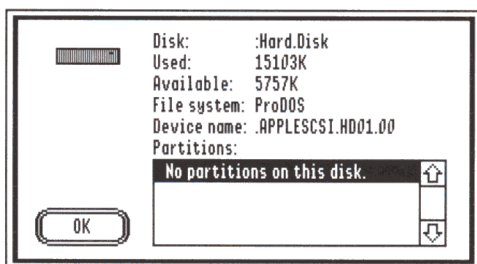
If the selected disk is a hard disk partition, the Partitions window lists the names of all the partitions on that hard disk. (If any of the partitions have not been initialized, the Partitions window lists the device name as the partition's name.) If the disk is not part of a partitioned device, the Partitions field displays the message "No partitions on this disk."

When you're looking at the Info dialog box for a hard disk partition, you can click any other partition name in the Partitions window to see the information about that partition.

3 **Click OK or press Return.**

You return to the Advanced Disk Utility screen.

If you want to initialize, erase, zero, or partition a disk, turn to the appropriate set of instructions. If you're finished using the Advanced Disk Utility, click Quit or choose Quit from the File menu (or press Command-Q).

In the Advanced Disk Utility, the Finder, and the Archiver backup and restore program, you have all the tools you need to work with the disks you can use with your computer. For information about initializing and erasing disks with the Finder, see Chapter 4, "Working With Disks," starting on page 85. For information about backing up and restoring information with the Archiver program, see Chapter 8, "Using the Archiver," starting on page 199.

Universe

7 8 9

4 5 6

1 2 3
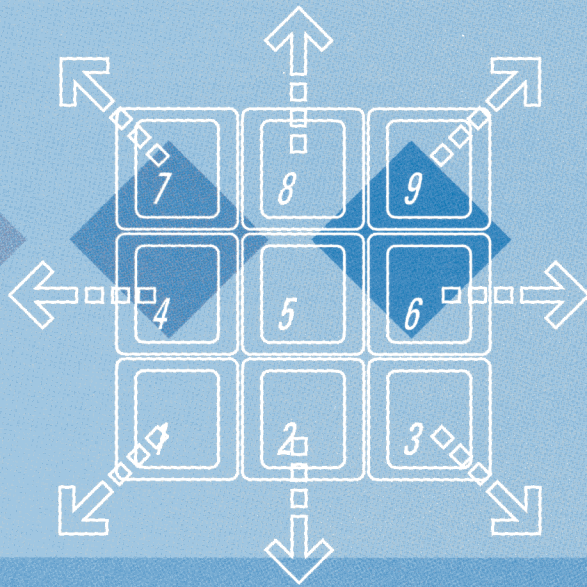
esc 1 2 3 4 5 6 7 8 9 0 - = delete
tab q w e r t y u i o p [ ]
control a s d f g h j k l ; '
shift z x c v b n m , . / shift
caps opt ⌘ ` \ ← → ↓ ↑

10 Using Universal Access

System 6 software includes programs designed to ensure universal access—that is, solutions that make Apple computers available to children and adults with special needs. If you have difficulty using the keyboard or the mouse or reading the monitor's screen, these programs may provide the assistance you need. The applications in this chapter are also useful to anyone who needs greater visual precision when using drawing applications, and to those who have an optional ADB device (such as a drawing tablet or child's keyboard) attached to the computer.

Easy Access provides alternative ways to use the mouse and keyboard; Video Keyboard provides an alternative on-screen keyboard; and CloseView magnifies the images displayed on the screen.

This chapter contains information on these topics:

- keyboard and mouse assistance with Easy Access
- alternative text entry with Video Keyboard
- easier screen viewing with CloseView

Keyboard and mouse assistance with Easy Access

Easy Access is a set of keyboard utilities with two features, Sticky Keys and Mouse Keys, that assist people who have difficulty typing with both hands or with manipulating the mouse. These features are also useful to anyone who wants to use the keyboard with one hand or to have complete control over very fine movements of the pointer.

If your computer has **ROM 01**, you can use Sticky Keys only when you start up from GS/OS or use a GS/OS application. Although Sticky Keys is built into **ROM 3** computers, you can see its visual indicators only when you've installed Easy Access on your startup disk and you're working with an application that uses the desktop interface. Mouse Keys requires the use of the desktop interface.

◆ **Note** You can determine which ROM version your machine has by checking the ROM number shown at the bottom of the screen when you first turn on your GS. ◆

If you use the Installer to create or update a system disk for a 1.4 MB drive or a hard disk drive, Easy Access will install automatically if earlier versions have been previously installed (if you are upgrading to System 6, for example). If you use an 800K floppy disk to start up your computer, there is not enough room to install the program on your startup disk. For instructions about using the Installer, see Chapter 2, "Using the Installer."

Using Sticky Keys

The Sticky Keys feature of Easy Access lets you type combination keystrokes, consisting of one or more modifier keys and one additional key, without actually pressing the keys simultaneously. The modifier keys affected by Sticky Keys are:

- Shift key
- Command key
- Option key
- Control key

All of the other keys on the keyboard are nonmodifier keys.

If you're working with an application that uses the desktop interface, one of three Sticky Keys icons appears at the far-right end of the menu bar when Sticky Keys is active.

This icon means Sticky Keys is ON.

This icon means the modifier key you just pressed is SET. The next key you press will be included as part of a combined keystroke. Typing a nonmodifier releases the SET modifier.

This icon means the modifier key you just pressed twice is LOCKED, which is useful when you want to use the same modifier to enter several different commands. For example, you might want to do a lot of copying and pasting. Press the Command key twice to LOCK it, then alternately type C (for Copy) and V (for Paste). To unlock the modifier, press it once. The icon will change back to the ON icon.

Any time you press a modifier key, the icon changes to reflect your new options.

◆ **Note** The visual indicators are in the software only; they are not built into the ROM. ◆

To use Sticky Keys, follow these steps.

1 **To turn on Sticky Keys, press and release one of the Shift keys five times in succession without moving the mouse.**

If you happen to bump or move the mouse during this sequence, you need to start over.

2 **Press the modifier key to set the modifier.**

For example, press the modifier Command key once (notice the SET icon).

3 **If necessary, press another modifier key.**

Some commands require that you press two modifier keys before you press the nonmodifier key.

When you enter a three-key command (such as Command-Shift-B), the Command key stays set when you press Shift (another modifier), but is released when you type B (a nonmodifier).

4 **Press the nonmodifier key to complete the command.**

Type A (a nonmodifier) to complete a Command-A command. The menu bar icon will change back to the ON icon.

5 **To turn off Sticky Keys, press the Shift key five times again.**

You can also turn off Sticky Keys by pressing a modifier key and a nonmodifier key at the same time. (The Control-A combination is handy because the keys are close together.)

Using Mouse Keys

If you feel more comfortable using the keyboard to give instructions to the computer—or if you have difficulty using the mouse—you can activate the Mouse Keys feature, which lets you move the pointer, click, press, drag, double-click, Shift-click, or Command-click entirely from the keyboard.

You can customize the responsiveness of the Mouse Keys feature using the Keyboard Control Panel.

To use Mouse Keys, follow these steps:

1 **To activate Mouse Keys, hold down the Command and Shift Keys.**

2 **Without releasing the first two keys, press, and then release, the Clear Key.**

3 **To turn off Mouse Keys, press the Clear key.**

◆ **Problems with combined keystrokes?** If you have difficulty with combined keystrokes, activate the Sticky Keys feature first, as described in the previous section. ◆

Using the numeric keypad to move the pointer

When Mouse Keys is activated, the numbers surrounding the number 5 on the numeric keypad let you move the pointer in the corresponding direction. To move the pointer straight up, for example, hold down the 8 key; to move the pointer diagonally up and to the left, hold down the 7 key; and so on. (See Figure 10-1.)

When you hold down a number key, the movement of the pointer begins slowly and then accelerates until it reaches a maximum speed. If you want to move the pointer by small increments, you can press and release the appropriate number key as many times as needed.
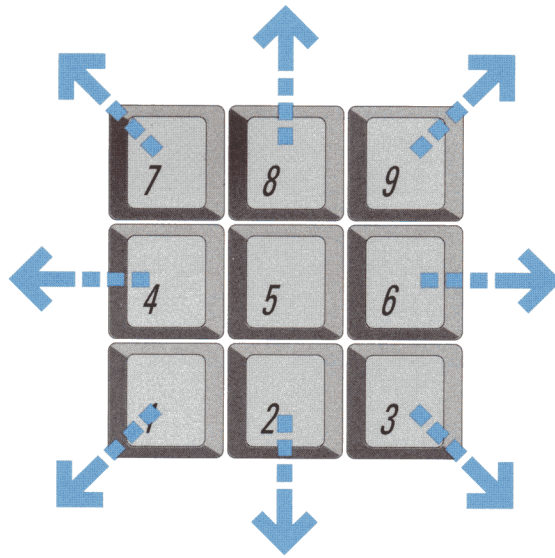
Figure 10-1 Moving the pointer with Mouse Keys

Using the numeric keyboard to move by larger increments

Normally, the pointer moves by one **pixel** each time you press and release a number key. If you want to increase this increment by as much as ten times, follow these steps:

1 **Press the asterisk (*) key on the numeric keypad.**

2 **Press a number key from 1 to 9 (or press 0 for 10) to multiply the increment by that number.**
   If you want to return to an increment of one pixel, press the asterisk key twice.

Using the numeric keypad to click, drag, and make other mouse movements.

Follow these steps to implement Mouse Key features:

- *To click,* position the pointer and then press and release 5.
- *To press,* position the pointer and then press and hold down 5.
- *To drag,* position the pointer and press 0 to begin dragging; use the numeric keypad to move the pointer, and press 5 when you want to end dragging.
- *To double-click,* position the pointer and then press and release 5 twice in quick succession.
- *To Shift-click,* position the pointer and then hold down one of the Shift keys while you press 5. (Or, if Sticky Keys is activated, you can press the keys separately.)
- *To Command-click,* position the pointer and then hold down the Command key while you press 5. (Or, if Sticky Keys is activated, you can press the keys separately.)

◆ **Not quick enough?**   If you're not able to press 5 quickly, you can set the double-click option in the General Control Panel to the slowest setting. For more information, see "General," on page 176. ◆

Alternative text entry with Video Keyboard

The Video Keyboard desk accessory provides a fully capable on-screen keyboard for entering text through Apple IIGS applications. Video Keyboard allows you to manipulate the standard mouse or alternative pointing devices, such as the head-controlled mouse, to do anything you can do with a physical keyboard. Designed particularly for individuals who cannot use a standard hardware keyboard, the Video Keyboard can also be useful in situations where a hardware keyboard is impractical or cumbersome.

To install Video Keyboard into your system, choose the "Special Aids: VideoKeyboard" update from the Customized Installation option of the Installer. For instructions about using the Installer, see "To add capabilities," in Chapter 2.

Video Keyboard uses both the Keyboard and Translation settings in the General Control Panel. For more information about these settings, see General," on page 176.

△ **Important** Always open Video Keyboard before you launch an application. Problems may arise with some applications if Video Keyboard is opened from within the program. △

The Apple IIGS does not recognize Video Keyboard as the active window, so characters you type with Video Keyboard always go to the current active window. This means you can have the Video Keyboard active and still work on other documents or programs.

Follow these steps to use Video Keyboard:

1 **Before you launch the application you want to use, turn on Video Keyboard by choosing it from the Apple menu.**

A window containing a keyboard image appears in the lower-left corner of the screen.

2   **Move the Video Keyboard window to any position on the screen by selecting its title bar and dragging, just as you would move any other window.**

If the lower-left corner is a good position for you, leave the Video Keyboard window where it is.

3   **Launch the application you want to use and position the insertion point where you want to insert text.**

4   **Move the pointer over the key you want to type and press the mouse button.**

The key becomes highlighted when it is selected, and it shows up at the insertion point in your document.

5   **To close the Video Keyboard window, click the close box.**

◆ **Note** Video Keyboard remains activated until you turn it off. That means that even if you quit the application you're using and launch another one, Video Keyboard remembers its position, and is ready to work with the next application. ◆

Video Keyboard Techniques

There are several techniques you can use to accomplish the same tasks as you can with the hardware keyboard.

- *To repeat a key continuously*: Move the pointer over the key, and then press and hold down the mouse button. When you release the mouse button or move the pointer away from the selected key, the auto repeat stops.

  (You can select the speed at which keys repeat by using the Speed option in the Keyboard Control Panel. For more information, see Speed," on page 179.)

- *To use a modifier key (Command, Control, Option, or Shift)*: Click the modifier key once and then click a nonmodifier key to complete the command. The modifier key remains selected until the nonmodifier key is clicked.

- *To lock a modifier key when you want to use it for several different commands*: Double-click the key. To unlock it, click it again.

Modifier keys can also be used together for 3-key commands. Click the first modifier key, then click the next one; the two keys remain selected until you click a nonmodifier key. If you change your mind, deselect a modifier key by clicking it.

The Caps Lock modifier key behaves differently from other modifier keys. A single click selects it, and it remains selected until clicked again.

- *To use Shift-click or Command-click*: Double-click the Shift key or Command key to lock it, and then use the mouse to select or drag an object. To unlock the modifier key, click it again.

- *To add a numeric keypad to the keyboard*: Click the Zoom box in the upper-right corner of the title bar. Clicking the Zoom box again removes the numeric keypad.

Key Caps

Video Keyboard key caps (key legends) show what will be typed when a given key is selected. When the Shift, Option, or Caps Lock modifier keys are selected, the key caps show how the modifiers affect these keys.

For example, when the Option key is selected, the key caps will display the Option characters. If both Shift and Option keys are selected, the key caps display the Option-Shift characters. Figure 10-2 shows the Shift, Option, and Shift-Option character sets.

If you set Translation to "None" (in the General Control Panel), the Key Caps layout will not change when you click any of the modifier keys.
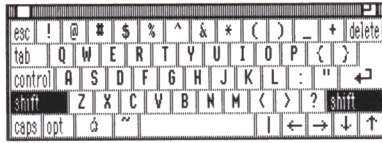
Shift characters

Option characters
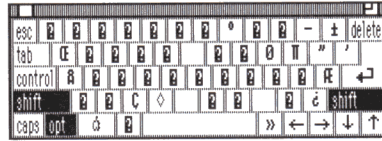
Option-Shift characters

Figure 10-2 Key caps displays of Option, Shift, and Option-Shift characters
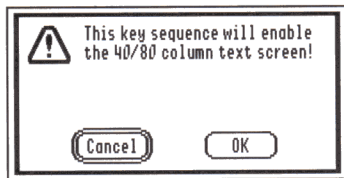
Figure 10-3 Dialog box carrying text screen warning

▲ **Warning** While using the Video Keyboard, if you enter the text Control Panel by pressing Command-Control-Esc, you see the dialog box in Figure 10-3. If you operate the computer using only a pointing device, click Cancel. Don't enter the text Control Panels because the Video Keyboard cannot be used there and you will have no way to manipulate the computer. ▲

Easier screen viewing with CloseView

The CloseView desk accessory makes the screen easier to view, or read, for people who have difficulty with standard-sized screen images. It can also be useful for anyone who wants to get a much closer look at the screen.

With CloseView, you can magnify any screen image 2 to 12 times. You can also reverse the screen display to make images appear white-on-black instead of black-on-white.

When you use CloseView, you work with applications, desk accessories, and the Finder in the same way you do without CloseView. When the magnification is activated, the program automatically follows your keystrokes and mouse movements without interfering with the application.

▲ **Warning** Some applications do not support CloseView. If you are unsure about whether a program supports CloseView, contact the application publisher. ▲

To install CloseView in your system, choose the "Special Aids: CloseView" update from the Customized Installation option of the Installer. For instructions about using the Installer, see Adding capabilities to a System 6 startup disk," on page 22 in Chapter 2.

Follow these steps to use CloseView:

1 **Choose CloseView from the Apple menu.**

The CloseView window appears.


```
≣☐▰▰▰▰▰▰  CloseView™  ▰▰▰▰▰
  ○ On  🔍                Magnification:
  ◉ Off      ]v1.0        ○ On    ┌─────┐
                          ◉ Off   │ 3x  │
  ◉ Black On White                └─────┘
  ○ White On Black        ⊠ Key Equivalents

  ☺ Apple Computer, Inc. 1990-92  ( Help )
```
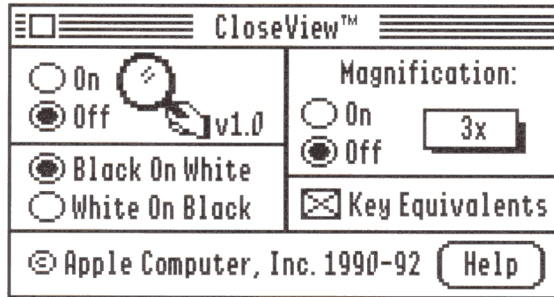
2 **Select the CloseView options you want to use.**

- *On and Off buttons:* Click the appropriate button to activate or deactivate CloseView. When you click On, a black box will appear showing the area to be magnified.

- *Magnification buttons and pop-up menu:* Click On or Off to activate or deactivate screen magnification. To select a different magnification power, position the pointer on the current setting, hold down the mouse button to display the pop-up menu, drag through the menu until the setting you want is highlighted, and then release the mouse button.
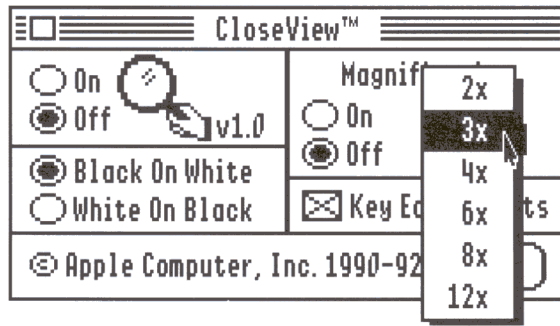
When magnification is turned off, but CloseView is on, you see the CloseView frame (a heavy box covering a portion of the screen). The frame moves when you move the pointer on the screen; it works like a magnifying glass, marking off the portion of the screen that will be magnified.
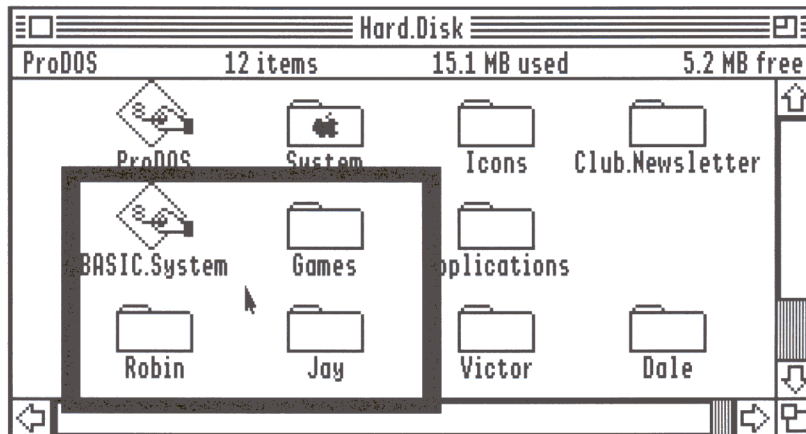
When magnification is turned on, the screen fills with the portion of the screen that is inside the frame.

BASIC.System   Games

Robin   Joy
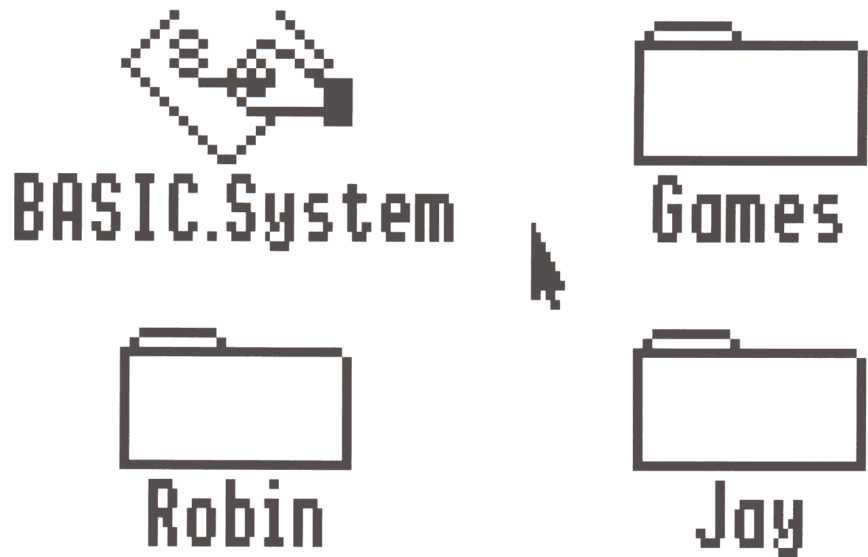
◆ **Losing track of your location?** If you have difficulty keeping track of your location at higher magnifications, you can use Command-Option-X to turn off magnification or Command-Option-Down Arrow to decrease magnification. ◆

- *Black on White and White on Black:* Click these buttons to change the display to either black-on-white (default) or to white-on-black (inverted). If CloseView is turned on,

the change takes place immediately; you can try each option to discover which is easier for you to see.

- *Use Key Equivalents:*   The Key Equivalents box is preset for shortcuts you can use to modify CloseView settings.

  □ Command-Option-O turns CloseView on or off.

  □ Command-Option-X turns magnification on or off.

  □ Command-Option-Up Arrow increases magnification power.

  □ Command-Option-Down Arrow decreases magnification power.

  □ Command-Option-I inverts the current display from black-on-white to white-on-black, and vice versa.

  (If you don't want to use these key equivalents, click in the Key Equivalents box to deselect it.)

- *Help:*   Click this button to open a window of information that may help you to use CloseView.

3 **After setting CloseView options, close the CloseView window.**

You can now return to your application and work as usual.

Resources for adaptive technology

For more information about adaptive technology for individuals with disability, you may want to consult these resources:

- *Independence Day: Designing Computer Solutions for Individuals with Disability* by Peter Green and Alan Brightman.
- *Apple Computer Resources in Special Education*
- *Apple II Guide*

Media Controller

CHANNEL

(•)1 ◯2 ◯3 ◯4
◯5 ◯6 ◯7 ◯8

1-No Connection!

T

MORE
(...)

VIDEO
(V)

DISPLAY
(V)

REC.	EJECT	STOP	AUDIO	
◇	▲	[]	(|⊪	⊪|)

SPEED	STEP	PLAY	STEP	SPEED
‹«	‹|	›	|›	|»

TRACK	SCAN	PAUSE	SCAN	TRACK
|«	«	||	»	»|

Media Ctrl
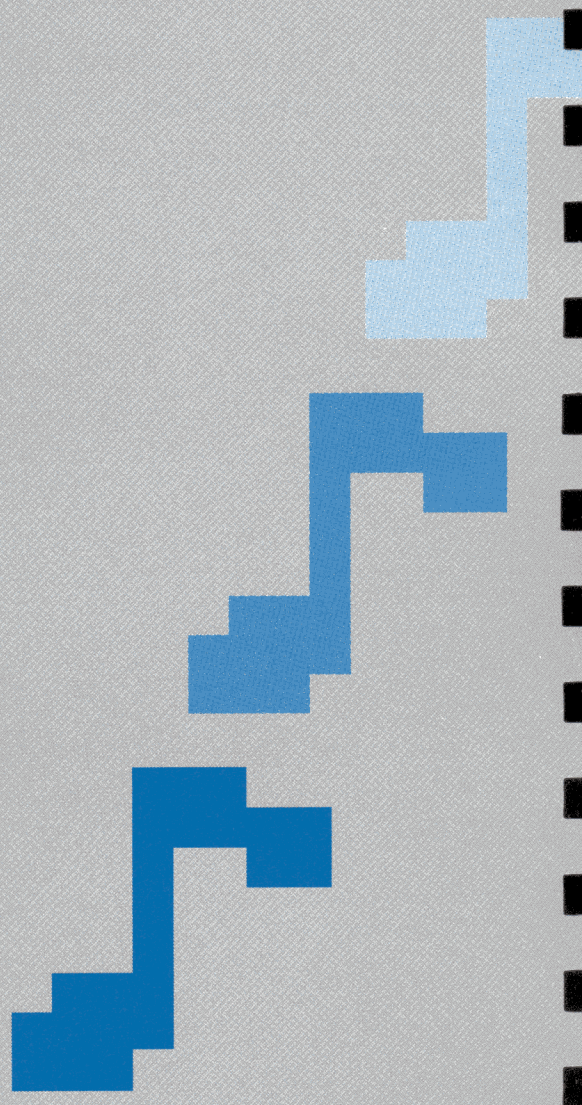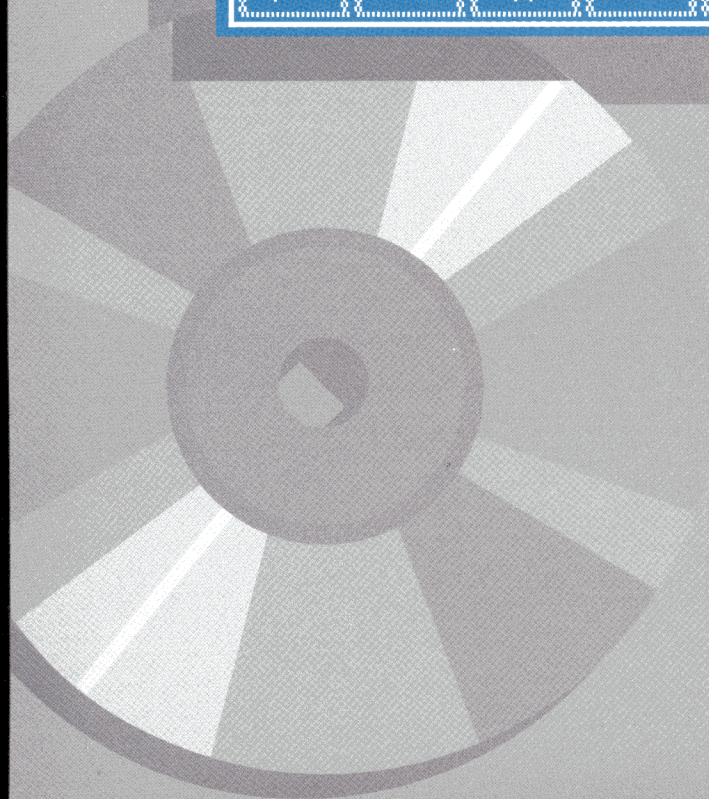
11 Controlling Multimedia Devices

Multimedia is a term that refers to the integration of text, graphics, sound, and live video—brought together and displayed in a way that allows you to access and combine as many of the elements as you like. System 6 software includes programs designed to allow you to control multimedia devices through your computer.

This chapter contains information on these topics:

- the Media Control Panel

- the Media Controller desk accessory

- the CD Remote desk accessory

- the VideoMix desk accessory

Media Control

The Media Control Panel and the Media Controller desk accessory work together to provide computer control of compact discs and laserdisc players. They allow you to set up connections and control your own combinations of sounds, pictures, and graphics from your computer desktop.

To use the Media Control Panel and the Media Controller desk accessory on an Apple IIGS computer, you must use the Installer to add updates to your startup disk. System 6 provides all the files you need to use the AppleCD SC or AppleCD SC Plus CD-ROM players, and Pioneer laserdisc players. Use this list to decide what updates to install for the equipment you plan to use:

- *For the AppleCD SC or AppleCD SC Plus,* use the "Media Control: AppleCD SC" update.
- *For the Pioneer 2000 family (which includes the 3030),* use the "Media Control: Pioneer 2000" update.
- *For the Pioneer 4200,* use the "Media Control: Pioneer 4200" update.
- *For both laserdisc players and the AppleCD SC or AppleCD SC Plus,* use the "Media Control: Everything" update.

For instructions on using the Installer to add updates, see Chapter 2, "Using the Installer." For instructions on connecting the equipment to your Apple IIGS computer, see the manuals that came with the equipment.

Once you've connected the equipment and installed the appropriate updates, you're ready to work with the Media Control programs via the desktop.

Setting connections with the Media Control Panel

To configure the Apple IIGS to work with your specific media devices, choose Control Panels from the Apple menu; then select the Media Control icon (it's listed "Media Ctrl") and click Open. You can also double-click the Media Control icon to open it.
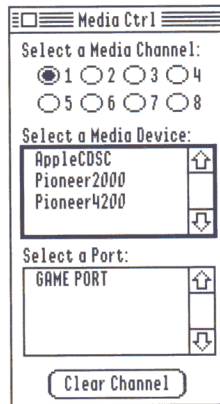
Follow these steps to set a media connection:

1 **Click one of the eight buttons to select a media channel.**

You can choose any available channel.

When a connection has been made on a channel, the channel button is displayed in red. If you want to clear a previously configured channel, click the Clear Channel button at the bottom of the screen.

The media device and port options display all available media devices and ports.

2 **Select a device from the list of available devices.**

3 **Select a media port from the list of ports.**

When you've set your connection for each piece of media equipment you're using, you must close the Media Control Panel window for the settings to take effect.

Controlling equipment with the Media Controller

Once you have assigned a media device to a channel via the Media Control Panel, you can use the Media Controller desk accessory to control the device while running other applications. To get to the Media Controller desk accessory, choose it from the Apple menu.
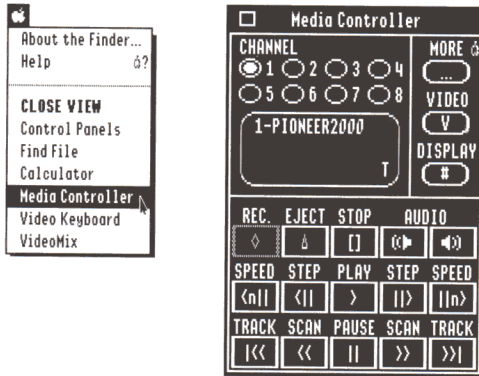
You see the Media Controller options, which look very much like the options you may have on a remote control device in your home, and have these functions:

- The Channel buttons let you select one of eight media channel devices. You must first set the channel connections by using the Media Control Panel.
- The More button gives you additional options:
  - *To see the In and Out options,* click the More button once. These options allow you to select particular time segments to play. After double-clicking the In text box, type the time for the beginning of the segment you want to play. Then select the Out text box and type the time for the ending of the segment you want to play. Click Run to play the selected segment.
  - You can also specify a segment by playing the disc. As it plays, click In when play reaches the beginning of the desired segment; click Out when play reaches the end of the desired segment. Click Run to play the selected segment.
  - *To see the additional options,* click the More button again. You see three options: Access Lock (which prevents disc ejection), Video Display (which displays the remaining time or frames), and Volume Control.

- The Video button controls whether or not you display a running laserdisc video on the desktop.

- The Display button allows you to see the time or the number of the frame the CD or laserdisc is currently playing.

- The Record button initiates record mode if the device has a record function. This button is dimmed because the devices do not currently support this function; however, the design allows for future support of such devices.

- The Eject button stops the device and ejects the disc.

- The Stop button stops play and the location is set back to the starting location.

- The Audio buttons turn on and off the audio channels, and correspond to the left and right audio channels.

- The Step buttons move backward or forward one frame button (if the device has such a capability).

- The Play button plays forward at normal speed.

- The Track buttons let you skip backward or forward by chapter or track.

  - *If you're skipping backward,* you go to the beginning of the previous chapter or track. If you are not at the beginning of a chapter or track, you skip to the beginning of the current chapter or track. If you're on the first chapter or track, you skip to the beginning of the last chapter or track.

  - *If you're skipping forward,* you go to the beginning of the next chapter or track. If you are at the end of the last chapter or track, you skip to the first chapter or track.

- The Scan buttons scan forward and backward.

- The Pause button initiates pause mode; clicking Play returns the device to play mode.

CD Remote

CD Remote is a desk accessory that allows you to control the AppleCD SC Plus or Apple CD SC drives to play your audio CDs. To use CD Remote on an Apple IIGS computer you must use the Installer to add an update to your startup disk. One update provides all the files needed to use the AppleCD SC or AppleCD SC Plus drives; install the "Drive: CD-ROM" update.

For instructions on using the Installer to add updates, see Chapter 2, "Using the Installer." For instructions on connecting the AppleCD SC equipment to your Apple IIGS computer, see the owner's guide that came with the equipment.

Once you've connected the equipment and installed the update, you're ready to work with the equipment via the desktop.

Complete instructions for using CD Remote are described in the *AppleCD SC Owner's Guide*.

△ **Important** CD Remote is not designed for working with data tracks; its function is to work with audio tracks. However, if you are working with a disc that has data and audio tracks, you can use the disc as if it were strictly an audio disc. CD Remote simply skips over the data tracks. △

VideoMix

The VideoMix desk accessory lets you adjust the combination of graphics and video made possible with the Apple II Video Overlay Card. The card allows you to superimpose a computer image on a video image. For example, you might use computer graphics to display text that describes video scenes or objects. The card works with any of the existing painting, drawing, and animation software that you can use on your Apple IIGS—in fact, you can use it with virtually any Apple II software.

To use the VideoMix desk accessory, you must have an Apple II Video Overlay Card installed in your computer and you must use the Installer to add the "Media: VideoMix" update to your startup disk.

For instructions on using the Installer to add updates, see Chapter 2, "Using the Installer." For instructions on connecting the laserdisc players and installing the video overlay card, see the manuals that came with the equipment.

Once you've made the connections and added the appropriate update, you're ready to use the VideoMix desk accessory to make adjustments to the video and graphics displays.

Selecting key color

Creating an overlay with the Apple II Video Overlay Card requires you to select a control color, called the **key color**. The key color is transparent to the incoming video and is treated separately from the other colors. All colors not designated as the key color are treated as a group and are called non-key colors. The key color indicates where the video input signal will be displayed on the screen. For example, if the key color is black, the video input signal shows through only where black is displayed on the screen. Where any other color is displayed, the video will not show through and those areas will display the computer generated graphics.

You can select the key color from the screen or from the options on the VideoMix color palette. Follow these steps:

1   **Choose VideoMix from the Apple menu.**
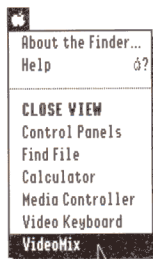
The VideoMix key color window appears, displaying a color palette with sixteen different colors.

2   **Select the color you want for your key color.**

If you want a color from the palette, click the color you want.

If you want to pick a color from the screen, click Pick From Screen. A hand with a pointing finger replaces the arrow pointer on the screen. With the hand pointer in the computer graphics area of the screen, click the color of your choice from any that appear on the screen. The color you select appears in the color palette as the key color.

Setting the video/graphics mix

You can use the VideoMix desk accessory to adjust the mix of video and graphics to create the effects you want. Follow these steps:

1 **From the VideoMix window, click the Video/Graphics Mix button.**

A window appears with two slider controls, one for the key color, and one for non-key colors. The slider controls allow you to change the dissolve value of both the key and non-key colors.

2 **Move the sliders to any of their seven positions to adjust the mix.**

If you move the sliders to the top of the slidebars (where you see the word *Graphics*), you select 0% dissolve for the key and non-key colors—resulting in the elimination of all video display on the screen.

If you move the sliders to the bottom of the slidebars (where you see the word *Video*), you select 100% dissolve for the key and non-key colors—resulting in the elimination of all graphics display on the screen. (You can redisplay the graphics by pressing the Escape key.)

You can move each slider independently to achieve a variety of display effects.

3 **Click OK to save the video/graphics mix you want.**

You can click Cancel to return to the key color palette without saving a mix.

Adjusting the tint

You can use the VideoMix desk accessory to adjust the tint and color of the video image to your preference. Follow these steps:

1 **From the VideoMix key color window, click the Video Adjust button.**

A window appears with a box set to the key color so that the current video image is shown.

2   **Adjust the tint and the color to your preference.**

Position the pointer on the up or down arrows for each setting. Press, and hold until the image in the box corresponds to the tint and color you want.

3   **Click OK to save the tint and color adjustment.**

For further details about using the Apple II Video Overlay Card and the VideoMix software, see the *Apple II Video Overlay Card Owner's Guide.*
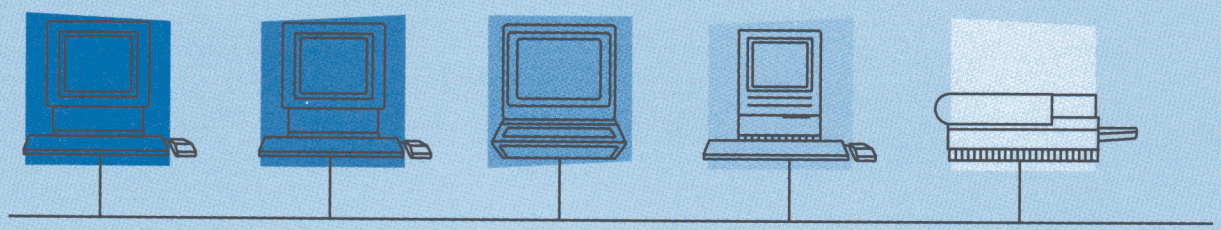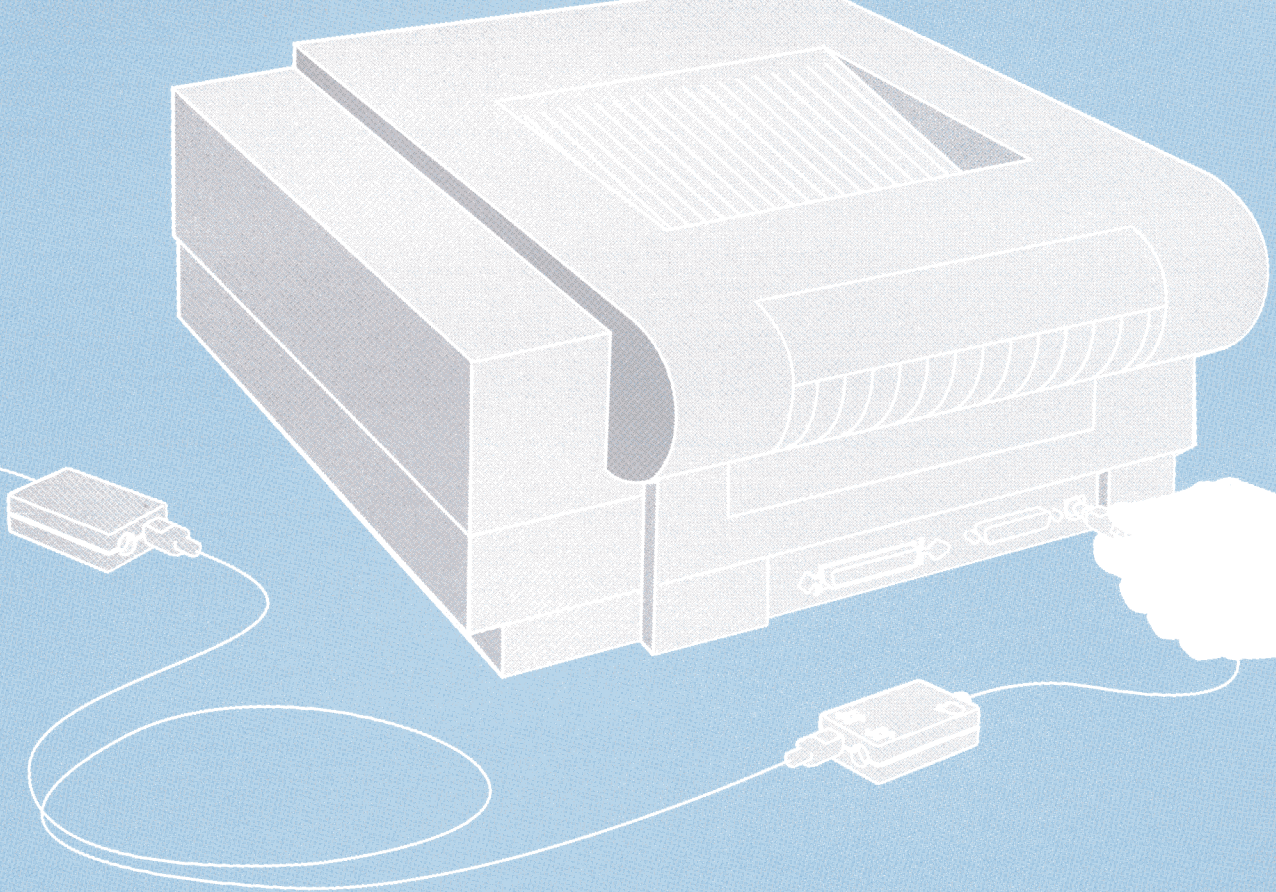
12 Networking the Apple IIGS

If you use your Apple IIGS computer at home, chances are you're using it as a stand-alone computer. If you use your computer at school or at work, however, it may be part of a **network**, a system of interconnected computers and peripheral devices, such as printers and file servers. This chapter tells you how to use System 6 with a network.

Although System 6 allows you to start up directly into ProDOS 8 without waiting for GS/OS to load, the chapter generally assumes you are working with GS/OS. You can skip reading this chapter if you don't work on a network. If you are a network administrator, refer to the documentation that came with your *Apple II Setup* disk for information about administrative tasks.

This chapter contains information on these topics:

- learning about the AppleTalk Network System

- using an AppleShare File Server

- using folders on a file server volume

- logging off a file server

- printing over the network

◆ **Note** If you will be starting up directly into ProDOS 8, refer to the *Apple IIe Workstation Card User's Guide* for information about ProDOS 8 applications that let you log on, select printers, and perform other network tasks. ◆

Learning about the AppleTalk network system

The Apple IIGS is designed to be part of the **AppleTalk network system**, which can include other types of personal computers, such as the Apple IIe, any of the Macintosh family of computers, UNIX®/Open System, and MS-DOS computers. It can also include peripheral devices such as LaserWriter and ImageWriter printers.

To connect devices to an AppleTalk network system, you can use one or more LocalTalk Locking Connector Kits, which include all the cables and connectors necessary to link devices to the network.

If your computer is part of an existing network at your school or office, there may be a **network administrator** who maintains the network. Typical duties of the network administrator include making the physical connections between devices on the network, setting up and maintaining any file servers and print servers on the network, troubleshooting whenever network users encounter problems, and answering questions about network services.

If some procedures in this chapter require decisions that you can't make about the network, or if you don't have all the networking information that you need, see your network administrator.

Network types

The AppleTalk network system includes a number of network types, such as LocalTalk and Ethernet. All AppleTalk network types use the same AppleTalk **protocols**, or rules for exchanging information, which are built into your Apple IIGS computer, the Macintosh computer, and the LaserWriter printer. These protocols can be added (with special interface cards) to the Apple IIe computer, the ImageWriter printer, and MS-DOS compatible computers. Regardless of the network type used by a **workstation** (a computer

functioning as part of a network), it can gain access to the services of the AppleTalk network system transparently.

The various network types can be pulled together into a unified, larger system called an **internet**. Networks within the internet can be grouped together into zones. Subdividing a large internet into zones makes access to network devices and services more convenient and efficient.

The advantages of networking

When your computer is part of an AppleTalk network system, you can share peripheral devices such as printers, eliminating the need for an individual printer for each user.

An AppleTalk network system can also include **AppleShare print servers**—specially configured Macintosh computers that store documents waiting to be printed, allowing several people to send documents to be printed at the same time. You'll learn more about using AppleShare print servers later in this chapter.

Members of an AppleTalk network system can share applications and exchange mail, documents, and other information electronically by using **AppleShare file servers**—specially configured Macintosh computers that allow network users to store and share information. A single Macintosh computer can be used as both a print server and a file server.

System 6 also allows you to share files with any Macintosh computer that is set up with Macintosh System 7. If Macintosh computers on your network are configured with earlier versions of system software, you will be able to store and share information only via AppleShare file servers.

Here are a few examples of ways you might use an AppleShare file server:

- To read or post messages in a class or departmental "bulletin board" folder.
- To keep frequently used electronic forms (such as expense reports, travel advance requests, and payroll documents) in a folder from which employees can copy as needed.
- To maintain documents that change frequently (such as student rosters, company address lists, and client databases).
- To share public-domain software with other network users (or copyrighted software, if the copyright statement or a special license allows multiple use).

You'll learn about setting up AppleShare file servers later in this chapter.

An overview of AppleShare file servers

AppleShare is the file server software that includes a set of **network services** that gives you access to resources on an AppleTalk network system. Along with the AppleShare file server software, a file server includes a Macintosh computer with one or more hard disk drives that lets you store large amounts of information. AppleShare file servers provide storage and sharing of applications and data files for AppleTalk network system users.

File server volumes

Each hard disk that's part of a file server is known as a **volume**. File server volumes function logically in much the same way as any other kind of disk. When contrasted to file server volumes, disks connected directly to your computer are sometimes called **local disks**.

When you **mount** a file server volume, its icon appears on your desktop. You can open the icon just as you would open any other disk icon, and you can use the file server volume the same way you use other disks—creating folders, opening applications, saving documents, and so on. An added benefit of file server volumes is that more than one network user can have access to them at the same time.

If Macintosh computers on your network are configured with System 7 software, Apple IIGS System 6 allows you to share files with them in almost the same way you work with other file server volumes. The only limitation is that you cannot start up from such volumes. (You'll learn more about starting up directly over the network later in this chapter.)

◆ **CD-ROM volumes and other locked volumes** Your file server may include locked volumes, such as CD-ROMs, whose contents can't be changed. A locked volume functions much the same as a write-protected 3.5-inch or 5.25-inch disk. You can't create folders or save documents on a locked volume because you can't alter its contents. ◆

Logging-on alternatives

When you want access to one or more file server volumes, you go through a process called **logging on**. For instructions on how to install the described updates on the Apple IIGS computer, see Chapter 2, "Using the Installer," starting on page 19.

You can log on to a file server in four ways:

- *From a hard disk that includes the AppleShare software and the Finder* You create such a disk by installing the "System 6: Hard Disk or FDHD" update, along with the "Network: AppleShare" update. When you start up with the disk, the Finder is your startup application. You can then use the AppleShare Control Panel to log on to a file server and select file server volumes, as explained in "Logging on to a file server from the AppleShare Control Panel," on page 280.

- *From a floppy disk that includes the AppleShare software, but not the Finder* You create such a disk by installing the "Network: AppleShare, 3.5" Disk" update. Although the disk does not include the Finder, it does allow you to use the AppleShare Control Panel to log on to a file server, and then to select an application, as explained in "Logging on to a file server from the AppleShare Control Panel," on page 280.

- *Over the network (with a local disk)* You create such a disk by installing the "Network: Local Startup" update (so named because it enables network startup from a local disk). Because some of the information needed for network startup is loaded from the floppy disk, this method is faster than network startup without a local disk. You bypass the Finder, logging on to a file server and launching whatever startup application the network administrator has assigned to you.

  Network startup from a local disk is useful primarily in classroom settings, where a teacher may want to have control over the application from which a student starts up. It is explained in "Logging off without the Finder," on page 300.

- *Directly over the network (without a local disk)* You can start up this way if you've installed the "Network: Server Startup" update on the startup volume of the file server. When you switch on the computer, you automatically log on to a file server and launch whatever startup application the network administrator has assigned to you.

  The advantage of this method is that it doesn't require a disk drive; the disadvantage is that it can take somewhat longer than starting up with a local disk. This way to log on is explained in "Starting up over the network without a local disk," on page 284, and "Starting up over the network with a local disk," on page 288.

When you're running the Finder, you can also create your own log-on shortcut by using EasyMount, a Finder extension included with System 6. EasyMount is installed automatically when you install your networking update.

To set up your shortcut, choose Create Server Alias from the Extras menu after selecting the server icon in the Finder. (An alias is a small file that gives you quick access to the item with which it's associated—in this case, the server.) A dialog box appears, allowing you to name your alias and locate it wherever you like—just as you would do with any normal file. From then on, you can log on to the server by double-clicking the alias. Note that you also have the option to save your alias with a password; if you do, access to the server alias is open. (That is, someone else could log on to the server without knowing your password.) When you're finished using the volumes on a file server, you go through a process called **logging off**, as explained in "Logging off a file server," on page 300.

Registered users and guests

A file server is like a central storeroom for files. Because you may want some files or folders to be private—or to be available only to a specific group of network users—the AppleShare File Server software provides a security system to make sure that only the appropriate people have access to information stored on file server volumes.

When the network administrator set up your file server, he or she probably created a list of **registered users**. If you're a registered user of a file server, your administrator has assigned you a **user name** and a **password**. When you log on as a registered user, your user name identifies you to the file server, and your password (a unique word or set of characters that no one else knows) lets you confirm that you're who you say you are.

Your file server administrator may also have set up **groups** of one or more registered users. The members of an AppleShare group usually need access to the same information. For example, teachers may need to share information among themselves, but restrict that information from students.

Even if you're not a registered user of a file server, you can log on as a **guest**, unless the file server has been set up to allow access only to registered users. Guests are given the user name <Any User> and do not need a password. When you log on as a guest, you don't have access to restricted information, but you can use public files and folders. Anything you create or store on a file server volume while logged on as a guest is available to all network users, including other guests.

Access privileges

The AppleShare File Server software has a feature called **access privileges** to let users restrict access to information in particular folders. When a registered user creates a folder on a file server volume, the folder is automatically set up as a private folder. The registered user is the **owner** of the folder, and he or she controls the access to its contents. Only the registered user can see or change what's in the folder unless he or she gives other users access to it.

You'll probably store some private information on a file server—for example, payroll or personnel records, students' grades, and so on. But you may also store information that you want to share, either with certain users on the network or with everyone on the network. Access privileges let you set up different restrictions for different folders.

For an explanation of the different access privileges and the FolderPriv Control Panel, see "Setting access privileges for a folder" later in this chapter.

AppleShare-aware applications

An application is **AppleShare-aware** if it can be used safely with an AppleShare file server. With an AppleShare-aware application, a user should be able to launch the application from the file server. In addition, a user may be able to store documents on the file server so that several persons can simultaneously have access to those documents, without inadvertently destroying each other's work.

In addition to being AppleShare-aware, each application falls into one of four categories:

- single-user/single-launch
- single-user/multi-launch
- multi-user/single-launch
- multi-user/multi-launch

If you want to share applications on an AppleShare file server, it's best to use multi-launch applications. If you aren't sure whether an application is AppleShare-aware, see the manual that came with the application.

Naming rules

AppleShare file servers use the HFS file system. The following rules apply when you name files and folders on a file server volume:

- The name can have no more than 31 characters.
- You can't use a colon (:) in the name.

◆ **Remember** If you move an item from a file server volume to a ProDOS disk, the item must have an acceptable ProDOS name. If you've installed the "FST: HFS" update and you are moving an HFS file to an HFS partition or disk, you can use HFS naming rules, which are the same as AppleShare naming rules.

   If you'll be sharing items with Apple IIe users on the network, however, you should follow the ProDOS naming restrictions described in "Renaming icons," on page 75. When you drag an item from a file server volume to a local disk, you may see a dialog box informing you that the item's name is unacceptable and suggesting a new name.   ◆

What you need to get started

If your network already includes an AppleShare file server, you only need to install software on the file server and on your Apple IIGS startup disks to begin working with network services.

   If your Apple IIGS isn't connected to a network, and you want to connect to your network, see your network administrator or refer to the *LocalTalk Cable System Owner's Guide* or the *AppleShare File Server Administrator's Guide* available from your authorized service provider.

   The preliminary set-up information in this chapter refers to AppleShare file server disks that you must have available. The disk you need depends on the setup procedures that you'll be following.

   If you're creating 3.5-inch network startup disks, you'll need the disks that came with the Apple IIGS System 6 software, as well as a blank disk for each network user.

   In addition, if you'll be using your Apple IIGS with an AppleShare file server, you must have the software that came with your AppleShare product package.

Using an AppleShare File Server

If your Apple IIGS is part of a network, you probably have access to an AppleShare file server—a Macintosh computer that has one or more hard disks used exclusively for storing and sharing information.

If your network includes one or more AppleShare file servers, read this section for instructions on using the file server.

Copying Apple II applications to an AppleShare file server

You copy Apple II applications to a file server volume in the same way that you copy other items. For instructions, see "Placing copies of files and folders on a different disk," on page 125. Network users who start up with a local AppleShare startup disk are free to open any application to which they have access on the file server. For these users, you can store applications in any folder with the appropriate access privileges.

Make sure that the applications you copy to the file server are AppleShare-aware applications—that is, applications designed specifically to work on an AppleShare file server. If they aren't, there may be restrictions on how you can use the applications on a network. If you aren't sure whether a particular application is AppleShare-aware, check with the software publisher or with your authorized service provider.

Set the access privileges so that the appropriate users will have access to applications. For instructions, see "Setting access privileges for a folder," on page 289.

△　**Important**　Before you copy any copyrighted applications to a file server volume, be sure to obtain the appropriate license from the manufacturer. Sharing applications on a file server without express permission is a violation of copyright law.　△

When you copy setup files or desk accessories that will be used by those who start up over the network, refer to the following guidelines in deciding where on the file server to store the applications:

- *If a setup file is to be shared by everyone,* copy it into the System.Setup folder.
- *If a desk accessory is to be shared by everyone,* copy it into the Desk.Accs folder.

- *If a setup file or a desk accessory is to be used only by an individual user,* copy it into the Setup folder inside the individual's folder, which is inside a folder called Users on the file server startup volume.

◆ **Note** For network startup with a local disk, the System.Setup and Desk.Accs folders are located on the floppy disk. For network startup without a local disk, they're located inside the System folder on the file server startup volume. ◆

If network users will start up with a disk, you also need to use the AppleShare Admin program to set startup applications for individual users, as explained in *AppleShare File Server Administrator's Supplement for Apple II Workstations.*

Logging on to a file server from the AppleShare Control Panel

Follow these steps to log on to an AppleShare file server from the AppleShare Control Panel:

1 **Start up your Apple IIGS with a startup disk on which you have installed the "Network: AppleShare" or "Network: AppleShare, 3.5" Disk" update.**

For instructions on installing one of the AppleShare updates on a startup disk, see "Installed networking options," on page 197.

If you start up from a disk that includes the Finder, you see the Finder desktop.

If you start up from a disk that doesn't include the Finder, you'll see the System 6 Program Launcher dialog box with a list of available applications. Click Cancel.

2 **Choose Control Panels from the Apple menu.**

The control panel window appears on your screen.

3 Open the AppleShare Control Panel icon.

When you select the AppleShare Control Panel, the AppleShare options appear.
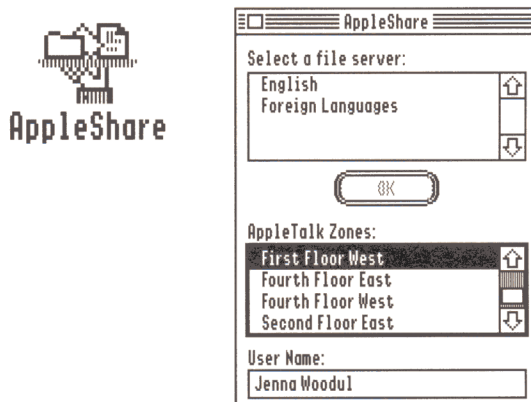
4 If necessary, select the zone that contains the file server you want to log on to.

If your network isn't divided into zones, or if the desired zone is already selected, skip to step 5.

To select a zone, simply click its name in the AppleTalk Zones window. A list of the file servers in that zone appears in the window labeled "Select a file server."

◆ **By the way** You can use the keyboard to select zone or file server names. Select the list by pressing the Tab key until a thick black border surrounds the list. Then either use the up or down arrows, or type the first few characters of the name to select it. ◆

5 Click the name of a file server in the window labeled "Select a file server".

6   **Click OK.**

You see this dialog box.

```
┌─────────────────────────────────────┐
│ ┌─────────────────────────────────┐ │
│ │                                 │ │
│ │  Connect to the file server     │ │
│ │  'Foreign Languages' as:        │ │
│ │                                 │ │
│ │      ○ Guest                    │ │
│ │      ◉ Registered User          │ │
│ │                                 │ │
│ │  Name:  │Jenna Woodul        │  │ │
│ │  Password: │   │  (Scrambled)   │ │
│ │                                 │ │
│ │   ( Cancel )  (   OK   )        │ │
│ │   ( Set Password )              │ │
│ └─────────────────────────────────┘ │
└─────────────────────────────────────┘
```

7   **Specify whether you want to log on to the file server as a guest or as a registered user.**

- *If you want to log on as a guest,* click the Guest button (or press Command-G) and then click OK.

- *If you want to log on as a registered user,* click the Registered user button (or press Command-R), type your password and then click OK. If you don't know your password, check with your network administrator.

8   **Select the file server volumes to which you want access.**

To select a single file server volume, click its name. To select additional file server volumes, hold down the Command key as you click each additional name. (If you don't have access privileges for a file server volume, its name will be dimmed.)

9   **If you want automatic access to one or more file server volumes each time you start up the computer, click the check box to the right of the volume names.**

Two new options appear in the dialog box for selecting file server volumes. The Save My Name Only option is selected.

```
┌─────────────────────────────────┐
│ ┌─────────────────────────────┐ │
│ │                             │ │
│ │ 'Foreign Languages'         │ │
│ │                             │ │
│ │ Select the server volumes you want: │ │
│ │ ┌───────────────────┬───┬─┐ │ │
│ │ │ French            │ ⊠ │⇧│ │ │
│ │ │ German            │ ☐ │ │ │ │
│ │ │ Spanish           │ ☐ │ │ │ │
│ │ │ Latin             │ ☐ │⇩│ │ │
│ │ └───────────────────┴───┴─┘ │ │
│ │ Checked volumes ( ⊠ ) will be │ │
│ │ opened at system startup time. │ │
│ │                             │ │
│ │   ○ Save My Name Only       │ │
│ │   ◉ Save My Name and Password │ │
│ │ ┌────────────┐ ┌──────────┐ │ │
│ │ │    Quit    │ │    OK    │ │ │
│ │ └────────────┘ └──────────┘ │ │
│ └─────────────────────────────┘ │
└─────────────────────────────────┘
```

- *If you want the computer to ask for your password before logging you on to the selected server or servers each time you start up,* leave the Save My Name Only option selected.

- *If you want the computer to bypass asking for your password when it logs you on to the selected server or servers each time you start up,* select the Save My Name and Password option.

▲ **Warning** Choosing the second option will permit anyone who turns on your computer access to the network and your files on the server. ▲

10 **Click OK or press Return.**

The dialog box disappears and you return to the AppleShare Control Panel. Close the AppleShare Control Panel, and then close the Control Panels window.

- *If you started up from a disk that includes the Finder,* the icon of each file server volume you selected now appears on the desktop.

- *If you started up from a disk that doesn't include the Finder,* you see the names of the server volumes that appear in the Program Launcher window.

Starting up over the network without a local disk

The main advantage of starting up over the network without a local disk is that you don't need a local disk drive. Your network administrator has stored all the necessary software on the file server to let you start up and use your Apple IIGS. The network administrator also selects whether you start up with the ProDOS 8 or the GS/OS operating system.

Follow these steps to start up over the network:

1 **Start up (or restart) the computer.**

You see a series of messages indicating that the computer is starting up over the network and looking for file servers.

If your network is divided into zones, or if there is more than one file server on your network, you see a screen similar to this one.


```
 File Server Log On V1.2

   Current zone: First Floor West

   Select a file server:
   English
   Foreign Languages




 Select: ↑↓     Change zones: Esc     Accept: ↵
```
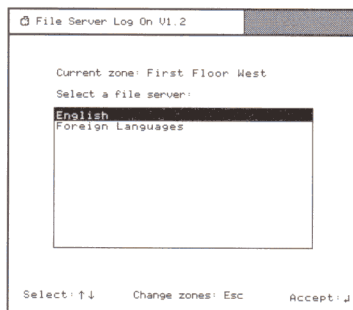
If your network isn't divided into zones and there is only one file server on the network, you see the screen shown in Step 4. Proceed to step 5.

2 If you want to select a new zone, press the Esc key.

You see this screen.

```
 File Server Log On V1.2

      Current zone: First Floor West

      Select a new zone:

     First Floor West
     Fourth Floor East
     Fourth Floor West
     Second Floor East
     Second Floor West
     Third Floor East
     Third Floor West




     Select: ↑↓        Quit: Esc        Accept: ↵
```
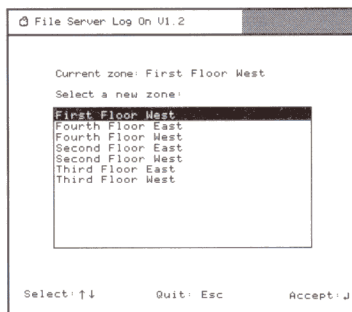
The name of the current zone (if your network is divided into zones) appears near the top of the screen. If the current zone is the one you want—or if the network doesn't have zones—proceed to step 4.

3 Select a new zone.

Use the Down Arrow or Up Arrow key to highlight the name of the desired zone, and then press Return.

You see a file server selection screen (similar to the one in Step 1) for the new zone.

4 Select a file server.

Use the Down Arrow or Up Arrow key to highlight the name of the file server you want to log on to, and then press Return.

You see the log-on screen. The "Log on as a Registered User" option should be highlighted.

```
 File Server Log On   V1.2

     Log on as a Registered User

     Log on as a Guest






     Select: ↑↓      Cancel: Esc      Accept: ↵
```
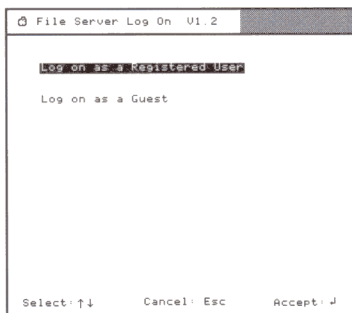
5 **Specify whether you want to log on as a guest or as a registered user.**

- *If you want to log on as a guest,* use the Down Arrow key to highlight "Log on as a Guest" and press Return.

  □ *If the file server has only one volume,* you'll see the "Welcome to the IIGS" screen while the computer launches your startup application over the network. You're logged on automatically, so you can skip the rest of this procedure.

  □ *If the file server you selected has more than one volume,* you'll see the selecting file server volumes screen. Go on to step 8.

- *If you want to log on as a registered user,* press Return. You'll be asked to supply your user name and password in the lower half of the screen, as shown.

```
 File Server Log On   V1.2

   √Log on as a Registered User

    Log on as a Guest


    Enter your name and password:

    Name: _____

    Password:


 Change: Tab     Cancel: Esc      Accept: ↵
```
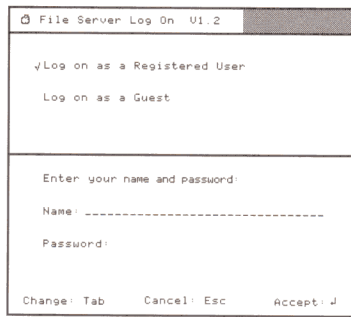
6 **Type your user name.**

Be sure to type your user name as it was given to you by the network administrator—though you don't need to worry about matching uppercase and lowercase letters. If you make a mistake, use the Delete key and retype. When the name is correct, press Return.

◆ **Keyboard shortcuts** Pressing Control-X clears the entire line; pressing Control-Y clears all characters between the insertion point and the end of the line; pressing Control-R restores the previous content of the line. ◆

7 Type your password.

As you type, asterisks appear in place of characters so that no one can see your password as you type it.

Type your password exactly as it was given to you by the network administrator—be sure to match uppercase and lowercase letters. If you think you've made a mistake, use the Delete key to erase the asterisks and then retype the password.

When the password is correct, press Return.

If the file server has only one volume, you see the "Welcome to the IIGS" screen while the computer launches your startup application over the network. You're logged on automatically, so you can skip step 8.

If the file server you selected has more than one volume, you see the selecting file server volumes screen. Go on to step 8.

```
 File Server Log On  V1.2

  Mark the additional volume(s) you need:

  √ Startup
    French
    German
    Spanish
    Latin




  Select: ↑↓←→     Quit: Esc        Accept: ↵
```
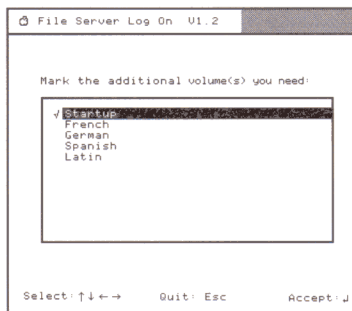
8 Select the file server volumes to which you want access.

The startup volume is automatically selected (with a checkmark) and cannot be deselected. Your network administrator will tell you which other volumes, if any, you need to select.

To select a volume, press the Down Arrow to highlight the volume's name, then press the Left Arrow key (or Space bar) to add a checkmark. (Pressing the Left Arrow key again removes the checkmark.)

When all the volumes you want are selected, press Return. You see the "Welcome to the IIGS" screen while the computer launches your startup application over the network.

Starting up over the network with a local disk

If you'll be logging on with a local disk, your network administrator will probably create your startup disk for you. If you don't have the appropriate startup disk, check with your administrator or you can create such a disk by installing the "Network: Local Startup" update.

You also need to make sure that your startup slot is set to the slot corresponding to the disk drive in which you insert the startup disk. For instructions, refer to Chapter 7, "Using the Desktop Control Panels."

The process for logging on with a local disk is similar to the process for starting up over the network without one; however, it is faster than starting up over the network because part of the necessary system information loads from the local disk.

Follow these steps to log on to the network with a local disk:

1 **Start up (or restart) the computer with your AppleShare startup disk.**

   You see the "Welcome to the IIGS" screen.

2 **The process you follow depends on what screen you see next.**

   ▪ *If you see the following screen,* follow steps 2 through 8 in the preceding section, "Starting up over the network."

```
 File Server Log On V1.2


     Current zone: First Floor West

     Select a file server:
     English
     Foreign Languages






   Select:↑↓     Change zones: Esc     Accept:↵
```
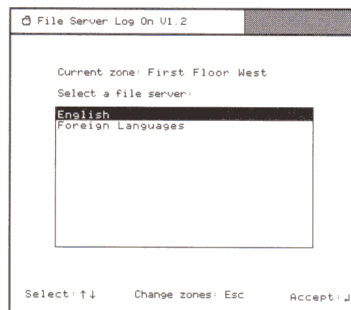
- *If you see the following screen,* follow steps 5 through 8 in the preceding section, "Starting up over the network."

```
 ⬠ File Server Log On   V1.2

    Log on as a Registered User

    Log on as a Guest




 Select:↑↓        Cancel: Esc      Accept: ↵
```
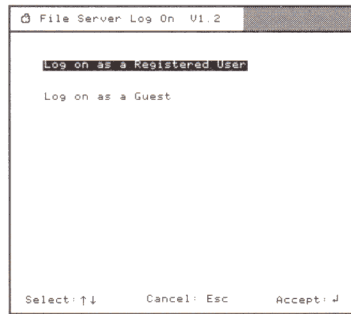
As you go through the appropriate steps in "Starting up over the network," there will be slight differences in what you see on the screen—for example, you won't see the message "Welcome to the IIGS" in step 7 or step 8—but the sequence you follow will be the same.

Using folders on a file server volume

Your network file server may contain a vast amount of information. Folders organize that information so that you can store, share, and secure it in the most efficient way.

Setting access privileges for a folder

Because file server volumes represent shared storage areas, you may want to set access privileges for your folders to make sure that only the appropriate people have access to the information stored there. You can set access privileges for a folder only if you are the registered user who owns it or if it is owned by *<Any User>*.

You can use access privileges in many ways. In a school setting, for example, you might want to set up a "bulletin board" folder for announcements, where only teachers can post announcements but where all network users can read announcements.

In creating customized access to a folder, you must decide which network users (if any) have the following access privileges:

- *See Folders:* The privilege to see the folders (if any) in your folder.
- *See Files:* The privilege to see, open, and copy documents and applications (if any) in your folder.
- *Make Changes:* The privilege to make changes to your folder's contents, including removing, renaming, or deleting contents as well as adding files or folders.

When you set access privileges for a folder, you must decide which of the following user categories should have each access privilege:

- *Nobody* means no one has access, including you (although the owner or administrator can change the privileges so either can get access).
- *Owner* means you (unless you transfer ownership of the folder).
- *Group* means any single AppleShare group the network administrator has created; you can designate a group of which you are not a member.
- *Owner & Group* means you (unless you transfer ownership of the folder) and any single AppleShare group the network administrator has created; you can designate a group of which you are not a member.
- *Everyone* means all network users, including guests.

◆ **An example** A teacher might want to create a folder where students in his or her class can turn in an essay. Students in the class should not be able to read the essays that have been turned in, and students from other classes should not be able to add anything to the folder.

In creating this folder, the teacher would assign the See Folders and See Files privileges to Owner and the Make Changes privilege to Owner & Group. (The teacher must also assign a group to the folder—in this case, the group of students in the class. Because only the network administrator can create groups, the teacher should first ask the administrator to set up the appropriate group.) ◆

If you find that you assign the same privileges to all or most of the folders you create, you can use the FolderPriv Control Panel to create a default set of privileges that are assigned to all new folders you create. See "Setting up default folder privileges," on page 298.

The icon of a folder on a file server volume will look different from icons on local disks, depending on what access privileges the owner of the folder has assigned you. There are five icons used for folders on file server volumes:

A *plain folder icon* (like the icon used for folders on local disks) means that you are not the owner of the folder but that you can open the folder. (In other words, you have the See Files privilege, the See Folders privilege, or both.)

A *folder icon marked with a black tab* means that you can set access privileges for the folder's contents. The folder is owned either by you or by *<Any User>*.

A *dimmed folder icon* means you have no access privileges for the contents of the folder.
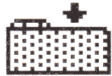
A *dimmed folder icon with an arrow* means that you have the Make Changes privilege for the folder but not the See Folders and See Files privileges. This folder is called a **drop folder** because you can drop off documents for the owner, but you can't open the folder to see its contents. For instructions on creating a drop folder, see "Setting up default folder privileges," on page 298.

A *dimmed folder icon marked with a black tab* means that you have no access privileges for the contents of the folder but that you or *<Any User>* owns the folder and thus can change the folder's access privileges. For more information on this type of folder, see "Setting access privileges for a folder," on page 289.

When you open a folder, icons representing your access restrictions appear below the title bar of the window and to the left of the information about directory contents. In the example illustration (Table 12-1), the icons mean that the user is not allowed to see files, not allowed to see folders, and not allowed to make changes. Such icons may appear individually or in combination, depending on the restrictions that apply to the folder that's open on the desktop.

Table 12–1 Menu bar icons showing access privileges you don't have

When you see	You know that
	You can't see the enclosed folders
	You can't see the enclosed files
	You can't make changes to the folder's contents
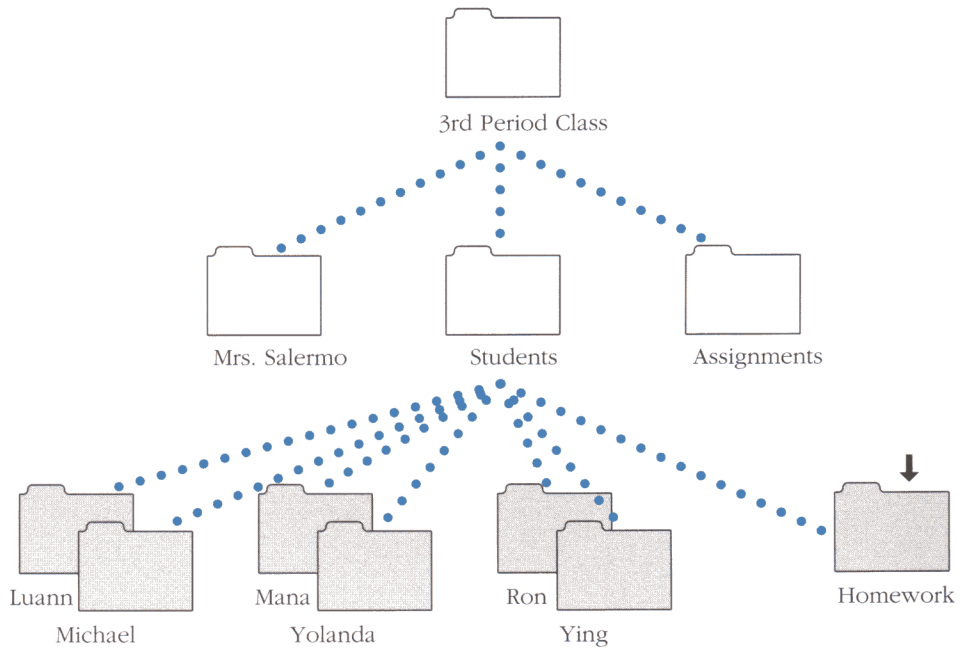
Figure 12-1 A typical hierarchy of folders on a volume

Figure 12-1 shows a typical hierarchy of folders on a volume, organized by class. You may organize your folders in any way you choose.

Follow these steps to set access privileges for a folder:

1 **Select the folder icon and choose Icon Info from the Special menu, or press Command-I.**

You see a window showing a set of spiral bound cards

2 Click the Access tab at the bottom of the Info notebook.

You see the Access card.

```
┌─────────────────────────────────────────────┐
│ ▤□▤▤▤▤▤▤  Info on "A.Folder"  ▤▤▤▤▤▤▤▤       │
│ ▐▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▌ │
│  Owner: │ Jenna Woodul                    │  │
│  Group: │                                 │  │
│  ·········································   │
│                     See Folders: │ Owner  ▼│ │
│         │ Private        ▼│  See Files: │ Owner  ▼│ │
│                    Make Changes: │ Owner  ▼│ │
│  ·········································   │
│   (  Apply  )    ( Apply to enclosed folders ) │
│   │ General ││ Where ││ Comment ││ Access │   │
└─────────────────────────────────────────────┘
```
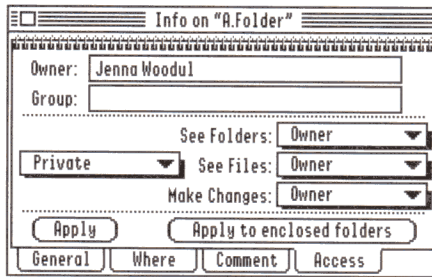
◆ **Note** The Access tab appears only when you select a file server volume or a folder on a file server volume and choose Icon Info. It doesn't appear when you select a file on a file server volume and choose Icon Info. ◆

3 If you want to, use the pop-up menu on the left to set access privileges.

The pop-up menu provides shortcuts for setting access privileges. Position the pointer on the box, and hold down the mouse button. A pop-up menu appears, listing the five possible settings. Drag through the list until the setting you want is highlighted, then release the mouse button.

Choosing any of the menu items *except Custom* automatically makes appropriate access changes in the pop-up menus on the right. The following notes explain your options:

- *Public:* All access privileges are automatically set to Everyone. That is, everyone on the network can see this folder and its files, and can make changes to them.

- *Private:* All access privileges are automatically set to Owner. That is, only you can see this folder and its files, and can make changes to them.

- *Drop Folder:* See Folders and See Files are set to Owner; Make Changes is set to Everyone. A drop folder allows users to drop off documents for you. Once a document is dropped off, only you can see its icon and open it. In other words, a drop folder works much like a locked mailbox or a suggestion box. When you see a drop folder in its directory window, it appears like any other locked folder you own—that is, it has a lock icon to the left of its name and it has a black tab. But when other users see the folder in

its directory window, they see a shaded folder with an arrow pointing to it—indicating that it is a drop folder.

How a drop folder icons appears
to the owner
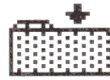
How a drop folder icon appears
to other users

◆ **By the way** Users who work with an application that has a Save or Save As directory dialog box won't be able to use these features to save a copy of a document in your drop folder. (To do so they would need to have See Folders privilege, and the folder would no longer be a drop folder.) They must to use the Finder to drop off a copy of the document. ◆

- *Bulletin Board:* See Folders and See Files are set to Everyone; Make Changes is set to Owner. A bulletin board folder allows any user to open and read documents. The person who maintains the bulletin board folder is the only one who can make changes to the contents of the folder, so he or she is the only person who can post or change documents. When you see a bulletin board in its directory window, it appears like any other folder.
- *Custom:* This setting doesn't provide a shortcut; it allows you to customize your settings. If you won't be customizing, skip to step 5.

4 **To customize settings, use the pop-up menus on the right to set access privileges.**

For each setting, position the pointer on the menu box, and hold down the mouse button. A pop-up menu appears, listing the five possible settings. Drag through the list until the setting you want is highlighted, then release the mouse button.

◆ **Safeguarding the contents of a folder** To safeguard the contents of a folder on a file server volume—making it impossible for anyone, including you, to accidentally erase the information it contains, set the Make Changes privilege to Nobody. (Before you do so, make

sure the folder already contains the information you want to keep.) Note that safeguarding the contents of a folder doesn't prevent the folder from being renamed or moved. To do that, you need to lock the folder, as explained in "Locking a file or folder," on page 131. ◆

5   **Click the appropriate button to apply the changes.**

   ▪ *If you want to assign the same set of access privileges to all the folders within this folder as well,* click the Apply to Enclosed Folders button.

   ▪ *If you don't want to assign the same set of access privileges to all the folders within this folder as well,* just click the Apply button.

6   **Close the Info window.**

   Your folder now carries its new access privileges.

Transferring ownership of a folder

If you are the owner of a folder, you can transfer ownership to another registered user or to *<Any User>*. Once you give away ownership of a folder, only the new owner will be able to change the access privilege settings.

   Note that if *<Any User>* is the owner of a folder, any registered user can claim ownership of that folder. Once someone claims ownership of a folder created by a guest, he or she will be the only person able to change the folder's access privilege settings.

Follow these steps to transfer ownership of a folder:

1   **Open the Access card.**

   For instructions, follow steps 1 and 2 on page 293 to reach the Access card screen.

2   **If you want to, make any changes to the access privileges for the folder.**

   For instructions, see "Setting access privileges for a folder," on page 289.

3   **Drag across your user name to select it.**

4 **Type the name of the registered user to whom you want to transfer ownership of the folder.**

If you want to give ownership of the folder to all network users, type `<Any User>` instead of a registered user name (or just leave the name blank).

5 **Click the appropriate button to apply the changes.**

  ▪ *If you want to assign the same set of access privileges to all the folders within this folder as well,* click the Apply to Enclosed Folders button.

  ▪ *If you don't want to assign the same set of access privileges to all the folders within this folder as well,* just click the Apply button.

A dialog box appears asking you to confirm that you want to change ownership of the folder. Click OK.

6 **Close the Info window.**

Assigning a group to a folder

If your network administrator has set up groups on the network, you can assign a group to any folder you create. Assigning a group merely indicates what group you want to associate with the folder—you still need to set access privileges for the Group (or the Owner & Group) category before members of the group have access to the contents of the folder.

Your network administrator may also have assigned you to a **primary group**—that is, a group with which your folders are associated unless you specify otherwise. (Primary groups are particularly useful when much of your work is likely to be shared by the same subset of network users.) When you create a folder, the primary group is set as the folder's group—but you're free to change that designation to another group if you prefer. Even when your primary group is associated with a folder, members of that group will not have access to the folder unless you set access privileges accordingly.

Follow these steps to assign a group to a folder (or to change to a different group):

1 **Open the Access card.**

For instructions, follow steps 1 and 2 on page 296 to reach the Access card.

2 **Drag across the current group name (if any) to select it.**

Or, if there is no group name, click anywhere in the box to the right of the word Group to position the insertion point in the box.

3 **Type the new group name exactly as it was given to you by the network administrator.**

4 **If you want to, make any changes to the access privileges for the folder.**

For instructions, see "Setting access privileges for a folder," on page 289.

5 **Click the appropriate button to apply the changes.**

- *If you want to assign the same privileges to all the folders within this folder,* click the Apply to Enclosed Folders button.

- *If you don't want to assign the same privileges to all the folders within this folder,* just click the Apply button.

6 **Close the Info window.**

Setting up default folder privileges

If you find that you assign the same folder privileges to most of the folders you create, you can use the FolderPriv Control Panel to set up default privileges that will be automatically assigned to all your new folders. Follow these steps:

1 **Choose Control Panels from the Apple menu.**

The Control Panels window appears.

2 Select the FolderPriv Control Panel, and click Open.

It may be necessary to scroll through the column until the FolderPriv Control Panel is visible. (You can also double-click the icon to open it.)
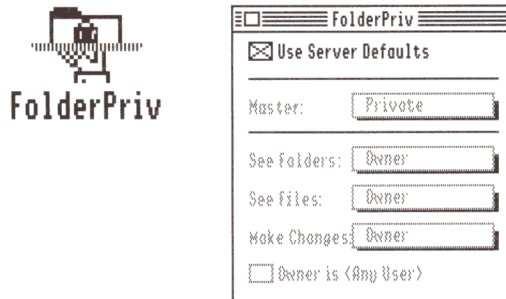
3 Click in the Use Server Defaults checkbox to deselect it.

If you want to use the server defaults, leave the checkbox selected and close the FolderPriv Control Panel.

4 Set your default privileges.

To use the pop-up menus, position the pointer on the setting box, hold down the mouse button, and drag through the list until the desired setting is highlighted.

For more information about the settings, see "Setting access privileges for a folder," on page 289.

If you want your folders to be open to all, click in the Owner Is <Any User> checkbox.

5 Close the FolderPriv Control Panel and the Control Panels window.

All folders you create are automatically assigned the default privileges you have set, unless you assign them individually. For information about assigning privileges to an individual folder, see "Setting access privileges for a folder," on page 289.

Logging off a file server

You can log off a file server in four ways:

- *If you started up from an AppleShare startup disk using the Finder,* follow the instructions in the next section, "Logging off in the Finder."

- *If you started up from an AppleShare startup disk without the Finder,* follow the instructions in the next section, "Logging off without the Finder."

- *If you started up over the network (with or without a local disk), and if the network administrator has installed the Server Quick Logoff program,* follow the instructions in the section, "Logging off with Quick Logoff," on page 301.

- *If you started up over the network (with or without a local disk), and if the network administrator has not installed the Server Quick Logoff program,* follow the instructions in the section, "Logging off without Quick Logoff," on page 301.

Logging off in the Finder

Follow these steps to log off a file server when you're using a Finder-based AppleShare startup disk:

1 **Quit the application you're using if you haven't already done so.**

You return to the Finder desktop.

2 **Drag the icons of all file server volumes to the Trash.**

The icons disappear from the desktop, and you're automatically disconnected from the file server.

Logging off without the Finder

There are two ways to log off if you're using an 800K AppleShare startup disk that doesn't include the Finder.

- *If the application you're using allows you to give an eject command,* do so.
- *If you cannot give an eject command,* shut down your computer.

Logging off with Quick Logoff

To log off without the Finder when the administrator has installed the Server Quick Logoff program, simply quit the application you're using. You're automatically logged off the file server, and you return to one of the screens shown (depending on whether your network is divided into zones and whether there is more than one file server on your network).

```
 File Server Log On V1.2


   Current zone  First Floor West

   Select a file server

  English
  Foreign Languages




  Select ↑↓     Change zones  Esc      Accept ↵
```

```
 File Server Log On  V1.2


     Log on as a Registered User

     Log on as a Guest




  Select ↑↓        Cancel  Esc      Accept ↵
```

From there, you (or any other registered user or guest) can log on to another file server. Or you can shut down the computer.

Logging off without Quick Logoff

Follow these steps to log off without the Finder when the administrator has not installed the Server Quick Logoff program:

1 Quit the application you're using.

You see the log-off screen.

```
 AppleShare Startup V1.0

   Log off from file servers
   Return to startup application
   Shut Down




 Select: ↑↓                          Accept: ⏎
```
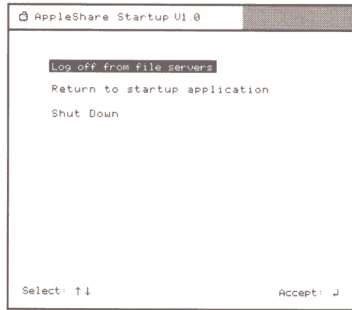
2 Press Return to accept the "Log off from file servers" option.

You're automatically logged off the file server, and you return to the screen shown (depending on whether your network is divided into zones and whether there is more than one file server on your network).

From there, you (or any other registered user or guest) can log on to another file server.

◆ **About the other options** The "Return to startup application" option starts up the computer with your startup application, just as if you had logged on again. Select this option if you accidentally quit your startup application and want to return to it.

The Shut Down option works like the Shut Down command in the Finder: it logs you off all file servers, ejects any disks in your local disk drives, and shuts down the computer. A message on the screen lets you know that it's safe to switch off the computer's power, and a button on the screen gives you the option to restart.

If someone else wants to use the computer, he or she can start up over the network by clicking the Restart button. If no one else wants to log on after you, switch off the computer. ◆

Printing over the network

This section describes the printing capabilities available to you when your network includes a network printer—either an ImageWriter or a LaserWriter printer.

Network printing appears much the same as printing with a local printer (a printer connected directly to your computer), with the added advantage that network users can share printers.

Follow these steps to choose a network printer:

1 **Start up the computer with a startup disk on which you have installed the appropriate network printer update (AppleTalk ImageWriter, AppleTalk ImageWriter LQ, or LaserWriter).**

2 **Choose Control Panels from the Apple menu.**

The Control Panels window appears.

3 **Select the NetPrinter Control Panel, and click Open.**

It may be necessary to scroll through the column until the NetPrinter Control Panel is visible. You can also double-click the icon to open it.
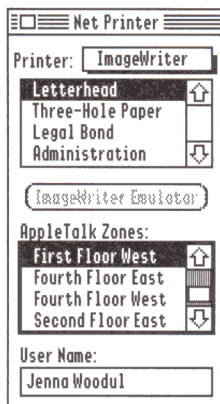
4   **If the preset option is not the type of printer you want, position the pointer on the setting box, hold down the mouse button, and drag through the list until the correct setting is highlighted.**

If you've installed only one network printer update, you can click OK to accept the preset option.

5   **If necessary, select a zone.**

If your network is divided into zones, the name of your zone is highlighted. If you want to use a printer in a different zone, simply click the name of the zone. If there are more than four zones in your network, you may need to scroll through the window to find the zone you want.

6   **If you selected LaserWriter in step 4, and if you're using an application that doesn't support the desktop interface or doesn't support the LaserWriter, click the ImageWriter Emulator button.**

The ImageWriter Emulator button is available only if you selected LaserWriter.

The ImageWriter Emulator is a program that makes it possible to use a LaserWriter with any application designed to print with an ImageWriter. Clicking the ImageWriter Emulator button tells the computer to install this program in the memory of the LaserWriter.

You see the message, "Checking for presence of the ImageWriter Emulator."

- *If someone has chosen the printer from an Apple II computer since the printer was last switched on,* you'll see the message "The ImageWriter Emulator is already installed in the selected printer." Click OK in the dialog box and go on to step 8.

- *If no one has chosen the printer from an Apple II computer since the printer was last switched on,* you see the message "Downloading the emulator." When the message disappears, the ImageWriter Emulator has been installed on the selected printer.

8   **Close the NetPrinter Control Panel.**

9   **Close the Control Panels.**

You're now ready to print your document. Select Print from the File menu or follow the instructions that came with your application to print your document.

Related books and manuals

The following manuals from Apple Computer, Inc., provide additional information about the Apple IIGS, the AppleTalk network system, and AppleShare File Server software.

- The *LocalTalk Cable System Owner's Guide* provides guidelines and instructions for planning, setting up, and maintaining the physical connections between network devices on an AppleTalk network system with LocalTalk cables.

- The *AppleShare File Server Administrator's Guide* explains how to set up and maintain a Macintosh computer (with AppleShare File Server software and one or more hard disks) as an AppleShare file server.

- The *AppleShare File Server Administrator's Supplement for Apple II Workstations* explains special procedures you must follow in order to give Apple II computers access to an AppleShare file server. When the Administrator's Supplement makes reference to the *AppleShare IIGS User's Guide*, you should refer to the *AppleTalk Network User's Guide for the Apple IIGS* instead.

- The *AppleShare Print Server Administrator's Guide* explains how to set up and maintain a Macintosh computer (with AppleShare Print Server software and one or more hard disks) as an AppleShare print server. (You can use a single Macintosh computer as a file server and a print server.)

- The *Aristotle Administrator's Guide* explains how to set up the Aristotle menu software on an AppleShare file server. (Aristotle is special software, designed for classroom use, that lets teachers determine which applications are available when students log on to a file server.)

- The *Apple II Workstation User's Guide* explains how to use the workstation card and its accompanying software. Refer to it if you plan to start up with ProDOS 8.

Apple IIGS
Install

Version 6.0

System 6
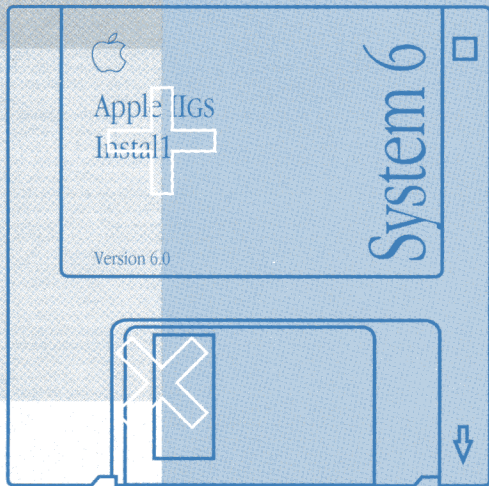
13 Troubleshooting

This chapter helps you deal with the unexpected. When you're using your computer, things may not always happen as you expect them to. Don't think of unexpected events as mistakes—think of them as learning opportunities. The more adventurous you are, the more likely you are to come across new possibilities—and to learn from them.

The first section of this chapter lists unexpected situations you may encounter when trying to start up applications. Subsequent sections are grouped by these topics: Control Panels, disks and disk drives, keyboard and mouse operations, modems, monitors, networking, printers and printing, and starting up (or restarting) the computer. The final sections describe a short diagnostic test you can run to make sure the computer isn't faulty, and list additional sources of help if the suggestions in this chapter don't explain what happened.

Within each section, specific situations are described in italic text, with the likely causes and recommended solutions immediately following.

Applications

This section discusses situations that may occur when starting up an application, using an application, saving a document, or quitting an application. Other unexpected situations that occur when starting up an application are covered later in this chapter in "Starting Up," on page 333.

Starting up an application

Here are some situations you might encounter when starting up an application.

The computer can't successfully run an application that you try to launch from the Finder.

One of the following may be the cause:

- The application is incompatible with System 6. Check with the dealer from whom you purchased the application or the application's publisher. If the application is incompatible, you can still use it if you start up directly from the application disk.

- The application requires more memory than your computer has. An Apple IIGS with ROM 3 has one megabyte (MB) of random-access memory (RAM); an Apple IIGS with ROM 01 has 256 kilobytes (K) of memory. Some Apple IIGS applications require more. You can add the necessary memory to your computer with an Apple IIGS Memory Expansion Card and one or more Apple II 256K Memory Expansion Kits. Third-party memory boards that permit even larger amounts of RAM are available.

- The application is incompatible with a peripheral interface card you've installed in your computer. Whenever you want to use the application, first use the Control Panel to change the setting for the slot containing the peripheral interface card from Your Card to the corresponding port.

You open a document by double-clicking, and an application other than the one you intended is opened.

The Finder does not associate the document with the application. Do the following:

- Hold down the Option key when opening the document. The Finder will let you select the application to launch.
- Hold down both the Option key and the Control key and the Finder will retain the association and launch the correct application the next time you open the document.

Using an application

Every application has its own set of messages, geared toward explaining the unexpected situations users may encounter. In many applications, the error messages are self-explanatory; they tell you what happened and what you need to do in order to continue. But in some applications, the messages may seem cryptic, requiring you to look up the meaning of the message in the manual that came with the application.

This section lists a few unexpected situations that might occur with any application you're using.

You can't get to the text Control Panel menu by pressing Command-Control-Esc.

Your application probably uses a version of ProDOS earlier than version 1.2, which doesn't give you access to the text Control Panel. Have your authorized service provider upgrade the application to a more recent version of ProDOS.

The text Control Panel menu appears unexpectedly.

You tried to get to the text Control Panel menu earlier from an application that didn't let you. The computer retained your request and complied as soon as possible. Choose Quit from the text Control Panel menu. Ask your authorized service provider to upgrade the version of ProDOS on your application disk so you can use desk accessories with the application.

Your application works with an Apple IIe but not with your Apple IIGS.

Some applications designed to work with both the Apple IIe and the Apple IIGS cannot exchange information with the Apple IIGS at a fast rate. If the System Speed setting in the Control Panel is at Fast, set System Speed to Normal and try again. If that doesn't help, ask your authorized service provider if there's a version of the application designed for the Apple IIGS.

The screen is full of 2's or meaningless characters.

The application you're using was designed for earlier models of the Apple II family. Leave the application disk in the disk drive, press Command-Control-Esc, choose Alternate Display Mode from the text Desk Accessories menu, and press Return. When you're finished using the application, choose Alternate Display Mode again to restore the standard display.

Saving a document

In addition to reading the troubleshooting suggestions in this section, you may need to consult the manual that came with your application for advice specific to the application.

Your application asks for the slot and drive of the disk where you want to save the document, but your drive is connected to the disk drive port.

Earlier models of the Apple II family didn't have ports, so the logical way to identify the location of a disk was by slot and drive. If your application was designed for such a machine, it will probably ask you for slot and drive numbers.

The first two 3.5-inch drives connected to the disk drive port correspond to slot 5; the third and fourth 3.5-inch drives connected to the port correspond to slot 2. The 5.25-inch drives connected to the disk drive port correspond to slot 6. When you have two drives of the same type, the drive that is connected to the disk drive port is drive 1; the second drive is drive 2.

Your application saves everything to drive 1, but you want it to save to drive 2.

The application is saving to the default, or preset, drive—the drive it is configured to use. Read the manual that came with your application to find out how to change the default drive. Some applications have a command called Select Volume or Set Prefix that lets you specify the drive where you want to save documents.

Quitting an application

Whenever possible, you should quit an application rather than just switching off the computer. If your application doesn't have a Quit command, try one of these methods. Start with the first method in the list, and try them in order until you find one that works.

- Press Command-Q (for Quit).
- Press Control-Q.
- Press Q.
- Check your application manual for other methods.
- Insert a different startup disk in your startup drive and press Command-Control-Reset. If none of these methods works, eject all disks, and then switch off the computer. You can then restart your computer with another application or with your system disk.

Control Panels

This section discusses situations that may occur when you are working with the desktop Control Panels.

A change you made in a Control Panel doesn't seem to have taken effect.

One of the following may be the cause:

- *If you made a change to the Slots options,* the change doesn't take effect until you restart the computer. As soon as you restart, the new setting will be in effect.

- *If you made a change in RAM disk size,* the change doesn't take effect until you shut down the computer, switch it off, and then start it up again. (Or, if your computer has ROM 3, and if you turned on the "Resize after reset" option, the change will take effect when you restart the computer with or without switching off the power.)

- In some cases, the change you make to a Control Panel doesn't take effect until you close the Control Panel window.

The Control Panels desk accessory—if any are installed on the startup disk— is dimmed in the Apple menu, and you can't get to the text Control Panel menu by pressing Command-Control-Esc.

You've installed one or more system updates on the current startup disk. Until you restart your computer, desk accessories are not available. Click Quit, and then click Restart System. When you next see the desktop, all your desk accessories will be available to you.

There aren't as many Printer Port or Modem Port options as you expect.

The Printer Port and Modem Port options displayed in the Control Panel depend on the slot settings for Slot 1 and Slot 2, respectively. If either slot is set to AppleTalk, fewer options will be displayed for the corresponding port.

When using a pop-up menu to change a setting in a desktop Control Panel, you don't see the setting you want.

When there are more settings in a pop-up menu than can fit on the screen at once, a black arrow at the top or bottom of the menu lets you know that there are more settings in that direction. Drag through the menu until the pointer reaches the arrow. More settings scroll into view. When the desired setting is highlighted, release the mouse button.

All the Control Panel options revert to their original settings (the ones set at the factory).

Restoring the standard frequency settings (Option-Control-Reset, then 2) causes the Control Panel options to revert to their original settings. Reset the Control Panel options. If they revert to their original settings again, the computer's battery is running low. Have your authorized service provider replace the battery.

The clock in the Time options of the Control Panel no longer keeps accurate time.

The computer's battery is running low. Have your authorized service provider replace the battery.

Disks and disk drives

This section discusses situations that may occur when you work with the Advanced Disk Utility or initialize disks in the Finder, as well as other situations you may encounter when you work with 3.5-inch, 5.25-inch, or hard disk drives.

Advanced Disk Utility

Here are some situations you may encounter while using the Advanced Disk Utility.

You can't erase, initialize, or zero removable media because the appropriate buttons are dimmed in the Advanced Disk Utility screen.

One of the following may be the problem:

- *The selected media is write-protected.* If you want to erase, initialize, or zero it, follow these steps:
  1. Eject the media.

     The Advanced Disk Utility screen displays the next available volume.
  2. Remove the write-protection.

     For instructions, see "Write-protecting a disk," on page 94 in Chapter 4, or refer to the manual that came with your removable media.
  3. Reinsert the media.
  4. Click the Disk button until the media is selected.

  The Erase, Initialize, and Zero buttons will no longer be dimmed.

- *The selected media is a locked partition.* If you want to erase, initialize, or zero it, follow these steps:
  1. Quit ADU.
  2. Unlock the partition. (You unlock a partition in the same way you unlock a file or folder. For instructions, see "Unlocking a file or folder," on page 132.)
  3. Start up ADU.
  4. Click the Disk button until the partition is selected.

  The Erase, Initialize, and Zero buttons will no longer be dimmed.

- *The selected disk is the startup disk.* If you want to erase, initialize, partition, or zero the disk, follow these steps:
  1. Shut down the computer.
  2. Start up the computer with a different startup disk.
  3. Launch ADU.
  4. Click the Disk button until the disk is selected.

  The Erase, Initialize, and Zero buttons will no longer be dimmed.

- *The selected disk is a network server.* You cannot perform operations on such a disk.

You can't partition a disk because the Partition button is dimmed.

- *The selected disk is not a SCSI hard disk or SCSI hard disk partition.* Other types of disks—3.5-inch disks, 5.25-inch disks, RAM disks, file server volumes, non-SCSI hard disks—can't be partitioned.

- *One or more of the partitions on your SCSI hard disk could be locked.* Quit ADU and unlock the locked partition(s). (You unlock a partition in the same way you unlock a file or folder. For instructions, see "Unlocking a file or folder," on page 132.) Then start up ADU, and click the Disk button until the disk or partition is selected.

  The Partition button will no longer be dimmed.

Initializing a disk in the Finder

Here is a situation you may encounter when initializing a disk.

The Initialize command is dimmed.

One of the following is the cause:

- *You haven't selected any disk icon.* Select the icon of the disk you want to initialize, then choose Initialize from the Disk menu.

- *The disk you want to initialize is write-protected* (as indicated by the symbol of a lock to the left of the disk icon's name). If the disk is removable, eject it, remove the write-protection, and reinsert the disk. (For instructions on removing write-protection, see "Write-protecting a disk," on page 94 in Chapter 4.) Then select the disk icon and choose Initialize from the Disk menu. If the disk is a locked partition, unlock it. (You unlock a partition in the same way you unlock a file or folder. For instructions, see "Unlocking a file or folder," on page 132.)

- *You're trying to initialize a file server volume or a disk that can't be altered* (such as a CD-ROM). These kinds of disks can't be initialized.

Using 3.5-inch and 5.25-inch disk drives

Here are situations you might encounter when using 3.5-inch and 5.25-inch disk drives.

The Finder doesn't recognize all the disk drives connected to the disk drive port.

One of the following may be the cause:

- *If you have more than one type of drive, you've connected the drives in the wrong order.* Apple 3.5 Drives must come first in the daisy chain, followed by UniDisk 3.5-inch disk drives, and then Apple 5.25-inch Drives.

  Shut down and switch off the computer, wait at least 15 seconds, and then reconnect the drives in the correct order.

- *You've connected more drives to the disk drive port than the computer can recognize.* (The disk drive port can accommodate a maximum of two Apple 3.5 Drives, four UniDisk 3.5 drives, and two Apple 5.25 Drives. But it cannot accommodate more than four disk drives in all.)

  Shut down and switch off the computer, wait at least 15 seconds, and remove the necessary drives to conform with the configurations described above.

- *You haven't installed the correct driver for your disk drive.*

  Use the Installer to add the correct driver to your startup disk. (For instructions, see Chapter 2, "Using the Installer."

- *The slot settings for slots 5 and 6 are set incorrectly.*

  To see 3.5-inch drives, make sure that slot 5 is set to Smart Port. To see 5.25-inch drives, make sure slot 6 is set to Disk port. (For instructions, see Chapter 7. Don't forget to restart the computer so that the changes you make will take effect.)

The Finder doesn't recognize all the disks inserted in the disk drives.

You haven't installed the correct file system translator for the disk you've inserted. For example, if you insert an HFS disk without having installed the HFS FST, the Finder won't recognize your disk.

Use the Installer to install the correct FST. (For instructions, see Chapter 2.)

The Finder sees only 800K when you're using a high-density disk.

In order to see all 1.4 MB of your high-density disks, you must connect the SuperDrive to the Apple 3.5 Disk Controller Card. If the SuperDrive is connected to the port on your Apple IIGS, only 800K will be seen.

Using a hard disk

Here is an unexpected situation you might encounter when using a hard disk.

A hard disk icon doesn't appear on the Finder desktop when you start up the computer.

One of the following may be the cause:

- *The hard disk, or another device on the SCSI chain, isn't switched on.* In order for the Finder to recognize a hard disk, the hard disk and all devices on the SCSI chain should be switched on and up to speed before you start up (or restart) the computer.

  Switch on the hard disk, wait about 10 seconds for it to come up to speed, and then restart the computer.

- *The Control Panel setting for the slot containing your SCSI card isn't set to Your Card.* Use the Control Panel to change the slot setting to Your Card. Then restart the computer. When you see the Finder desktop, the hard disk icon should appear.

- *You haven't installed the SCSI hard disk driver on your startup disk.* Use the Installer to add the driver to your startup disk. (For instructions, see Chapter 2.)

- *More than one SCSI device is set to the same SCSI device number.* Check the SCSI device numbers according to the instructions in the manual that came with the SCSI card.

- *There's only one SCSI device attached to the SCSI card, but you've used two SCSI cable terminators on the device.* When you're connecting only one SCSI device, you should use only one SCSI cable terminator. (Note that the Apple High Speed SCSI card has built-in termination.)

  Shut down the computer, switch off the computer and the SCSI hard disk, wait at least 30 seconds, and then reconnect the SCSI cables and cable terminators according to the instructions in the manual that came with the SCSI card.

Keyboard and Mouse Operations

This section discusses unexpected situations that may occur when you attempt to perform keyboard or mouse operations.

The Delete key doesn't delete characters.

Earlier models of the Apple II family didn't have a Delete key, so applications designed for them use some other key or combination of keys to delete text. Often the Left Arrow key erases the text to the left of the cursor. If that doesn't work, consult the manual that came with your application for instructions.

The insertion point doesn't move when you press the arrow keys.

Earlier models of the Apple II family didn't have the Up Arrow and Down Arrow keys, so applications designed for those machines use some other way of moving the insertion point. Many applications use the Esc (Escape) key in combination with I for up, J for left, K for right, or M for down. Consult the manual that came with your application for instructions.

The insertion point doesn't move past the last line of your document.

That's how the application is meant to work. Press Return to move the insertion point beyond the last line of your document and continue typing.

When you press a key, the corresponding character appears more than once on the screen.

Set the Speed setting in the Keyboard Control Panel of the desktop Control Panels to give yourself a longer delay before keys repeat. (In the text Control Panel, this option is called Repeat Speed.) For information, see "Keyboard," on page 179.

The application says to press a key but doesn't respond when you do.

One of the following may be the cause:

- *The keyboard isn't plugged in.* Switch off the computer, wait at least 15 seconds, and then connect the keyboard securely to the keyboard port.

- *If this situation occurs immediately upon starting up the application, the application may be one that requires you to type everything in uppercase letters.* (Earlier models of the Apple II family didn't give you the option of typing lowercase letters.) Press Caps Lock and try pressing the key again.

The application tells you to press the Solid Apple key (also represented as the key), but there's no such key on the keyboard.

On some earlier models of the Apple II family, the Option key was marked with the symbol of a solid apple and was called the Solid Apple key. Press Option whenever the application tells you to press the Solid Apple key.

The application tells you to press the Option key in combination with other keys, but pressing Option doesn't work.

In the General Control Panel, change the Translation setting from Standard to None.

The computer doesn't keep track of keystrokes.

If you're using an application that was designed for the Apple IIe, the keyboard buffer may not work with your application. (Some early Apple IIe applications don't support buffering of keystrokes.) Deselect the Keyboard Buffering option in the Keyboard Control Panel whenever you're using this application. (For more information, see "Keyboard," on page 179.)

When typing in a text mode application, unexpected characters appear on the screen.

You may have changed the Monitor or Keyboard option in the General Control Panel of the desktop Control Panels to a setting other than U.S.A. (These options are called Display Language and Keyboard Layout in the text Control Panel.) Use either the text Control Panel or the desktop Control Panels to change the settings back to U.S.A.

When typing a password (or other case-sensitive material), no characters appear.

You are typing lowercase characters. Press the Caps Lock key and retype the characters. The reverse situation may also occur. If lowercase is required, make sure Caps Lock is not activated.

When you move the mouse across the desk, the pointer on the screen moves in the opposite direction.

The mouse should be positioned with the cable pointing away from you. The Apple logo should be toward you.

You run out of room to move the mouse on the desk before the pointer on the screen reaches its destination.

Lift the mouse off the desk and move it back to the center of your work surface. The pointer won't move until you put the mouse back on the desk and move it.

If you encounter this difficulty frequently, you may want to change the Mouse Speed option in the General Control Panel of the desktop Control Panels. (The same option is called Mouse Tracking in the text Control Panel.) For more information, see "Keyboard Mouse," on page 181 in Chapter 7.

Double-clicking doesn't work the way you expect.

You can adjust the amount of time the computer waits for the second click of a double click. (See "Keyboard Mouse," on page 181 in Chapter 7 for an explanation.) Change the Double Click option in the General Control Panel to a setting better suited to your own speed of double-clicking.

The mouse won't respond.

One of the following may be the cause:

- *The mouse is not connected properly to the keyboard or to the mouse port, or the keyboard is not connected properly to the keyboard port.* Switch off the computer, wait at least 15 seconds, and secure the keyboard and mouse connections.

- *The mouse port (also called the keyboard port or the Apple Desktop Bus port) is not activated in the Slots options of the Control Panel.* Change the setting for Slot 4 from Your Card to Mouse Port as described in Chapter 7.

Modems

Here are some unexpected situations you might encounter when using a modem.

Every character appears twice on the screen when you're sending a message.

Your Apple IIGS is echoing every character you send on the screen, and the other computer is echoing every character it receives back to your screen. Deselect the Echo setting in the communications application (or in the Modem Port Control Panel).

A line of meaningless characters appears on the screen when you send or receive messages over phone lines.

One of the following may be the cause:

- *The computer on the other end of the phone line is sending information to your computer in a form your computer can't understand.* If you're trying to connect to an information service, check the materials you received from the service to see what specifications the other computer is using, and check the data bits, stop bits, and parity settings in your communications application and in the Modem Port Control Panel. For more information, see "Modem Port and Printer Port," on page 182 in Chapter 7.

- *The baud rate is set incorrectly in the terminal program.* Follow the instructions in the manual that came with your terminal application and make sure that the baud rate entered in the application matches the baud rate supported by your modem.

- *Someone is trying to use another extension on the telephone line (or, if your telephone is on a party line, someone else is trying to use the telephone).* Try again when the line is available.

Characters are lost during information exchange.

One of the following may be the cause:

- *There's too much noise or distortion on the phone lines to transmit information at the speed you're using.* Sign off and reestablish communication. If that doesn't work, change to a lower baud, if possible, on both the sending and the receiving end. If the receiving modem does not support the lower baud rate, the connection will not be made; the sending modem sets the baud for the connection.

- *Buffering is turned off.* (This is likely to be the cause if you're losing only an occasional character.) Turn on the Buffering option in the Modem Port Control Panel.

Information you send through the modem doesn't appear on your screen.

The other computer isn't echoing information back to your computer as it receives it, probably because it's using a half-duplex modem. Turn on the Echo setting in the communications application (or in the Modem Port Control Panel).

◆ **Exception** Many communications applications that use passwords turn off the Echo setting while you're entering your password. (That way, no one can watch the screen to learn your password as you type it.) ◆

Your communications application works with a modem connected to a Super Serial Card, but not with a modem connected to the Apple IIGS modem port.

One of the following may be the cause:

- *The modem port is configured incorrectly.* Check the specifications in the manual that came with the modem and then use either the communications application or the Modem Port Control Panel to reconfigure the port correctly.

- *Your communications software works only in conjunction with a particular integrated circuit on the Super Serial Card.* Either use a Super Serial Card or get a communications application designed for the Apple IIGS.

You lose the connection with the remote computer or information service.

Your telephone has a call-waiting feature and someone is phoning you. When you're ready to reestablish the connection, dial the temporary cancellation code for the call-waiting feature. One of the two codes below will probably work:

- On most call-waiting systems, 1170 is the appropriate code.
- Dialing *70 is an alternative code to use.

Monitors

This section discusses unexpected situations that you may encounter with your monitor.

The image on the screen is rolling or out of alignment.

The Apple IIGS is sending signals to the monitor according to the standard for most countries (50 hertz) instead of the United States standard (60 hertz), or vice versa. Press Option-Control-Reset. Then press either 2 (to restore the standard U.S. setting) or 3 (to restore the other setting). When you reset the frequency, all other Control Panel options revert to their original settings, so you must go to the desktop Control Panels and reconfigure your system to match your individual preferences.

The text on the screen is fuzzy or unreadable.

One of the following may be the cause:

- *The contrast is too bright or too dim.* Adjust the contrast knob on your monitor.
- *The monitor cable isn't properly plugged into the computer.* Switch off the computer, wait at least 15 seconds, and then secure the connection.
- *The software is set incorrectly.* Change the monitor setting to "Monochrome" in the Monitor Control Panel.
- *You're using a composite color monitor and the application is displaying text in the 80-column mode.* If the application gives you a choice between 40-column and 80-column display, choose 40. If the application doesn't give you a choice, change the Columns setting in the Control Panel to 40.

Text and background colors are so similar that the text is unreadable.

First try adjusting the contrast and brightness on your monitor. If that doesn't improve the contrast, you can restore the original Control Panel settings for text and background by pressing Option-Control-Reset and then 2 (for the United States) or 3 (for other countries). If there still isn't enough contrast, try changing the Type option in the Display menu of the text Control Panel to Color, even if you're using a monochrome monitor.

Little apples and check marks appear instead of uppercase, inverse text.

The apples and check marks are called MouseText. MouseText characters replaced a redundant set of characters in earlier models of the Apple II family. Older applications using that redundant character set will now display MouseText characters in place of uppercase, inverse text. The MouseText characters don't affect the way an application works, so if they don't bother you, go ahead and use the application. If they do bother you, ask your authorized service provider or the manufacturer of the application if a newer version of the application is available.

There isn't enough contrast between colors on the display.

The application was designed for earlier models of the Apple II family. The Apple IIGS generates slightly different colors. Try changing the Type option in the Display menu of the text Control Panel or the Monitor Control Panel of the desktop Control Panels to the opposite setting. (The display type doesn't have to match the kind of monitor you're using.)

The screen is full of 2's or meaningless characters.

The application you're using was designed for earlier models of the Apple II family. Leave the application disk in the disk drive, press Command-Control-Esc, choose Alternate Display Mode from the classic desk accessories menu, and press Return. When you're finished using the application, choose Alternate Display Mode again to restore the standard display.

You can't get color display even though you're using a color monitor.

One of the following may be the cause:

- *The monitor is set to monochrome (dark-and-light) mode.* Change the switch on your monitor to color mode.
- *The software is set incorrectly.* Change the monitor setting to "Color" in the Monitor Control Panel.
- *You're using a composite color monitor with a text-based application.* Unlike RGB color monitors, composite monitors can't display 80-column text clearly in color mode, so they may switch automatically to monochrome mode for text-based applications. You get color display when you use graphics-based applications.

The 40-column display changes to an 80-column display and clears the screen when you press Control-Reset.

You've changed the Columns option in the display Control Panel to 80, but the application you've just been using can display text only in the 40-column mode. Pressing Control-Reset puts you back in the 80-column mode. You don't need to do anything further, unless you prefer the 40-column mode. (In that case, simply change the setting in the display Control Panel.)

Networking

This section discusses situations that may occur when you are working on a network, including setup, starting up, and using an AppleShare file server.

Network Setup

If setup is not properly accomplished, or network communication is interrupted, you may encounter these situations.

You can't find the AppleShare file server you want in the desktop Control Panels.

One of the following may be the cause:

- *AppleShare isn't installed on your startup disk.* Add AppleShare to your startup disk (for instructions, see Chapter 2, "Using the Installer," starting on on page 19) or see your network administrator.

- *The computer's slot settings are incorrect in the Control Panel.* If your computer has ROM 3, and if it's connected to the network via the printer port, Slot 1 should be set to AppleTalk. If your computer is connected to the network via the modem port, Slot 2 should be set to AppleTalk. It's recommended—but not required—that you set slot 7 to AppleTalk as well. For more information, see "Activating slots and ports," on page 192 in Chapter 7.

  If your computer has ROM 01, and if it's connected to the network via the printer port, Slot 1 should be set to Your Card, Slot 2 can be set to either Your Card or Modem Port, and Slot 7 must be set to AppleTalk.

  If your computer has ROM 01, and if it's connected to the network via the modem port, Slot 1 should be set to Printer Port, Slot 2 should be set to Your Card, and Slot 7 must be set to AppleTalk. (Note that Slot 1 must not be set to Your Card in this case.)

- *The file server isn't selected in the Control Panel.* Follow the instructions in "Logging on to a file server from the AppleShare Control Panel," on page 280 in Chapter 12.

- *A lot of people may be using the file server or the network.* Wait 15 or 20 seconds after you select the AppleShare icon in the Control Panel—or after selecting a zone in the AppleShare options—and see if the desired file server appears in the list.

- *The file server has been shut down.* It is sometimes necessary for the network administrator to shut down the file server to perform certain administrative tasks. Ask the administrator when the file server will be available again.

- *Communication on the LocalTalk network has been interrupted.* Ask the network administrator to check for disconnected LocalTalk cables between your computer and the file server you're trying to use.

- *The file server is in a different zone.* Make sure the correct zone is selected in the Control Panel.

You can't find your zone in the Control Panel.

Communication on the LocalTalk network may have been interrupted. Ask the network administrator to check for disconnected LocalTalk cables between your computer and the file server you're trying to use.

Network, Starting up or Logging On

This section lists unexpected situations you may encounter when trying to start up over the network or log on to an AppleShare file server with a startup disk that doesn't include the Finder.

You can't use certain features or files, or an error message refers to an attempt to open a file with "CDEV" in the pathname.

All file servers in your zone may not have been updated with current software. All servers that have Apple II startup service enabled should be running the same version of the *Apple II Setup* disk; all file servers from which users start up should be running the same version of system software. Check with your network administrator to make sure the latest software is installed on all the file servers in the zone.

Although attempting to start up with ProDOS, you start up with GS/OS.

One of the following may be the cause:

- *All file servers in your zone may not have been updated with current software.* Check with your network administrator.

- *In a lab situation, you may have been at a different machine when you first selected to start up with ProDOS 8.* The setting is saved in the first computer's memory and doesn't affect other machines.

You get a message saying that an application isn't a ProDOS 8 application.

Although you selected ProDOS 8 startup, your startup application is a GS/OS application.

After selecting a startup application from the server's administration program, you start up in the Finder.

An update not intended for networking has been installed on the file server. Install the "Network: Server Startup" update instead.

An error message says that "the user is unknown" or "login is disabled."

One of the following may be the cause:

- *The user name may be misspelled.* Check with the network administrator.
- *With AppleShare 3.0, your may have exceeded the limit for login attempts.* Ask the network administrator to re-enable the login feature for you.

Using an AppleShare file server

This section lists unexpected situations you may encounter when trying to use an AppleShare file server.

You try to change your password, and get an unknown error.

The administrator has set a minimum number of characters for the password; you are trying to use a password that is too short.

Although you try to eject a file server volume (by dragging it to the Trash, for example), it stays mounted.

Your application or the system has a file open on the server volume. Try closing documents or quitting the application. If you started up directly over the network, and you're trying to eject your startup volume, you have to quit the application and log off. If the administrator has installed the Server Quick Logoff program, simply quit the application you're using; you're automatically logged off the file server.

◆ **Note** In general, the security features of AppleShare 3.0 aren't recognized by Apple II networking software. Although the server enforces security properly, misleading messages (or no messages at all) may be displayed on the Apple IIGS. ◆

Printers and Printing

This section discusses unexpected situations you may encounter when printing your documents. Be sure to familiarize yourself with the printing procedure for the application you are using.

The printer doesn't print.

One of the following may be the cause:

- *If your printer has a select button, it hasn't been turned on.* This button determines whether the printer is accepting instructions from the computer. (Sometimes you want to control line feed and form feed manually; the select button lets you switch between manual and automatic operation.) Make sure the button is set to On and try printing again.

- *The printer isn't switched on.* Switch the printer on and try printing again.

- *The printer isn't plugged into a power source.* Make sure the power cord is connected securely to the printer and that the plug is inserted fully into a grounded outlet. Then try printing again.

- *The printer isn't properly connected to the computer.* Switch off the computer, wait at least 15 seconds, and secure the connection. Then try printing again.

- *The slot corresponding to the port to which you've connected the printer cable isn't set to Printer.* See "Slots," on page 191 in Chapter 7 for instructions on changing the slot setting.

- *The printer port (or the modem port) is configured incorrectly.* See "Modem Port and Printer Port," on page 182 in Chapter 7 for instructions on reconfiguring the port.

- *The correct printer and port are not selected in the DC Printer or NetPrinter Control Panels.* For instructions, see "DC Printer," on page 175 in Chapter 7.

- *If you are printing with an interface card, the card's settings are not properly set.* See the manual that came with your card.

- *The printer's dip switch settings are not properly set.* For instructions, see the manual that came with your printer.

- *You're using the wrong kind of cable.* (Different kinds of printers need different cables.) Take the cable to your authorized Apple dealer and ask whether you need a different kind of cable.

If you're printing with a network printer or a local LaserWriter printer, see the additional suggestions at the end of this section.

The printer produces a line of meaningless characters that bear no resemblance to your document.

Any of the following may be the cause:

- *The printer port (or the modem port) is configured incorrectly.* See "Modem Port and Printer Port," on page 182 in Chapter 7 for instructions on reconfiguring the port. Specifically, check the baud rate setting; it should be set to 9600 baud for the ImageWriter or LaserWriter printers. The correct rate setting for StyleWriter printers is 19,200 baud. If you're using another printer, check your manual for the correct baud rate setting.

- *If you are printing with an interface card, the card's settings are not properly set.* See the manual that came with your card.

- *The printer cable is loose.* Switch off the computer, wait at least 15 seconds, and then secure the connection.

- *If your application presents you with a list of printer types, the selected type may not match your printer type.* Select the correct printer type. (If your printer type isn't listed, select each type in turn and try printing. If your printer uses the same configuration as one of the types on the list, your document should print successfully when that type is selected.)

The ImageWriter printer produces pairs of meaningless characters.

The ImageWriter printer has a built-in debug mode that prints the hexadecimal characters being sent from the computer. You can tell that the printer is in debug mode if you see pairs of characters in the ranges 0–9 and A–F. When you turned on the computer, you may have inadvertently pressed the Select button at the same time—invoking the debug mode. Turn the printer off and then turn it on again and be careful not to press the Select button.

You expect a document to be single-spaced, but it prints with double or triple spacing, or it prints with blank lines between the graphics.

Either of the following may be the cause:

- *An extra line feed is being inserted by the application, the printer, or the Apple IIGS.* Start with the easiest solution, which is to change the application's line feed setting to Off. If that doesn't work, deselect the Add LF after CR setting in the Printer Port Control Panel of the desktop Control Panels. If neither of those suggestions solves the problem, turn off the automatic line feed switch on the printer. (For instructions on turning off the line feed switch on the printer, consult the manual that came with your printer or ask your authorized service provider for assistance.)

- *You're trying to print a document that is too wide for the printer to support.* Change the margins of your document and try again.

Lines are printing on top of each other.

No line feed instruction is being sent to the printer after the carriage return instruction. Start with the easiest solution, which is to change the application's line feed setting to On. If that doesn't work, select the Add LF after CR setting in the Printer Port Control Panel of the desktop Control Panels. If neither of those suggestions solves the problem, turn on the automatic line feed switch on the printer. For instructions on turning on the line feed switch on the printer, consult the manual that came with your printer or ask your authorized service provider for assistance.

Your computer is part of the AppleTalk network system, but you can't print to your usual network printer.

One of the following may be the cause:

- *You haven't installed the appropriate network printer update on your startup disk.* See your Network Administrator.

- *After installing the appropriate network printer update, you removed a different networking update* (either another of the network printer updates or the AppleShare update) from your startup disk. Removing any networking update deletes certain files that all networking updates share. Reinstall the desired network printer update or see your Network Administrator.

- *The computer's slot settings are incorrect in the Control Panel.* If your computer is connected to the network via the printer port, Slot 1 should be set to AppleTalk. If your computer is connected to the network via the modem port, Slot 2 should be set to AppleTalk. It's recommended—but not required—that you set slot 7 to AppleTalk as well. For more information, see "Activating slots and ports," on page 192 in Chapter 7.

- *The printer isn't selected in the Net Printer Control Panel.* If you haven't selected a printer in the Net Printer Control Panel, follow the instructions in Chapter 12. If you have selected a printer but find that you can't print, someone may have switched off the printer in the meantime. If that's the case, switch on the printer and select it again in the NetPrinter Control Panel. Verify selection by checking to see that the printer select light is on.

- *Someone has renamed the printer.* Ask your network administrator and the other network users whether they have changed the printer's name. When you know the new name, use the NetPrinter Control Panel to select the printer by its new name.

- *Communication on the LocalTalk network has been interrupted.* Ask the network administrator to check for disconnected LocalTalk cables between your computer and the network printer you're trying to use.

- *The printer's dip switch settings are not properly set for AppleTalk.* For more information, check the manual that came with your printer.

You can't print with a LaserWriter.

If none of the solutions given earlier in this section seems to help, one of the following may be the cause:

- *You haven't installed the LaserWriter update on your startup disk.* Follow the instructions on installing updates Chapter 2 or see your Network Administrator.

- *The computer's slot settings are incorrect in the Control Panel.* If your computer is connected to the network via the printer port, Slot 1 should be set to AppleTalk. If your computer is connected to the network via the modem port, Slot 2 should be set to AppleTalk. It's recommended—but not required—that you set slot 7 to AppleTalk as well. For more information, see "Activating slots and ports," in Chapter 7.

- *The printer was switched off, and no one has installed the ImageWriter Emulator in the printer's memory since it was switched on again.* Select the printer in the LaserWriter options in the Net Printer Control Panel of the desktop Control Panels and

click the ImageWriter Emulator button. (For more detailed instructions, see "Choosing a network printer" in Chapter 12.)

- *You don't have a LocalTalk connector box connected to both the computer and the printer.* You can't connect a LocalTalk cable directly to a computer or a peripheral device—you must attach a connector box to each device, and then connect the two connector boxes with a LocalTalk cable.

Starting Up

This section discusses unexpected situations you may encounter when you attempt to start up your computer.

Nothing appears on the screen when you switch on the power.

Go through the following checklist to try to identify the cause:

1. Check the power lights on the monitor and computer. If they are on, the computer and monitor are plugged into a power source. If not, check the plugs. If you're using a power strip, make sure it is plugged in and switched on.
2. Make sure the monitor is connected to the computer.
3. Make sure the computer is switched on.
4. Make sure the monitor is switched on.
5. Check the monitor's contrast and brightness settings. If you think one of these settings may be the cause, see the owner's guide that came with your monitor for instructions.

The image on the screen is rolling or out of alignment.

Hold down the Option and Control keys while you press and release the Reset key (the key marked with a triangle). Then press 2. This procedure restores the standard frequency settings for the United States so that your monitor will receive signals from the computer at the proper frequency. It also restores all the default Control Panel settings, so you may need to go to the desktop Control Panels to make some changes after following this procedure.

Your disk drive doesn't start when you switch on the computer.

One of the following may be the cause:

- *The disk drive is not connected to the computer.* Switch off the computer, wait at least 15 seconds, and check to make sure the disk drive is properly connected.

- *The Control Panel setting for the startup slot may be incorrect.* See "Changing the startup drive," on page 194 in Chapter 7 for more information. Then use the Slots Control Panel to change the startup slot as necessary.

The computer tries to start up using the "wrong" disk.

Unless you've used the Control Panel to change the startup slot, the computer will attempt to start up from a disk in the disk drive connected to the highest-numbered slot or corresponding port.

A 5.25-inch disk drive connected to the disk drive port corresponds to Slot 6. A 3.5-inch disk drive connected to the disk drive port corresponds to Slot 5. Additionally, only Drive 1 in any slot can be the startup device.

Put your startup disk in the disk drive that the computer is using as the startup drive. (Make sure that the door of any 5.25-inch disk drive is open if you want to start up from a 3.5-inch disk.) Or change the Startup setting in the Control Panel to correspond to the device you want to use as a startup drive.

◆ **Special cases** When you've installed an Apple II Memory Expansion Card in one of the computer's internal slots but you haven't copied a startup application onto the card, you see a message telling you that the computer can't start up from the memory expansion card, and the computer will scan the lower-numbered slots for a startup disk. If it finds a startup disk, it starts up from that disk. If it doesn't, you see the message "Check startup device!"

If the startup slot in the Slots Control Panel is set to AppleTalk but no startup file server volume is available in your zone, the computer will scan all the slots for a startup disk. If it finds a startup disk, it starts up from that disk. If it doesn't, you see the message "Check startup device!" This happens either when the appropriate software has not been installed on the file server or when the file server has been shut down. ◆

The computer doesn't recognize a UniDisk 3.5-inch drive.

Any of the following might be the cause:

- *You haven't installed the necessary update for the UniDisk drive on your current startup disk.* (This update may not be included on other startup disks.) Use the Installer, as described in Chapter 2 starting on page 19, to install the UniDisk update on each startup disk.
- *The UniDisk drive is connected to a controller card specifically designed for the UniDisk drive,* but the corresponding slot setting in the Slots Control Panel is not set to Your Card. Change the slot setting to Your Card. For more information, see "Activating slots and ports," on page 192 in Chapter 7.
- *The UniDisk drive is connected to a disk drive controller card,* but the System Speed option in the General Control Panel is set to Fast. Change the System Speed to Normal. For more information, see "General," on page 176 in Chapter 7.

The computer doesn't recognize your Apple 3.5 Drive.

Either of the following might be the cause:

- *You've connected one or more UniDisk drives before the Apple 3.5 Drive in the daisy chain of drives connected to the disk drive port.* Switch off the computer, wait at least 15 seconds, and then reconnect the disk drives so that the UniDisk drives come after all Apple 3.5 Drives in the chain.
- *The Apple 3.5 Drive is connected to the disk drive port, but slot 5 is set to Your Card in the Slots Control Panel.* Change the Slot 5 setting to Smart Port. For more information, see "Slots," on page 191 in Chapter 7.

The computer doesn't recognize your Apple SuperDrive.

Either of the following might be the cause:

- *The SuperDrive is connected to the Apple 3.5 Controller Card, but Slot 5 is not set to Your Card.* Change the Slot 5 setting to Your Card. For more information, see "Slots," on page 191 in Chapter 7.
- *Slot 5 is set to Your Card, but the SuperDrive is not connected to the Apple 3.5 Controller Card.* Switch off the computer, connect the SuperDrive to the Apple 3.5 Controller Card, and restart your computer.

The computer doesn't recognize your Apple 5.25 Drive (or a disk in your Apple 5.25 Drive).

Either of the following might be the cause:

- The Apple 5.25 Drive is connected to the disk drive port, but slot 6 is set to Your Card in the Control Panel. Change the Slot 6 setting to Disk Port. For more information, see "Slots," on page 191 in Chapter 7.

- If the disk drive icon appears on the desktop but the icon of the disk you inserted doesn't appear, close the disk drive door, then double-click the disk drive icon to open it. The disk icon should appear.

The computer doesn't recognize your hard disk.

One of the following may be the cause:

- *The hard disk isn't switched on.* In order for the Finder to recognize a hard disk, the hard disk must be switched on and up to speed before you start up (or restart) the computer.

  Switch on the hard disk, wait about 10 seconds for it to come up to speed, and then restart the computer.

- *You haven't installed the necessary SCSI hard disk update on your current startup disk.* (This update may not be included on other startup disks.) Use the Installer, as described in Chapter 2, to install the SCSI hard disk update on each startup disk.

- *The Control Panel setting for the slot containing your SCSI card isn't set to Your Card.*

  Use the Slots Control Panel to change the slot setting to Your Card. (See "Slots," on page 191 in Chapter 7.) Then restart the computer. When you see the Finder desktop, the hard disk icon should appear.

- *More than one SCSI device is set to the same SCSI device number.* For instructions on setting SCSI numbers, see the hardware manual that came with your computer.

- *The connection is not properly terminated.* For instructions on proper connection, see the manuals that came with your hard disk and your SCSI card. Keep in mind, for example, that the Apple II High-Speed SCSI Card has built-in termination.

You see only a square bracket and the insertion point.

One of the following is probably the cause:

- *In trying to restart the computer by pressing Command-Control-Reset, you released Command and Control too soon after pressing and releasing Reset.* Try again, being sure to follow these steps:

  1. Hold down Command and Control.

  2. Without releasing Command or Control, press and then release Reset.

  3. When you hear a beep (or, if the volume level is turned all the way down in the Control Panel, when the screen's border flashes), release Command and Control.

- *The program on the disk isn't self-starting.* You're most likely to run into this situation if you're using programs written by friends, acquired through a user group, or copied from a bulletin board. Try typing PR# __ (the blank space being the slot number which you have set for your startup disk) and press Return. If that doesn't work ask the person who gave you the application how to start it.

The computer begins to start up, but fails; you see an error message or a beep indicating failure.

If you recently added any desk accessories or setup files (**INIT**s), restart the computer and hold down the Shift key until you see the message "No Inits/DA's." In the Finder, remove the recently added desk accessories or setup files.

If you think there's a serious problem

If you're having a problem that you haven't been able to solve with any of the suggestions in this chapter, try repeating whatever you were doing and see if the same thing happens again. You may simply have made a keystroke or mouse movement without realizing it.

If the same thing happens when you repeat the same steps, you may want to run a short diagnostic test to make sure there isn't a serious problem with your computer.

△ **Important** If you have changed any settings in the Control Panels (as explained in Chapter 7, "Using the Desktop Control Panels," on page 171), they will be restored to the original settings—the ones set at the factory—when you run the diagnostic test. You must return to the desktop Control Panels if you want to change them back. △

Follow these steps to run the diagnostic test:

1. With the power on, hold down the Command, Control, and Option keys while you press and release the Reset key.

   Or, if the power is off, simply hold down Command and Option while you switch on the computer's power.

2. Wait for a message on the screen giving the results of the test.

   After about 35 seconds you should see the message "System Good." If you see the message "System Bad" followed by a string of letters, make a note of the letters and contact your authorized Apple service provider.

3. If your system is good, restart your computer.

   Insert a startup disk in your startup drive, then hold down Command and Control while you press and release Reset.

If you need more help

If this chapter hasn't provided an explanation for an unexpected situation or event, there are a number of places you can turn for more information.

Often the best source of help is another Apple II user. If you know people who have had a lot of experience with Apple II computers, check with them to see if they can explain what you're experiencing. (A good way to meet other Apple II users is through an Apple user group.)

Your authorized Apple service provider should also be able to answer most questions you have about the Apple IIGS.
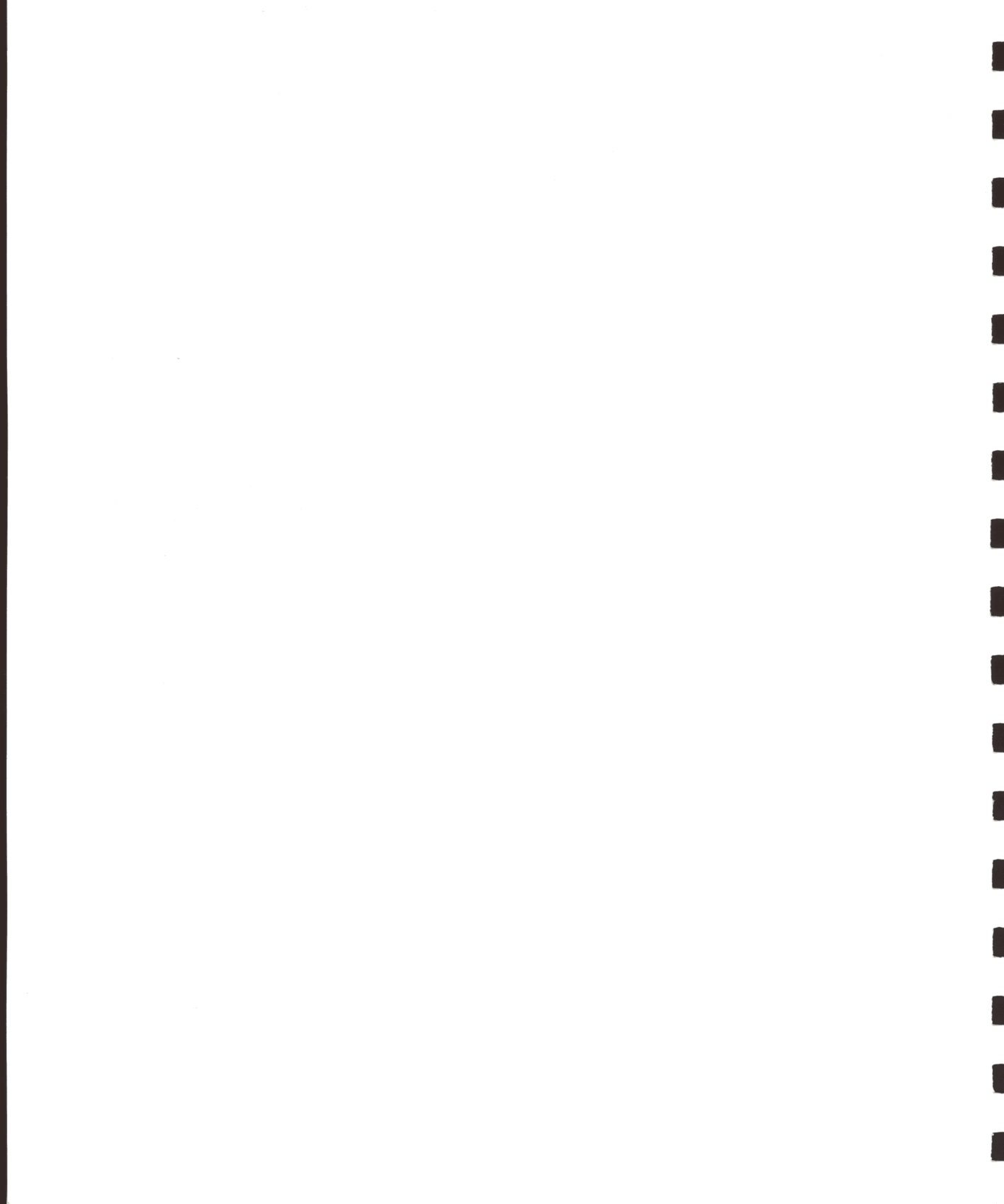
Appendix: System Messages

This appendix helps you deal with the unexpected messages you may encounter while using your computer. Things may not always happen as you expect them to, but the messages here and their explanations should help you to use your Apple IIGS computer more effectively.

This chapter is arranged alphabetically according to the actual screen message. You can also refer to the Troubleshooting chapter starting on page 307, if you need more help.

Within each section, the text of the messages are described in italicized text, with the likely causes and recommended solutions immediately following.

A, B

"Access error. Cannot change file."

When you're installing an update on a file server volume, you don't have the Make Changes privilege for the file server volume or the System folder on the file server volume. Or, if you're installing an application update in a folder, you don't have privileges for the folder.

If you're the network administrator, log on and install the update; otherwise, ask the administrator to install the update for you.

"Access not allowed."

The file server will not be recognized if you have no privileges. The folder will be dimmed if you don't have access.

"An application can't be found for this document."

You tried to open a document, but the Finder is unable to associate the document with any application. Click OK. To open this document, you must open the application used to create it. Double-click the application icon, and then open the document from within the application.

"An update has altered system files on the startup disk. You cannot quit the Installer without restarting your system."

When you click Quit in the Installer, you've installed one or more system updates on the current startup disk. In order for the computer to recognize those updates during the current work session, you must restart the computer. Click the Restart System button. The computer restarts from the current startup disk, and in a few moments you return to the Finder desktop.

If you inadvertently installed a system update on the current startup disk and you want to remove it before proceeding, click Cancel. Then select the name of the unwanted system update in the window on the left and click Remove. The Installer removes the update from the current startup disk. When you quit the Installer, you see the same message alerting you that the Installer has altered system files on the current startup disk. Click Restart System.

△   **Important** Removing an update that you've installed is not always the same as not having installed it in the first place. When you install the "Network: AppleShare 3.5" Disk" update, for example, there isn't room for all system files, so the Installer creates an abbreviated version by removing certain files. Subsequently removing the AppleShare on 3.5" Disk update cannot reinstate the files that have been deleted—it can only remove the files that have been added. △

"AppleShare.FST requires AppleShare. Please enable AppleTalk in the Control Panel, install AppleShare on the boot disk and re-boot the system."

When you start up (or boot) the computer, one of the following is the cause of this message:

- The slot settings in the Control Panel are not set up for access to the AppleTalk network system. Press Return to continue starting up. When the computer finishes starting up, use the Slots Control Panel to change the appropriate slot settings.

   If your computer is connected to the network via the printer port, Slot 1 should be set to AppleTalk. If your computer is connected to the network via the modem port, Slot 2 should be set to AppleTalk. For more information, see "Activating slots and ports," on page 192 in Chapter 7.

- If you're starting up over the network (rather than from a local disk), make sure of the following:

   □   If your computer has ROM 01, the following slot settings apply:

      If your computer is connected to the network via the printer port, Slot 1 should be set to Your Card. If your computer is connected to the network via the modem port, Slot 1 should be set to Printer Port, Slot 2 should be set to Your Card, and Slot 7 should be set to AppleTalk.

   □   If your computer has ROM 3, it is recommended—but not required—that Slot 7 be set to AppleTalk.

   When you restart the computer after changing the slot settings, you shouldn't see the message again.

- Some of the AppleTalk or AppleShare files are missing from the current startup disk. Press Return to continue starting up. Then use the Installer to reinstall the networking updates you need. See Chapter 12, "Networking the Apple IIGS," starting on page 271 for more information.

If you're installing on a 3.5-inch disk, install "Network: AppleShare, 3.5" Disk" and—if you want to—one network printer update. If you're installing on a hard disk, install AppleShare and as many network printer updates as you want. Then quit the Installer and click Restart System in the dialog box that appears. When the computer restarts this time, you shouldn't see the message again.

C

"Can't locate 'PRINTER NAME'" when you send a document to be printed.

Open the Control Panels under the Apple menu. Then open either the DC Printer or Net Printer Control Panel and verify that the printer settings are correct. The printer may not be turned on. If you are working on a network there may be network problems, contact your network administrator.

"Cannot load file Start.GS.OS."

One of the following is the cause:

- You don't have the See Files or See Folders privilege for the System folder on the file server's startup volume. Ask the network administrator to give those privileges to everyone on the network.

- The Server Network Startup update has not been installed on the startup volume of the file server. Ask the network administrator to install this update.

- The Start.GS.OS file is not present. Ask the network administrator to reinstall the system software.

"Check startup device!"

This message appears whenever the computer can't find the system software necessary to start up the computer. Any of the following could be the cause:

- *There's no disk in the startup disk drive.* Put a startup disk in the drive and press Command-Control-Reset (be sure to hold down the Command and Control keys before pressing Reset) to restart your computer with the startup application on that disk. (If

you don't remember which drive is your startup drive, see "Identifying Your Startup Drive" in the manual that came with your Apple IIGs.)

- *There's a nonstartup disk in the startup drive.* Eject the disk, insert a startup disk in its place, and press Command-Control-Reset to restart the computer with the application on the new startup disk. (If you don't remember which drive is your startup drive, see "Identifying Your Startup Drive" in the manual that came with your Apple IIGs.)

- *The Control Panels setting for the startup slot is incorrect.* See "Changing the startup drive," on page 194 in Chapter 7 for more information. Then use the Slots Control Panel to change the startup slot as necessary.

This message can also appear when you try to start up from the RAM disk. Although it's possible to start up from a RAM disk (assuming you're not starting up "cold," after having switched off the computer), the amount of memory required by the GS/OS operating system usually makes this method of starting up impracticable.

"Completely replace the contents of 'DESTINATION DISK [NAME]' with the contents of 'SOURCE DISK [NAME]'?"

This message doesn't indicate any problem—it's only to confirm that you want to erase everything on the destination disk (the disk that you're copying onto) and replace it with the contents of the source disk (the disk that you're copying from). If that's what you intended, click OK. Otherwise, click Cancel.

"Contact the network administrator. An error occurred launching the startup path."

You probably don't have the appropriate access privileges to launch the startup application.
Make a note of the startup pathname given in the message, and then ask the network administrator to make sure you have the proper access privileges.

"Contact the network administrator. This path does not contain a ProDOS 8 startup application: (pathname)"

Your computer is set to start up with ProDOS, but your startup application is not a ProDOS 8 application. The network administrator can set up the application properly or use the Network Control Panel to make your computer start up with GS/OS.

"Contact the network administrator. This startup path was not found."

The pathname of your startup application is incorrect. Either one or more names within the pathname have changed, or the access privileges to the file server volume or one of the folders have changed.

Make a note of the startup pathname given in the message, and then ask the network administrator to set your startup application again.

D

"Device write-protected."

When a disk is write-protected, you can't make any changes to it. Remove the write-protection or use a different disk to save your document. If the manufacturer write-protected this disk, you probably shouldn't save documents on it.

Depending on the action you're trying to take, you may be offered an opportunity to try the action again. For example, when you try to copy files to a write-protected disk, you see a dialog box that allows you to remove write-protection and then click Try Again.

For instructions on removing write-protection, see "Write-protecting a disk," on page 94 in Chapter 4.

"Disk Directory Full."

The disk on which you're trying to install an update already has the ProDOS 8 maximum of 51 items in the main directory. This situation can occur either when you're trying to install an application update in the main directory or when you're trying to install a system update and the disk doesn't already include a System folder.

Click OK. If you were trying to install an application update, you may want to install the update in a folder. If you were trying to install a system update, you must return to the Finder and either discard at least one item from the disk or nest at least one item within a folder. Then run the Installer again and install the desired update.

"Disk Full."

When creating a new folder in which to install an application update, you don't have enough room on the disk to accommodate the new folder. Either use another disk or create space on this disk. (To create space, quit the Installer and use the Finder to copy files to another disk, drag files you no longer need on this disk into the Trash, and choose Empty Trash from the Special menu.)

If you want to know how much room is available on a disk and how much room a folder or file takes up, quit the Installer. After starting up with a disk that includes the Finder, select the desired disk, folder, or file icon and choose Icon Info from the Special menu. The size information you see depends on what type of icon you selected.

- *If you selected a disk icon,* the Size line on the General card shows the amount of space used and the amount of space available on the disk.

- *If you selected a folder icon,* the Size line on the General card shows the message "use calculate icon. . ." Click the icon of a calculator at the lower-right corner of the General card. In a moment, the Size line shows the amount of space the folder's contents take up on the disk, both in bytes and in kilobytes (K).

- *If you selected a file icon,* the Size line on the General card shows the amount of space the file takes up on the disk, in both bytes and kilobytes (K).

"Disk icons can't be dragged with file or folder icons for this operation."

When dragging icons to copy them, you tried to drag a disk icon and a file or folder icon at the same time. To perform this operation, you can drag either disk icons or file and folder icons, but not both simultaneously.

Click anywhere on the Finder desktop to deselect all selected icons. Then try again.

"Duplicate filename."

When you try to save a document on a disk, you tried to use a name that you've already used for a document on that disk. If the version you're trying to save is a revised version of the one that's already on the disk, and you want the revised version to replace the older version, then confirm that you want to replace the existing document. But if you used a duplicate name by mistake and want to retain the original document, give the new document a different name and repeat the save procedure.

E, F

Error message numbered $0044, $0046, or $004E.

Errors $0044 and $0046 indicate that a file was not found either because you don't have the proper access privileges on a network volume (ask the network administrator to give you the necessary privileges), or because some software is missing from network or non-network disks (try reinstalling software).

Error message $004E indicates access denied, usually because access privileges are not set correctly. It can also occur because a file on a network or non-network disk was locked or already opened by some other program.

Error message numbered $0201–out of memory.

You have used all of the available memory. Try starting up without setup (initialization) files; you can bypass them by starting up while pressing the Shift key. If the problem persists, try reducing RAM disk size, removing unneeded drivers, desk accessories, setup files, or file system translators. You can also expand the memory size of your computer if removing items is not feasible. If you decide to remove setup files, remove only those that you have installed. The system requires the following files: TS2, TS3, Tool.Setup, Resource.Mgr, and Sys.Resources.

G, H

"GS/OS can't read this disk (in device [.DEVICENAME]). Do you want to initialize it?"

You've inserted a blank disk that has never been initialized or a disk that is damaged. If you want to initialize the disk, click Continue. Otherwise, click Eject. (If you decide not to initialize a 5.25-inch disk, open the disk drive door and remove the disk after you have clicked Eject.)

"GS/OS does not recognize the file system on this disk (in device [.DEVICENAME]). Do you want to initialize it?"

You've inserted a disk that was initialized for an operating system that GS/OS can't recognize, or a disk on which the directory is damaged. If you want to erase everything on the disk and initialize it, click Continue. Otherwise, click Eject. (If you decide not to initialize a 5.25-inch disk, open the disk drive door and remove the disk after you have clicked Eject.)

I, J, K, L, M, N, O

"I/O Error."

I/O stands for input/output. The computer is having trouble exchanging information with a peripheral device, usually a disk drive. Any of the following might be the cause:

- *The disk drive door of a 5.25-inch drive is open.* Shut the door and try again.
- *The printer or disk drive isn't plugged in or has a loose connection.* Switch off the computer, wait at least 15 seconds, and check to see that all devices are connected securely.
- *You may not have inserted the correct disk.* Eject the disk to make sure it's the correct one. If it's not, insert the correct disk and repeat what you were doing just prior to seeing the error message.
- *Your disk drive is connected to a card in slot 1, 2, or 3 and the System Speed option is set to Fast in the Control Panel.* Software designed for earlier models of the Apple II family requires that Disk II controller cards be in slots 4, 5, 6, or 7 or that System Speed be set to Normal. Either switch the System Speed setting to Normal or connect your disk drive to slot 4, 5, 6, or 7.
- *A disk may be physically damaged, or its file system may be corrupted.* Copy files to another disk (copy them file-by-file rather than by dragging the disk icon to another disk) and then discard the damaged disk.

"Illegal filename."

When you try to save a document on a disk, filename refers to the name of your document. An illegal filename is one that doesn't conform to the application's rules or the rules of the file system. In most cases, the system prompts you to rename correctly by stating naming conventions. Different applications have different requirements, but you shouldn't have any problem if you use a filename that starts with a letter, has 15 characters or fewer, and uses only letters, numbers, and periods.

"Initialization failed."

Your disk is probably damaged. Click OK. Then discard the disk, insert another disk, and try again.

"Initialization failed! There was an error trying to initialize the partition."

When partitioning a hard disk, you may be using defective media or a defective device. Try another piece of media. If you continue to receive the error message, hard format your disk drive by initializing it via the Finder or the Advanced Disk Utility. If you still have the problem, take your drive to an authorized service provider.

"Initialization of the disk 'DISK NAME' has been canceled. It will not be displayed in the Finder."

When partitioning a SCSI hard disk, you clicked Cancel in the Initialize dialog box for the partition. The hard disk has been partitioned but this partition hasn't been initialized. Use the Advanced Disk Utility to initialize the partition, as explained in "Initializing," on page 225 in Chapter 9.

"Insert Disk: <any disk name>".

One of the following is the cause:

- *The disk named in the message isn't in a disk drive.* If you're installing with only one disk drive, you'll see these messages frequently during the installation process. If you're installing with two disk drives, you'll see these messages occasionally during the installation process.

Eject a disk from a disk drive, insert the disk named in the message. The installation proceeds.

- *The disk named in the message is in a disk drive but has been renamed.* When they're being used as the source of updates, the installation disks must be named as supplied by Apple. If they aren't, the Installer doesn't know where to look for the necessary files.

  Click Cancel. Then click Quit (or choose Quit from the File menu) to quit the Installer. When you return to the Finder desktop, rename the necessary source disk icons. Then run the Installer again and install the necessary updates. The message should not appear again except when the computer is prompting you to swap disks.

◆ **Tip** If you have a two-drive system, installation will proceed faster if you eject the system disk or the system tools disk and leave the disk you're updating in a disk drive. ◆

"Invalid Pathname Syntax."

When creating a new folder in which to install an application update, you provided a folder name that doesn't conform to the naming rules for the file system. Click OK, and then provide a valid name. (For information on naming rules, see "Renaming icons," on page 75 in Chapter 3.)

P, Q, R, S

"SCSI device requires a driver. Please install the SCSI driver on boot disk and re-boot system"

When starting up the computer, the current startup disk (or boot disk, in computer jargon) doesn't include the SCSI Hard Disk update. Press Return to continue starting up. When the computer finishes starting up, use the Installer to add the SCSI Hard Disk update to the current startup disk. (For instructions on using the Installer, see Chapter 2 starting on page 19 of this manual.)

When you quit the Installer, a dialog box appears letting you know that you must restart (or re-boot, in computer jargon) the computer. Click Restart System. In a few moments you see the Finder desktop, and the computer recognizes your hard disk.

"Syntax Error."

This is a general-purpose message indicating that the computer didn't understand the last BASIC language instruction it tried to perform. Check your typing. Sometimes you see this message when you type something in lowercase letters and the application expects it in uppercase letters. Try pressing Caps Lock and typing your entry again.

"System error $0201 occurred."

The system has run out of available memory. This can be caused by attempting to log on to a network with insufficient memory or by setting the RAM disk to too large a size.

If you get this message while trying to open the AppleShare Control Panel, you don't have enough memory. Try the following:

- Close some windows.

- Start up while holding down the Shift key (bypassing setup files).

- Remove some initialization files or desk accessories. Remove only setup files that you have installed. The system requires the following files: TS2, TS3, Tool.Setup, Resource.Mgr, and Sys.Resources.

- Install more memory.

  If you've set the RAM disk size too large, the amount of memory allocated doesn't leave enough memory available for the application you're trying to run. If the message appears when you're starting up with a Finder-based startup disk, there isn't enough available memory to run the Finder.

  If necessary, press Return. Then press Command-Control-Esc to go to the Desk Accessories menu. (You may need to press Command-Control-Reset before you're able to press Command-Control-Esc.) From there, use the text Control Panel to reduce the size of your RAM disk so that enough memory will be available for the application you're trying to use. (For instructions, see the manual that came with your computer.)

T

"The application 'APPLICATION NAME' can't be found for this document."

The Finder is able to associate the document with an application but is unable to find that application. Click the Locate button to direct the system to the location of the application.

Also, check to make sure you have inserted the disk that contains the application. If the application is on a 5.25-inch disk, make sure the disk drive door is closed. Then click Try Again.

If you know you don't have the application on a disk, click Cancel. If the application has been renamed or moved to a different disk or folder, click Cancel, open the application icon, and then open the document from within the application.

"The attempted connection to the server's volume has failed."

You don't have access to one of the file server volumes you tried to connect to. Ask the network administrator to give you the necessary access privileges for that volume, or log on to a different volume.

"The changes to some folders could not be applied (access privileges error)."

You clicked Apply to Enclosed Folders but you don't own one or more folders inside the selected folder.

Click OK. Then click the Apply button if you want to apply the new access privileges to the volume. If you want to change the privileges for enclosed folders that you own, select each folder separately and change the privileges. For instructions, see "Setting access privileges for a folder," on page 289 in Chapter 12.

"The disk 'DISK NAME' is write-protected."

You can't copy anything to the destination disk if it's write-protected. If you want to continue with the copying procedure, eject the write-protected disk, remove the write-protection, reinsert the disk, and click Try Again. Otherwise, click Cancel.

For instructions on removing write-protection, see "Write-protecting a disk," on page 94 in Chapter 4.

"The disk 'DISK NAME' may be damaged."

Click OK. Reinsert the disk and try initializing again. If you get the same message, discard the disk, insert another disk, and try initializing.

"The disk directory is full. Can't complete this operation."

You already have a total of 51 files or folders in the main (disk) directory, the maximum number that ProDOS allows. Move some files into folders, drag files and folders you don't need into the Trash, or copy some files and folders onto another disk and then remove them from this disk.

◆ **Note** When "Save Finder information onto disk" is selected in the Preferences dialog box, the Finder maintains three (normally invisible) files in the disk directory of any startup disk. These files contain information of use only to the Finder. When "Hide invisible files" is selected in the Preferences dialog box, the Finder shows two fewer items in the disk directory than are actually there. In that case, the disk directory is full when 49 items appear in the directory. Also, the item count does not include items that are on the desktop. ◆

"The disk in device [.DEVICENAME] appears to be in [FILE FORMAT]. A [FILE FORMAT] File System Translator is required to use this disk"

You've inserted a disk for which the system has no file system translator installed. The system tries to identify the file format as best it can.

Do not click Initialize unless you are willing to lose the contents of the disk.

If the disk you inserted is an application disk that uses the Pascal or Apple II DOS 3.3 operating system, you can still use the application if you follow these steps:

1. Click Eject.
2. Choose Shut Down from the Special menu of the Finder. You see a dialog box listing the shutdown options. "Turn off system power" should be selected.
3. Click OK or press Return. The computer shuts down, and any disks you were using are ejected.
4. Reinsert the application disk in the startup drive.
5. Click Restart. The application opens.

When appropriate, you can also install one of the FSTs in your system. See Chapter 2, "Using the Installer," starting on page 19 for more information on installing the appropriate FSTs.

"The disk is full. Can't complete this operation."

When you're trying to copy folders or files to the RAM disk, there isn't enough memory allocated to the RAM disk to contain the items you're trying to copy. Click Cancel. Then, if you want to, increase the size of the RAM disk to accommodate the items. (For instructions, see "Setting RAM disk size," on page 111 in Chapter 4.)

When working with files and folders, you have run out of room on this disk. Either use another disk or create space on this disk. (To create space, copy files to another disk, then drag files you no longer need on this disk into the Trash and choose Empty Trash from the Special menu.)

If you want to know how much room is available on a disk and how much room a folder or file takes up, select the disk, folder, or file icon and choose Icon Info from the Special menu. The size information you see depends on what type of icon you selected.

- *If you selected a disk icon,* the Size line on the General card shows the amount of space used and the amount of space available on the disk.

- *If you selected a folder icon,* the Size line on the General card shows the message "use calculate icon . . ." Click the icon of a calculator at the lower-right corner of the General card. In a moment, the Size line shows the amount of space the folder's contents take up on the disk, both in bytes and in kilobytes (K).

- *If you selected a file icon,* the Size line on the General card shows the amount of space the file takes up on the disk, both in bytes and in kilobytes (K).

"The file/folder 'FILE NAME' already exists and is locked (or contains items that are locked). Replace it anyway?"

When moving or copying a file or folder, you tried to move or copy an item that has the same name as one of the following items in the destination folder or destination disk directory: a locked file, a locked folder, or an unlocked folder that contains a locked item.

If you want to replace the item in the destination folder, click Yes. If you don't want to replace the item but want the Finder to continue moving or copying any other items you selected, click No. If you want to stop the moving or copying operation altogether, click Cancel.

"The file/folder 'FILE NAME' is copy-protected and can't be copied."

When copying a file or folder, you have tried to copy an item that is copy-protected. If you're copying several files or folders, click Skip File. Otherwise, click Cancel.

"The file/folder 'FILE NAME' is locked (or contains items that are locked). Remove it anyway?"

When dragging a file or folder to the trash, you have tried to throw away a file or folder that is locked or a folder that contains locked items. If that's what you intended, click Yes. If you don't want to remove the item but want to continue removing other selected items, click No. If you want to stop the operation, click Cancel.

"The filename 'FILE NAME' is already used."

While duplicating a file or folder, you have chosen a name for a duplicate file or folder that already exists for an item in the destination folder or disk directory. To choose another name, simply type the new name and click OK. To skip this item and duplicate the next item you selected, click Skip File. To cancel the duplicating operation, click Cancel.

"The filename 'ICON NAME' is unacceptable to the destination file system."

When you're copying or renaming an icon, this message appears if the name of the icon doesn't conform to the naming rules for the file system used by the destination disk.

If you're renaming an item on a local disk (as opposed to a file server volume), follow the ProDOS or HFS naming rules described in Chapter 4. If you're renaming an item on a file server volume, follow the AppleShare naming rules described in Chapter 12.

"The folder 'FOLDER NAME' can't be moved into itself or into one of its own folders."

When moving or copying folders, you have nested a folder inside another folder and then attempted to copy the outer folder into itself or into the window of the nested folder.

For example, suppose you created a folder called Lesson.Plans and placed a folder called January.Plans inside that folder. If you then tried to drag the Lesson.Plans folder icon on top of the January.Plans folder icon or into the January.Plans window, or tried to drag the Lesson.Plans folder icon into the Lesson.Plans window, you would see this message.

If you're moving or copying several items, click Skip File to go on to the next item. Otherwise, click Cancel.

"The item name 'ICON NAME' is unacceptable to the destination file system."

This message is encountered when attempting to copy a file with an invalid name for the current operating system. This can occur when copying HFS files to your computer either from a floppy disk or an AppleShare file server.

When copying an item to a local disk, you're trying to copy an item with a name that is acceptable to the source disk file system (used on a file server volume or a Macintosh) but not to the destination file system (used on the local startup disk). You have several options:

- The suggested name is a translation of the AppleShare name into an acceptable name. If you want to accept the suggested name, click OK.

- If you don't like the suggested name, type a new name that conforms to the file system naming rules (described in Chapter 4), and then click OK.

- If you're copying several items and want to skip this item, click the Skip File button.

- If you're copying several items and want all names that don't conform to file system's naming rules to be translated automatically, click the "Translate bad file names" button.

- If you're copying several items and want to skip all items whose names don't conform to the file system's naming rules, click the "Skip bad file names" button.

- If you decide to cancel the copying operation altogether, click Cancel.

"The pathname is too long to complete the operation."

When copying, moving, or creating items in a nested folder, the complete pathname (including the colons used to separate parts of the name) cannot exceed 222 characters. Shorten the names of one or more of the nested folders involved, or use fewer levels of folders.

"The server is not responding. You cannot connect to it."

There's a problem with the file server itself or with the network cables. Ask the network administrator to check the server and cables and resolve the problem.

"There isn't enough room on 'DESTINATION DISK NAME' to copy the contents of 'SOURCE DISK NAME'."

There isn't enough room on the destination disk to copy all the files and folders on the source disk. Click Cancel. Then either try copying the disk again using a different destination disk, or drag selected files and folders onto the destination disk.

You can also use the Icon Info menu option to find out how much room is available on a disk and how much room a file or folder takes up. To do so, select the desired disk, folder, or file icon and choose Icon Info from the Special menu. The size information you see depends on what type of icon you selected.

- *If you selected a disk icon,* the Size line on the General card shows the amount of space used and the amount of space available on the disk.

- *If you selected a folder icon,* the Size line on the General card shows the message "use calculate icon . . ." Click the icon of a calculator at the lower-right corner of the General card. In a moment, the Size line shows the amount of space the folder's contents take up on the disk, both in bytes and in kilobytes (K).

- *If you selected a file icon,* the Size line on the General card shows the amount of space the file takes up on the disk, both in bytes and in kilobytes (K).

"This disk could not be initialized."

When using the Advanced Disk Utility, you've tried to initialize the startup disk. Because files on the startup disk are open and in use, it isn't possible to initialize the startup disk. If you want to initialize the disk, quit the Advanced Disk Utility, shut down the computer, and restart with a different startup disk. Then initialize the disk using either the Initialize command in the Disk menu of the Finder or the Advanced Disk Utility.

"There isn't enough room on 'RAM DISK NAME' to copy the contents of 'SOURCE DISK NAME'."

When trying to copy the complete contents of a disk to the RAM disk, you haven't allocated enough memory to the RAM disk to accommodate the disk you're trying to copy. Click Cancel. Then, if you wish, increase the size of the RAM disk to accommodate the items. (For instructions, see "Setting RAM Disk Size" in Chapter 4.)

"This device appears unreliable. The partition map may be incomplete."

When partitioning a hard disk, you may be using defective media or a defective device. Try another piece of media. If you continue to receive the error message, hard format your disk drive by initializing it via the Finder or the Advanced Disk Utility. If you still have the problem, take your drive to an authorized service provider.

"This file server uses an incompatible version of the AFP protocol. You cannot connect to it"

The file server is not running AppleShare File Server software version 2.0 or later. Ask the network administrator to upgrade the file server to the current version, or log on to a different file server that is running a compatible version of the software.

"This file server does not use a recognizable logon sequence. You cannot connect to it."

The file server is not running AppleShare File Server software version 2.0 or later. Ask the network administrator to upgrade the file server to the current version, or log on to a different file server that is running a compatible version of the software.

"This file system won't use the entire disk."

When partitioning a SCSI hard disk larger than 32 MB, you've allocated more than 32 MB to a single partition, but the ProDOS file system doesn't recognize part of any hard disk partition in excess of 32 MB. This message appears when the Initialize dialog box for that partition appears. Click Cancel. Then return to the Advanced Disk Utility screen and repartition the hard disk, being sure to create partitions no larger than 32 MB.

"Unable to load the Macintosh driver. HFS partitions will not be usable on Macintosh computers."

When partitioning a hard disk, you most often get this message because the drive doesn't have an internal Apple ID (as may be the case with an early Apple drive or a product from another company), and you have not placed the "Generic Mac SCSI" file in the Drivers folder located inside your System folder. Third-party drive manufacturers usually provide the file for their products. If you have an early Apple drive, format it first via the Macintosh, using the HDSC Setup program, which automatically provides the necessary file.

Less commonly, the message occurs even when you have properly placed the file described above or you are partitioning a drive that has an internal Apple ID. In such cases, either the Macintosh driver can't be read from the ADU file because of a device error, or there is not enough memory to load the file.

"Unable to install the HFS boot driver. This device appears unreliable."

When partitioning a hard disk, you may be using defective media or a defective device. Try another piece of media. If you continue to receive the error message, hard format your disk drive by initializing it via the Finder or the Advanced Disk Utility. If you still have the problem, take your drive to an authorized service provider.

"Unable to Load ProDOS."

Any of the following could be the cause:

- *The system files on the startup disk are incomplete.* Try a different startup disk.
- *The startup disk is missing the ProDOS file.* Try a different startup disk. (If you're using a hard disk as a startup disk, you need to install the "Latest System Files" update on the hard disk. For instructions, see Chapter 2, "Using the Installer.")
- *The System Speed option in the Control Panel is set to Fast,* which may be interfering with the application. Use the General Control Panel to change the System Speed setting to Normal. For more information, see "General" in Chapter 7.

"UniDisk 3.5 requires a driver. Install UniDisk 3.5 driver on boot disk and re-boot system."

You've connected a UniDisk 3.5-inch disk drive, but the current startup disk (or boot disk, in computer jargon) doesn't include the UniDisk 3.5 update. Press Return to continue starting up. When the Finder desktop appears, use the Installer to add the UniDisk 3.5 update to the current startup disk. (For instructions on using the Installer, see Chapter 2 of this manual.)

When you quit the Installer, a dialog box will appear letting you know that you must restart (or re-boot, in computer jargon) the computer. Click Restart System. In a few moments you'll see the Finder desktop, and the computer will recognize your UniDisk drive.

"Uninitialized or no disk in drive."

When using the Advanced Disk Utility, you have selected an item that is either an empty 5.25-inch disk drive, or a hard disk or hard disk partition that has not been initialized. If you want to work with a 5.25-inch disk, insert the disk in the disk drive and close the disk drive door. If you want to initialize the selected hard disk or hard disk partition, click Initialize.

"Unknown user or log on is disabled. Please retype the name or contact the network administrator."

One of the following may be the cause:

- *You made a typing error when supplying your user name.* Try typing the name again.
- *The network administrator gave you an incorrect user name.* Check with the administrator to make sure you're using the correct name.
- *You aren't allowed to log on to that file server.* Ask the network administrator whether you have access to the file server in question.
- *You're trying to log on as a guest to a file server that doesn't allow guests to have access.* Ask the network administrator whether guests can have access to the file server in question.

"WARNING: This update makes a 3.5-inch disk into an AppleShare disk. Files will be removed. Install any desired printer driver separately (only one will fit). Do NOT install this update on your only copy of the system disk."

When you're installing the "Network: AppleShare, 3.5" Disk" update, because of space constraints, a 3.5-inch disk cannot accommodate the complete system files and AppleShare. The update gives you an abbreviated version of the system files, removing all but the bare essentials. Be sure you aren't installing this update on your only copy of the system disk. (In fact, you'll probably want to install it on a blank disk.)

If you want to install the update, click Perform This Update. Otherwise, click Skip This Update.

"WARNING: Install this update only on non-server disks. This update installs system files for starting up over the network. Some files, including the Finder, are removed. Proceed with caution."

When you're installing the "Network: Local Startup" update, it creates a disk that lets you start up directly from a file server but does not give you access to the Finder. If the disk on which you're installing this update contains the Finder, the Finder will be removed during the installation. Be sure you aren't installing this update on your only copy of the system disk. (In fact, you'll probably want to install it on a blank disk.)

If you want to install the update, click Perform This Update. Otherwise, click Skip This Update.

"WARNING: Install this update only on a file server's startup volume. This update installs system files for starting up over the network. Some files, including ProDOS, are removed. Proceed with caution."

The "Network: Server Startup" update is installed on the startup volume of a file server, so network users can start up directly from a file server without using a startup disk in a local disk drive. This update should be installed only on the startup volume of a file server, and only by the network administrator.

If you want to install the update, click Perform This Update. Otherwise, click Skip This Update.

Y, Z

"You are attempting to replace a file with a folder or vice versa. Should it be replaced?"

When moving or copying files or folders, you have instructed the Finder to replace an item on the destination disk with an item on the source disk that has the same name. But one of the items is a file and the other is a folder.

If you want to replace the item on the destination disk, click Yes. If you want to leave the original item on the destination disk and continue moving or copying other items, click No. (In this case, the item will not be moved or copied.) If you want to discontinue the moving or copying operation altogether, click Cancel.

"You do not have the SCSI driver on your system disk . . . Therefore, you cannot partition this device."

When you open the Advanced Disk Utility and choose Initialize/Erase from the File menu, you've connected a SCSI hard disk, but the current startup disk doesn't include the SCSI Hard Disk update. Click OK, then choose Quit from the File menu. When the Finder desktop appears, use the Installer to add the "SCSI Hard Disk" update to the current startup disk. (For instructions on using the Installer, see Chapter 2 of this manual.)

"Your startup configuration has not been set up properly. Contact the network administrator."

The file containing the name of your startup application, prefix (if any), and printer (if any) is damaged. Ask the network administrator to set a valid startup application, prefix, and printer.

If you need more help

Refer to the Troubleshooting chapter starting on page 307 in this manual.

Glossary

access To get information from something, such as a file server volume or an information service.

access privileges The privileges, given to or withheld from network users, to open, change, or delete folders and files stored on an AppleShare file server. By setting access privileges, you can control who may use the information stored on a file server.

acoustic-coupler modem A type of modem with a cradle that uses a standard telephone handset to send and receive information. Compare direct-connect modem.

active window The frontmost window on the desktop; the window whose title bar is highlighted with four horizontal lines. You make a window active in order to perform your next action there. To make a window active, click anywhere in the window.

adaptive device Any device that meets someone's special needs for using a computer; examples of adaptive devices are Braille keyboards and printers, breath-operated keyboards, and speech synthesizers.

ADB Acronym for Apple Desktop Bus. A port on the back panel of the Apple IIGS for connecting the keyboard, the mouse, and other ADB devices. It's called a "bus" because the signals sent by several devices can "ride" the same cable.

Advanced Disk Utility A program on the Apple IIGS *SystemTools1* disk that lets you prepare disks to receive information. You can use the program to partition hard disks and to zero, initialize, and erase 3.5-inch disks, 5.25-inch disks, hard disks, hard disk partitions, and RAM disks.

American Simplified Keyboard See Dvorak keyboard.

analog RGB color monitor A type of color monitor that accepts separate analog signals for the primary colors red, green, and blue. (Hence the RGB in the name.) The intensity of each primary color can vary continuously, making it possible to display many shades and tints of color.

analog signal A signal that varies continuously over time rather than being sent and received as a sequence of discrete values or levels. Compare digital signal.

ANSI Acronym for American National Standards Institute. An organization that sets standards for many technical fields and provides the most common standards for personal computers.

<Any User> The user name assigned to everyone who logs on to an AppleShare file server as a guest.

Apple key On older Apple II keyboards, a name used for the Command key.

Apple menu In graphics-based applications, the menu at the leftmost end of the menu bar, whose title is represented by the Apple logo (a multicolored, striped apple symbol). The Apple menu contains the desktop Control Panel and any new desk accessories (NDAs) you've installed in the Desk Accessories folder within the System folder on your startup disk.

Apple I The prototype for the Apple II family of computers; designed by Apple Computer cofounder Steve Wozniak.

Apple SCSI cable system The connective hardware used to link Small Computer System Interface (SCSI) devices to a computer and to one another. See also SCSI.

AppleShare-aware application A program designed to be used with AppleShare file servers.

AppleShare file server A combination of AppleShare File Server software, one or more hard disks, and a Macintosh computer that allows network users to store and share applications, folders and documents over the AppleTalk network system. The same Macintosh computer can be used as both an AppleShare file server and an AppleShare print server.

AppleShare print server A combination of AppleShare Print Server software and a Macintosh computer that stores documents sent to it over the network and manages the printing of those documents on a printer. The same Macintosh computer can be used as both an AppleShare print server and an AppleShare file server.

Applesoft BASIC The Apple II "dialect" of the BASIC programming language; Applesoft BASIC is built into all Apple II computers. See also BASIC.

AppleTalk network system A group of interconnected computers and peripheral devices, together with the software and connective hardware needed to link them. If your computer is part of an AppleTalk network system, you can share peripheral devices and network services (such as an AppleShare file server) with other network users.

Apple II A family of computers, including the Apple IIGS, the Apple IIe, the Apple IIc Plus, the Apple IIc, the Apple II Plus, and the Apple II.

Apple II SCSI Card An interface card that you install in one of the slots on the main circuit board so that you can connect Small Computer System Interface (SCSI) devices to the Apple IIGS, the Apple IIe, and the Apple II Plus. See also SCSI.

application program Any computer program designed for a particular purpose, such as home finance, education, or word processing. Application programs are often referred to as applications for short. Compare system software.

arrow keys The keys in the lower-right corner of the Apple IIGS keyboard. In many applications, you use the arrow keys (sometimes called the cursor keys) to move the insertion point or cursor in the direction indicated by the arrow.

arrow pointer See pointer.

ASCII Acronym for American Standard Code for Information Interchange; pronounced "ASK-ee." A communications code that defines the way letters, numbers, and punctuation marks are represented by the computer.

assembly language A programming language very close to the language of electrical impulses that is the "native tongue" of the Apple IIGS. The native assembly language for the Apple IIGS is the 65816 instruction set.

audio digitizer A peripheral device that converts sound input from a stereo system, an electronic instrument, or a microphone into a form that the computer can process, save on a disk, and play back. (Once the sounds are in digital form, they can be edited.)

auto-repeat The automatic repetition of the keys on the Apple IIGS keyboard; if you hold one key down, the computer will keep generating that character until you release the key or press another key. You can turn off the auto-repeat feature using the Control Panel.

backspace To move the insertion point or cursor to the left by pressing the Delete key (which generally erases as it backspaces) or the Left Arrow key (which generally backspaces without erasing).

backup copy A duplicate of a disk or file, which you make as a safeguard in case anything happens to the original. Making a backup copy of a disk or file is like making a photocopy of a paper document.

backup set A collection of duplicate disks or files. See backup copy.

BASIC Acronym for Beginners All-purpose Symbolic Instruction Code. A version of BASIC called Applesoft BASIC is built into your Apple IIGS.

baud The rate of transmission used in exchanging information between a computer and its peripheral devices, or between two computers.

BBS (bulletin board system) A computerized version of the bulletin boards frequently found in supermarkets; places to leave electronic messages and to advertise things you want to buy or sell. One thing you can get from a computerized bulletin board that you can't get from a corkboard is free software. See public-domain software.

binary system A numbering system in which every number is expressed as a combination of 0's and 1's. The binary system is perfectly suited to computers because the computer's microprocessor is made up of switches—like light switches—that are either on or off. On is usually represented as the number 1, off as 0.

bit Contraction of the words binary and digit. The smallest item of useful information a computer can handle, usually represented as a 1 or a 0. Eight bits equal one byte.

block A unit of data storage or transfer usually equivalent to 512 bytes—or roughly 512 characters.

boldface A name given to type that is heavier than the plain text type with which it is used.

boot See start up.

buffer An area of memory where information is kept until the computer or a peripheral device is ready to deal with it.

bug An error in an application program or system software. According to computer industry folklore, the expression was coined in the early days of computing, when a moth once got inside a room-size computer and caused the computer to break down.

bulletin board On an AppleShare file server, a folder that all users can see the contents of but that only the owner can change. A bulletin board folder functions in much the same way as a cork board in a classroom or office. Not the same as bulletin board system (BBS).

bus A path along which information is transmitted electronically in a computer or between a computer and its peripheral devices.

button In graphics-based applications, a rectangle with rounded corners that appears in a dialog box. You click buttons to designate, confirm, or cancel an action. See also mouse button.

byte A sequence of eight bits that represents an instruction, a letter, a number, or a punctuation mark.

cache Memory set aside to increase the efficiency and operating speed of the computer. Compare RAM cache.

Cancel button A button that appears in many dialog boxes. Clicking the Cancel button cancels whatever activity is in progress.

Caps Lock key A key that you can lock into place so that letters you type will come out capitalized. Caps Lock affects only alphabetic keys—not numbers or symbols.

card A circuit board that you can install in a slot inside the Apple IIGS to expand the computer's memory, give the computer the means to communicate with a peripheral device, or add some capability to the computer.

carriage return (CR) A nonprinting character that tells the computer or printer to end one line of text and start another. In word-processing applications, carriage returns are frequently used to end paragraphs. Even though you usually can't see them, you can delete carriage returns the same way you delete other characters.

catalog See directory.

CDA See classic desk accessory.

CDEV Abbreviation for Control Panel Device. A category, such as General, Keyboard, or Slots, of options you can change in the desktop Control Panels. System 6 treats each CDEV as an independent Control Panel, and allows more than one to be displayed at the same time.

CD-ROM Acronym for compact disc read-only memory. A disc that uses laser technology to store approximately 550 megabytes of data. A CD-ROM is like a phonograph record in that you can play it but you can't record information on it.

CD-ROM drive A device, such as the AppleCD SC, that reads the information from a CD-ROM and transmits the information to the computer.

character A letter, number, or other symbol.

character generator The integrated circuit responsible for printing characters on the screen in text mode.

character set The letters, numbers, and symbols that can be generated by pressing keys on a keyboard.

checkbox The small box associated with an option in a dialog box; when clicked, the check box activates or deactivates the option. (When an option is activated, an X appears in the checkbox.)

chip An electronic circuit—including components and interconnections—entirely contained in a single piece of semiconducting material, usually silicon. Same as integrated circuit.

circuit board A board containing both embedded circuitry and a collection of attached integrated circuits. The computer's main circuit board, interface cards, and memory expansion card are all examples of circuit boards.

circuitry A network of wires, integrated circuits, resistors, and other electronic devices and connections, over which electrical impulses travel.

classic desk accessory (CDA) A "mini-application" that you can use without leaving your main application. Classic desk accessories are available from the Desk Accessories menu, which you can reach by pressing Command-Control-Esc whenever the computer is on.

Clear key A key on the numeric keypad. Pressing Clear deletes the selected item.

click To position the pointer on an object on the screen, then press and quickly release the mouse button.

Clipboard The holding place for what you last cut or copied; a buffer area in the computer's memory. Information on the Clipboard can be inserted (pasted) into documents.

clock rate The rate at which bits move from one internal component to another.

close box The small box on the far-left end of the title bar of an active window. Clicking the close box closes the window.

Color menu In the Finder and other graphics-based applications, a menu that lets you color the background and outline of icons.

color monitor A display device that lets you display text and graphics in color.

column In text-based applications, a way of designating the number of characters that fit on the computer's display. A column is one character wide.

command An instruction that you give to the computer.

Command key The key on the Apple IIGS keyboard marked with both the outline of an apple (🍎) and a propeller symbol (⌘). See modifier key.

communications software Applications that make it possible for your computer to exchange information with other computers and with information services over telephone lines.

compatibility The condition under which devices or programs can work with each other. For example, the Apple IIGS can run many applications developed for earlier models of the Apple II family. Those applications are said to be compatible with the Apple IIGS.

composite color monitor A monitor that uses composite signals to display information. Also called an NTSC color monitor.

composite signal A video signal that includes both display information and the synchronization (and other) signals needed to display it.

computer An electronic device that performs predefined (programmed) computations at a high speed and with great accuracy; a machine that is used to store, transfer, and transform information.

computer system A collective term for a computer and everything attached to it.

configure To change software or hardware actions by changing settings. For example, you use the Control Panel to configure the printer port so that your computer will send information to the printer in a format that the printer can understand.

Control key See modifier key.

controller card See disk drive controller card.

Control Panel A desk accessory that lets you set the time of the built-in clock and tailor certain features of your computer system to suit your individual preferences. There are two versions of the Control Panel, see text Control Panel and desktop Control Panels.

coprocessor card A card that includes a microprocessor which overrides or works with the microprocessor on the main circuit board. The main reason for using a coprocessor card is to be able to work with disks initialized for other operating systems.

copy-protect To make it difficult for someone to duplicate a disk. Not the same as write-protect.

CP/M Abbreviation for Control Program for Microprocessors. An operating system that works with the 8080 microprocessor. You can run CP/M software on the Apple IIGS by installing a Z80 card.

CPU (central processing unit) The "brain" of the computer; the microprocessor that actually performs the computations in machine language. Some people use the term CPU to refer to the entire component—the computer—that includes the central processing unit.

CR See carriage return.

cursor A blinking underline, rectangle, or other symbol that marks your place on the screen. It shows you where your next action will take place. Properly called an insertion point. Compare pointer.

cursor keys The keys (usually called the arrow keys) in the lower-right corner of the Apple IIGS keyboard; in many applications, you use these keys to move the insertion point or cursor in the direction indicated by the arrow.

cut To remove text or graphics from a document by using the Cut command. The most recent "clipping" is stored on the Clipboard of the Apple IIGS so that you can paste it somewhere else if you wish.

daisy-chain To connect a series of peripheral devices so that the first device is attached directly to the computer, the second device is attached to the first device, and so on.

data Information, especially raw or unprocessed information.

database application A type of application that helps you keep track of lists of information. Database applications make it easy to recall and update information and to create reports using subsets of information.

data bit A bit in a communication transfer that contains actual information. Compare stop bit.

data disk A disk that contains your work—letters, budgets, pictures, and so on—but that contains no application programs. Compare program disk; startup disk.

Data Carrier Detect (DCD) A handshake signal used to regulate the flow of data between the computer and a peripheral device.

Data Set Ready (DSR) A handshake signal used to regulate the flow of data between the computer and a peripheral device.

Data Terminal Ready (DTR) A handshake signal used to regulate the flow of data between the computer and a peripheral device.

debug To locate and correct "bugs"—errors or the causes of problems or malfunctions in a computer program. See also bug.

dedicated server A computer that is used exclusively as a file server, print server, or both. (The same computer cannot be used as both a server and a workstation on the network at the same time.)

default A preset response or setting, used unless you specify something different.

defenestration The act of throwing something through, from, or out of a window. Not recommended for any part of your Apple IIGS system.

Delete key A key on the Apple IIGS keyboard used in many applications to erase the character to the left of the cursor or insertion point.

desk accessory A "mini-application" that you can use without leaving your main application. See also classic desk accessory; new desk accessory.

desktop In graphics-based applications, the computer's working environment on the screen. In the Finder, for example, the desktop displays the Menu bar, Trash icon, the icons of any disks to which you have access, and the windows of any disks or folders you've opened.

desktop Control Panels The new desk accessory version of the Control Panel, which is part of System 6, is available through the Apple menu of the Finder (or any graphics-based application that supports the Apple menu). The desktop Control Panels (Slots, Time, and so on) are treated as independent CDEVs by System 6 and more than one can be displayed at the same time. See also CDEV, Control Panel; compare text Control Panel.

destination disk The disk onto which you are copying or moving data. (The source disk is the disk from which you're copying or moving data.)

destination folder The folder into which you're copying or moving data. (The source folder is the folder from which you're copying or moving data.)

device See peripheral device.

diacritical A mark, point, or sign attached to a letter to indicate phonetic use or value, or to distinguish it from another letter.

dialog box A box that the Apple IIGS displays to request information or ask you to confirm an action. In many cases, dialog boxes containing warnings are accompanied by a beep.

digital signal A signal that is sent and received as a sequence of discrete values or levels rather than continuously. Compare analog signal.

digitizer See audio digitizer; graphic digitizer.

dimmed command A command that you can't choose under the present circumstances.

direct-connect modem A modem that you plug directly into a phone jack. With a direct-connect modem, the computer automates the process of dialing and answering the telephone when you're connecting to a remote computer. Compare acoustic-coupler modem.

directory A list of all the files on a disk or in a folder. Sometimes called a catalog. See also subdirectory.

directory dialog box A special type of dialog box, used in graphics-based applications, that allows you to open, save or relocate a file.

disk A flat, circular magnetic surface, made either of metal or of plastic coated with iron oxide. You can buy applications prerecorded on disks, and you save your work on blank disks. See also 5.25-inch disk; hard disk; 3.5-inch disk.

disk drive A peripheral device that loads information saved on a disk into the memory of the computer and saves information from the memory of the computer onto a disk.

disk drive controller card A circuit board that provides the necessary circuitry to connect disk drives to the Apple IIGS. (You can connect 3.5-inch and 5.25-inch disk drives directly to the disk drive port on the back panel of the Apple IIGS, so a disk drive controller card isn't required.)

disk drive light A light, usually on the front of a disk drive, that comes on when the drive is loading information from a disk or storing information on a disk. Sometimes called an in-use light. When the light is off, it's safe to insert or eject disks. When the light is on, don't remove the disk in the drive.

Disk menu A Finder menu that lists commands that affect whole disks—commands like Initialize, Erase, Verify, and Eject.

disk name The name of a disk or its main directory. Compare pathname.

disk operating system See operating system.

display A general term used to describe what you see on your screen when you're using a computer or to describe the monitor itself.

document A discrete collection of information you create with an application. Examples of documents are memos, pictures, and budgets. Compare file.

DOS 3.3 One of several operating systems that can be used with the Apple IIGS. DOS is an acronym for Disk Operating System; 3.3 is the version number.

double-click To position the pointer where you want an action to take place, and then press and release the mouse button twice in quick succession without moving the mouse.

Double Hi-Res A graphics mode that can display information using a rectangular array of 560 horizontal by 192 vertical dots for black and white and for 16 colors.

Down Arrow key A key on the Apple IIGS keyboard used in many applications to make the insertion point or cursor move down one line.

download To send a file from one computer to another.

drag To position the pointer on something, press and hold the mouse button, move the mouse, and then release the mouse button. When you release the mouse button, you either highlight a selection or move an object to a new location.

drive See disk drive.

drive number The number indicating to which connector on a disk drive controller card a particular drive is connected.

drop folder On an AppleShare file server, a folder that only the owner can see the contents of but that all users can add contents to. A drop folder functions in much the same way as a locked mailbox or suggestion box.

Dvorak keyboard A keyboard layout designed to increase typing speed and efficiency by locating the keys used most often in the home row. Also called the American Simplified Keyboard. Compare Qwerty keyboard.

echo A copy on your own screen of a message you send via a modem. The echo can come from the remote computer (the computer on the other end of the phone line) or from your own computer.

Edit menu A menu in most graphics-based programs that lists editing commands such as Copy, Cut, and Paste.

8-bit processor A microprocessor that can work with 8 bits of data at a time.

80-column card An interface card that makes it possible for some models of the Apple II to display text in 80-column form instead of the standard 40-column form. (The Apple IIGS has built-in 80-column display capability, so it doesn't require an 80-column card.)

80-column display A text mode in which 80 characters per line (rather than 40) are displayed on the screen.

eject To remove a disk from a disk drive.

Enter key A key on the numeric keypad that confirms a choice or tells a program you're ready to proceed. (In most cases, the Return key also serves this function.)

error message A message that appears on the computer's screen to alert you to a failure in the communication process. Error messages are often accompanied by beeps.

Esc key A key on the Apple IIGS keyboard used in many applications to get back to a menu or to cancel a procedure that's in progress. (Esc is an abbreviation for escape.)

even parity An error-checking system in which the sending device adds an extra bit, set to 0 or 1 as necessary, to make the total number of 1 bits add up to an even number. The receiving device then counts the 1 bits. If the total is an even number, the receiving device assumes that the message came through intact. Compare odd parity.

Everyone A user category to which you can assign access privileges. This category includes all registered users and guests (if guests are allowed access to the file server volume in question).

Extras menu A Finder menu that lists System 6 Finder extensions—programs that add functionality to the Finder.

file A named collection of information stored on a disk—either information created by a user, or prerecorded information such as an application program or a system file. Compare document.

file management A general term for copying files, deleting files, and other housekeeping chores involving the contents of disks.

File menu A menu in most graphics-based applications that lists commands affecting whole documents or applications—commands like Open, Save, Print, and Quit.

filename The name you give your file (document) before you save it to a disk.

file server A computer, equipped with special software and one or more mass storage devices (such as hard disks), that allows computer users in a network to store and share applications, documents, and other information.

file server volume A disk connected to a file server that network users employ to store and share information.

file system A system for organizing the sections on a disk so that your application can keep track of where data is stored. You must initialize any disks you'll be using with a particular application for use with that application's file system.

Finder An application that helps you manage the way information is stored on disks. The Finder also lets you move quickly from one application to another.

firmware Programs stored permanently in read-only memory (ROM).

5.25-inch disk A disk 5.25 inches in diameter, with a storage capacity of 143K (the equivalent of about 70 pages of text). For many years, 5.25-inch disks were the only type of disks you could use with Apple II computers. Compare 3.5-inch disk.

folder A subdirectory or an icon that represents a subdirectory. Folders give you a visual representation of documents that you have grouped together on a disk.

font A complete set of characters in one design, size, and style.

format The physical division of space on a disk into sections—somewhat like parking spaces in a parking lot— where information can be stored. A disk's format is established as part of the initialization process.

40-column display A text mode in which 40 characters per line (rather than 80) are displayed on the screen.

freeware Public-domain software that you can receive at no cost. Bulletin board services are a good source of freeware.

FST (file system translator) A program that tells GS/OS how to read and write data to disks that use a particular file system, such as AppleShare or HFS.

function A built-in formula you can use in a spreadsheet to calculate an average, a square root, and so on.

function key A key that tells an application to carry out a particular activity or function (print a document, save a document, and so on). Some applications use the number keys on the numeric keypad as function keys.

garbage A string of meaningless characters that bears no resemblance to your document. Garbage characters are often an indication that your computer and peripheral device are using different bauds or data formats.

graphic digitizer A peripheral device that converts photographic images into a form that the computer can process, save on a disk, display on the screen, and print. (Once an image is in digitized form, it can be edited.)

graphics application Any application program in which you work with graphics; examples are art applications, business graphics applications, and clip-art applications.

graphics-based application An application that uses a graphics mode to display information. In most graphics-based applications, the mouse rather than the keyboard is the primary means of communication with the computer.

graphics mode A way of displaying text and graphics on the screen. In a graphics mode, images are formed by patterns of dots.

graphics tablet A device for drawing pictures. A special pen sends out signals that are detected by wires in the tablet and sent as x and y coordinates to the screen.

group (1) A named collection of registered users of an AppleShare file server. Groups can be designated only by the network administrator. (2) A user category to which you can assign access privileges. This category includes any registered users who are members of the group associated with the folder.

GS/OS The current operating system for the Apple IIGS.

guest Someone who logs on to an AppleShare file server without providing a registered user name or password. The user name assigned to someone who logs on as a guest is <Any User>.

hand-operated controls Peripheral devices, such as joysticks and game paddles, used in games and simulation applications to move objects on the screen.

handshake signal A signal that regulates the flow of data between the computer and peripheral devices.

hard copy A printed copy of an electronic document.

hard disk A storage device that can hold much more information than a 3.5-inch disk or a 5.25-inch disk. Unlike 3.5-inch and 5.25-inch disks, a hard disk is sealed into its drive and is not removable.

hard disk partition A division of the hard disk that is recognized by the system as a separate disk. Partitions are created using the Advanced disk utility.

hard format Dividing the physical space on a disk into sections according to a pre-defined physical reference point. See format.

hardware Those parts of the computer system that you can see and touch. The computer, the peripheral devices, the cables used to connect them, and the cords that supply them with power. Compare software.

Help window A window that contains useful information, usually defining or clarifying terms or functions of the program being used.

hertz (Hz) The unit of frequency of vibration or oscillation, defined as the number of cycles per second. Named for the physicist Heinrich Hertz. The frequency setting used for monitors in the United States is 60; the setting used in most other countries in 50.

HFS (Hierarchical File System) The file system used by the Macintosh computer, HFS is one of the file systems currently support by GS/OS.

highlight To make something visually distinct. For example, when you select an icon, it becomes highlighted—the outline and icon name are white on a black background rather than the usual black-on-white.

Hi-Res A graphics mode that can display information using a rectangular array of 280 horizontal by 192 vertical dots.

home control device A peripheral device that allows your computer to regulate the temperature of your home, turn lamps on and off, monitor smoke detectors or burglar alarms, or control a number of other household appliances.

home row The row of keys on the keyboard where the fingers rest when they aren't reaching for other keys. In the standard keyboard layout, the home row contains A, S, D, F, G, and so on. In the Dvorak keyboard layout, the home row contains the most frequently used keys (A, O, E, U, I, and so on).

Hz See hertz.

I-beam See insertion point.

icon (1) In graphics-based applications, a symbol on the screen that represents a disk, a document, or something else you can select. (2) A symbol on the back panel of the computer that shows you where to plug in a peripheral device.

information service A large database that you can subscribe to, letting you receive news, stock prices, electronic mail, or other services via your modem.

initialize To divide a disk into sections where information can be stored and to write a file system on the disk so that an application can keep track of where data is located. Disks must be initialized before you can save information on them.

INITs (initialization files) See setup files.

input Information traveling into the computer (like keypresses and mouse movements).

insertion point A blinking vertical or horizontal line that marks your place on the screen. The insertion point shows you where your next action will take place. Also called the cursor. Compare pointer.

Installer A program on the Apple IIGS *Install* disk that lets you add or remove capabilities from your startup disks. For example, if you're connecting a SCSI hard disk, you need to install the "SCSI Hard Disk" update to your startup disks.

integrated circuit An electronic circuit—including components and interconnections—entirely contained in a single piece of semiconducting material, usually silicon. Often referred to as a chip.

interface The way things communicate. See also parallel interface; serial interface; user interface.

interface card A circuit board that you plug into one of the slots in the Apple IIGS to link certain peripheral devices to the computer.

internet Two or more networks connected to form a larger network.

inverse characters Characters that appear in the opposite format from normal. For example, if characters are ordinarily light on a dark screen, inverse characters would show up as dark on a light screen. Inverse characters are used as a form of highlighting.

I/O (input/output) Refers to the means by which information is exchanged by the computer and its peripheral devices.

I/O error message A message you see when there's a problem with the way information is being exchanged by the computer and its peripheral devices.

jacket The covering that protects a 5.25-inch disk.

joystick A peripheral device that moves creatures and objects in games.

justify To format a page of text so that the left margin, the right margin, or both margins are a constant width for all lines.

keyboard A peripheral device that provides a common way to communicate with the computer. The computer's keyboard looks like the keyboard on a typewriter, but the keys on a computer keyboard can be programmed for many uses.

keyboard buffer A special part of memory where keypresses are stored until the computer is ready to act on them.

key color The designated color through which the video input signal displays on the screen.

keypad See numeric keypad.

kilobyte (K) A unit of measure for computer memory; 1 kilobyte equals 1024 bytes. See also byte; megabyte.

laser printer A printer that produces typeset-quality text and graphics using laser technology.

Left Arrow key A key on the Apple IIGS keyboard used in many applications to move insertion point one character to the left. (In some applications, the cursor or insertion point erases characters as it moves to the left.)

LF The character that instructs the computer to advance to the next line. (The event generated by the LF character is called a line feed—hence the abbreviation LF.)

light pen A peripheral device shaped like a pen that sends instructions to the computer when you point to choices on the screen. Light pens work only with applications designed to receive input from them.

line break The end of a line of text on the screen or on a printed page. You can force a line break by pressing Return, or you can let the application break lines for you.

line feed An advance to the next line. See also LF.

load To transfer data or programs into the computer from a disk.

local disk Any disk in a disk drive connected directly to the computer. Compare file server volume.

local printer A printer connected directly to a computer and available only from that computer. See also Direct Connect. Compare network printer.

LocalTalk connector box A piece of hardware, consisting of a small box with an attached cable, that you use to connect your computer to the AppleTalk network system.

log off To end a work session on an AppleShare file server.

log on To identify yourself to an AppleShare file server from a workstation.

Lo-Res A graphics mode that can display information using a rectangular array of 40 horizontal by 48 vertical blocks.

machine language The binary language of 0's and 1's that is the only language the computer uses. All other programming languages, like BASIC, must be translated into this binary code before the computer can process them.

main circuit board A large circuit board that holds RAM, ROM, the microprocessor, custom integrated circuits (chips), and other components.

mainframe computer A central processing unit or computer that is much larger and more powerful than a minicomputer or a personal computer (microcomputer). Mainframe computers are sometimes called mainframes for short.

main menu The first menu you see in text-based applications. The main menu presents the application's top level of options.

Make Changes The access privilege that allows someone to make changes to a folder's contents.

mass storage device A device such as a hard disk or a CD-ROM that can store much more information than 3.5-inch or 5.25-inch disks.

megabyte (MB) A unit of measure for computer memory; 1 megabyte equals 1,048,576 bytes (each byte being enough memory to represent a single character). See also byte; kilobyte.

megahertz (MHz) One million cycles per second.

memory Integrated circuits (chips) that store instructions for the microprocessor. There are two kinds of memory temporary memory (called random-access memory or RAM) and permanent memory (called read-only memory or ROM). The contents of RAM disappear when you switch off the power; the contents of ROM do not.

memory expansion card An interface card that you install in the memory expansion slot in the Apple IIGS to increase the computer's random-access memory.

menu A list of choices presented by an application.

menu bar In graphics-based applications, the horizontal strip at the top of the screen that contains menu titles.

menu title In graphics-based applications, a word, phrase, or picture in the menu bar that designates one menu. When you point to a menu title and hold down the mouse button, you can see the commands in the menu.

MHz (megahertz) One million cycles per second.

microprocessor The "brain" of the computer; the integrated circuit that performs the actual calculations. Also called the central processing unit (CPU). The Apple IIGS has a 65C816, 16-bit microprocessor.

MIDI (Musical Instrument Digital Interface) A software and hardware standard set by the music industry that allows different electronic instruments to communicate with one another and with computers. The Apple MIDI Interface is a device that plugs into the modem port of the Apple IIGS and lets you use your computer as a music synthesizer or as a control device for electronic musical instruments.

mode A state that determines the computer's behavior. See also graphics mode; text mode.

modem Short for modulator/demodulator. A device that links your computer to another computer or to an information service over phone lines. See also acoustic-coupler modem; direct-connect modem.

modifier key A key that generates no events of its own but changes the meaning of other keys or of mouse actions. The modifier keys on the Apple IIGS keyboard are Command, Control, Option, and Shift.

monitor A peripheral device that displays instructions from the application to you on a screen and shows what you've typed into the computer's memory.

monochrome monitor A black-and-white, amber-and-black, or green-and-black monitor.

mount Comparable to inserting a floppy disk, mounting a network volume allows you to see the volume icon and to gain access to the contents according to the privileges assigned.

mouse The small device you roll around on a flat surface next to your computer. When you move the mouse, the pointer on the screen moves correspondingly.

mouse button The button on top of the mouse. You press the mouse button to choose commands from menus or when you want to move items around on the screen.

Mouse Keys One of the Easy Access components that enables the numeric keypad to provide mouse functions, such as moving the pointer, clicking, dragging, and pressing.

MouseText Special characters, including check marks and little apples, used in some text-based applications.

MS-DOS The operating system for applications designed to run on IBM PCs and compatible computers. You can run MS-DOS software on the Apple IIGS by installing a PC Transporter card.

music synthesizer A device that can generate a variety of sounds, including simulations of traditional musical instruments.

NDA (new desk accessory) A "mini-application" that you can use without leaving your main application. New desk accessories are available from the Apple menu whenever you're using the Finder or any graphics-based application that supports the Apple menu.

nest To store in a folder one or more levels removed from the main (disk) directory. You can nest items in folders within folders within folders.

network A group of computers linked together so that their users can share information and peripheral devices.

network administrator The person who sets up, maintains, and troubleshoots a network.

network printer Any printer, connected to a network, that can be shared by network users. Compare local printer or Direct Connect.

network services A capability, such as file sharing or printing, provided by special software on a network.

Nobody A user category to which you can assign access privileges. This category excludes all registered users and guests—even the folder's owner.

NTSC Abbreviation for National Television Standards Committee. An organization that defines the standard format for transmitting broadcast video signals in the United States.

NTSC color monitor See composite color monitor.

numeric keypad The number keys, on the right side of the Apple IIGS keyboard, that are laid out like the keys on a calculator. In most cases, you can use these keys interchangeably with the number keys on the top row of the keyboard. Some application programs use the keys of the numeric keypad as special function keys.

OCR Abbreviation for optical character reader. A peripheral device that scans pages of typed or typeset text and "reads" the characters into the computer.

odd parity An error-checking system in which the sending device adds an extra bit, set to 0 or 1 as necessary, to make the total number of 1 bits add up to an odd number. The receiving device then counts the 1 bits. If the total is an odd number, the receiving device assumes that the message came through intact. Compare even parity.

open To make available. You open documents in order to work with them. In the Finder, opening an icon causes a window displaying the contents of the icon to appear on the desktop.

Open Apple key On older Apple II keyboards, the name for the Command key.

operating system A set of programs that, among other things, controls the way information is loaded into memory, the way the computer works with that information, the way information is stored on a disk, and the way the computer communicates with a printer and other peripheral devices. GS/OS, ProDOS 16, ProDOS 8, DOS 3.3, and Apple Pascal are some of the operating systems available for the Apple IIGS.

Option key A key on the Apple IIGS keyboard that, when pressed in conjunction with another key, creates a special effect. (The Option key controls the operation of other keys but has no effect if pressed alone.) On older Apple II keyboards, this key was labeled ⬛ and was called the Solid Apple key. Compare Command key; Control key.

output Information traveling out of the computer.

owner (1) The registered user who created or was assigned ownership of a folder on an AppleShare file server volume. (2) A user category to which you can assign access privileges. This category includes only the folder's owner. (If the folder is owned by <Any User>, however, all network users will have the privileges assigned to the Owner category.)

Owner & Group A user category to which you can assign access privileges. This category includes the owner and any registered users who are members of the group associated with the folder.

parallel device A printer or other device that sends and receives data several bits at a time over several separate wires. Compare serial device.

parallel interface An interface in which a computer and a peripheral device exchange information several bits at a time along several separate wires. Compare serial interface.

parallel printer A printer that receives information from the computer several bits at a time each over its own wire. A parallel printer must be connected to the Apple IIGS through an interface card. Compare serial printer.

parity A way of checking data to make sure that bits of data didn't get lost or garbled during transmission. See also even parity; odd parity.

Pascal (1) One of several operating systems that can be used with the Apple IIGS. (2) A structured programming language taught in high school and college computer-science courses because it stresses a systematic approach to problem solving.

password A secret word that gives you, but no one else, access to your data on a file server or to messages sent to you through an information service.

paste To insert a copy of the contents of the Clipboard—whatever was last cut or copied—at the insertion point.

pathname The complete name of a document, beginning with the name of the disk (sometimes called the volume name), followed by the names of any subdirectories or folders the document is in, and the name of the document itself. It's called a pathname because it describes the path or route to the document.

peripheral device A device that's connected to the computer, such as a printer or a modem.

peripheral interface card See interface card.

pixel Contraction of the phrase picture element. A dot on the screen, used in graphics mode to form text and graphics.

plotter A device that prints charts and graphs by means of pens whose movements are programmed.

pointer In graphics-based applications, a marker that moves across the screen when you move the mouse across your desk. Compare insertion point and cursor.

pop-up menu A menu of options (for example, in the desktop Control Panels) in which only the selected option is visible unless you press the mouse button to make the other options "pop up."

port A socket on the back panel of the Apple IIGS for connecting peripheral devices.

prefix A partial pathname—the name of the disk and, if you like, the name of one or more subdirectories or folders. Applications that ask you to type a pathname usually let you set a prefix so that you don't have to type the complete pathname every time you want to work with documents on a particular disk or in a particular subdirectory or folder. Once a prefix is set, all you do is type the rest of the pathname.

press (1) To position the pointer on something and then hold down the mouse button without moving the mouse. (2) To hold down a key on the keyboard.

primary group The AppleShare group with whom a user most often shares folders and documents stored on a file server. Primary groups are specified by the network administrator.

printer A device that produces a paper copy of the information you create using the computer.

ProDOS Acronym for Professional Disk Operating System. One of several operating systems for the Apple IIGS. See also operating system.

program (v.) To write instructions for a computer. (n.) A set of instructions that tells a computer what to do.

program disk A disk that contains an operating system and a self-starting application program.

programmer A person who writes computer programs.

prompt A character displayed on the screen to indicate that the user can take some action. For example, a bracket prompt (]) is used in the Applesoft BASIC programming language.

proportional scroll box The white box in a scroll bar. The position of the proportional scroll box in the scroll bar indicates the position of what's in the window relative to the entire directory or document. The size of the box relative to the size of the bar indicates how much of the window is visible.

protocols An agreed-upon formal hardware or software handshaking between two electronic devices. See handshake signal.

public-domain software Software that is not copyrighted. You can get it at user group meetings or through computer bulletin boards. See also freeware; shareware.

pull-down menu A menu that is hidden until you use the mouse to press its title.

Qwerty keyboard The most commonly used keyboard layout in the United States, named for the first six letters in the top row of letter keys. Also called the Sholes keyboard. Compare Dvorak keyboard.

radio button A small circle on screen that you click to designate an action or setting. When a radio button is "on," a dot appears within the circle.

RAM (random-access memory) Memory to which the contents of individual locations can be referred in an arbitrary or random order. RAM usually refers to that part of memory available for programs and documents that the computer reads from a disk; the contents of RAM are lost when the computer is turned off. See RAM disk. Compare ROM.

RAM cache A part of the computer's random access memory where programs store frequently used instructions.

RAM chip An integrated circuit that you install on your memory expansion card when upgrading the card's memory.

RAM disk A cross between a disk and random-access memory. Like a disk, it must be initialized before you can put files on it and must be addressed by its disk name or by its slot number. Like RAM, it offers fast access to information but cannot store information permanently—everything is erased from the RAM disk when you switch off the computer's power.

read To transfer information from a disk into the computer's memory.

read-only The privilege to transfer information from a disk into the computer's memory, but *not* to record information on a disk.

read/write The privilege to both transfer information from a disk into the computer's memory and record information on a disk.

registered user A user of an AppleShare file server who has been given a user name and password by the network administrator.

remote computer The computer on the other end of the phone line. You can use your Apple IIGS, a modem, and a communications application to communicate with a remote computer—across the street or on the other side of the globe.

Reset key The key on the Apple IIGS keyboard marked with a triangle. You can press Reset in combination with Command and Control to restart the computer.

resolution The degree of clarity of your display. An RGB color monitor has better resolution than a composite color monitor.

Return key A key on the Apple IIGS keyboard that you press to move the insertion point to the beginning of the next line. The Return key is also used in many applications to accept choices or to indicate that you've finished doing something and are ready to proceed.

RGB color monitor A type of color monitor that can display text in color and in 80-column format. (RGB is an abbreviation for red, green, blue—the three primary colors from which all screen colors are derived.)

Right Arrow key A key on the Apple IIGS keyboard used in many applications to move the insertion point one character to the right.

ROM (read-only memory) Permanent computer memory. Applesoft BASIC is stored in ROM, as are other programs that regulate communication between the microprocessor and other parts of the computer system. Compare RAM.

ROM disk ROM chips on a memory expansion card that can contain application programs.

root level The "highest" or "volume" level of a pathname. See also directory, pathname, and subdirectory.

row A horizontal arrangement of character cells (in text mode) or pixels (in graphics mode) on the screen.

save To store an application or data on a disk, as opposed to storing it temporarily in the memory of the computer.

scan To search in the slots of the computer for a disk drive controller card. The computer scans when you first switch on the power. It looks first in slot 7 (or the corresponding port); if it doesn't find a startup device there, it proceeds to the next-highest-numbered slot until it finds a startup device.

screen The part of the monitor where information is displayed.

scroll To move through a document so that you can see a different part of it.

scroll arrow An arrow on either end of a scroll bar. Clicking the scroll arrow moves the document one line in the direction indicated. Pressing the scroll arrow causes continuous scrolling.

scroll bar A rectangular bar along the right side or along the bottom of a window. Clicking in the scroll bar or dragging the proportional scroll box causes what's visible in the window to change.

SCSI Acronym for Small Computer System Interface, pronounced "SKUH-zee." An industry standard interface that provides high-speed access to peripheral devices and allows them to be daisy-chained to a single port or card.

sector Part of a track on a disk.

See Files The access privilege that allows someone to open and copy the documents and applications in a folder.

See Folders The access privilege that allows someone to see the folders in a folder.

select In graphics-based applications, to designate where the next action will take place. To select something, you click it or drag across it to highlight it.

select button A button on a printer that determines whether the printer should accept data from the computer or instructions from other buttons on the printer control panel (like the line feed button and the form feed button).

serial device A device that sends and receives data one bit at a time over a single wire. Compare parallel device.

serial interface An interface in which a computer and a peripheral device exchange information one bit at a time along a single wire. Compare parallel interface.

serial port One of two ports (the printer port and the modem port) on the back panel of the Apple IIGS designed for serial devices.

serial printer A printer that receives information from the computer one bit at a time, over a single wire. Compare parallel printer.

setup files Files that define functionality for the system or for applications. Also called initialization files or INITs, setup files are located in the System.Setup folder inside the System folder.

shareware Public-domain software that you can try out for free, but for which you're obligated to pay either a stipulated fee or a donation of your choosing if you decide to continue using it.

Shift-click To hold down the Shift key as you click to select items on the screen. Shift-clicking lets you select multiple items that are not grouped together on the screen.

Shift key A key on the Apple IIGS keyboard that you can press in combination with another key to get an uppercase letter or the upper character on a two-character key.

Sholes keyboard The most commonly used keyboard layout in the United States, named for Christopher Sholes, the inventor of the typewriter. Also called the Qwerty keyboard. Compare Dvorak keyboard.

simulation A computerized representation of something in action.

16-bit processor A microprocessor that can work with 16 bits of information at a time.

65C816 The 16-bit microprocessor used in the Apple IIGS.

size box A box on the lower-right corner of some active windows that lets you resize the window.

slash A character (/) that's often used to separate the parts of a pathname.

slot A long, narrow socket inside the Apple IIGS that lets you connect a printer or other peripheral device to the computer by plugging in an interface card.

slot number The number indicating which slot a particular device is connected to. There are seven general-purpose slots on the main circuit board for connecting peripheral devices to the computer. They are numbered from 1 to 7, with 1 on the left as you face the front of the computer. If your device is connected to a port instead of a slot, you can identify the device by the slot number that corresponds to the port.

SmartPort A software protocol for communicating with peripheral devices, such as 3.5-inch or 5.25-inch drives.

software Instructions, usually stored on disks, that tell the computer what to do. Compare hardware.

Solid Apple key The name for the Option key on older Apple keyboards. The name derives from the fact that the key was marked with the filled-in symbol of an apple (🍎) rather than the word Option.

source disk The disk from which you are copying or moving. (The destination disk is the disk onto which you're copying or moving.)

source folder The folder from which you're copying or moving. (The destination folder is the folder into which you're copying or moving.)

Space bar The bar at the bottom of the keyboard. Pressing the Space bar inserts a space character in your text at the insertion point.

space character A text character whose representation is a space. You generate the character when you press the Space bar.

Special menu A Finder menu that lists a variety of "housekeeping" commands such as Clean Up, Empty Trash, and Shut Down.

speech synthesizer An interface card that allows a computer application to imitate human speech.

spreadsheet application An application that simplifies arithmetic tasks such as financial planning and cost estimating. Spreadsheets are laid out in columns and rows.

stand-alone computer A computer that is not connected to any other computers as part of a network. Compare workstation.

start up To load an application from a disk into the memory of the computer. In computer jargon, starting up is also called "booting."

startup disk A disk with the necessary software to start up the computer.

startup drive The disk drive in which the computer looks first for a startup disk.

Sticky Keys One of the Easy Access components that provides combined keystroke commands so that the user doesn't have to hold down more than one key at a time.

stop bit A bit used to indicate the end of a character during data transmission. Compare data bit.

styled text An application feature that allows you to change the appearance of on-screen and printed text by introducing such attributes as italics and underlining.

subdirectory A directory within a directory. You can use subdirectories to group related documents together. Same as folder.

Super Hi-Res A graphics mode that can display information using a rectangular array of 640 horizontal by 200 vertical dots in 4 colors (per line) or 320 horizontal by 200 vertical dots in 16 colors (per line). Up to 256 colors can be displayed on the screen at one time under normal circumstances. Special software enables up to 3200 colors at one time.

Super Serial Card A serial interface card manufactured by Apple Computer. You don't need to use a Super Serial Card with the Apple IIGS because the serial interface is built in and can be accessed through the printer and modem ports.

surge protector A device that protects your computer equipment from damage in the event of a surge of electrical current. Some power strips have built-in surge protectors.

syntax The rules that govern the structure of statements or instructions in a programming language or in an operating system.

syntax error message A message you see when you misspell a command or give a command that the computer can't process.

synthesizer See music synthesizer.

SYSOP (system operator) The person who operates a computerized bulletin board.

System 1. The name of the folder containing the files your computer uses to start up and manage system-wide information. 2. See computer system.

system disk A disk that contains the operating system and other system software needed to run applications.

system software Software that supports application programs by managing system resources such as memory and input/output devices.

Tab A key on the Apple IIGS keyboard that, when pressed, moves the insertion point to the next tab marker.

tab marker A character that indicates the position to which the cursor or insertion point will move when you press the Tab key.

tape backup unit A peripheral device (usually a SCSI device) that lets you duplicate on magnetic tape the information on a hard disk. The alternatives to using a tape backup device are copying onto a second hard disk (which requires the purchase of an additional hard disk) or copying onto a large number of 3.5-inch disks (which is time-consuming).

telecommunication The exchange of information with other computers or with commercial information services over phone lines. To telecommunicate, you need a computer, a modem, communications software, and a similar setup on the other end of the phone line.

text-based application An application that uses one of the text modes to display information. In most text-based applications, the keyboard rather than the mouse is the primary means of communication with the computer.

text Control Panel The classic desk accessory version of the Control Panel, which is built into the computer and is available through the classic Desk Accessories menu. See also Control Panel; compare desktop Control Panels.

text mode A way of displaying text on the screen. In a text mode, characters fit in a 40-column by 24-line grid or in an 80-column by 24-line grid.

3.5-inch disk A magnetic disk, 3.5 inches in diameter, housed in a rigid plastic case. The most common storage medium used with the Apple IIGS. A double-sided 3.5-inch disk can store from 800K to 1.4 MB of information. Compare 5.25-inch disk.

title bar The horizontal bar at the top of a window that shows the name of the window and lets you move the window.

track One of a series of concentric circles that are magnetically drawn on the recording surface of a disk as part of the initialization process. Tracks are further divided into 8 to 12 consecutive sectors.

Trash An icon that represents the function of discarding files and folders when you no longer need them.

troubleshooting Diagnosing and solving a problem.

tunneling A new feature of the System 6 Finder. If the Option key is pressed when opening a folder, the Finder opens the selected folder and then closes what had been the active window.

Up Arrow key A key on the Apple IIGS keyboard used in many applications to make the cursor or insertion point move up one line.

update A hardware or software capability you can add to disks using the Installer.

user group A computer club whose members share information and public-domain, freeware, and shareware programs—often programs they've written themselves.

user interface The way information is exchanged between a computer and a person.

user name A unique name assigned to a registered user of an AppleShare file server and used to identify that user on the network.

video monitor See monitor.

View menu A Finder menu that lets you change the way you view the contents of windows on the desktop.

voice input device A device that translates the spoken word into a form that certain software applications can process.

volume See disk; file server volume.

volume name See disk name.

window In graphics-based applications, one or more areas on the screen showing the contents of disks, folders, and documents.

Windows Menu A Finder menu that lets you select or stack the open windows on your desktop.

word-processing application Any application designed to make writing and editing easier and faster.

workstation A computer you can use to do your work and to send and receive information over the network. Compare stand-alone computer.

write To record information on a disk.

write-protect To prevent changes to the contents of a disk by covering the notch on the side of a 5.25-inch disk or by sliding the small plastic tab to uncover the square hole on a 3.5-inch disk. Not the same as copy-protect.

XOFF An ASCII character that tells the transmitting device to halt transmission.

XON An ASCII character that tells the transmitting device to resume transmission.

Z80 card A coprocessor card that lets you run programs based on the CP/M operating system.

zero To eliminate the disk directory, all files and folders, and the file system from a disk so that no amount of manipulation can recover the information that was on the disk. (When you zero a disk, only the tracks and sectors remain.) A disk that has been zeroed must be reinitialized before it can be used to store information.

zone One or more networks, collectively identified by a zone name, that are part of a larger, interconnected network. Zones make it easier for network users to find network devices and services.

zoom box The small box in the upper-right corner of a window. Clicking the zoom box expands the window to its maximum size. Clicking it again returns the window to its previous size.

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The Apple Publishing System

This Apple® manual was written and edited
on a desktop publishing system using Apple
Macintosh® computers and FrameMaker for
the Macintosh. Proof pages were created on
Apple LaserWriter® printers, and final pages
were output directly to separated film. Line
art and chapter openers were created with
Adobe Illustrator. Screen shots were created
and modified with system software and
Studio 8.

Text and display type are Apple's corporate
font, a condensed version of Garamond.
Ornaments are ITC Zapf Dingbats® and
custom symbols designed for Apple
Computer. Some elements, such as computer
voice, are set in Apple Courier, a fixed-width
font.

PostScript®, the LaserWriter page-description
language, was developed by Adobe Systems
Incorporated.

Important information for future reference

Use this space to keep track of some important information
that you'll want to have handy for future reference. (You may
want to use pencil, especially for the slot settings, in case the
information changes in the future.)

Apple IIGS serial number
(on the bottom of the computer): _____

Monitor type and serial number
(usually on the back of the monitor): _____
                                        Type

                                        _____
                                        Serial number

Slot settings

Slot 1: _____   Slot 5: _____

Slot 2: _____   Slot 6: _____

Slot 3: _____   Slot 7: _____

Slot 4: _____   Startup slot: _____