About This Guide

Welcome to the A/UX operating system on your Apple Macintosh computer. A/UX brings the Macintosh interface to the traditional UNIX® operating system environment. It weds Macintosh ease of use to UNIX standards, power, and programmability.

This book, *A/UX Essentials,* presents the basic skills you need in order to use A/UX. Many of the chapters contain tutorials to help you learn the essential techniques and concepts. You can read through this guide in sequence or go directly to the information you need. However, if you are unfamiliar with A/UX, you should go through the first five chapters before proceeding on your own.

This Preface contains the following sections:

- What is A/UX?
- Who should use this guide
- How to use *A/UX Essentials*
- Conventions used in this guide

What is A/UX?

A/UX brings together two outstanding computing environments: UNIX and the Macintosh.

Why UNIX?

The UNIX operating system is important because it is a standards-compliant, multitasking, multi-user operating system.

A **standards-compliant** system is one that complies with industry-wide standards that allow it to function on a network with a wide variety of hardware and software.

A **multitasking** system is one that allows you to run many processes at the same time. Thus, instead of having to wait while your computer prints a text file, you can work on another project while the printing is in progress.

A **multi-user** system is one that allows many users to work on the same system at the same time. This enables them to share files and information.

The basic A/UX operating system is a combination of UNIX systems (AT&T System V.2 and extensions from BSD 4.2 and 4.3).

Why the Macintosh interface?

A/UX enhances the UNIX operating system with the Macintosh Finder interface. This enhancement differentiates A/UX from all other versions of UNIX. With A/UX you can perform the following tasks:

- Use menu commands and manipulate icons to open, move, rename, or copy files and applications on the A/UX and the Macintosh file systems concurrently.
- Store Macintosh files and applications in the A/UX file system as well as in the Macintosh file system. For further information on file systems, see "Introducing A/UX" in Chapter 1, "Starting and Finishing a Work Session."
- Use the Macintosh files or off-the-shelf Macintosh applications while running A/UX exactly as you use them while running the Macintosh Operating System (Macintosh OS).
- Run several applications at the same time, taking advantage of both Macintosh features and A/UX multitasking capabilities. This applies to both A/UX and Macintosh applications in any combination.

Two operating systems on one personal computer

A/UX allows you to run Macintosh software applications while using UNIX. Furthermore, you can do so while UNIX processes are running.

As shipped, A/UX sets aside a small area on your disk for the Macintosh OS. It is from this area (called **MacPartition**) that A/UX is launched. It is important to remember that you do not need to run your Macintosh applications from this area. You can store your Macintosh applications, as well as your Macintosh files, among your UNIX files. This gives you the advantage of using UNIX file access permissions and UNIX utilities, such as backup tools and file-search utilities, on your Macintosh files.

In addition, while running A/UX you can use floppy disks configured for the Macintosh. You can also use additional hard disks containing the Macintosh file system.

Thus, you can take advantage of both operating systems at the same time.

Commando, a command-building tool

In addition to bringing the Finder's ease of use to the capabilities of UNIX, A/UX also adds dialog boxes for running the more than 500 UNIX commands available in A/UX. This means that you can now use the many options and utilities that UNIX and A/UX make available without having to learn the complex commands and options themselves. Each dialog box allows you to use the mouse to select the options.

Commando is described in full in Chapter 4, "Using UNIX Commands and Commando."

Who should use this guide

A/UX Essentials contains information that is important to anyone who plans to use A/UX. It presents concise tutorials that introduce you to the Macintosh way of interacting with the traditional UNIX environment and that briefly explain the uses of essential parts of A/UX.

Although everyone who uses A/UX should consult *A/UX Essentials* to become familiar with A/UX, this guide is designed particularly for users who are not experienced with A/UX or other versions of UNIX. It will also prove useful to those who are somewhat new to the Macintosh computer, although this guide assumes that you are already familiar with basic Macintosh skills. You should be sure to read *Macintosh User's Guide: Essentials* and to follow the tour disk, *Macintosh Basics.*

The road map diagram, just before the beginning of the Table of Contents, illustrates the learning path for A/UX .

How to use *A/UX Essentials*

This guide is an introduction to A/UX. You should read at least the first five chapters and work through the tutorials in those chapters. Once you are comfortable with the basics of A/UX, you can use this book as a reference work.

Users who are familiar with the UNIX operating system and the UNIX command-line interface, but who are new to the Macintosh, should read Chapter 2 carefully ("Using Files, Folders, and Directories") to accustom themselves to the Macintosh-like features of the Finder. They should also note the flexibility and ease of manipulating CommandShell windows (discussed in Chapter 3, "Using CommandShell"), the extent to which Commando can simplify the use of UNIX commands (discussed in Chapter 4, "Using UNIX Commands and Commando"), and the easy-to-use UNIX Permissions dialog box (discussed in Chapter 5, "Permissions").

Users who are unfamiliar with UNIX should go through the tutorials in Chapters 3, 4, and 5 if there is any likelihood that they will have to use UNIX commands or adjust UNIX permissions.

What's in this guide

This guide deals with the basics of learning and using A/UX on your Macintosh. However, there are many situations that require more specialized information than is covered here. The list of topics and references in Table P-1 will tell you where to turn for further information.

A/UX Essentials contains the following chapters:

- Chapter 1, "Starting and Finishing a Work Session," teaches you how to start the system, log in, and log out. Chapter 1 also introduces other skills and information essential to getting started.
- Chapter 2, "Using Files, Folders, and Directories," teaches you how to maneuver within the A/UX file hierarchy and use files and folders. It also introduces you to UNIX-style pathnames.
- Chapter 3, "Using CommandShell," shows you how to use CommandShell windows, which provide the UNIX command-line interface. This allows you to work directly with the A/UX operating system using traditional UNIX commands.
- Chapter 4, "Using UNIX Commands and Commando," describes a major innovation of A/UX, Commando, which allows you to run UNIX commands with Macintosh-like dialog boxes. It also introduces the basic concepts of using UNIX commands.
- Chapter 5, "Permissions," introduces UNIX permissions and teaches you how to check them and change them.
- Chapter 6, "Writing With TextEditor," introduces you to the Macintosh-style text editor, which allows you to create and edit text-only files using the Macintosh menus and a mouse.
- Chapter 7, "Printing," describes the different kinds of printer connections and the various ways of sending a file to the printer while using A/UX.
- Chapter 8, "Customizing Your Work Environment," explains how to use various devices to create precisely the work environment that you need.
- Chapter 9, "A/UX Reference," presents a brief summary of all menus and menu commands in the A/UX Finder, CommandShell, and TextEditor.
- Chapter 10, "Troubleshooting," shows how to solve some problems that can arise while you are using A/UX.
- Chapter 11, "Where to Go From Here," gives you information on resources available for learning more about A/UX.
- The Glossary contains definitions of all A/UX terms introduced in this guide.

For other information about A/UX, you will want to refer to other manuals about the operating system. Table P-1 suggests topics you may need to know about and lists the books in which you will find the information.

Table P-1 Finding further information

Topic	Book
Setting up and using a network	*A/UX Networking Essentials; A/UX Networking System Administration*
Setting up a printer for one computer	*Setting Up Accounts and Peripherals for A/UX*
Setting up a printer for a network	*A/UX Networking Essentials*
Creating a user account	*Setting Up Accounts and Peripherals for A/UX*
Backing up your entire system	*A/UX Local System Administration*
Setting a password for the A/UX Startup application	*A/UX Installation Guide*

Terminology: UNIX-style and Macintosh-style

Although A/UX links the UNIX and Macintosh environments, these two environments use different terminology. For example, Macintosh users are familiar with the word "folder." It represents essentially what UNIX users call a "directory." The term "folder" is particularly meaningful when you are using the Finder, where it is represented by a file-folder icon. In the UNIX environment, however, the term "directory" is more useful. Therefore, when you are entering commands in a CommandShell window, it's best to think in terms of a directory rather than a folder, especially when you are entering such commands as "make directory" (`mkdir`) or "change directory" (`cd`).

For that reason, this guide uses Macintosh terminology when describing how to work with the Finder and UNIX terminology when describing operations performed in a CommandShell window.

Conventions used in this guide

A/UX guides follow specific conventions. For example, words that require special emphasis appear in specific fonts or font styles. The following sections describe the conventions used in all A/UX guides.

Keys and key combinations

Certain keys on the keyboard have special names. These modifier and character keys, often used in combination with other keys, perform various functions. In this guide, the names of these keys are in Initial Capital letters followed by SMALL CAPITAL letters.

The key names are

CAPS LOCK	DOWN ARROW (↓)	OPTION	SPACE BAR
COMMAND (⌘)	ENTER	RETURN	TAB
CONTROL	ESCAPE	RIGHT ARROW (→)	UP ARROW (↑)
DELETE	LEFT ARROW (←)	SHIFT	

Sometimes you will see two or more names joined by hyphens. The hyphens indicate that you use two or more keys together to perform a specific function. For example,

Press COMMAND-K

means "Hold down the COMMAND key and then press the K key."

Terminology

In A/UX guides, a certain term can represent a specific set of actions. For example, the word *enter* indicates that you type a series of characters on the command line and press the RETURN key. The instruction

Enter `ls`

means "Type `ls` and press the RETURN key."

Here is a list of common terms and the corresponding actions you take.

Term	*Action*
Click	Press and then immediately release the mouse button.
Drag	Position the mouse pointer, press and hold down the mouse button while moving the mouse, and then release the mouse button.
Choose	Activate a command in a menu. To choose a command from a pull-down menu, position the pointer on the menu title and hold down the mouse button. While holding down the mouse button, drag down through the menu until the command you want is highlighted. Then release the mouse button.
Select	Highlight a selectable object by positioning the mouse pointer on the object and clicking.
Type	Type a series of characters *without* pressing the RETURN key.
Enter	Type the series of characters indicated and press the RETURN key.

The `Courier` *font*

Throughout A/UX guides, words that appear on the screen or that you must type exactly as shown are in the `Courier` font.

For example, suppose you see this instruction:

Type `date` on the command line and press RETURN.

The word `date` is in the `Courier` font to indicate that you must type it.

Suppose you then read this explanation:

After you press RETURN, information such as this appears on the screen:

```
Tues Oct 17 17:04:00 PDT 1989
```

In this case, `Courier` is used to represent the text that appears on the screen.

All A/UX manual page names are also shown in the `Courier` font. For example, the entry `ls`(1) indicates that `ls` is the name of a manual page in an A/UX reference manual. See "Manual Page Reference Notation," later in this preface for more information on the A/UX command reference manuals.

Font styles

Italics are used to indicate that a word or set of words is a placeholder for part of a command. For example,

`cat` *filename*

tells you that *filename* is a placeholder for the name of a file you want to display. For example, if you wanted to display the contents of a file named `Elvis`, you would type the word `Elvis` in place of *filename*. In other words, you would enter

```
cat Elvis
```

New terms appear in **boldface** where they are defined. Boldface is also used for steps in a series of instructions.

A/UX command syntax

A/UX commands follow a specific command syntax. A typical A/UX command gives the command name first, followed by options and arguments. For example, here is the syntax for the `wc` command:

`wc [-l] [-w] [-c] [`*filename*`]...`

In this example, `wc` is the command, `-l`, `-w`, and `-c` are options and *filename* is an argument. Brackets ([ ]) enclose elements that are not necessary for the command to execute. The ellipsis (...) indicates that you can specify more than one argument. Brackets and ellipses are *not* to be typed. Also, note that each command element is separated from the next element by a space.

The following table gives more information about the elements of an A/UX command.

Element	*Description*
command	The command name.
option	A character or group of characters that modifies the command. Most options have the form *-option,* where *option* is a letter representing an option. Most commands have one or more options.
argument	A modification or specification of a command, usually a filename or symbols representing one or more filenames.
[ ]	Brackets used to enclose an optional item—that is, an item that is not essential for execution of the command.
...	Ellipses are used to indicate that you can enter more than one argument.

For example, the `wc` command is used to count lines, words, and characters in a file. Thus, you can enter

```
wc -w Priscilla
```

In this command line, `-w` is the option that instructs the command to count all of the words in the file, and the argument `Priscilla` is the file to be searched.

Manual page reference notation

The *A/UX Command Reference,* the *A/UX Programmer's Reference,* the *A/UX System Administrator's Reference,* the *X11 Command Reference for A/UX,* and the *X11 Programmer's Reference for A/UX* contain descriptions of commands, subroutines, and other related information. Such descriptions are known as *manual pages* (often shortened to *man pages*). Manual pages are organized within these references by section numbers. The standard A/UX cross-reference notation is

command (section)

where *command* is the name of the command, file, or other facility; and *section* is the number of the section in which the item resides.

- Items followed by section numbers (1M) and (8) are described in the *A/UX System Administrator's Reference.*
- Items followed by section numbers (1) and (6) are described in the *A/UX Command Reference.*
- Items followed by section numbers (2), (3), (4), and (5) are described in the *A/UX Programmer's Reference.*
- Items followed by section number (1X) are described in the *X11 Command Reference for A/UX.*
- Items followed by section numbers (3X) and (3Xt) are described in the *X11 Programmer's Reference for A/UX.*

For example

```
cat(1)
```

refers to the command `cat`, which is described in Section 1 of the *A/UX Command Reference.*

You can display manual pages on the screen by using the `man` command. For example, you could enter the command

```
man cat
```

to display the manual page for the `cat` command, including its description, syntax, options, and other pertinent information. To exit a manual page, press the SPACE BAR until you see a command prompt, or type `q` at any time to return immediately to your command prompt.

For more information

To find out where you need to go for more information about how to use A/UX, see *Road Map to A/UX.* This guide contains descriptions of each A/UX guide and ordering information for all the guides in the A/UX documentation suite.

10 Troubleshooting

This chapter lists some common problems users encounter and gives some suggested remedies. This is by no means a complete list of all the problems that can arise. However, the chapter describes some useful techniques to try when you don't know what to do and you can't find an expert in the next office.

This chapter contains the following sections:

- Startup problems
- Problems at login
- The pointer "freezes" on the screen
- Handling A/UX System Console alert messages
- The printer does not respond
- The icons have disappeared from the Finder
- The alert sound is deactivated in CommandShell
- The Console Emulator appears at login
- A Macintosh application does not open

Startup problems

This section lists some signs of trouble when you start up and suggests some remedies.

The computer won't start

If the computer fails to respond when you press the POWER ON key, follow these steps:

1. Check to see that the power cord is properly plugged in to a power source and to the computer itself.

   The computer might be plugged into an outlet that has no power or to an extension power strip that has no power.

2. If the power source is functioning, check the cable that connects the keyboard to the computer.

   Perhaps your keypress is not being sent to the computer.

A floppy disk icon with a question mark appears

This icon means that the system cannot find the startup disk. Try the following steps:

1 **Be sure that the external hard disk is turned on.**

2 **Restart the computer (with the restart switch). The computer might not have recognized all your disks during startup.**

3 **Be sure that the SCSI cables are connected properly and that the SCSI chain is terminated properly.**

This is described in *Setting Up Accounts and Peripherals for A/UX.*

4 **Try reinstalling your Macintosh system software.**

See the installation manual that came with the software.

Problems at login

When you log in to the system, several error messages might appear. A few are listed here.

Unknown login name

The following message appears:

```
Sorry, that user name is unknown. Please retype the name or
contact the system administrator.
```

Either you have typed your login name incorrectly or your login name has not been entered correctly in `/etc/passwd`.

Try retyping your login name; be sure to duplicate the uppercase and lowercase letters of the name exactly. A/UX is case sensitive.

If that doesn't help, contact your system administrator.

Incorrect password

The following message appears:

```
Sorry, your password in incorrect. Please reenter it.
```

When you reenter your password, be sure to duplicate the uppercase and lowercase letters of the password exactly. A/UX is case sensitive.

If that doesn't help, contact your system administrator.

Inaccessible home directory

The following message appears:

```
Your home directory, ----, is inaccessible. Perhaps that
directory is on a file system which is not mounted. Please
contact the system administrator.
```

Contact your system administrator.

The pointer "freezes" on the screen

If the screen doesn't respond when you are working in the Finder and you can't log out or shut down, try the following:

1 **Check the connections between the mouse, the keyboard, and the computer.**

2 **If these connections are in order, press COMMAND-CONTROL-E to redisplay the Login dialog box.**

You can then choose Restart or Shut Down from the Special menu.

If you are working in a CommandShell window and the screen stops accepting input from the keyboard, try the following steps:

1 **Check the connections between the mouse, the keyboard, and the computer.**

2 **Type `stty sane` and press CONTROL-J.**

Although the screen doesn't respond when you type `stty sane`, pressing CONTROL-J is equivalent to pressing RETURN and should force a line break. After the line breaks, your screen might respond normally.

3 **If the computer is still frozen, press COMMAND-CONTROL-E to redisplay the Login dialog box.**

You can then choose Restart or Shut Down from the Special menu.

Handling A/UX System Console alert messages

When the system alerts you to a problem, a message flashes on your screen. In order to read the message, you need to open CommandShell and display the A/UX System Console window. Follow these steps:

1 **If you are working in the A/UX Finder, you see a diamond-shaped icon blinking beside the CommandShell command in the Apple menu. Choose CommandShell.**

2 **When CommandShell opens, choose A/UX System Console from the Windows menu.**

The A/UX System Console window appears and displays the warning message.

For further information on the A/UX System Console window, see "Using the A/UX System Console" and "How A/UX Warns you of an Alert" in Chapter 3, "Using CommandShell."

Typical A/UX System Console alert messages

Shutdown warning

Normally, when the A/UX System Console displays an alert message, it also gives directions for dealing with the situation. The most common alert message concerns the imminent shutdown of the system.

When planning to shut down the system for maintenance, the system administrator is prompted to broadcast a message warning users of the fact. This gives you time to save your files and to log out of the system so that your work is not damaged.

File system full

If the message *File system full* blinks on and off several times a minute, a process that is filling up the file system might be running. If you are running the process, stop the process and clear the space. If you are not the sole user and you are not running the process, see the system administrator.

The printer does not respond

If the printer does not respond when you send a file to be printed, try the following:

1. **Check the cable between the printer and the computer. Be sure that the connectors have been plugged in to the correct ports.**
2. **Check that the printer is turned on.**
3. **Be sure that the printer has paper.**
4. **Be sure that the printer is selected in the Chooser.**

The icons have disappeared from the Finder

If the desktop file becomes corrupted, you can often repair it by rebuilding the desktop database. One symptom of this problem is that the icons do not appear in the Finder. Another is that the screen inappropriately displays a message that the application you need can't be found.

◆ **Note** Rebuilding the desktop database might take 20 minutes or more. If you have other UNIX file systems mounted in addition to A/UX, it can save a lot of time if you unmount them before performing this operation. ◆

Rebuild the desktop database as follows:

1 **Choose Logout from the Special menu in the Finder.**

2 **When the Login dialog box reappears, type your login name and password and click Login.**

3 **A window with the message** `Login session for` **(and your login name) appears. When that message disappears, leaving a blank screen, press COMMAND-OPTION and hold it down until the dialog box described in Step 4 appears..**

4 **A dialog box appears, asking you whether you want to rebuild the desktop database. Click OK.**

The alert sound is deactivated in CommandShell

If the alert sound doesn't work when it should, reactivate it as follows:

1 **Choose Control Panels in the Apple menu.**

2 **Double-click the Sound icon.**

3 **If the volume is turned too low, raise the indicator on the Speaker Volume bar.**

4 **Click the close box.**

The Console Emulator appears at login

If you log in and the Console Emulator appears instead of the A/UX Finder, it might mean that someone was using your user account and changed the session type to Console Emulator. Follow these steps:

- **At the command line, enter**
  `mac32`

- **If you want to display the A/UX Finder for 24-bit addressed software, enter**
  `mac24`

For further information on the Console Emulator, see Chapter 3, "Using CommandShell." For further information on 32-bit and 24-bit addressing, see "Changing Your Session Type" in Chapter 8, "Customizing Your Work Environment."

A Macintosh application does not open

If you are trying to use a Macintosh application and it refuses to open or respond properly, it might be that you do not have the proper file access permissions for the application.

Follow the directions for checking permissions given in Chapter 5, "Permissions."

If you do not have read permission for the application, you will not be able to open it.

1 Starting and Finishing a Work Session

This chapter introduces you to A/UX; it then explains how to start and end a work session and what to do when you're ready to quit working for the time being. It also explains how to shut down the computer. Chapter 1 covers the following topics:

- Introducing A/UX
- Starting the computer
- Starting A/UX
- Logging in
- You're ready to work
- What are you allowed to do?
- Logging out
- Shutting down A/UX
- About system administration

Although this chapter is designed to be read in sequence, you can also use it as a reference work by going directly to the section that contains the material you need.

Introducing A/UX

A/UX joins two systems that have different histories and different styles of operation, but that now work together. They are the UNIX® operating system (in Apple Computer's version, called *A/UX*) and the Macintosh Finder, which is familiar to all those who have used the Apple Macintosh computer. In practical terms, this means that you are using the UNIX operating system through the Macintosh user interface. This allows you to use Macintosh icons and mouse operations to manipulate the commands and utilities that give UNIX its flexibility and power.

Although this guide speaks of using A/UX instead of the Macintosh Operating System (OS), in fact, there is one area of your startup disk, called *MacPartition,* that contains the Macintosh OS. This is used to start the computer and to give the computer the command to load and launch A/UX. MacPartition contains a Macintosh file system; the files on the rest of the disk are contained in one or more UNIX file systems.

While you are running A/UX, the Finder allows you to open files and folders, close them, copy them, and move them, and to perform a variety of other functions as well. You can use the Finder to manipulate all files and folders that you have permission to manipulate (UNIX permissions are discussed in Chapter 5, "Permissions"). This is true whether they are stored in a UNIX file system or in the Macintosh file system.

In summary, A/UX offers you three distinct environments:

- The A/UX Finder, which provides access to both your UNIX and your Macintosh file systems.
- The Macintosh OS, which provides access only to files and folders that are in MacPartition or in a Macintosh file system on some other disk. Files and folders contained in a UNIX file system are not visible from the Macintosh OS Finder. Chapter 2 contains a section that tells you how to turn on the Macintosh OS ("Getting to the Macintosh OS").
- CommandShell (a UNIX command-line interface) provides access only to UNIX file systems. CommandShell cannot work with any material stored in a Macintosh file system, such as MacPartition.

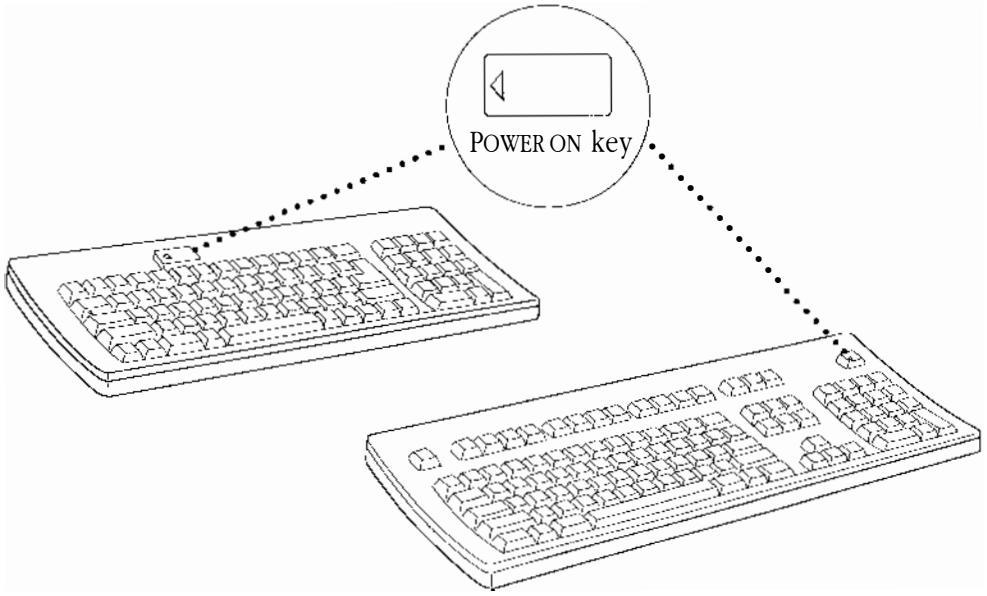
Starting the computer

Before you start the computer, you or the system administrator should set up your hardware according to the instructions that were packaged with it, install A/UX by following the directions in the *A/UX Installation Guide*. Consult *Setting Up Accounts and Peripherals for A/UX* for connecting and setting up peripheral devices such as printers.

Turn on the computer as follows:

- **Press the POWER ON key.**

The POWER ON key is the key with a small triangle. It is at the top of the keyboard, either in the middle or in the right corner. The Macintosh SE/30 has its power switch on the back of the computer.



The computer starts up and displays the message *Welcome to Macintosh,* which indicates that the computer is starting the Macintosh OS. A/UX will be launched from the Macintosh OS. Proceed to "Starting A/UX."

Starting A/UX

There are two ways to start A/UX:

- Automatically, by presetting your system so that the A/UX Startup application launches as soon as the computer begins to run the Macintosh OS
- Manually, by following the directions in "Starting A/UX Manually"

If A/UX is set to start automatically, the system loads and launches A/UX now. If your system launches in this way, continue with "Loading and Launching," later in this chapter.

A/UX does not start up automatically unless you or the system administrator have set it to start automatically. Although the installation instructions advise setting automatic startup, your system can be set for manual startup of A/UX.

If you wish to set your system to start A/UX automatically, proceed to the next section, "Setting Automatic A/UX Startup."

If your system is not set to start A/UX automatically and you wish to start A/UX manually, proceed to "Starting A/UX Manually," later in this chapter.

Setting automatic A/UX startup

If your system is not set to start A/UX automatically, you can set it to do so after the MacPartition disk icon is displayed (Figure 1-1), and before you start A/UX manually.

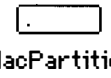
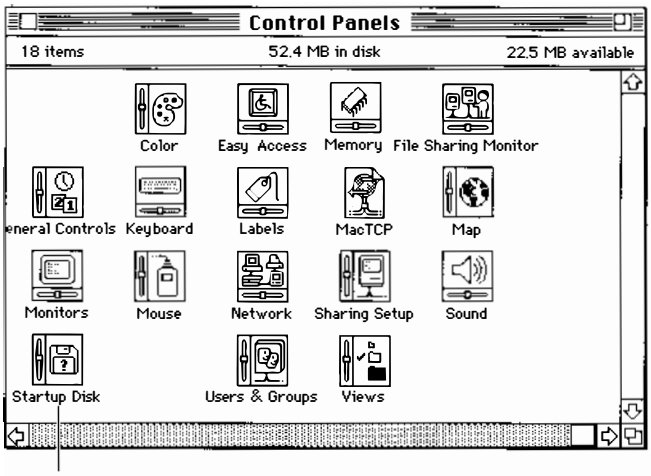


Figure 1-1 The MacPartition icon

Follow these steps:

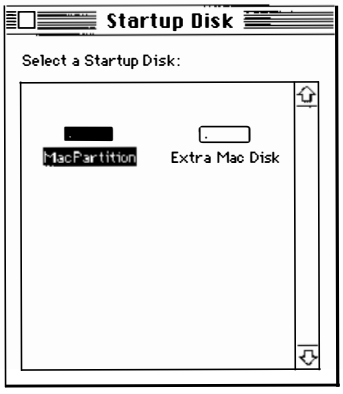
1 **Position the mouse pointer in the Control Panels icon of the Apple (🍎) menu and release the mouse button to display the Control Panels window.**



Startup Disk control panel icon

2 **Double-click the Startup Disk control panel icon.**

The following window appears.



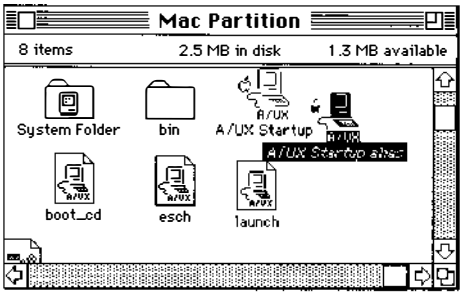
3 **Click on the MacPartition icon to select it and click the close box to close the control panel.**

4 **Double-click the MacPartition icon (at the right edge of the screen) to display the MacPartition window, if it is not already displayed.**

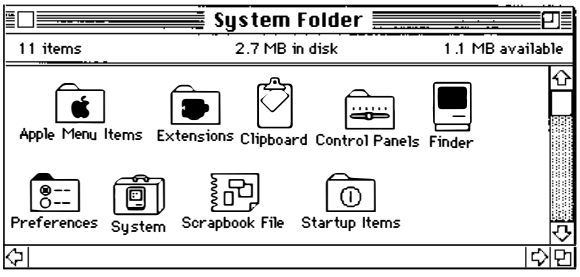
The MacPartition icon is shown in Figure 1-1.

5 **Create an alias of the A/UX Startup application by clicking the A/UX Startup icon in the MacPartition window and choosing Make Alias from the File menu.**

A duplicate of the A/UX Startup application icon appears beside the original, with the name *A/UX Startup alias.*



6 **Open the System Folder icon in the MacPartition window by double-clicking its icon.**



7 **Drag the *A/UX Startup alias* icon to the Startup Items icon to place it in the Startup Items folder.**

8 **Close the System Folder by clicking its close box.**

The next time you start the computer, the process described later in this chapter, in "Loading and Launching," starts automatically.

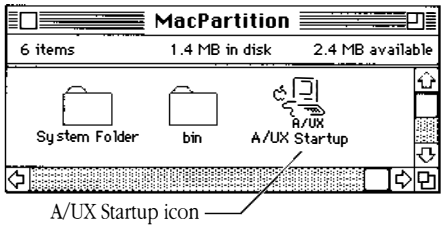
For further information on setting automatic A/UX startup, see *A/UX Local System Administration.*

Starting A/UX manually

If A/UX is not set to start automatically, you must start A/UX by running the A/UX Startup application manually. Follow these steps to start up A/UX manually:

1 **Double-click the MacPartition icon, which is located at the right edge of the screen. The MacPartition icon is shown in Figure 1-1.**

The A/UX Startup icon appears in the MacPartition disk window.



2 **Double-click the A/UX Startup icon to launch A/UX.**

A/UX begins the loading and launching process.

Loading and launching

As the A/UX Startup program runs, a series of screens appears to inform you of its progress. One of these screens is shown in Figure 1-2.

The A/UX Startup application checks the condition of the file systems each time you start A/UX and fixes problems identified during the check. For example, problems can be caused if the system was shut down improperly the last time it was used. This check can last for several minutes.

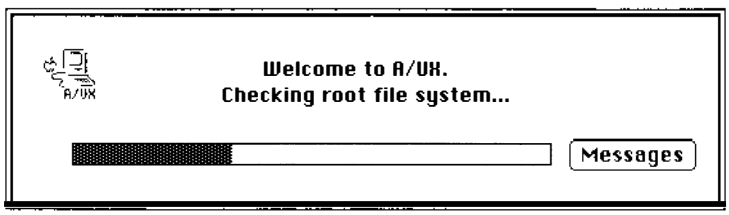


Figure 1-2 A startup status screen

◆ **Note** During the loading and launching process, the screen might flicker or even become blank for a moment. However, the progress bar reappears quickly and the process continues. ◆

The Cancel and Messages buttons in the Startup screen

When the startup process begins, a Cancel button is available at the right of the progress bar (shown in Figure 1-2). You can cancel the Startup program by clicking the Cancel button.

The Cancel button changes to a Messages button after a few seconds. If you click the Messages button, a small window appears that displays status messages describing the progress of the startup process. If you are a nontechnical user, you probably will not use this feature.

△ **Important** A/UX might report alert messages during the startup sequence. In some cases, you must supply information in response to the message. If this happens, an alert box appears and tells you that there is a message for you. When you click OK in the alert box, an A/UX System Console window appears, into which you can enter any information that the program requests. For further information on the A/UX System Console window, see "Using the A/UX System Console" in Chapter 3, "Using CommandShell." △

At the end of the startup process, the Login dialog box appears. Proceed with the next section,"Logging In," to learn about logging in to different accounts in A/UX.

Logging in

Unlike the Macintosh OS, A/UX supports many users on a single computer. Therefore, you must identify yourself to the system before you can be permitted to use it. This procedure is called **logging in.**

User accounts and home directories

The terms **user account** and **home directory** (or **home directory folder**) appear frequently in A/UX manuals, as they do in the documentation of all UNIX systems. A brief discussion of these terms follows.

The user account

Just as you must have a bank account in order to use the services of a bank, so you must have an account on an A/UX system before you can use A/UX. This allows you to protect your files and information from being used by others, in the same way that your bank account protects your deposits and information about your deposits from outsiders. Your files are protected by a scheme of permissions that is discussed in detail in Chapter 5, "Permissions."

As shipped, A/UX contains a Guest account to which anyone can log in, and a start account which is used for tutorial purposes. In addition, your system administrator might have created a user account that is meant for your personal use.

The start account and the Guest account can be used by several users, although your system administrator might require use of a password to log in to those accounts in order to limit the number of people who have access to them. For information on passwords, see the information on logging in later in this chapter, and see "Changing Your Password" in Chapter 8, "Customizing your Work Environment."

If you are a regular user of the system, you should have your own user account. Your system administrator assigns a **login name** (also called the *user name* and the *user account name)* to you when he or she creates your user account. If you are acting as your own system administrator, you can find instructions for creating a user account in *Setting Up Accounts and Peripherals for A/UX.*

The home directory folder

Your login name is simply a designation that tells the system that you are a legitimate user with an account. Your home directory folder, however, is an actual folder that contains your own files. It is common practice to name the home directory folder with the users login name. Whenever you log in to A/UX, an **alias** of your home directory folder icon appears near the right edge of the screen. Figure 1-3 shows the alias of the home directory folder for the start account.

start alias

Figure 1-3 The home directory folder alias for the start account

An alias of a file or folder is an icon that is linked to the original file or folder so that it can be manipulated like the original. However, you can put the alias in a different place in the file hierarchy without moving the original file or folder. In addition, the alias is usually normally given the name of the original file or folder plus the word *alias*. Since the name of your home directory folder is likely to be your login name, the folder that appears at the right edge of the screen is named with your login name plus *alias*, for example, *start alias*.

If the folder has been moved to another part of the screen, it appears in its new position when you next log in.

Your home directory folder is your home base on the computer while you are using A/UX. Although you can spend as much time as you want away from home, your home remains your headquarters and is probably the place where you keep most of your belongings.

The phrase *home directory folder* is an adaptation of the standard UNIX term *home directory*. What the UNIX world calls a *directory* is called a *folder* in the Macintosh world, and appears in the A/UX Finder with a folder icon. Therefore the name *home directory folder* has been coined.

You can deny other users permission to add files to your home directory folder or to remove files from it, and you also can control their ability to read or change any files that you have created, whether or not these files are situated in your home directory folder. For further information on these file- and folder-protection schemes, see Chapter 5, "Permissions."

Your login name

For purposes of your A/UX system, you are identified by the name under which you logged in. Moreover, your login name determines the name of your home directory and which files and folders you have permission to use.

11 Where to Go From Here

This chapter presents a brief overview of the places you might look to learn more about A/UX and your Macintosh computer. This chapter contains the following sections:

- Finding resource material
- Learning more about system administration
- Learning more about commands
- Learning more about creating, formatting, and printing documents
- Learning about developing in the A/UX environment

Finding resource material

Apple Computer, Inc. provides a variety of reference material to help you use your computer and its operating systems. You can find information in the sources listed here:

A/UX Essential Manuals

This set contains the guides necessary to install and configure A/UX, to use it, and to learn about the system and its documentation. It comes with the operating system software.

Macintosh accessory set

This set contains the system software and guides necessary to set up and use a Macintosh computer. This set comes with the computer.

A/UX user's documentation suite

This suite is available in several different bundles addressing the needs of specific users. You can purchase this suite through your authorized A/UX dealer or representative.

This suite includes the following sets:

- A/UX Essential Manuals
- A/UX Administration Manuals
- A/UX Programming Manuals

For a complete list of the guides contained in each of these bundles, see *Road Map to A/UX*.

Apple Technical Library

This set of books describes the hardware and software of the Macintosh family of computers. The books are official technical publications from Apple Computer, Inc., and are published by Addison-Wesley Publishing Company. You can find these books in most well-stocked bookstores.

Learning more about system administration

To help you learn about A/UX system administration tasks, Apple Computer, Inc. provides the following guides:

Setting Up Accounts and Peripherals for A/UX

This book describes how to add user accounts and peripheral devices, such as printers and additional hard disks, to an A/UX system.

This guide comes in the A/UX Essential Manuals set.

A/UX Local System Administration

This book describes the duties of the administrator of a single A/UX system. It includes information on making backups of files and maintaining a healthy file system.

This guide is available as part of the A/UX Administration Manuals set.

A/UX Networking Essentials

This book presents basic information for those who need to use their systems on a network, but whose technical expertise is below that of an experienced system administrator.

This guide is available in the A/UX Essential Manuals set.

A/UX Network System Administration

This book describes how to set up and maintain a simple network. It includes a discussion of TCP/IP software utilities, Network Information (Yellow Pages) services, and Network File Services (NFS). It also contains information on how to print using the AppleTalk network and AppleTalk protocol.

This guide is part of the A/UX Administration Manuals set.

A/UX System Administrator's Reference

This reference manual contains an entry for each system administration command. Each entry gives the command name, describes the syntax, lists the associated files, and provides cross-references. This reference includes a section of entries for device drivers and device interfaces and a section of entries for system-maintenance procedures.

This reference is part of the A/UX Administration Manuals set.

Learning more about commands

You can use the following resources to learn about commands:

Type *commandname* **COMMAND-K in a CommandShell window.**

In response, the computer displays a Commando dialog box that describes available options and demonstrates the correct command syntax. For further information on Commando, see Chapter 4, "Using UNIX Commands and Commando."

Enter `man` *commandname* **in a CommandShell window.**

In response, the computer displays the reference manual page that describes the command in detail. You can read through the entire description or find only the options that you need. Each manual entry presents an example of the correct syntax.

A/UX Command Reference

This reference manual contains an entry for each command. Each entry lists the command name, describes the syntax, and lists the associated files and commands. This manual also includes similar entries about the game programs included with A/UX.

A/UX Reference Summary and Index

This guide catalogs the other reference manuals in three ways. It presents a list of all A/UX commands by function, synopses of all A/UX commands organized alphabetically,

and a keyword index of all the command reference entries. The command synopses and list of commands by function lead you to the information in *A/UX Command Reference* and *A/UX System Administrator's Reference*. The index serves all volumes.

These guides are part of the A/UX Programming Manuals set.

Learning more about creating, formatting, and printing documents

To learn more about using the A/UX text-processing and text-formatting tools, see the guides listed here:

A/UX Text-Editing Tools

This book describes the editing tools provided with A/UX. It contains detailed instructions and sample sessions for using `vi`, `ex`, `ed`, and `sed`. This guide is part of the A/UX Administration Manuals set.

A/UX Text-Processing Tools

This book describes the text-formatting tools that make up AT&T's Documentor's Workbench (DWB), version 3.0. It also describes other text-processing tools that come with A/UX, such as `grap` and TranScript.

This guide is available in the A/UX Administration Manuals set.

To find out more about using Macintosh applications to write, design, lay out, and print documents, see the guides that come with each application.

To learn about printing documents with A/UX tools you can consult several guides.

Setting Up Accounts and Peripherals for A/UX

This book describes how to set up a printer to use with your computer. It comes with the A/UX software in the A/UX Essential Manuals set.

A/UX Networking Essentials

This book describes how to add a printer or a computer to a network and how to print on a network. It is available in the Essential Manuals set.

A/UX Local System Administration

This book describes the duties of a system administrator for a single A/UX system. It includes information on setting up and configuring the kernel for peripheral devices, such as printers.

This guide is part of the A/UX Administration Manuals set.

A/UX Shells and Shell Programming

This book describes the Bourne, C, and Korn shell programs distributed with A/UX. You use the shell language to communicate with the operating system to accomplish tasks.

This guide is available in the A/UX Programming Manuals set.

Learning about developing in the A/UX environment

To learn about development platforms and tools, see the following guides, all of which are part of the A/UX Programming Manuals set:

A/UX Toolbox: Macintosh ROM Interface

This book describes what the A/UX Toolbox is and how to use the A/UX Toolbox to implement the Macintosh user interface on applications that run under the A/UX operating system.

A/UX Programming Languages and Tools, Volumes 1 and 2

These books describe the programming languages, their accompanying subroutine libraries, the utility programs, the compilers, and the associated program-generating tools provided with A/UX.

A/UX Programmer's Reference, Volumes 1 and 2

These reference manuals contains information for programmers. These manuals consists of entries for system calls, subroutines, file formats, and miscellaneous facilities.

A/UX Porting Guide

This book describes how to port existing UNIX applications to A/UX and presents a comprehensive overview of the porting process.

Building A/UX Device Drivers

This book describes how to build A/UX device drivers and how peripheral devices interact with A/UX.

This book is available from APDA as part of the set called A/UX Device Drivers Kit.

A/UX Network Applications Programming

This book describes the A/UX programming interfaces for the programmer who wishes to write network applications based on AppleTalk, Network File Services (NFS), Yellow Pages, and Internet software.

This book is available from APDA.

The Login dialog box

When you log in, you give the system two pieces of information:

- your login name
- your password

You can log in to any one of several types of accounts:

- the start account for tutorials
- the Guest account for guest users (if the system administrator has restricted access to the start account)
- your own user account (if the system administrator has assigned you one)
- the root account for system administrators

This section describes how to log in to these accounts.

As soon as A/UX Startup finishes running, the Login dialog box appears. You can log in whenever you see the Login dialog box, shown in Figure 1-4.

◆ **Note** Several login options are available while the Login dialog box is displayed. These options include changing your password. If you are a new user, your system administrator might have assigned you a temporary password with the understanding that you would use the Change Password login option to choose your own password as soon as possible. To do so, see "Changing Your Password," in Chapter 8. Other login options are also explained in Chapter 8; see "Changing Your Session Type." ◆

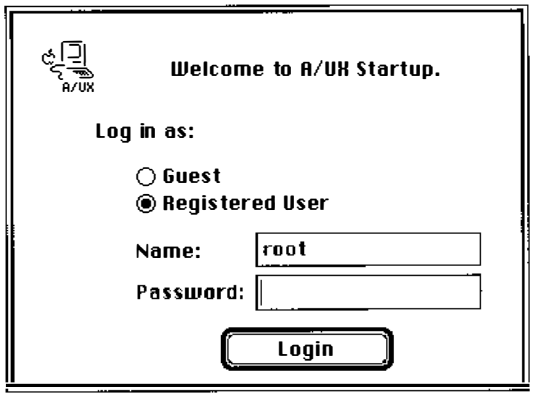


Figure 1-4 The Login dialog box

To **log in** means to enter the name of the account you are about to use and to enter the account's password (if required). The three sections that follow describe how to log in to the start account, the Guest account, and the user and root accounts. Refer to the section of this chapter that describes how to log in to the account you want to use.

△ **Important** UNIX is **case sensitive,** that is, it distinguishes between uppercase and lowercase letters. If your login name is supposed to be `john`, but you type `John`, A/UX won't recognize it because of the uppercase `J`. This is true of all character sequences that A/UX reads, such as commands, passwords, folder names, and so on. △

Logging in for the tutorials

The start account contains the files associated with the various tutorials in this book. Log in to this account whenever you use a tutorial presented in this guide.

To log in to the start account, follow these steps:

1 **While the Login dialog box is displayed, click the Registered User button to select it, unless it is already selected.**

2 **Type `start` as the login name.**

The login name for the tutorial account is `start`. Notice that all the letters in the name `start` are lowercase. Remember to enter the login name exactly as specified, using lowercase letters unless capital letters are indicated.

3 **Press RETURN.**

This action moves the cursor to the Password text box. You also can press TAB or click the Password text box to move there. A/UX asks you for a password to ensure system security. Each account has a password so that only the person who is entitled to use that account has access to it.

4 **Type `my.passwd` or use the password given to you by the system administrator.**

Note that the period in `my.passwd` has no spaces before or after it.

A gray rectangle expands through the Password text box as you type each character.

Since the password `my.passwd` appears in this book, it's a good idea to change this password immediately, to prevent anyone from breaking into your system by using the start account. Your system administrator might already have changed the password.

To change the password for your account, see "Changing Your Password," in Chapter 8, "Customizing your Work Environment."

5 **Click Login or press RETURN.**

If the password and the login name are correct, you're logged in and the Finder appears after a few moments. If you type the wrong login name or password, a warning dialog box appears. Try again, and be sure that you are typing lowercase and uppercase letters as required.

If you make a mistake while typing your login name or password, click the Name or the Password field to select it; then press the DELETE key.

Type the login name or password again and click Login or press RETURN.

Proceed to "You're Ready to Work," later in this chapter.

Logging in to the Guest account

If your system administrator has not set up a user account for you, you can use the Guest account.

To log in to the Guest account, follow these steps:

1 **While the Login dialog box is displayed, click Guest.**

The system administrator might have set up the system so that you do not need to enter the Guest account password.

- If you aren't required to enter a password, the Password field does not appear when you click the Guest radio button.
- If you are required to enter a password, the Password field appears in the Login dialog box. If you do not know the password, see your system administrator or the person in charge of the Guest account.

2 **If a password is required, type the password.**

3 **Click Login or press RETURN.**

See "Changing Your Password" in Chapter 8, "Customizing Your Work Environment," for more information on security and passwords.

If you make a mistake while typing your password, click the Password field to select it; then press the DELETE key. Type the password again and click Login or press RETURN.

If the password is correct, you're logged in and the Finder appears after a few moments. Proceed to "You're Ready to Work," later in this chapter.

Logging in to your user account or the root account

Your personalized user account allows you full use of the files that you create. It also contains files that specify preferences about your work habits, such as the pattern of your desktop. Your system administrator has set up the account by using the `adduser` script described in *Setting Up Accounts and Peripherals for A/UX* or by following standard UNIX procedures for setting up a user account. You should log in to this account whenever you're working with A/UX, except when using the tutorials in this book, in which case you should log in to the start account.

If you are authorized to have access to all files in the file system in order to perform system maintenance and system administration tasks, and if you know the password for the root account, you also can use these instructions to log in to the root account. Substitute the name `root` for your user name.

To log in to your user account or the root account, follow these steps:

1 **While the Login dialog box is displayed, click the Registered User button, unless it is already selected.**

2 **Type your login name.**

If you are logging in to the root account, type `root`. If you are logging in to a user account, type the login name assigned to you by your system administrator. Remember to enter the login name exactly as specified, using lowercase letters unless uppercase letters are indicated.

3 **Press RETURN.**

This action moves the cursor to the Password text box. You also can press TAB or click the Password text box to move the cursor there. A/UX asks you for a password to ensure system security. Each user account has its own password. To change your account password, see "Changing Your Password," in Chapter 8, "Customizing Your Work Environment."

If the system administrator created your user account without assigning a password, you might be asked to assign your own password by typing it into the space provided.

4 **Type your password.**

A gray rectangle expands through the Password text box as you enter each character.

5 **Click Login or press RETURN.**

If you make a mistake while typing your login name or password, click the Name or Password field to select it; then press the DELETE key.

Type the login name or password again and click Login or press RETURN.

If the password and the login name are correct, you're logged in and the Finder appears after a few moments. Proceed to the section called "You're Ready to Work."

The Finder now appears, as shown in Figure 1-5. This is a special application that manages the desktop. It displays icons that represent the available UNIX and Macintosh file systems. The Finder makes it easy to work with disks and many types of files, such as text files, programs, and utilities. Use the Finder to open a folder or a file or to execute a program by double-clicking its icon.

If you started A/UX manually, by opening the MacPartition folder and double-clicking the A/UX Startup icon, the MacPartition folder might still be open. You can close it by clicking the close box at the upper left of the MacPartition window. If your system starts A/UX automatically, the MacPartition folder is probably not open when the Finder appears.

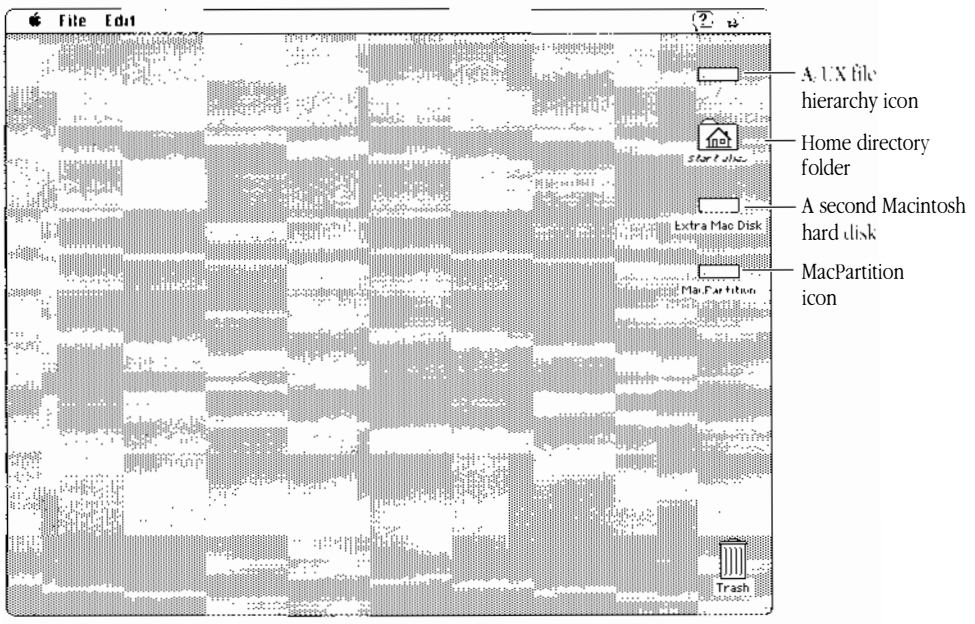


Figure 1-5 The A/UX Finder

The Secure Startup feature

If the MacPartition icon does not appear in your Finder, it means that your system administrator has activated a feature called Secure Startup. This is a security feature that prevents users from opening the MacPartition window. If Secure Startup is running, your system launches A/UX automatically; you do not need to open MacPartition to launch it. Only users logged in to the root account can see and open MacPartition.

For further information on Secure Startup, see *A/UX Installation Guide.*

Locating the `start` folder

If your system administrator has set up a user account for you, an alias of your home directory folder, labeled with your login name and the word *alias,* appears near the right edge of your screen. If you logged into the start account (or the Guest account), the start (or Guest) folder is your home directory folder.

◆ **Note** If others have used your system before you, you can see the same windows that were displayed when the previous user logged out. It's possible, therefore, that a window is covering the icon for your home directory folder. If so, you can move some of the windows to find the icon. ◆

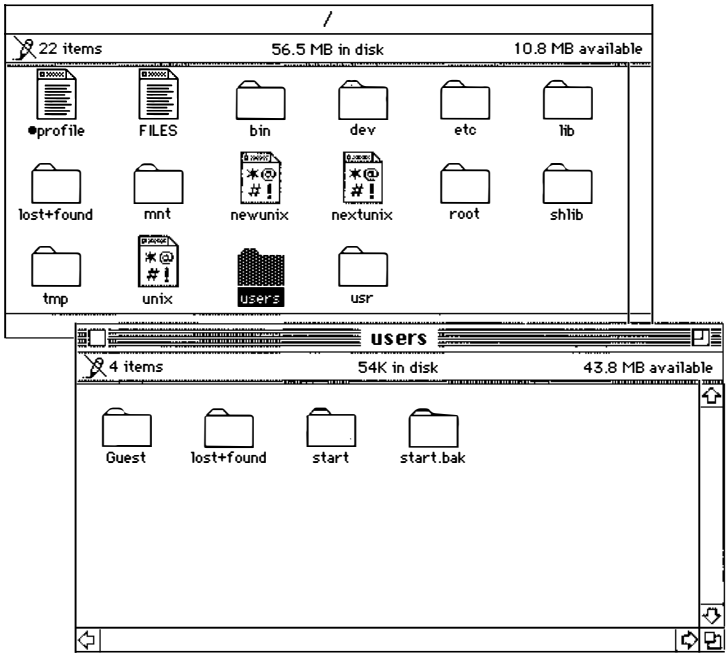
If you are not logged in to the start account, but you want to use the `start` folder for the tutorials in this book, locate the `start` folder as follows:

1 **Double-click the UNIX file hierarchy icon, at the upper right of the screen.**

This is the disk icon with the slash (`/`) label. This action opens the `/` folder, which is at the top of the UNIX file system. The icon is called either the *UNIX file hierarchy icon* or the *slash (/) folder icon.*

2 **Double-click the folder labeled** `users`**.**

Both the start and the Guest folders are now visible. Other users' home directory folders also can be located here.



3 **Select the** `start` **folder icon.**

4 **Choose Make Alias in the File menu.**

A new icon labeled *start alias* appears.

5 **Drag the *start alias* icon to the desktop.**

You can double-click the *start alias* icon to open the `start` folder and use its files.

The next section, "What Are You Allowed to Do?" describes the tasks you can perform while using different login accounts.

What are you allowed to do?

Table 1-1 shows the types of actions you can perform in the different types of login accounts. It also tells you where you can find more information about these tasks.

Table 1-1 What you can do

Who you are	Tasks you can perform	Where to find information
Registered user	Log in and log out	Chapter 1
	Use UNIX programs and utilities	Chapters 2 and 4
	Create, print, manage, and store documents	Chapters 2 and 7
	Use Macintosh Applications and desk accessories	*Macintosh Reference;* Application user's guide
	Change your password	Chapter 8
	Connect to a network	*A/UX Networking Essentials*
Guest user	Same as registered user	
Root user	All the above, plus: Add user accounts	*Setting Up Accounts and Peripherals for A/UX*
	Shut down the system and start it up again	Chapter 1
	Add and manage peripheral devices	*Setting Up Accounts and Peripherals for A/UX; A/UX Local System Administration*
	Set up and manage a network	*A/UX Network System Administration; A/UX Networking Essentials*

When you're ready to stop working, see the next section "Logging Out," for instructions on logging out of A/UX.

Logging out

When you finish your work with A/UX, end your work session by logging out. If you walk away from your computer without logging out, anyone who uses your computer has access to all your files, just as you do. If you log out, the next user must log in to his or her own account to gain access to the system.

▲ **Warning** Logging out is not the same as shutting down the computer. When you log out, the computer continues to run. In order to shut down the computer, you must be logged in to the root account or you must know the root password. For information on shutting down, see "Shutting Down A/UX" later in this chapter. ▲

Log out as follows:

1 **Choose Finder in the Applications menu to be sure that the Finder is the active application.**

The Applications menu appears when you click the icon at the far right of the menu bar.

2 **Choose Logout in the Special menu under the A/UX Finder.**

The system reminds you to save all your unsaved work.

After you log out, the Login dialog box reappears, indicating that you have logged out successfully. The computer remains on, ready for the next user to log in.

Shutting down A/UX

When you finish working you should log out, not shut down the computer. For information on logging out, see "Logging Out," earlier in this chapter.

Sometimes you need to shut down A/UX to do system maintenance, such as adding peripheral devices, adding your system to a network, or repairing a file system. To shut down the system properly, you need to know the password for the root account.

▲ **Warning** Don't use the switch on the back of the Macintosh computer to turn it off while A/UX is running. Doing so might corrupt the file system and cause a loss of data. Always use the correct shutdown procedure to turn off the computer. ▲

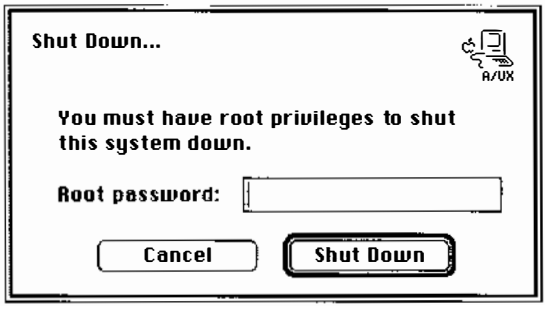
Shutting down the computer

Follow these steps to shut down the computer:

1 **With either the Finder or the Login dialog box displayed, choose Shut Down from the Special menu.**

If you want to shut down and start up again immediately, choose Restart, instead of Shut Down, from the Special menu. The Restart dialog box appears. The procedure is the same as the shutdown procedure.

If you are not logged in to the root account, you see the Shut Down dialog box.



2 **Enter the root password in the appropriate text box.**

3 **If others are using the system, type a warning message in the next text box.**

Your message is sent to other users.

If you are the sole user of this system, you are not asked for this information.

4 **Type a number specifying the delay, in minutes, between the time the message is transmitted and the time the other users must finish logging out.**

Give the other users a reasonable amount of time to save their work and to log out.

If you are the sole user of this system, you are not asked for this information.

5 **Click Shut Down.**

About system administration

When several people use an A/UX system, a system administrator must maintain the system. The system administrator sets up user accounts, backs up the system, sends messages regarding procedures and schedules, maintains system security, and serves as a troubleshooter for any problems that arise.

You might be the only person using the computer. In this case, you must act as your own system administrator, using the root account to perform maintenance tasks. This account has access to all files in the entire file system. Thus, if you're the system administrator for your A/UX system, you should log in to your user account to do your normal work. When you need to perform a maintenance task, you must log in to the root account.

Maintaining the start account

The start account is meant to be used by new users. After someone uses it for tutorials, the material in the start folder might well be altered. To restore it to its original condition, run the `setup` script as follows:

- **Double-click the setup icon in the `start` folder.**

  The `start` folder is restored to its original form.

For further information on administering a system that is not part of a network, see *Setting Up Accounts and Peripherals for A/UX* and *A/UX Local System Administration.* For information on administering a system connected to a network, see *A/UX Networking Essentials* and *A/UX Network System Administration.*

2 Using Files, Folders, and Directories

This chapter describes situations in which the use of folders and files in the A/UX Finder differs from their use in the Macintosh OS. It also defines pathnames, that is, the way the UNIX operating system describes the locations of files and directories in the file hierarchy.

- The Finder in A/UX
- Using the Finder
- The Finder icons
- Using files and folders in the Finder
- Working with Macintosh files
- Getting to the Macintosh Operating System
- Backing up and restoring files
- UNIX pathnames

The Finder in A/UX

As the Preface to this guide states, you should be acquainted with the basics of using the Macintosh, including all the elements of moving, copying, opening, closing, naming, and displaying files and folders in the Finder. Since these basic techniques are the same in the A/UX Finder as they are in the Macintosh OS Finder, they are not taught in this guide.

There are a number of unique features in the A/UX Finder. This chapter concentrates on these features and the ways in which they affect you.

Using the Finder

This section identifies the various objects that appear in the Finder in A/UX. You will recognize the similarity between the A/UX Finder (shown in Figure 2-1) and the Macintosh Finder. Note that the MacPartition folder is not open in Figure 2-1. As you learned in Chapter 1, "Starting and Finishing a Work Session," this window is open if you have started A/UX manually. It might not be displayed if you have set A/UX to start automatically. If Secure Startup is turned on (see "The Secure Startup Feature" in Chapter 1), the MacPartition is not visible at all.

The A/UX Finder allows you to work with different A/UX and Macintosh applications concurrently. You can copy and paste information between documents and applications easily and quickly, without having to save the file from one application before you open a file from an other application.

The Finder icons

The A/UX operating system contains many files and folders, each of which is represented by an icon in the Finder. This section illustrates the icons you see and describes what they represent.

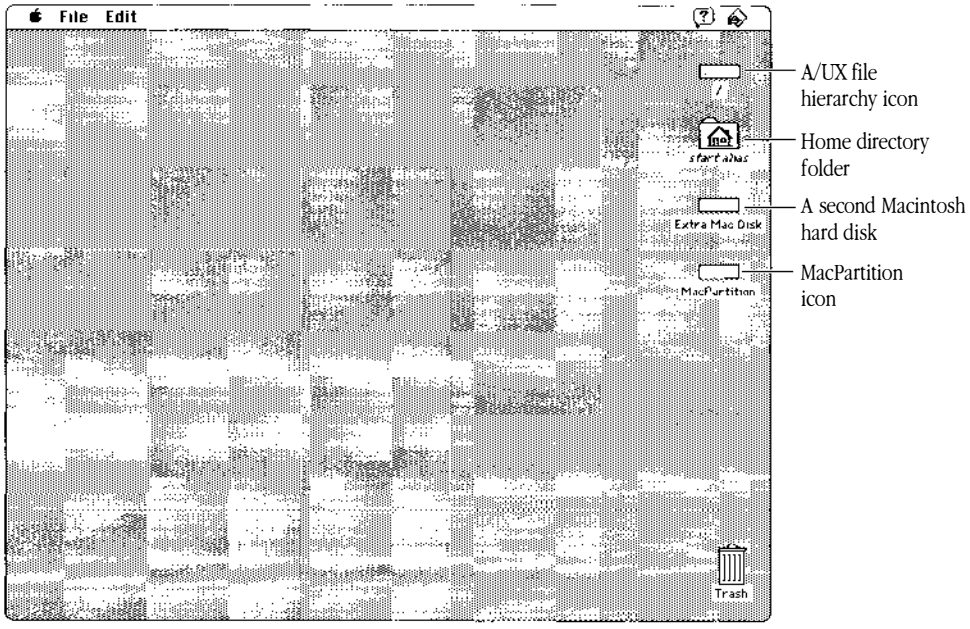


Figure 2-1 The A/UX Finder

Folders and directories

A reminder about terminology: In traditional UNIX terminology, the term *directory* is used for the object that is called a *folder* in the Macintosh environment. Thus, in traditional UNIX terms, the file system contains directories, which, in turn, can contain files and other directories. This is also true of the UNIX file systems supported by A/UX.

Although users who are using UNIX in CommandShell (described in Chapter 3, "Using CommandShell") will find it useful to think in traditional UNIX terms, and will refer to *directories* rather than *folders,* those who are using the Finder will prefer to think in terms of the folder and file icons. Because the Finder is discussed in this section, the term *folder* is used consistently here. In sections that discuss the A/UX command-line interface, which is in the style of the UNIX system (for example, in "UNIX Pathnames," later in this chapter), the word *directory* is used.

The icon for a given file or folder changes according to user permissions (for a description of permissions, see Chapter 5, "Permissions"). Icons that are shaded, for example, indicate that you have neither read nor write permission. Note that this refers only to your permissions. Other users might have different permissions, and their own permissions are reflected in the icons they see.

Folder icons

This section illustrates the different folder icons that you might see in the Finder.

Folder: These two icons represent folders for which you have read and execute permission, that is, the ability to open the folder and see what files or folders are in it. You might or might not have write permission, that is, the ability to add, rename, or remove items. The marked tab on the bottom folder indicates that you own the folder, that is, you created it, or ownership has been transferred to you.

Locked folder: This icon indicates that you cannot open this folder, nor can you change any of its contents.

Drop box: This icon represents a folder for which you have write and execute permission only. You cannot open the folder or read the files in the folder, but you can place files in it.

Active System Folder: This icon represents the System Folder that the system is currently using.

Home directory folder: This icon represents the alias of your home directory folder. When it appears automatically, at the right edge of the Finder screen, the name of the folder is normally your login name and the word *alias*.

File, application, and utility icons

The following icons represent various kinds of files in A/UX. They include files that are commands, scripts, applications, and text documents.

A/UX text files: These icons represent a text file for which you have read permission (top) and one for which you do not have read permission (bottom). When you double-click the icon on the top, the file opens using the default text editor. You cannot open the file on the bottom because you do not have read permission. For information on the default text editor, see "Changing the Default Text Editor" in Chapter 8, "Customizing Your Work Environment."

Binary data file: This icon represents a file that is not a text file; it contains code that can only be read by the computer or by a program. You can neither read nor execute this file.

UNIX command: This icon represents a UNIX command. When you double-click this icon, a Commando dialog box appears, which allows you to run the command. Commando is described in Chapter 4, "Using UNIX Commands and Commando."

Shell script: A shell script, often called simply a *script,* is an executable text file that contains a series of commands for the computer to carry out. Many scripts are created by system administrators and by users on site and are not an integral part of the UNIX operating system. Note the similarity between this icon and the A/UX command icon shown above it. This icon functions as though it were a UNIX command icon, that is, double-clicking the icon displays a Commando dialog box. If no Commando dialog box has been created for the shell script, a default dialog box appears. For further information on options and arguments and on Commando dialog boxes, see Chapter 4, "Using UNIX Commands and Commando." For information on creating scripts, see *A/UX Shells and Shell Programming.*

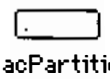
Executable file (without read permission): This icon represents a file that you can run (such as an application), but for which you do not have read permission. Many applications (such as those supplied by third-party developers) represent their products with their own custom-designed icons, which appear in place of this icon.

HyperCard application icon: This icon is an example of a Macintosh application (the HyperCard application). Under A/UX, you can run Macintosh applications, such as HyperCard, by double-clicking the icon just as you do under the Macintosh OS.

File system icons

This section describes icons that represent the UNIX and Macintosh file systems.

UNIX file system (or / folder) icon: This icon represents the root level of the UNIX file system. For a discussion of the traditional representation of the UNIX file system as an inverted tree, see "UNIX Pathnames," later in this chapter.



Macintosh file system: This icon represents a partition or a hard disk that contains a Macintosh file system.

Macintosh floppy disk: This icon represents a floppy disk with a Macintosh file system. A floppy disk that is formatted with a UNIX file system does not display an icon. You can access it only through UNIX commands in CommandShell. See "Inserting and Formatting Floppy Disks," later in this chapter.

Using files and folders in the Finder

Although the A/UX Finder allows you to use files and folders as you use them in the Macintosh OS, A/UX does impose some of its own rules and limitations.

Permissions limitations

Under A/UX, every file and folder has specific permissions that determine which users are allowed to open a file or a folder, change a file's or a folder's contents, or run a program. If you attempt to open a file or a folder or to change its contents when you lack the necessary permission, an error message is displayed and you cannot proceed. An example is shown in Figure 2-2.

For details on UNIX permissions, see Chapter 5, "Permissions."

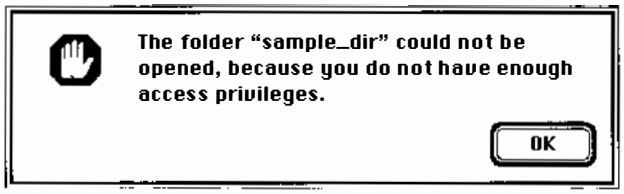


Figure 2-2 The warning that you do not have the appropriate UNIX permissions to open a folder

Naming or renaming files and folders

When you name or rename files and folders, observe the following restrictions:

1. Names can have no more than 31 characters.
2. Use only letters, numbers, or the underline character.
3. Do not use slash characters (/), spaces, or colons (:). Although slashes and spaces work in the Macintosh environment, UNIX interprets a slash to mean that the characters after the slash represent the next item in a pathname (for details, see "UNIX Pathnames," later in this chapter). UNIX interprets a space to mark the end of a filename or directory name. Use an underscore (_) instead of a slash or a space.

   For example, avoid the following constructions:

   ```
   A/UX file 1
   ```

   The preferred form is as follows:

   ```
   A_UX_file_1
   ```

Working with Macintosh files

You can easily move your Macintosh applications and files to your UNIX file system, and you can work with them just as you do when working in the Macintosh OS. The advantage of moving them into the UNIX file system is that you can then use UNIX backup facilities, search facilities, UNIX file permissions, and other utilities with your Macintosh files.

If there are applications or other items that you must use with the Macintosh OS, you might want to add another hard disk that contains a Macintosh file system because the MacPartition is small.

If you attach a second hard disk with the Macintosh file system to your computer, after you log in to your account (as described in "Logging In" in Chapter 1, "Starting and Finishing a Work Session") an icon representing that disk appears on your screen if the additional disk is running. You can double-click this icon to open it and to use its files and folders as you normally do in the Macintosh OS.

Getting to the Macintosh Operating System

Sometimes you might want to use the Macintosh OS exclusively. If the power has been turned off, follow the directions in the next section, "If the Power is Off." The instructions in this section assume that Secure Startup is not turned on. If it has been turned on and if you are not logged in to the root account, the MacPartition icon does not appear and you cannot use the Macintosh OS. See "Secure Startup" in Chapter 1, "Starting and Finishing a Work Session."

If A/UX is running, proceed to the section called, "If A/UX is Running."

If the computer is off

If the computer has been turned off, and if A/UX is set for automatic startup, you need to cancel the automatic startup procedure. Follow these directions:

1 **Press the POWER ON key to turn on the computer.**

First the copyright screen appears.

2 **With the copyright screen displayed, hold down the COMMAND key while pressing the period key.**

If the copyright screen disappears before you have done this, a startup screen appears.

3 **If the copyright screen vanishes before you perform step 2, click Cancel in the Startup screen during the first five seconds of the startup procedure.**

If Secure Start is not running, you see the A/UX Startup window with the `A/UX Startup #` prompt.

4 **Choose Quit from the File menu.**

The Macintosh OS Finder appears. Icons for the Macintosh HFS hard disks connected to your system appear on the right side of the screen. Note that the icon for the UNIX file hierarchy does not appear. The Macintosh OS does not recognize the UNIX file system.

If A/UX is running

If the computer is on and running A/UX, follow these directions:

1 **Choose Restart from the Special menu, with either the Finder or the Login dialog box displayed.**

The Restart dialog box appears.

2 **Enter the root password in the appropriate text box.**

If you are already logged in as `root`, you are not asked for the root password here.

3 **If others are using the system, type a warning message in the next text box.**

Your message should warn other users that the system is about to be shut down and that they should save their work and log out. The message is broadcast to other users.

If you are the sole user of this system, you are not asked for this information.

4 **Type a number specifying the number of minutes users have until the system actually shuts down.**

Give other users a reasonable amount of time to save their work and to log out.

If you are the sole user of this system, you are not asked for this information.

5 **Click Restart.**

6 **With the copyright screen displayed, hold down the COMMAND key while pressing the period key.**

If the copyright screen disappears before you to do this, a startup screen appears.

7 **If the copyright screen disappears before you perform Step 6, click Cancel in the Startup screen during the first five seconds of the startup procedure.**

8 **Choose Quit from the File menu.**

The Macintosh OS Finder appears. Icons for the Macintosh OS hard disks connected to your system appear on the right side of the screen. Note that the A/UX / disk does not appear. The Macintosh OS does not recognize the A/UX file system.

To begin using a file on your Macintosh HFS hard disk, open it by double-clicking its icon. Refer to the *Hard Disk SC Owner's Guide* or to the owner's guide that came with your hard disk or your computer for information about setting up and using files and folders on this disk.

Backing up and restoring files

This section shows you how to make backup copies of your critical files on floppy disks and to restore them from floppy disks.

It is important that you make backup copies of individual files as you create and revise them, and that your system administrator back up the entire system periodically. This prevents you from losing data or programs should your disk or your system fail.

For information on backing up your entire system, see *A/UX Local System Administration.*

Inserting and formatting floppy disks

Before you can use a brand new floppy disk, you must **format** the disk. This means that the computer writes information on to the disk, information that enables it to accept either the Macintosh or the UNIX file system.

When you insert floppy disks, the system can respond in a variety of ways, depending on how the floppy disk was formatted and whether you are currently working in the Finder or in CommandShell.

If you want to back up a folder or a file by dragging an icon to the floppy disk icon, you need to be in the Finder and to insert a formatted floppy disk. For further information on this method of backing up files, see "Dragging to Copy a File to a Floppy Disk," later in this chapter.

For more information on CommandShell, see Chapter 3, "Using CommandShell."

If you are in the Finder

If the floppy disk that you insert is formatted for the Macintosh file system, its icon, shown in Figure 2-3, appears near the right edge of the screen.

Figure 2-3 A Macintosh floppy disk icon

If the floppy disk has not been formatted for the Macintosh file system, you see a series of dialog boxes warning you that this is the case. These dialog boxes (illustrated in Figure 2-4) guide you through the formatting process, as follows:

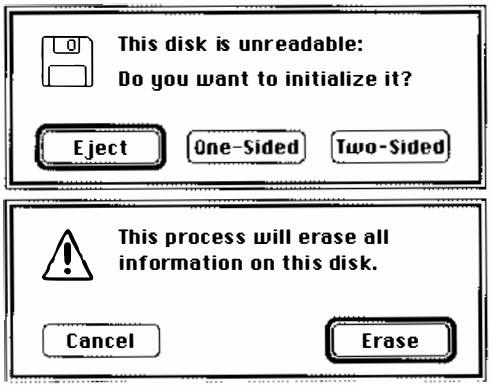


Figure 2-4 Disk-formatting dialog boxes

1 **In the first dialog box, click Two-Sided.**

2 **When the second dialog box appears, click Erase.**

You can click Cancel if the disk contains data that you don't want to erase.

If you are in CommandShell

If the floppy disk that you insert contains UNIX data (for example, a UNIX file system) nothing happens; no icon appears and no dialog box appears. Therefore, you can work with it only by using UNIX command-line commands. You can use it for backing up files with UNIX backup utilities, such as `tar` or `cpio` (which are described in *A/UX Local System Administration*).

If the floppy disk has never been formatted, you see the top dialog box in Figure 2-4. If it is a Macintosh disk, a dialog box (shown in Figure 2-5) asks you to specify whether you want to use it for the Macintosh file system or for a UNIX file system. A third choice is to eject the disk (and therefore to cancel the procedure).

- If you click UNIX Data, after the initialization is complete, the disk behaves like the UNIX disk described above (that is, no icon appears).
- If you click the Macintosh button, the ensuing dialog boxes guide you through the initialization process for a Macintosh file system disk, as shown in Figure 2-4. You must use the Macintosh disk with the Finder.

Figure 2-5 Initializing for a Macintosh or a UNIX data disk

Dragging to copy a file to a floppy disk

A/UX provides an easy way to copy files and folders. Follow these steps:

1 **Be sure that you are in the Finder.**

2 **Insert a floppy disk (initialized for the Macintosh file system) into the disk drive.**

You see an icon representing the disk.

3 **Drag the icon of the file or folder that you want to copy to the floppy disk icon.**

A dialog box appears describing the progress of the copy operation.

You can shift-click to select multiple files or folders to back up.

Dragging to restore a file

A/UX provides an easy way to restore files or folders that were backed up by dragging their icons to a disk. Follow these steps:

1 **Insert in the drive the floppy disk containing the file you want to restore.**

You see an icon representing the disk.

2 **Double-click the disk icon to display a window that shows the contents of the disk.**

3 **Drag the icon of the file or folder that you want to restore to the folder on the hard disk where you want it to reside.**

A dialog box appears describing progress of the copy operation.

You can shift-click to select multiple files or folders to restore.

UNIX pathnames

This section describes the way the UNIX operating system specifies the location of files and directories in the UNIX file hierarchy. The tutorial exercises in Chapter 4, "Using UNIX Commands and Commando," make use of the information in this section.

A/UX differs from traditional forms of UNIX in that the Finder allows you to manipulate files and folders by manipulating their icons. However, if you need to work with the command-line interface available in CommandShell, you will find it necessary to understand UNIX pathnames.

The *folders* of the Macintosh environment correspond to the *directories* of the UNIX world. Since this section describes the traditional UNIX way of using pathnames in the A/UX CommandShell window, the word *directory* is used here.

The UNIX file system is organized in a **hierarchy** traditionally represented as an inverted tree. Figure 2-6 shows an example of this organization. Organized from top to bottom, the file system begins at the top with the `/` directory, which is called the root of the file system and is always represented by the slash character (`/`). Branching downward from the root of the file system are the rest of the directories and files in the system. The `/` directory contains a number of directories that store the operating-system files and programs. There is only one UNIX file hierarchy for a given system. All additional directories, file systems, and files fall within this hierarchy (shown in Figure 2-6).

Because of its hierarchical organization, A/UX uses pathnames to refer to files and directories. A **pathname** is a name that describes where the file or directory is located in the hierarchy. Here is an example:

```
/users/start/letter1
```

Figure 2-7 shows the path that leads from the root to the file `letter1` and that gives rise to the pathname `/users/start/letter1`.

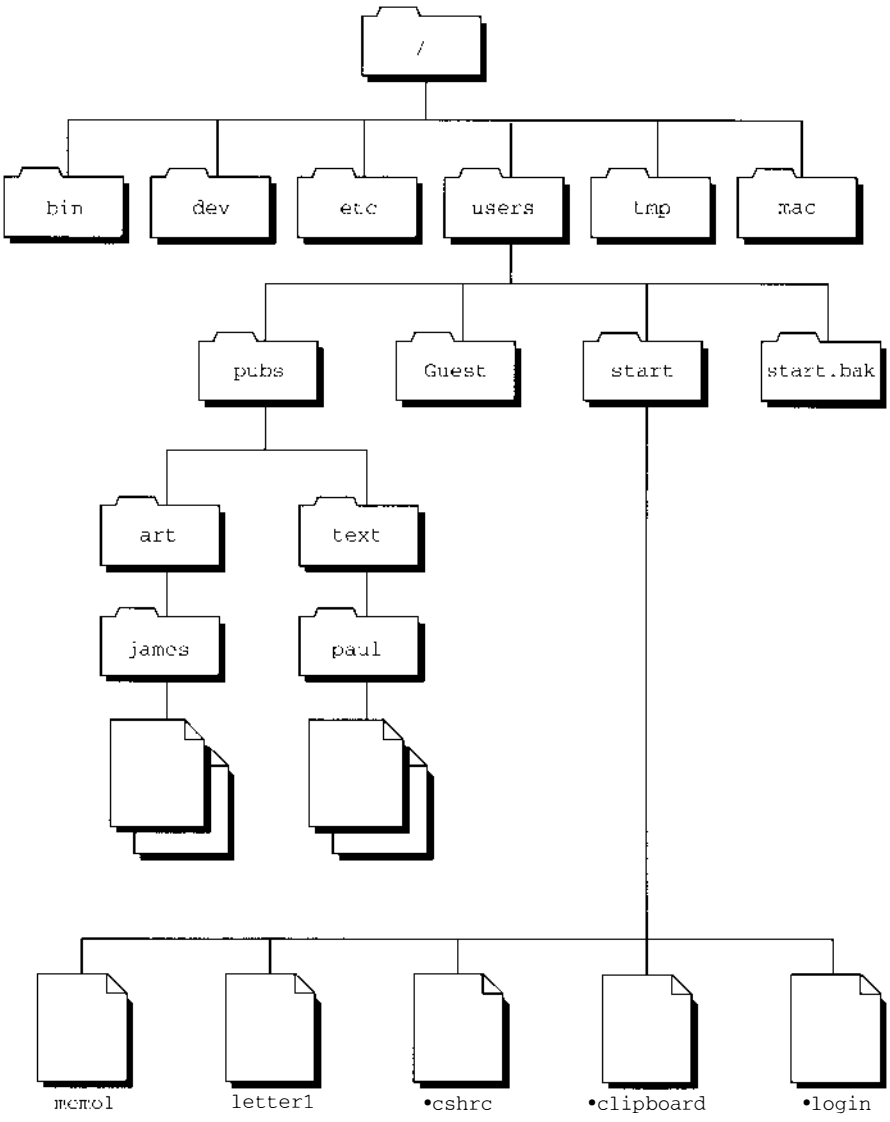


Figure 2-6 Part of the A/UX file-system structure

Here, the file named `letter1` is located within the `start` directory, which is located within (or *below,* in UNIX terminology) the `users` directory, which, in turn, is located below the `/` directory (indicated by the `/` character).

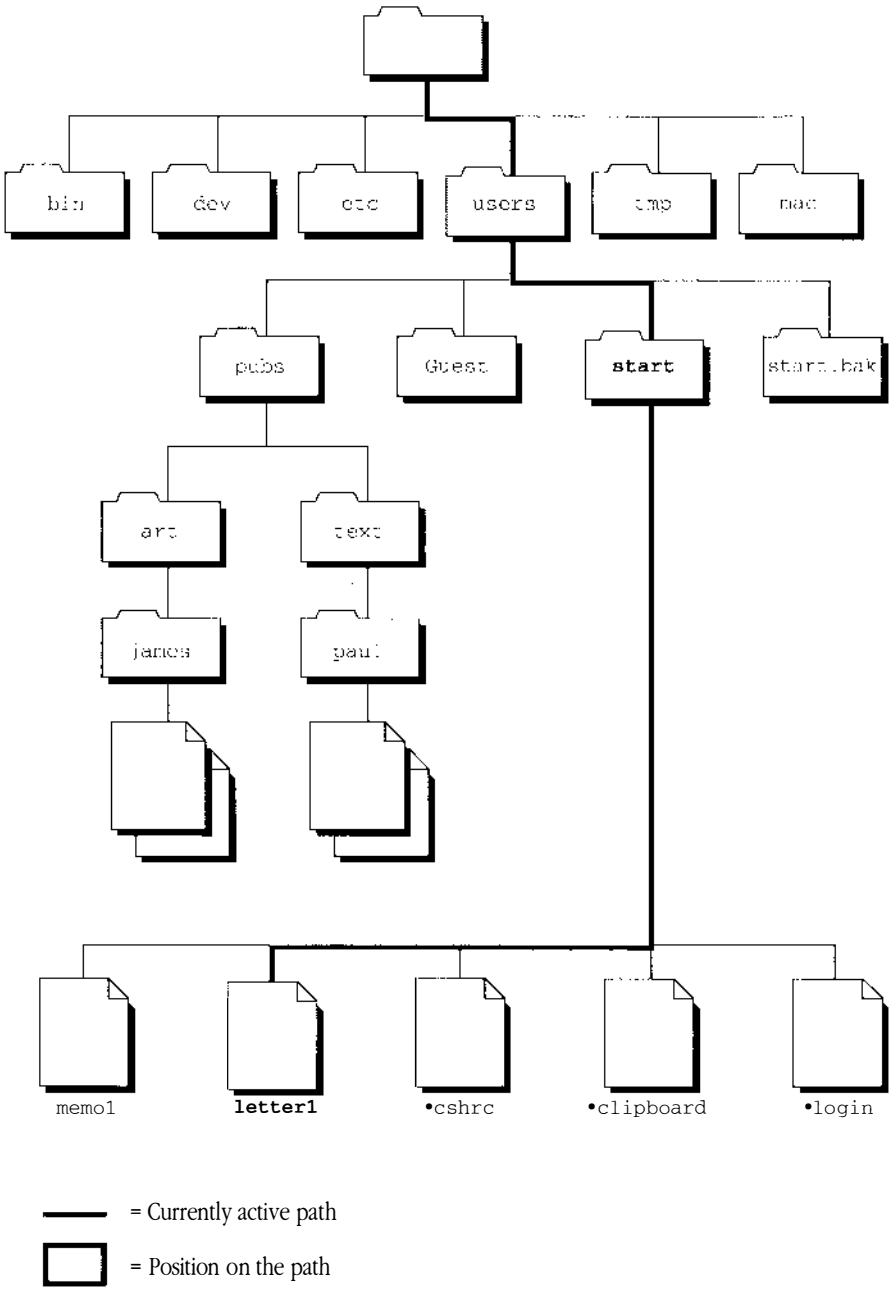


Figure 2-7 The pathname `/users/start/letter1`

An **absolute pathname** of a file shows the complete path from the root to the file in question, by listing all directories that lead from the `/` directory and concluding with the filename itself. The first item in an absolute pathname is always the character `/`, which indicates the root. Thereafter, the slash character is used to separate the names of the directories.

We know, for example, that `/users/start/letter1` is an absolute pathname because it begins with the slash character, and is thus tracing the path from its origin at the root. The subsequent slash characters separate the names of the `users` and the `start` directories, and the names of the `start` directory and file `letter1`.

A **relative pathname** lists the directories leading to the file, beginning with the current directory.

The directory in which you are currently working is called the **current directory.** When you change directories, the directory you move to becomes your new current directory. For example, if the current directory is `/users`, then `start/letter1` is a relative pathname of `/users/start/letter1`. Note that a relative pathname never begins with the `/` character, because it doesn't start at the root. This can be compared with leaving out the area code in a telephone number if you are calling the number from within that same area code.

Figure 2-8 diagrams the relative pathame `start/letter1`.

The name of the file or of the directory whose path is being described is the last component of a pathname.

When typing UNIX commands in the CommandShell command-line interface, if you want to specify a file that is in your current directory, just type the filename. You needn't specify its directory, because you're already working in that directory. For information on CommandShell, see Chapter 3, "Using CommandShell." For information on UNIX commands, see Chapter 4, "Using UNIX Commands and Commando."

Two dots (`..`) are an abbreviation for *the directory that contains the current directory.* For example, if you are in `/users/start`, you can specify the `/users` directory with two dots (`..`) as a shortcut.

Once you understand how UNIX pathnames work, you can easily learn to find your way around a UNIX hierarchy while working with the command-line interface. For further details, see the section called "Using UNIX Commands to Navigate the File System" in Chapter 4, "Using UNIX Commands and Commando."

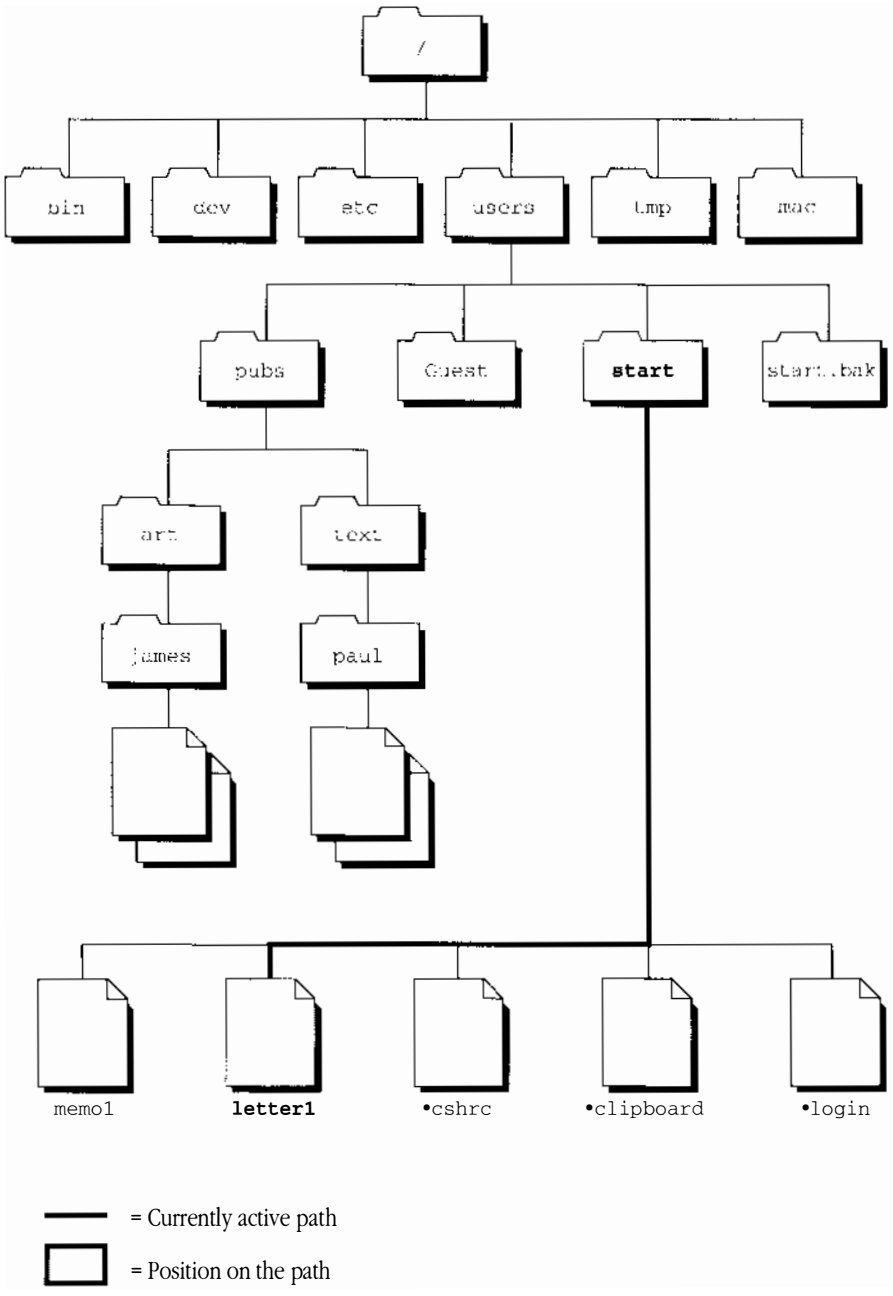


Figure 2-8 The relative pathname `start/letter1`

△ **Important** If you are working in the Finder and you open a new CommandShell window, the current directory of the CommandShell window is your home directory. If you bring to the foreground of the screen a CommandShell window that has been used, the window is still in the directory it was in when it was last used. The folder that you have been using in the Finder does not determine the directory in which your CommandShell windows are working. △

3 Using CommandShell

This chapter describes how to use CommandShell, an application that provides access to the traditional UNIX command-line interface. This chapter contains the following information:

- What is CommandShell?
- Making CommandShell active
- Using CommandShell windows
- Using the A/UX System Console
- Customizing CommandShell windows
- Using terminal emulation
- Using Macintosh editing tools in CommandShell windows
- Leaving CommandShell

Start by reading the first two sections of this chapter, ("What is CommandShell?" and "Making CommandShell Active"). You can then consult any of the remaining sections that describe the tasks you want to perform.

What is CommandShell?

CommandShell allows you to display one or more windows in which you can communicate with A/UX by entering commands on a command line, as is traditionally done on most UNIX systems. When you do this, you can communicate with A/UX through any one of three standard shells:

- C shell
- Bourne shell
- Korn shell

Like the Finder, a **shell** is a utility that establishes an interface between you and the operating system. It accepts the commands that you enter and passes them on to the operating system, which executes them. It also displays the operating system's responses. There are several standard shells, each of which interprets your commands and the operating system's responses somewhat differently than the others. Since the C shell is one of the most commonly used UNIX shells, it is the default shell when you log in to your user account (unless your system administrator has changed the default shell).

For information on changing shells, see "Changing Shells" in Chapter 8, "Customizing Your Work Environment."

Making CommandShell active

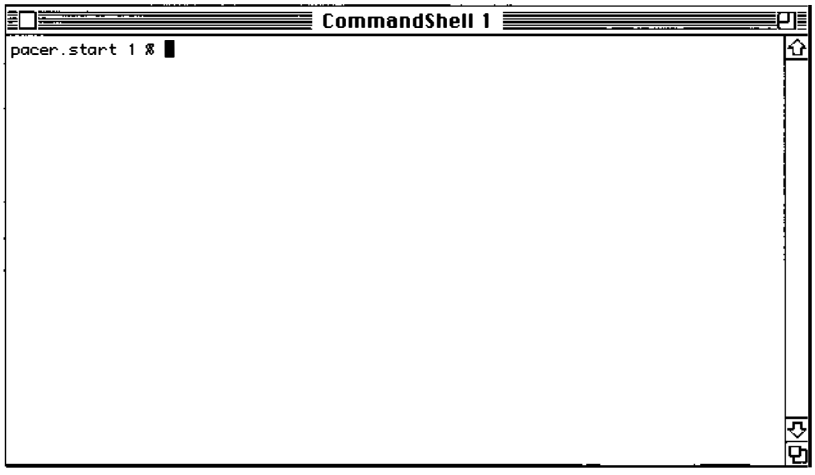
Before you read this section, you should start A/UX and log in to your user account. When you log in, the A/UX Finder is active and its menu bar appears at the top of the screen.

To make CommandShell active:

- **Choose CommandShell from the Applications menu, which is at the right side of the menu bar.**

  The Applications menu is shown.

A window labeled *CommandShell 1* appears and becomes the active window.



When the CommandShell window becomes active, the CommandShell menu bar appears. It contains commands that allow you to manipulate the CommandShell windows and their contents.

Switching between CommandShell and the Finder

You can return to the Finder by clicking on any portion of a Finder window with your mouse pointer or by choosing Finder in the Applications menu. You can then reactivate CommandShell by clicking on any portion of a CommandShell window or by choosing CommandShell in the Applications menu.

△ **Important** If you open a new CommandShell window, the current directory of the CommandShell window is your home directory. If you bring to the foreground of the screen a previously used CommandShell window, that window is still in the directory it was in when it was last used. The folder that you are using in the Finder does not determine the directory in which your CommandShell windows are working. △

Using CommandShell windows

The following sections explain how to work with CommandShell using the menu commands. You can read through these sections sequentially or you can find the task you want to complete and go directly to the section that applies to it.

Displaying CommandShell windows

When you make CommandShell active, a CommandShell window appears. You can display additional windows in two ways:

- **Choose New from the File menu.**
- **Press COMMAND-N.**

Either of these actions makes a new window appear in front of the existing window or windows. The CommandShell windows are numbered in the order in which they are created (CommandShell 1, CommandShell 2, and so on).

◆ **Note** You can open up to 15 windows. It is best to use a large-screen monitor when you work with many windows at the same time. ◆

Arranging CommandShell windows

You can arrange CommandShell windows on the screen in three ways.

- **Standard positions:** When you create a new window, it appears in front (and slightly below and to the right) of the previously created window, partially obscuring the windows behind it (Figure 3-1).
- **Tiled positions:** You can **tile** the windows to arrange them alongside each other with their edges touching, like tiles on a floor. For information on different tiling patterns, see "The CommandShell Environment" in Chapter 9, "A/UX Reference." Tiling windows reduces the size of the windows so that they fit on the screen.
- **Manual positions (resizing and dragging):** You can arrange CommandShell windows on your desktop manually by using their resize boxes to resize the windows and by clicking their title bars to drag them to new locations on the desktop.

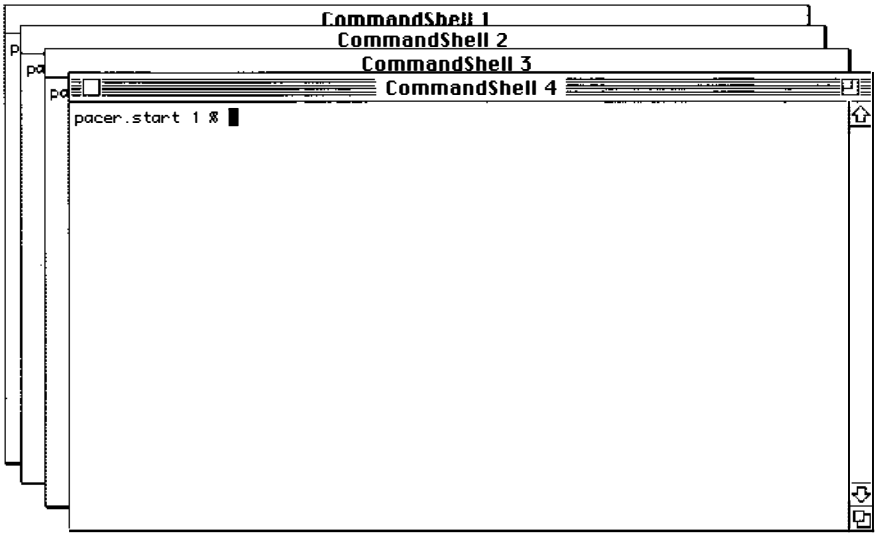


Figure 3-1 Windows in standard position

▲ **Warning** Unlike a standard Macintosh window, if a CommandShell window is so reduced in size (because of tiling or resizing) that its contents cannot be seen, CommandShell erases the obscured screen output. You cannot retrieve it by enlarging the window. ▲

For further information on tiling, sizing, moving, and hiding CommandShell windows, see "The CommandShell Window Menu" in Chapter 9, "A/UX Reference."

Recording the contents of a window

As you add new lines to a CommandShell window, the top lines can scroll past the top edge of the window, as shown in Figure 3-2. CommandShell automatically records a preset number of these lines. This allows you to review them by scrolling upward.

By default, CommandShell records 1000 lines. For information on how to change this default, see "Customizing CommandShell Windows," later in this chapter.

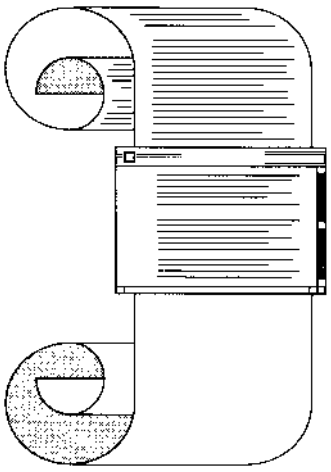


Figure 3-2 Recording window contents as they scroll off the top

Figure 3-3 shows how the window looks after you use the scroll bar to redisplay the recorded lines. The dotted line across the window marks the top of the most recent screen. It separates the active area (the material below the dotted line) from the recorded

area (the material above the dotted line). You can change the material in the active area (that is, the area that contains material that has not yet scrolled off the top of the window) but not the material in the recorded area.

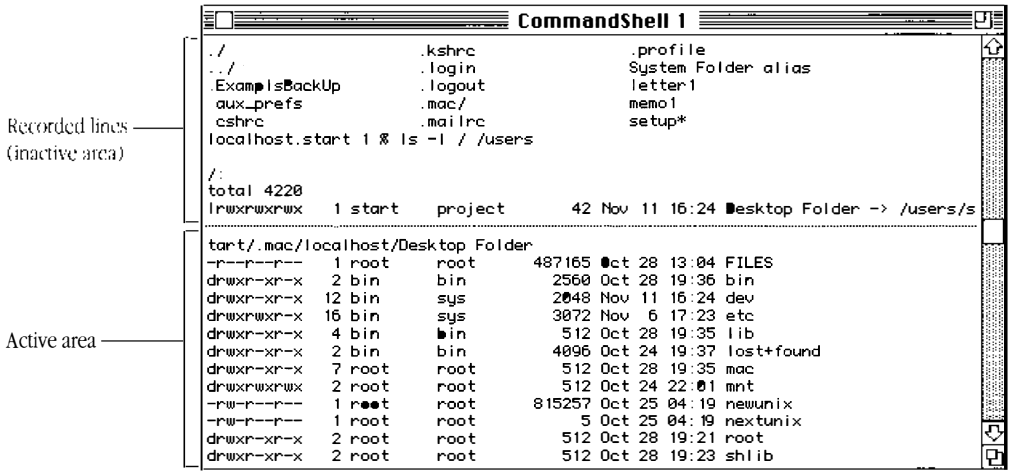


Figure 3-3 Viewing recorded window contents

◆ **Note** CommandShell does not save the recorded lines for use after you close the window. If you have accumulated data that you want to save, select it and copy it to a file in a text editing or word processing program. See "Saving a Selection in a New File," later in this chapter. ◆

Canceling the recording of window contents

You can stop CommandShell from recording the top lines of the active window as follows:

■ **Choose Don't Record Lines Off Top from the Commands menu.**

This command causes CommandShell to stop recording lines as they scroll past the top of the active window. Any lines already recorded are saved and are still available for review. The command name in the Commands window changes to Record Lines Off Top. Choose this to begin recording the lines again in the same window.

Erasing recorded window contents

To erase recorded lines, do the following:

- **Choose Clear Lines Off Top from the Commands menu.**

  The recorded lines are erased and are no longer available for review. The scroll bar becomes white. This command operates only on the active window.

Closing CommandShell windows

Before you can close a window, it must be the active window. The active window has horizontal stripes running across its title bar. To make a window active, point to it with the mouse cursor and press the mouse button.

Closing a window

There are three ways to close an active window:

- **Choose Close from the File menu.**
- **Press COMMAND-W.**
- **Click the close box of the window.**

  In each case, the CommandShell window disappears from the screen.

◆ **Note** CommandShell does not save any lines after you close the window. If you don't want to lose your work, save the contents to a file. To save the text of A/UX command lines to a file, see "Saving a Selection in a New File," later in this chapter. ◆

If you close a window in which a process or program is running, the process or program halts. An alert box warns you of this and gives you the option to keep the window open.

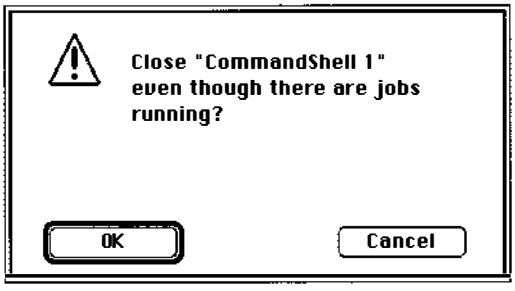
Closing all open windows

You can close all the open windows at once, as follows:

- **Choose Close All Windows from the File menu.**

  The CommandShell windows disappear from the screen.

  If one or more of the windows contains a process or a program that is running, the process is halted. An alert box warns you of this.



Using the A/UX System Console

When you are working in A/UX, the system might generate messages regarding its status. In a traditional UNIX environment, these messages appear on a console terminal. Typically, the system administrator monitors these messages, which alert the administrator to take action to avert or remedy a problem. In A/UX, the system messages appear in the A/UX System Console, a CommandShell window that you display by choosing its name from the Window menu.

Displaying at the A/UX System Console window

To view the contents of the A/UX System Console window, follow these steps:

1 **Choose CommandShell from the Applications menu.**

This action displays an active CommandShell window and makes the CommandShell menu commands available.

2 **Choose A/UX System Console from the Windows menu, or press COMMAND-0 (that is, the number "zero").**

This action displays the A/UX System Console window. For more information on the messages that you might see in the window or for information on how to respond to a request for information, see *A/UX Local System Administration.*

Clearing the A/UX System Console window

To clear the messages from the A/UX System Console window, follow this step:

- **Choose Clear Lines Off Top from the Commands menu.**

This action clears all the information from the window. You should clear this window periodically so that you can tell when new messages appear.

Closing the A/UX System Console window

Close the A/UX System Console window just as you close any CommandShell window (see "Closing CommandShell Windows" earlier in this chapter). Note that unlike other CommandShell windows, when you close the A/UX System Console window, nothing in the window is lost. Closing the System Console window is equivalent to "hiding" it.

How A/UX warns you of an alert

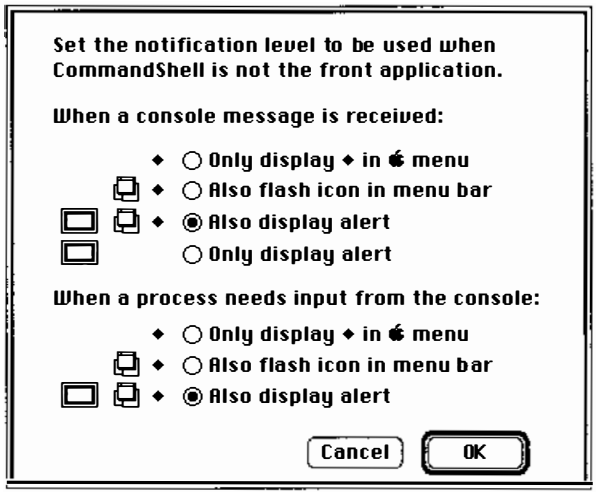
If A/UX needs to bring an alert to your attention (for example, if the system administrator is preparing to shut down the system), an icon flashes in the menu bar and an alert box appears. If CommandShell is not the active application, a diamond-shaped symbol also appears alongside CommandShell in the Applications menu. Choose this to activate CommandShell; then choose A/UX System Console from the Windows menu to display the alert message.

You can change this default to suppress the alert box, the flashing menu-bar icon, or both.

To change this default, do the following:

1 **Choose Notification Levels in the Preferences menu.**

The Notification Levels dialog box appears.



2 **After you click the appropriate buttons, click OK.**

Customizing CommandShell windows

If you use CommandShell windows often, you might find it convenient to establish an ideal arrangement of windows, so that as soon as you log in to A/UX, the windows appear exactly the way you want.

Presetting window defaults

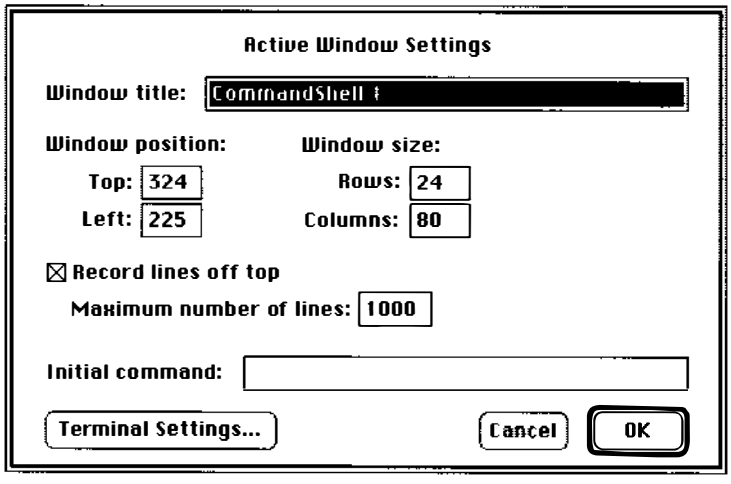
The Active Window Settings command in the Preferences menu allows you to do the following steps:

- save an initial command to execute upon activating CommandShell
- change the title of the window
- change the number of lines to record

You can preset window defaults as follows:

- **Choose Active Window Settings in the Preferences menu.**

  The Active Windows Settings dialog box appears.



  The name of the active window is highlighted in the top line.

You can change any or all of the settings in this dialog box. After you click OK, the new settings affect the active window. If you saved the new settings by choosing Save Preferences in the Preferences menu, the new settings become the new defaults for displayed windows. See "Saving the Layout of Your CommandShell Windows," later in this chapter.

Notice that the check box "Record lines off top" is selected by default. If you click it, the X mark disappears and recording of lines is turned off. You also can change the maximum number of lines recorded, but only if "Record lines off top" is selected.

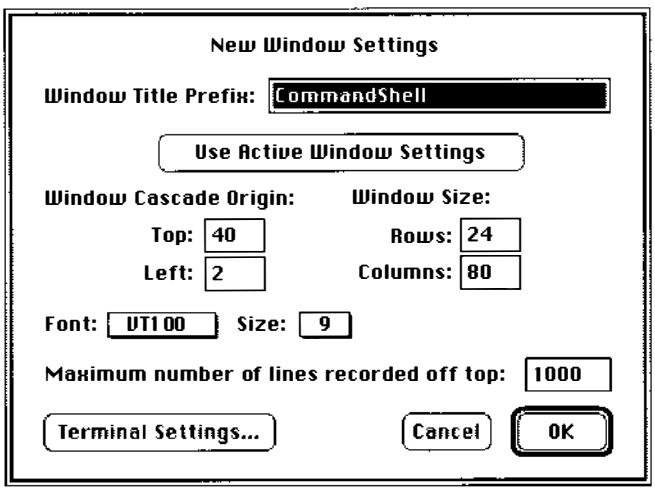
In the "Initial command" text box, you can enter a command to run automatically as soon as you activate CommandShell.

Presetting the appearance of new windows

You can change the default settings that control the appearance of new windows before you create them. Follow these steps:

- **Choose New Window Settings from the Preferences menu.**

The New Windows Settings dialog box appears.



You can extend the active window settings to all new windows. To do so, click Use Active Window Settings.

If you want to label new windows with a prefix other than "CommandShell," type the prefix in the Window Title Prefix text box.

You also can preset the window size, the screen font to be used in the window, and the maximum number of lines to be saved by typing your choices in the appropriate boxes.

To preset a default position for the upper-left corner of the first window of a group of stacked windows, enter the coordinates (in pixels) in the Window Cascade Origin text box.

Saving the layout of your CommandShell windows

The Save Preferences command (in the Preferences menu) allows you to save the following specifications:

- notification level preferences (see "How A/UX Warns You of an Alert," earlier in this chapter)
- the positions and sizes (in rows and columns) of all CommandShell windows
- the stacking order of the windows
- the titles of the windows
- the fonts and point sizes of text in the windows
- whether a given window is visible or hidden
- whether a given window is zoomed (that is, enlarged to full-screen size with the Zoom Window command in the CommandShell Window menu) and the sizes (in pixels) of its zoomed and unzoomed states
- whether lines are to be recorded off the top of the screen, and the number of lines to be recorded (see "Recording the Contents of a Window" and "Presetting the Appearance of New Windows," earlier in this chapter)
- the initial command to be run in the window (see "Presetting Window Defaults," later in this chapter)
- terminal emulation information

To save the settings you choose, follow these steps:

1 **Arrange the windows just as you want them to be.**

Be sure that you have chosen any special formatting features that you want (such as fonts).

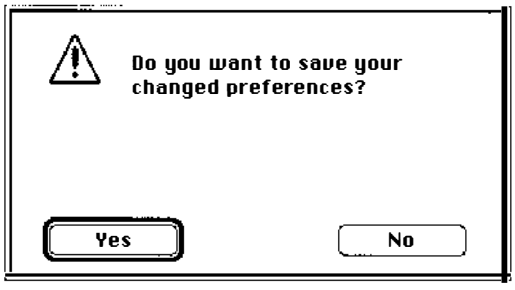
2 **Choose Save Preferences in the Preferences menu.**

Restoring the window layout to the saved preference

If you have saved your window preferences but have changed the window layout on your screen, you can instantly restore your preferred layout as follows:

- **Choose Restore From Preferences in the Preferences menu.**

When you log out or shut down the system, if you have changed your window preferences with the Active Window Settings or the New Window Settings dialog box, but have not saved them by choosing Save Preferences in the Preferences menu, you are asked whether you want to save the changed preferences.



Click Yes or press RETURN to save the changed preferences or click No to abandon them.

Using terminal emulation

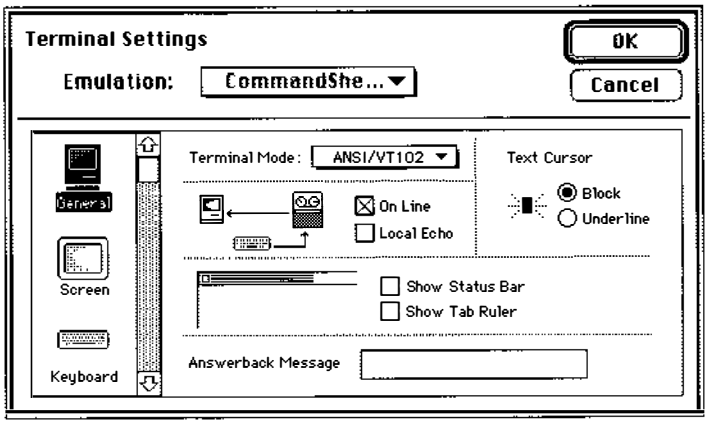
The CommandShell window emulates the Digital Equipment Corporation VT102 terminal. At present, this is the only terminal emulation that CommandShell supports, though it ultimately will provide other terminal emulations. Although terminal emulation for the VT102 terminal is the only one currently shipped with A/UX, you can purchase others from other sources. For example, there is an Apple Computer product called MacTerminal, which contains a VT320 emulation tool that you can install. However, since A/UX is shipped only with the VT102 tool, that is the only one discussed in this manual.

In addition to the features discussed earlier in "Customizing CommandShell Windows," you can customize the VT102 features just as you would on a VT102 terminal, as follows:

1 **Choose Active Window Settings in the Preferences menu.**

2 **Click the Terminal Settings button.**

The Terminal Settings dialog box appears.



To the right of the word *Emulation* there appears a pop-up menu that will eventually allow you to choose between several terminal emulations. At present, only the VT102 is available.

Along the left margin of the dialog box there are four setup icons, which allow you to select General, Screen, Keyboard, and Character Set.

Since most A/UX users do not have need to change the default terminal emulation capabilities, these capabilities are described in "Terminal Emulation" in Chapter 9, "A/UX Reference."

For more information on the VT102 terminal emulator, see "VT102 Terminal Emulation Tool" in *Apple MacTerminal,* a manual that describes other terminal emulation tools available for the Macintosh.

Using Macintosh editing tools in CommandShell windows

You can use some of the standard Macintosh editing procedures while working in CommandShell windows. This allows you to paste a series of commands or a long, complex command into another window without having to retype it.

The sections that follow describe how to copy or paste the contents of a window using the mouse and the menu commands. This material applies to command lines, system messages, and the output of commands. If you are using a text-editing application, use the editing tools provided by the application.

Selecting text

You must select text before you perform the editing procedures. Select text as follows:

- **Drag across text to select a single letter, word, or section of text.**

  Text is highlighted when it is selected.

Copying text

To copy text, follow these steps:

1 **Select the text you want to copy.**

2 **Choose Copy from the Edit menu or press COMMAND-C.**

The highlighted text is copied to the Clipboard. You can paste the Clipboard contents as many times as you want. For more information about the Clipboard and its contents, see *Learning Macintosh* or the *Macintosh Reference.*

Pasting text

Once you have copied text to the Clipboard, you can paste the text in a CommandShell window as follows:

- **Choose Paste from the Edit menu or press COMMAND-V.**

The text is pasted at the command prompt. You can paste the Clipboard contents as many times as you want, until you replace them by copying or cutting something else. For more information about the Clipboard and its contents, see the owner's guide that came with your computer. For more information about the Clipboard and its contents, see *Learning Macintosh* or the *Macintosh Reference.*

Changing the font or font size

You can change the appearance of all the text in a CommandShell window by changing the font or font size. The choices available in the Fonts menu are the monospaced fonts in the System file. At the bottom of the list of available font sizes in the Font menu, the last item, Other, allows you to select any font size that does not appear in the list.

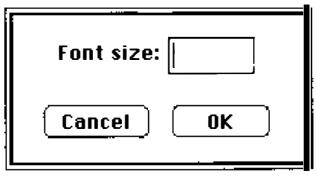
◆ **Note** If the active window uses a terminal emulation tool that does not support font changes, the Fonts menu is disabled. ◆

You can change the font or font size as follows:

- **Choose the font or font size you want from the Fonts menu.**

  All text in the window changes to the new font or font size.

- **If you choose Other, the Font Size dialog box appears. Type the font size in points and click OK.**



The screen fonts change to the size you type.

Saving a selection in a new file

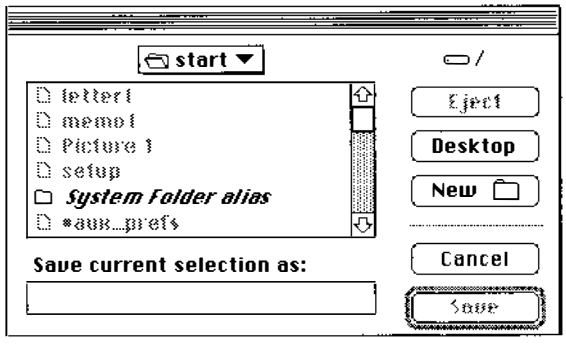
You can save the contents of a CommandShell window in a text file. When text is present in a CommandShell window, follow these steps:

1 **Select the text you want to copy into a new file.**

The text appears highlighted.

2 **Choose Save Selection from the File menu.**

The Save Selection dialog box appears. See the *Macintosh Reference* if you need assistance in saving the file to a different drive.



3 **Type a name for the new file.**

4 **Click Save.**

Printing the contents of a CommandShell window

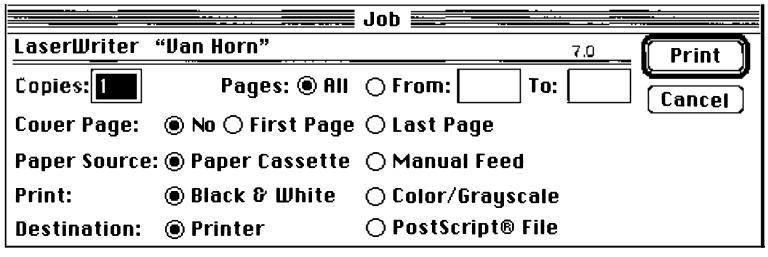
You can print all or part of the contents of a CommandShell window as follows:

1 **Select the portion of the window that you want to print.**

You can select the entire contents of the window by choosing Select All in the Edit menu.

2 **Choose Print Selection in the File menu.**

The Print dialog box appears.



3 **Click Print.**

For assistance in setting up your printer, see *Setting Up Accounts and Peripherals for A/UX*.

Leaving CommandShell

Make sure that you have saved any work that you complete in CommandShell windows before you return to the A/UX Finder. There are several ways to leave CommandShell:

- **Choose Hide CommandShell from the Applications menu.**

  This action closes all the windows and sets CommandShell aside until you reactivate it. This method reduces screen clutter while you work with other applications.

- **Choose another application from the Applications menu.**

  This action moves the CommandShell window to the background of the screen. The application you have chosen becomes active.

- **Choose Quit in the File menu.**

  This turns off CommandShell. The only reason for turning off CommandShell is to load new fonts, which you cannot do unless all applications are turned off. By default, there is a file in the Apple Menu Items folder (located in the System Folder). This allows you to turn CommandShell on again by selecting CommandShell in the Apple menu.

  If the CommandShell file has been removed from the Apple Menu Items folder in the System Folder, you can restart CommandShell by double-clicking the CommandShell icon in the `/mac/bin` folder. Do this as follows:

1. **Double-click the `/` folder to open it.**
2. **Double-click the `mac` folder to open it.**
3. **Double-click the CommandShell icon.**

   CommandShell begins to run.

4 Using UNIX Commands and Commando

This chapter teaches you how to use UNIX commands on the command line and how to use Commando dialog boxes to perform a variety of useful UNIX operations. It also shows you how to consult information in the *A/UX Command Reference* on screen. The following information is presented in this chapter:

- About UNIX Commands
- What is a command?
- Using UNIX commands to navigate the file system
- Getting your bearings
- Options and arguments
- The Commando dialog box
- Using Commando
- Further useful UNIX operations

If you are unfamiliar with UNIX commands, read the opening sections of this chapter in sequence, through "Options and Arguments." If you feel comfortable with the command-line interface, go directly to "Using Commando."

About UNIX commands

Chapter 3, "Using CommandShell," tells you how to use CommandShell, the UNIX command-line interface. When you enter a command on the command line, you are instructing A/UX to run a program that performs a specific task or a specific set of tasks. Entering the command on the command line is the traditional UNIX way of running commands. You also can run these commands with the A/UX application called Commando, which displays a dialog box that offers you an easy way to use a UNIX command and to choose among the various options that the command offers.

△ **Important** As you go through the tutorials that use UNIX commands, be sure that you enter them exactly as specified in the exercises. Don't add or remove spaces, don't change a character from uppercase to lowercase, or vice versa, and be sure to use minus signs where appropriate.

What is a command?

A command consists of a special kind of file called a **program,** which is an **executable file,** that is, a file that contains a set of instructions that makes the computer perform a specific task. A/UX contains over 500 such commands.

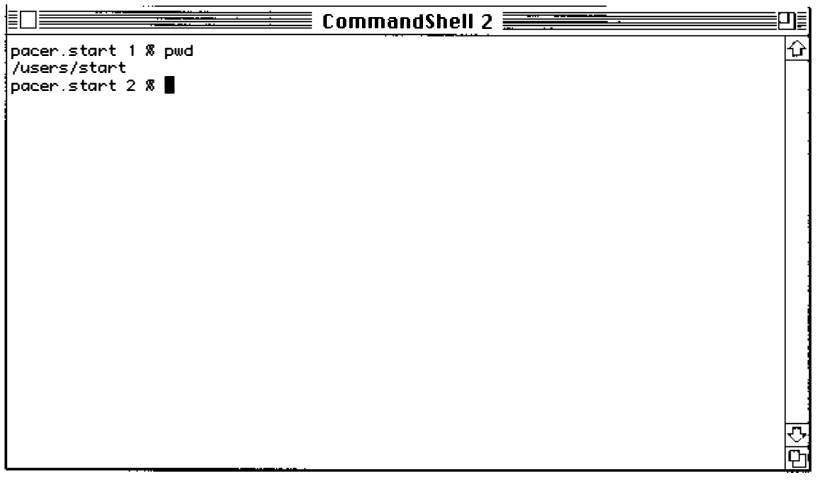
For example, there is a command called `pwd`, which stands for *print working directory.* This command makes the computer display the pathname of the directory in which your CommandShell window is currently working (your current directory).

To perform the following exercises, be sure that you are logged in to the start account. If you do not have a CommandShell window displayed, choose CommandShell in the Applications menu. If a CommandShell window does not appear when you choose CommandShell in the Applications menu, immediately choose New in the File menu, and a new CommandShell window appears.

- **Enter the following command by typing the command and pressing RETURN:**

  `pwd`

  The pathname of your current directory (`/users/start`) appears in response to the `pwd` command.



The `pwd` command caused the program (the executable file) called `pwd` to run, that is, to execute its instructions. The results of the command are commonly called the **output.** In the case of the `pwd` command (as is true of many commands), the output is displayed on the screen. In traditional UNIX parlance, one says that the output is directed to the screen. This is called the **standard output.**

Later in this chapter you will see that you can instruct a command to send its output somewhere other than to the screen. For example, the information can be sent to a file to be saved or to a printer to be printed. This rechanneling of data is called **redirection.**

Using UNIX commands to navigate the file system

Chapter 2, "Using Files, Folders, and Directories," tells you how CommandShell refers to files and directories by their pathnames (see "UNIX Pathnames"). You can use pathnames to determine where you are in the A/UX file system and to move from directory to directory in CommandShell.

Note that although you can work within the files in MacPartition while using the Finder (if Secure Startup is not on; see "The Secure Startup Feature" in Chapter 1, "Starting and Finishing a Work Session"), you cannot use CommandShell to work with the contents of MacPartition or any other Macintosh file system.

△ **Important** If you are working in the Finder and you open a new CommandShell window, the current directory of the CommandShell window is your home directory. If you bring to the foreground of the screen a CommandShell window that has been used, the window is still in the directory it was in when it was last used. The folder that you have been using in the Finder does not determine the directory in which your CommandShell windows are working.

Getting your bearings

This section describes how to determine what account you're using, what directory you're using, and how to move to another directory.

Finding your user account name

If you forget your login name, use the `whoami` command to find out what it is.

Follow these instructions:

1 **Choose CommandShell in the Applications menu.**

A window appears on the screen. CommandShell is described in Chapter 3, "Using CommandShell."

2 **Enter the `whoami` command.**

Remember that you enter a command by typing the command and pressing the RETURN key. In a few seconds you see a response that identifies the account name.

Where are you?

If you are working in CommandShell and you don't know what directory you are in, use the `pwd` command as follows:

- **Type `pwd` and press Return.**

The name of the current directory (the directory in which you are currently working) is displayed.

For information on moving from directory to directory, see the next section: "Changing to a New Directory; Returning to Your Home Directory."

Changing to a new directory; returning to your home directory

Suppose you use the `pwd` command and find that you are working in the root directory (indicated by a `/`) when you really want to be working in the `/users/start` directory. To change from directory to directory, use the `cd` (*change directory*) command. Change to `/users/start` as follows:

- **On the command line, enter `cd /users/start`**

△ **Important** Don't neglect to enter the space after `cd`. The space marks the end of the command and the start of the command argument (described in the next section).

If you enter `pwd` now, the response reads as follows:

```
/users/start
```

When you use the `cd` command, you can use the absolute pathname or relative pathname of the destination directory, whichever is easiest for you. If you aren't sure where you are relative to the destination directory, use an absolute pathname.

You can always return to your home directory by entering the `cd` command without specifying any directory.

Options and arguments

Options and arguments modify the way a command runs and specify the files (or other objects) upon which the command operates.

Options

Most UNIX commands can run in a variety of ways to produce a variety of results. These variations in the way a command works are called **options.**

Listing the contents of a directory: the `ls` command options

For example, the `ls` command causes the computer to list all the files in your current directory. However, there are various ways in which you can list the files. If you use the `ls` command without any of its options, only the names of the files are listed, and they are listed in a one-column list.

Let's say that you are working in the start directory with your CommandShell window displayed. To be sure that this is the case, do the following:

1 **Enter the `pwd` command to see what directory you are in.**

The command line should display the following response:

```
/users/start
```

2 **If this is not what appears enter the following:**

```
cd /users/start
```

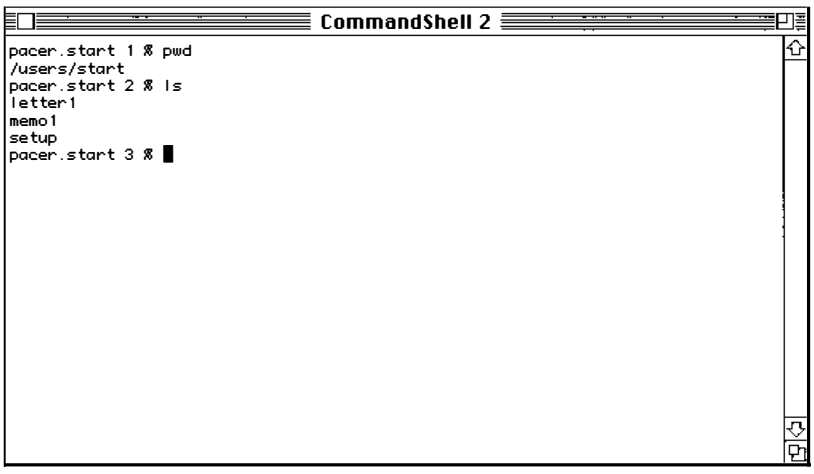
3 **Repeat Step 1 to be sure that you are in the `/users/start` directory.**

For further information on the `pwd` and `cd` commands, see "Changing to a New Directory; Returning to Your Home Directory," earlier in this chapter.

The following steps introduce you to several of the `ls` command options:

4 **Enter `ls` on the command line of a CommandShell window.**

The resulting display looks something like this:



But what if there were too many filenames to fit in one CommandShell window, so that the filenames at the top of the list scroll off the top of the window? You might want to avoid having to use the scroll bar to scroll back to the top of the list. Instead, you can break the list into columns so that more of the filenames can fit on one screen.

You can do this with the `-C` option (which stands for *columns;* note that this is an uppercase `C`). Whenever you type an option in the command line it is preceded by a dash (sometimes called a *minus*); in conversation, the `-C` option is called *minus C.*

△ **Important** Since UNIX is case sensitive, be sure that you do not use a lowercase `c` for the `-C` option. Some options call for lowercase characters and some call for uppercase characters. △

To list the contents of the `/` directory in columns, follow these steps:

1 **Enter `cd /` to move to the `/` directory.**

2 **Enter `ls -C` on the command line in the CommandShell window.**

Be sure that you leave a space between the command and the option (that is, between the `ls` and the `-C`).

The screen displays the output, which looks like the following.

```
pacer.start 4 % ls -C /
Desktop         dev             mac             root            users
Desktop Folder  etc             mnt             shlib           usr
FILES           lib             newunix         tmp
bin             lost+found      nextunix        unix
```

3 **Enter `cd`**

If you are logged in as `start`, the start directory is your home directory, so you need only enter `cd` to return to it. If you have a different login name, enter `cd/users/start` to return to the `start` directory.

If you want to know how large a file is, who owns it, or other technical information about the file, you can use the `ls` command with the `-l` option (note that this *l* is a lowercase ell) for a **long listing**.

■ **Enter `ls -l` on the command line.**

Be sure to type a space between the `ls` command and the `-l` (lowercase ell) option. The output is shown below.

```
pacer.start 6 % ls -l
total 8
-rw-r--r--   1 start    project     1289 Jan 17  1990 letter1
-rw-r--r--   1 start    project      884 Jan 17  1990 memo1
-rwxr-xr-x   1 start    project       94 May 12  1989 setup
```

The first three columns give permissions and ownership information. The next three columns tell the size (in bytes), the date on which the file was last changed, and the filename.

Arguments

Technically speaking, an argument is any item on the command line that modifies the way the command works. This guide, however, uses the word *argument* as it is commonly used, to mean the file or other object upon which the command acts. Some commands must have an argument, whereas others (such as `ls`) might or might not require an argument, and others (such as `pwd`) rarely or never take an argument.

Using the `ls` command with an argument

If you are working in the `start` directory and you want to display a list of the contents of the `/` directory, you would use the `ls` command with the name of the root directory (designated by the `/` character) as the argument.

- **Enter `ls /` on the command line.**

  Note the space between the command and its argument.

  A listing of the contents of the root directory appears on your screen.

  You also can list a single file by using its name as the argument. For example:

- **Enter `ls -l letter1` on the command line.**

  A single line appears that gives you the long listing for the file `letter1`, but for no other files in the directory.

The Commando dialog box

Many UNIX commands have a large selection of options and require learning a complex syntax for entering these options on the command line. To make it easier for users to learn and to remember the various tasks that a given command can perform, and to simplify and to automate entering the command on the command line, A/UX contains an application called Commando.

UNIX commands vary in the options they offer; therefore, Commando dialog boxes vary considerably from one another. However, most Commando dialog boxes have the same basic elements as Macintosh OS dialog boxes: radio buttons, check boxes, text boxes, and file buttons. In addition, all Commando dialog boxes have a Help box, Output and Error pop-up menus, and standard buttons, such as Cancel. Figure 4-1 shows an example of the elements of a Commando dialog box.

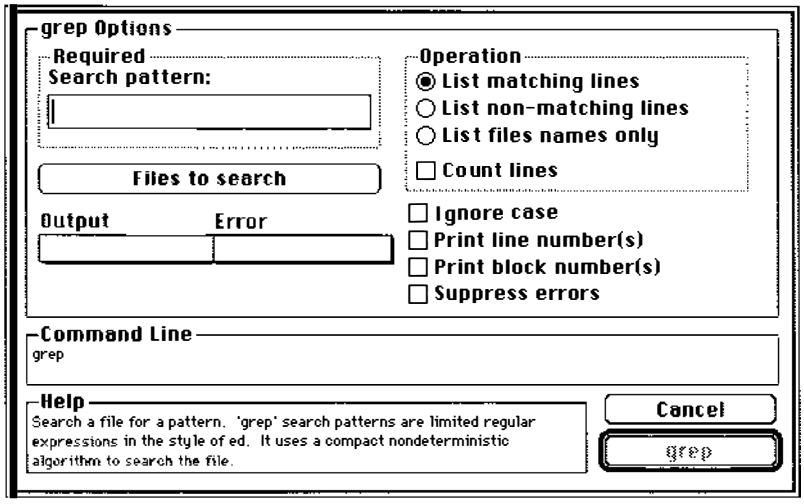


Figure 4-1 Elements of a Commando dialog box

Using Commando

There are three ways to display a Commando dialog box while using CommandShell:

- Type the name of the command and choose Commando in the CommandShell Edit menu. For example, type `ls` on the command line, then choose Commando in the Edit menu.

- Type the name of the command, then press COMMAND-K. For example, type `ls` on the command line, then press COMMAND-K

- Enter `cmdo` followed by a space; then type the name of the command whose dialog box you want to use. For example, enter `cmdo ls` on the command line.

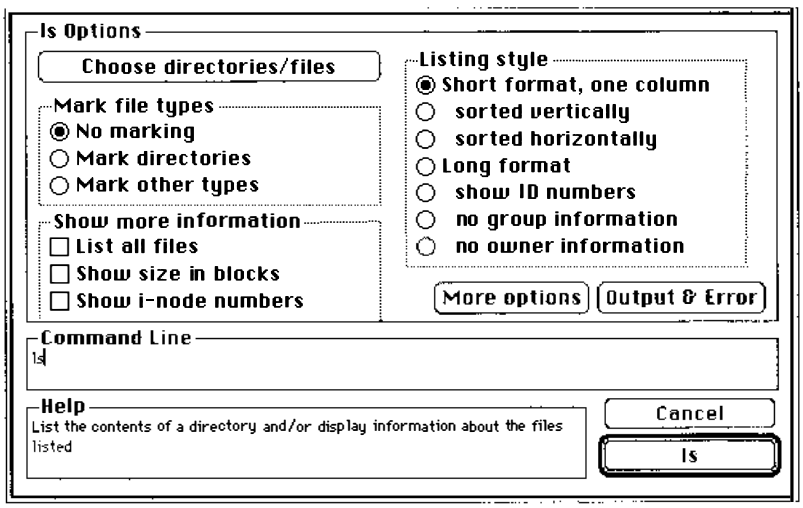
▲ **Warning** The last method of invoking Commando is *not* supported in 24-bit addressing mode. For further information on 24-bit and 32-bit addressing mode, see "Changing Your Session Type" in Chapter 8, "Customizing Your Work Environment." ▲

You can see how useful Commando is by working with a command that is already somewhat familiar to you, the `ls` command.

1 **With the CommandShell window displayed, type `ls` (do not press RETURN).**

2 **Either select Commando from the Edit menu or press COMMAND-K.**

The Commando dialog box for the `ls` command appears.



The Help box

Commando can serve as a quick command reference. At the bottom of every Commando dialog box you see a box labeled *Help.* This box contains a brief description of the command or the selected option.

1 **Look at the Help box at the bottom of the dialog box.**

This gives you a quick summary of the main functions of the command.

2 **Use your mouse to point to the button labeled "Choose directories/files" and hold down the mouse button.**

Information relative to your selection appears in the Help box.

3 **Without releasing the mouse button, move the pointer away from the "Choose directories/files" button, then release the mouse button.**

4 **Perform Step 2 with several of the radio buttons and check boxes to view the various explanations in the Help box.**

If you happen to activate any of the radio buttons or check boxes, click them again to deactivate them.

The Command Line box

Commando is a *command-line building* tool. This means that the Commando dialog box doesn't run the command directly; it creates the proper command line in the CommandShell window. You can then run the command by pressing RETURN, or you can alter it to suit your needs.

Just above the Help box is the Command Line box. This box shows you the command line that the Commando dialog box is building. As long as you haven't yet chosen any options, only the command itself (`ls`, in this case) appears in this box.

1 **Click the Command button labeled "ls" at the lower right of the dialog box.**

The dialog box is replaced by the active CommandShell window, which contains the command line you have constructed thus far. The `ls` command, which was shown in the Command Line box, is now displayed on the command line, ready to be run.

2 **Redisplay the `ls` Commando dialog box.**

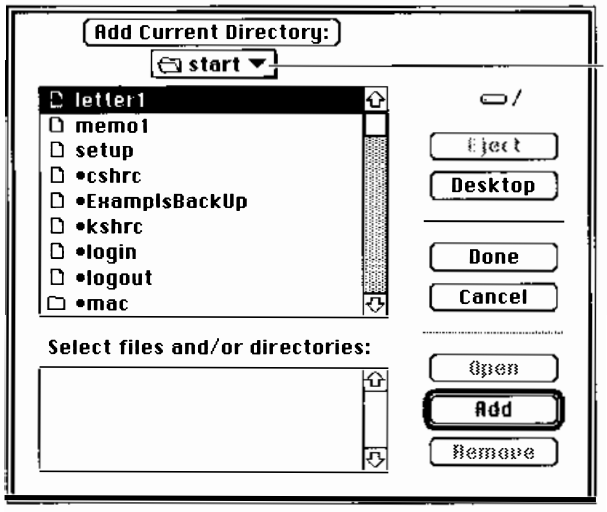
The `ls` command is already on the command line. You need only press COMMAND-K to redisplay the dialog box, which you will use in the following exercise.

Choosing arguments

The "Arguments" section earlier in this chapter points out that you can apply the `ls` command to a specific file or directory by using the appropriate filename or directory name as the argument to the `ls` command. In the Commando dialog box, you do this with the "Choose directories/files" button.

- **Click "Choose directories/files."**

The following dialog box appears.



This dialog box allows you to specify one or more files and directories as arguments.

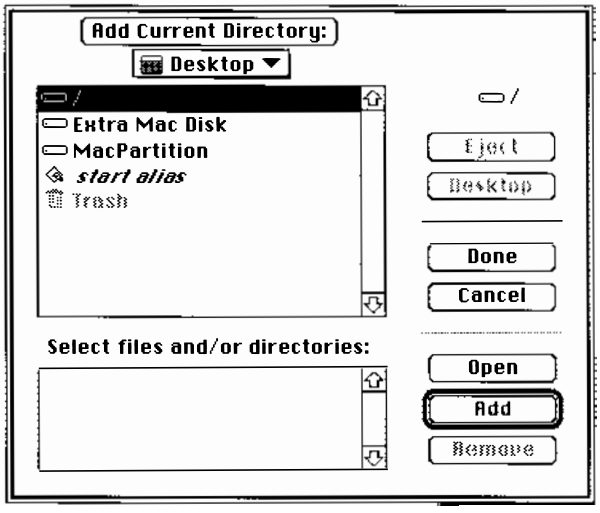
The name of the current directory is displayed in a small box just below the Add Current Directory button, as shown previously. When you click this box, a pop-up menu appears that lists all the directories above the current directory on the directory tree.

To list all files in both the `/` directory and the `/users` directory, do the following:

1 **The current directory, which is listed at the top of the dialog box, is `start`. Select it and hold down the mouse button; then select Desktop from the pop-up menu.**

The newly displayed menu lists the items on the desktop. If you are logged in to the start account, the *start alias* folder is on your desktop and is therefore listed in this menu. If you have inserted a floppy disk, that too is shown in the menu.

2 **Double click the `/` directory icon (highlighted in the dialog box shown below) to make the `/` directory the current directory.**

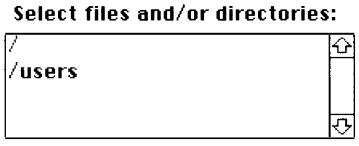


3 **Click Add.**

You have now put the root directory in the list of arguments.

4 **To add the directory named `users`, double-click the highlighted `/` directory icon (just below the Desktop icon); then scroll down the list of files and directories until `users` is displayed; then select `users` and click Add.**

The arguments you are adding to the command appear in the "Select files and/or directories" box at the bottom of the dialog box. as shown here.



5 **Click Done.**

When the Commando dialog box reappears, examine the Command Line box. You have constructed the following command line:

```
ls / /users
```

This means, "List the contents of the `/` directory and the directory called `users`, which is just below the `/` directory in the directory tree." For an explanation of pathnames such as `/users`, see "UNIX Pathnames" in Chapter 2, "Using Files, Folders, and Directories."

6 **Press RETURN.**

The command line appears at the command prompt, ready to run.

7 **Press RETURN to run the command.**

Choosing options: radio buttons and check boxes

This exercise introduces more options of the `ls` command and familiarizes you with the use of check boxes, radio buttons, and the "More options" button.

You have already worked with two of the options that the `ls` Commando dialog box offers: the `-C` option (to divide the listing into columns) and the `-l` option (to create a long listing).

These two options are contained in the "Listing style" section of the `ls` Commando dialog box, which is in the right half of the dialog box.

For the following exercise, display the `ls` Commando dialog box again if it is not already displayed.

1 **Use your mouse to display the help message associated with the "Long format" radio button (see "The Help Box" earlier in this chapter).**

Observe that the Help box tells you that this radio button controls the `-l` option and briefly describes what the `-l` option does.

2 **Examine the help message of the "sorted vertically" button (in the "Short format" group of buttons).**

Observe the change in the Help box, which now describes the `-C` option.

3 **Click the "sorted vertically" button so that it is darkened, which means that it is turned on.**

As in standard Macintosh dialog boxes, only one radio button in the group of radio buttons can be turned on at a time. The Command Line box now displays the following line:

```
ls -C
```

4 **Click the "Mark directories" button (located in the "Mark file types" section, at the upper left of the dialog box).**

Ordinarily, you cannot tell which item in the list is a filename and which is a directory name. This option places a `/` symbol after directory names to differentiate them from filenames. The `-p` option is now added to the Command-Line box.

5 **Choose the "List all files" check box in the "Show more information" group.**

This button forces the listing to contain all filenames, including those that begin with a dot (.), which are normally left out of the listing. As in standard Macintosh dialog boxes, the difference between radio buttons and check boxes is that you can select any number of check boxes in a given group at the same time but only one radio button within a given group.

6 **Click "More options."**

A new dialog box appears, which offers you more options. Some Commando dialog boxes contain several "More options" buttons to offer several levels of additional options.

7 **Click the Cancel button of the "More options" dialog box to return to the main Commando dialog box.**

8 **Click "Choose directories/files" to choose the / directory as the argument.**

This is described in the tutorial in "Choosing Arguments," earlier in this chapter.

9 **Click the Done button of the "Choose directories/files" dialog box.**

The Command Line box now shows that you have constructed the following command:

```
ls -a -C -p /
```

That is, "list (`ls`) *all* the contents (`-a`) in multiple columns (`-C`), and place a / mark after directory names (`-p`); do all this to the / directory only (/ argument).

10 **Click ls (at the lower right of the dialog box).**

The active CommandShell window appears with the command line ready to run.

11 **Press RETURN to run the command.**

The standard output of the command (that is, the results shown on the screen) is shown below. There might be differences between this illustration and the files and directories displayed on your screen, because as the system is used, some items are added or deleted and others are moved to different places in the file hierarchy.

```
./              Application       lib/            start alias
../             Desktop Folder/   lost+found/     tmp/
.aux_prefs      FILES             mac/            unix
.cshrc          Guest alias       mnt/            users/
.kshrc          TextEditor alias  newunix         usr/
.login          bin/              nextunix
.logout         dev/              root/
.mac/           etc/              shlib/
.profile
```

As you can see, for the occasional user of UNIX, the Commando command-building tool offers a powerful and effective way of using UNIX commands.

Further useful UNIX operations

The following pages show you how to use several useful features of the UNIX operating system. Some of these tutorials illustrate the use of more features of the Commando dialog boxes.

Using a different user account after logging in

While you're working in one login account, you might want to accomplish some task in a different login account without logging out of the system and logging in to the other account. When you do this, you become a **substitute user.** For example, if you need to perform a system-administration task, but you are currently working in a user account, you can temporarily use the root account, perform the task, then return to your user account without having to log out and log back in twice.

You can work in any account if you know its login name and password. Becoming a substitute user does not log you out of your own account and in to a new account; it merely allows you to work in the other account temporarily. As soon as you exit from the other account, you are once again working in your original account.

You can become a substitute user only while working in a CommandShell window, and you're a substitute user only as long as you are working in that window. When you return to the Finder, you automatically return to your original user account.

1 **In the active CommandShell window, enter the command** `su` **and a space, and the login name of the new account.**

For example, enter `su root`. A/UX displays the following prompt:

```
Password:
```

You need to know the password for the new account (the root account, in this case) to complete this procedure.

2 **Type the password.**

No characters are displayed as you type the password.

3 **Press RETURN.**

When you press RETURN, A/UX reads the password. If the login name and password are correct, you can begin to work in the new account. If either the login name or the password is incorrect, you see the following message:

```
su: Sorry
```

In this case, you are still working in the same account you were originally using.

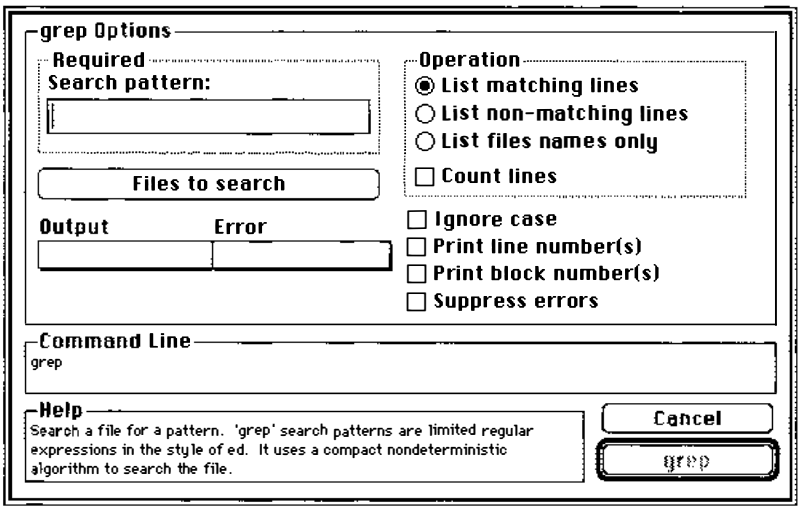
When you return to the Finder (by clicking any Finder icon or open Finder window or by choosing Finder in the Applications menu), you automatically return to your original user account. You can end the substitute user session while still in CommandShell by entering the command `exit` at the command line.

Searching for a string of characters and redirecting output

One useful UNIX command is called `grep`; it is used for finding a given string of characters in any file you specify. For example, suppose that you need to glance at all references to the word *sales* in the files that are in the `start` directory. For the purposes of this tutorial, assume that the phrase is in either `memo1` or `letter1`, since they are the only pieces of business correspondence in that directory.

Instead of looking at the results of the search on screen, you can save the information in a separate file so that you have it available for future reference. This requires redirecting the output of the search to a file rather than displaying the results on a screen.

1 **In a CommandShell window, type `grep` and press COMMAND-K to display the `grep` Commando dialog box.**



There is a text box at the upper left of the dialog box. It is marked *Required* because you cannot use the `grep` command without specifying the pattern of characters for which you are searching.

2 **In "Search pattern," type the characters you are looking for:**

```
sales
```

3 **Click "Files to search."**

4 **Display the `start` directory's files in the file list.**

If some other directory is displayed at the top of the "Files to search" dialog box, and if the `start` folder is on the Desktop, follow these steps:

- Select the current directory name and hold the mouse button down.
- Choose Desktop from the pop-up menu.
- Choose the start directory from the new menu that appears.

If the `start` folder is not on the desktop, follow these steps:

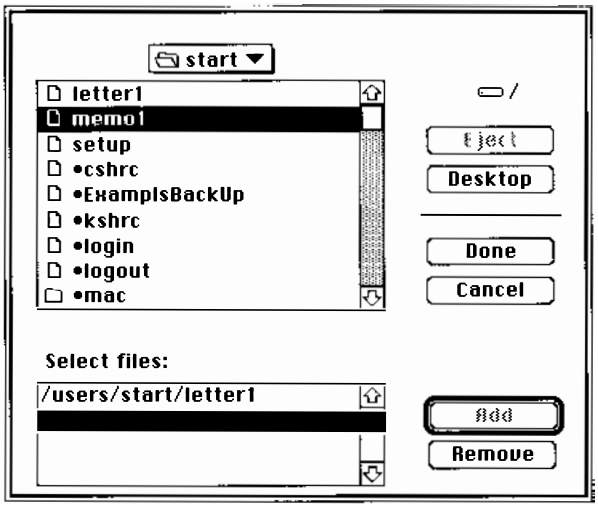
- Return to the root directory by choosing `/` from the pop-up menu that appears when you point to the current directory's name and hold down the mouse button.
- Double-click the `users` directory, then the `start` directory, in the files list.

This causes the files in the `start` directory files to appear in the files list.

5 **Choose the following files either by double-clicking their names or by selecting a filename and choosing Add:**

```
memo1
letter1
```

The filenames (with their complete pathnames) appear in the "Select files" box. These are the files the system will search through for the specified string of characters.



6 **Choose Done.**

The `grep` Commando dialog box reappears.

7 **Check "Ignore case" (the `-i` option).**

The "Ignore case" option allows the search to succeed even if the characters are not all lowercase (as you typed them in the text box).

8 **To redirect the output to a new file, select Output and hold the mouse button down; then choose New File in the pop-up menu.**

This displays a dialog box that allows you to enter the name of a new file in which to save the results of the search.

9 **Be sure that the `start` directory is displayed in the files list and type the following filename in the "Redirect to" text box:**

```
salessearch
```

The output of the search will be redirected to a new file named `salessearch` and will be saved in that file.

10 **Choose OK.**

11 **Choose the grep button.**

You have built the following command line:

```
grep -i sales /users/start/letter1 /users/start/memo1
>/users/start/salessearch
```

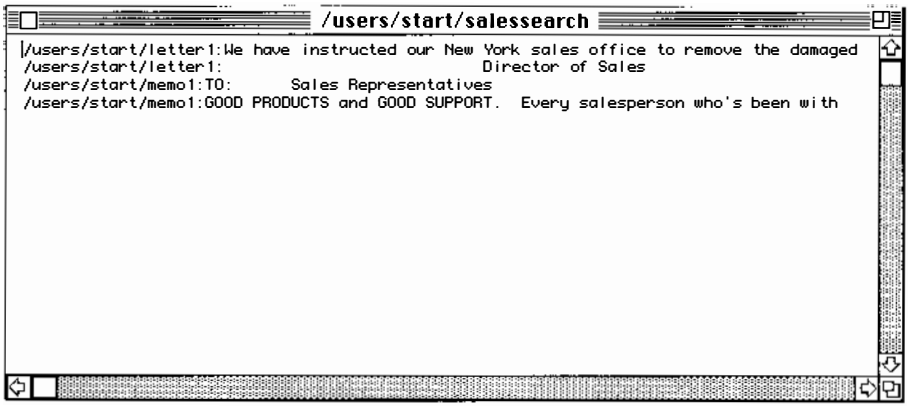
Table 4-1 explains the meaning of each item on the command line.

Table 4-1 Items in the command line of Step 11

Command-Line Item	Meaning
`grep`	search for a pattern of characters
`-i`	ignore case
`sales`	search for this pattern of characters
`/users/start/letter1` `/users/start/memo1`	search through these files
`>`	redirect to the following file
`/users/start/salessearch`	create this file and send the results of the search to it

12 **When the CommandShell window reappears with the complete command line, press RETURN to run the command.**

To check the results, return to the Finder by clicking the `start` folder to make it the active window or by choosing Finder in the Applications menu. Note that the `start` folder now contains a file named `salessearch`. If the `start` folder is not open, double-click its icon to open it. Double-click the salessearch icon to open the text file. This opens the TextEditor window that displays the text file. For information on TextEditor, see Chapter 6, "Writing with TextEditor."



This shows you the file (with its full pathname) in which the characters occur and the line on which they occur.

For a review of UNIX-style pathnames, see "UNIX Pathnames" in Chapter 2, "Using Files, Folders, and Directories."

Looking up UNIX commands on screen

If you need to look up information about a UNIX command, you can use the printed version of the *A/UX Command Reference* (see "Command Reference Notation" in the Preface of this guide). You also can display on your screen the complete text of the *A/UX Command Reference* entry (called the **manual page,** or the `man` page) for any command.

The term *manual page* might lead you to assume that each entry is only one page long, but that is not the case. Some of these entries are dozens of pages long.

Display a `man` page as follows:

- **Enter** `man` *commandname*

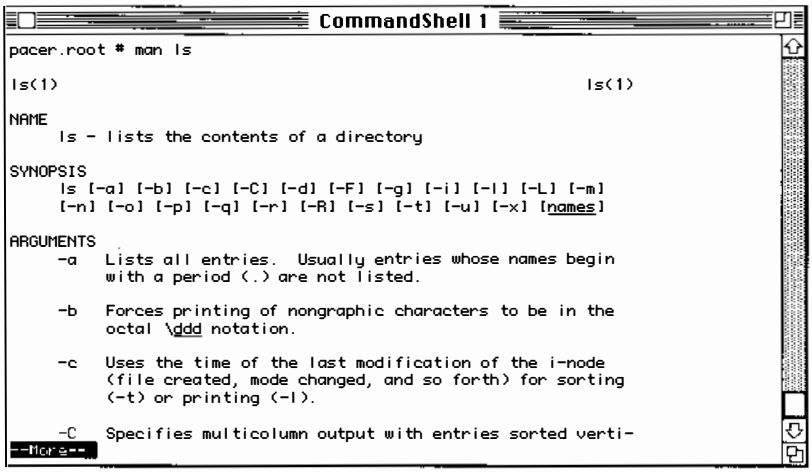
  Use the name of a command (for example, `ls`) in place of *commandname*.

The text that appears on screen has somewhat simpler formatting than the text that you read in the *A/UX Command Reference*. For example, terms that are in italic type in the printed book are underlined on screen.

Follow these directions to examine the `man` page for the `ls` command:

- **Enter the following on the command line:**

```
man ls
```



Moving down through the `man` *display*

You can show the next screen of text or advance line by line as follows:

- **Press the space bar to display the next screen of text.**
- **Press Return to advance the text one line at a time.**

To review material that has been scrolled off the top of the screen, use the scroll bar.

The "Name" section

The `man` page begins with the "Name" heading, which introduces a brief summary of what the command does:

```
ls - list contents of directory
```

This is the text that appears in the Help box of the Commando dialog box.

The "Synopsis" section

The "Synopsis" section appears below the "Name" section. It looks rather mysterious at first view, but it becomes clearer once you know what to look for. The `ls` synopsis reads as follows:

```
SYNOPSIS
   ls [-R] [-a] [-d] [-C] [-x] [-m] [-l] [-L] [-n] [-o] [-g]
   [-r] [-t] [-u] [-c] [-p] [-F] [-b] [-q] [-i] [-s] [names]
```

Don't be discouraged by the long list of bracketed items. The synopsis summarizes the way the `ls` command is used on the command line. It will look clearer if you consider its separate components one at a time.

`ls`	You begin by typing the `ls` command itself.
`[-R] ... [-s]`	These are the options. You continue by typing any of the bracketed options that are appropriate. Note that you do not type the brackets on the command line. The brackets are a conventional way of indicating that the bracketed item is optional. As you learned earlier in this chapter (see "Options and Arguments"), you can use the `ls` command without any options.
`[names]`	Finally, you type the argument, if necessary. The fact that it is bracketed indicates that it, too, is optional. In this case, *names* refers to names of directories or files.

The "Arguments" section

This is essentially a list of all the options and arguments. Note that options and arguments are listed together, in one section, and are arranged alphabetically. Some of the items in the list of `ls` command options are familiar to you. Here are two examples:

```
-C    Multicolumn output with entries sorted vertically.

-p    Put a slash (/) after each filename if that file is a
      directory.
```

Some of the explanations might be expressed in technical language that is a bit obscure. For an alternate explanation, display the Commando dialog box and look at the Help message for the item that you need to learn about. See "The Help Box" in "Using Commando," earlier in this chapter.

The "Description" section

This section offers a full description of the operation of the command. Its length and complexity vary from command to command, depending on the complexity of the command's use.

The "Examples" section

Not every `man` page has an Examples section. The `man` page for `ls` presents `ls -l` as an example, which is discussed earlier in this chapter (see "Options and Arguments"). When examples are provided, they are useful for seeing how the command is used.

The "Files" and "See Also" sections

There are several sections that appear only in a few `man` pages ("Status Messages and Values," "Warnings," "Limitations," "Notes," and "Bugs"). The "Files" section and the "See Also" sections, however, normally do appear.

If you are not involved in the technicalities of UNIX, the "Files" section is unlikely to be of use to you. It describes the files that the command uses.

The "See Also" section can be useful to you. It cross references other commands that are associated with the command in one way or another, or whose uses parallel or supplement the command.

Quitting a manual page

To redisplay the command prompt without paging through the entire manual page, you can quit the manual page as follows:

- **Press CONTROL-C.**

Linking commands with the pipe

A/UX allows you to take the output from running one command and to channel it (or *pipe* it) into another command. This allows you to string commands together in order to run a given set of data through several processes, just as oil in a refinery moves from process to process through pipes (See Figure 4-2).

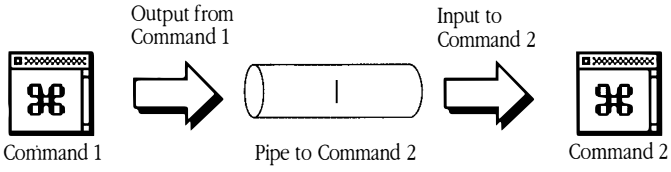


Figure 4-2 Using a pipe to channel the output of Command 1 as the input to Command 2

The pipe symbol is a simple vertical line (`|`), which is often on the backslash key (`\`) on the keyboard, though keyboards vary as to the position of this character.

Earlier in this chapter, in "Options and Arguments," you learned that the command `ls -l` produces a long listing of files and directories in a directory, giving you several items of information in addition to the name of the files and directories. One of those items of information is the date on which the item was last changed.

The next exercise shows you how to use the pipe to use the output of one command as the input to another. The task is to find all items in the `start` directory that were created or last changed in the year 1990. To do this, you first use the `ls -l` command

to create a long listing of the contents of the `start` directory, because a long listing contains the dates on which the items in the list were created or changed; then you will use a pipe to channel the output of the `ls` command to the `grep` command; then you use the `grep` command to search the output of the `ls -l` command (the list) for the characters `1990`.

1 **On the command line in a CommandShell window, type the following:**

```
ls -l /users/start
```

This is the list command, the option that creates a long listing, and the argument that specifies which directory's contents are to be listed. For the purposes of this exercise, use the absolute pathname of the `start` directory (`/users/start`).

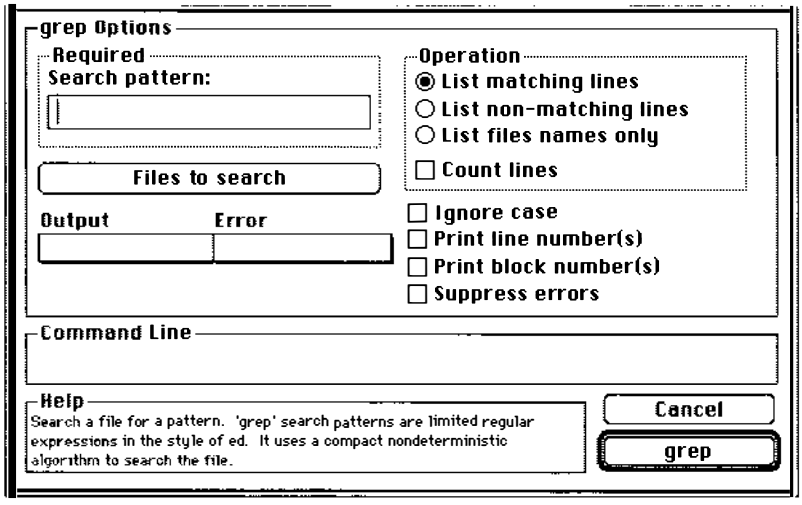
2 **Press the spacebar, type a pipe character (`|`), then press the spacebar again.**

The command line now looks like this:

```
ls -l /users/start |
```

3 **Type `grep` and press COMMAND-K.**

The Commando dialog box for `grep` appears.



4 **In the "Search pattern" text box, type:**

```
1990
```

In this exercise you will not be using any of the options, so you need only type the character string to be searched for.

You do not need to use the "Files to search" button because the text that is being searched is the output of the `ls -l` command, which you are channeling into the `grep` command with the pipe.

5 **Press RETURN or choose grep in the dialog box.**

The following command line appears in the CommandShell window:

```
ls -l /users/start | grep 1990
```

6 **Press RETURN to run the command.**

The window displays the following response:

```
-rw-r--r--   1 start    project     1289 Jan 17  1990 letter1
```

The pipe is useful for performing complex tasks that require processing information through several commands and that would take too much time and work to perform one command at a time.

5 Permissions

This chapter teaches you the meaning and use of UNIX file and folder permissions. It shows how to change permissions for the three main user types (owner, group, and others). It also discusses the difference between UNIX permissions and Macintosh file-sharing permissions.

- Restricting access to files and folders
- UNIX file access permissions
- Folder and directory access permissions
- Default access permissions
- When you are denied permission
- Changing permissions
- Differences between UNIX and Macintosh file-sharing permissions

If you are unfamiliar with the concept and use of access permissions, first read "Restricting Access to Files and Folders;" then go through whatever sections and tutorials are appropriate to your needs.

Restricting access to files and folders

A/UX is a multi-user system that allows you to share files with other users, whether all the users are using one computer or several computers linked by a network. It also provides a way to protect your files and folders so that only you (or a restricted group of users) can open, read, or change the file, or run the program. Chapter 1, "Starting and Finishing a Work Session," showed you that only the person who knows the password of an account can log in to that account. UNIX permissions extend the security of your files by ensuring that only users with the correct access permissions can use files or folders.

The user who owns the folder or file (that is, the one who created it or who has been granted ownership) controls access to that folder or file. The only exception to this is the person who is logged in as root. That person normally has access to all files. For that reason, under most circumstances, only the system administrator has permission to log in to the root account. Because of these special privileges, the person logged in as root is sometimes called the **superuser.**

Although it is commonly said that a given user has certain permissions, it would be more accurate to say that a given *user account* has certain permissions. Whoever knows the account name and password can log in to that user account and take advantage of all permissions assigned to that account.

UNIX file access permissions

File access permissions determine who (that is, which user accounts) can use a particular file and what they can do with it. Three types of permissions exist. You can set **read permission, write permission,** and **execute permission** for each file.

- Read permission allows you to open the file and read it.
- Write permission allows you to change the file or delete it.
- Execute permission allows you to run an executable file, such as an application or a script.

Categories of users

Every file's permissions grant or deny access to the file according to the user's **access class,** that is, his or her membership in one or more of three categories. A description of these three categories follows:

- Owner (sometimes called user) permission applies to the person who owns the file. If the file has only owner permission, only the person who is logged in as the owner of the file can use it. The owner of a file or folder is the user who created it. Ownership can be transferred to a different user with the `chown` command. For further information on the `chown` command, see `chown`(1) in *A/UX Command Reference.*
- Group permission applies to a specific named group of users. If the file has **group permission,** those who are assigned to this group can use it.
- Others (sometimes called world) permission applies to all other users. If the file has **others permission,** everyone logged in, who is neither the owner nor in the group, can use it.

Therefore, each form of permission (read, write, and execute) can be assigned to the owner, to a specified group of users, and to all other users logged in to the system.

Folder and directory access permissions

You can set the access permissions of folders or directories that you own. Folder and directory access permissions can be somewhat confusing because they have the same names as file access permissions (read, write, and execute), but they affect folders and directories differently than they affect files. In addition, access permissions for directories work somewhat differently in a command-line interface (such as CommandShell) than access permissions for folders in the Finder.

The following general rules apply to directory access permissions if you are working in CommandShell:

- **Read permission** allows you to read the contents of a directory (that is, to list its contents with the `ls` command and many of the command's options; see Chapter 4, "Using UNIX Commands and Commando"). However, it doesn't allow you to go into the directory or to add, rename, or remove any of its contents.
- **Write permission** allows you to add or remove items from the directory, or to rename them, if you already know the items' names. However, you cannot enter the directory, nor can you list its contents.
- **Execute permission** allows you to go into the directory with the `cd` command (see "Changing to a New Directory; Returning to Your Home Directory" in Chapter 4, "Using UNIX Commands and Commando"), but you cannot list its contents, nor can you add, remove, or rename its contents. You can access the items in the directory only if you know their names.

These permissions are usually used in combination, although they can be of some use individually. For example, a directory that has only execute permission prevents unauthorized users from snooping its contents.

UNIX directory permissions in CommandShell work differently than folder permissions in the Finder because in order to see what a folder contains in the Finder, or to remove or rename anything in the folder, you must open the folder by double-clicking it. Since that is equivalent to entering the folder, you need read and execute permission. In fact, the Finder insists that you have execute permission before you can do anything useful with a folder.

The following list shows the permissions you need in order to perform various operations upon a folder in the Finder:

- To open a folder and read its contents, you need read and execute permissions.
- To open a folder and add, rename, or remove files, you need read, write, and execute permissions.
- To add items to a folder that you cannot open and whose contents you cannot see, rename, or remove, you need write and execute permissions. This folder is commonly called a drop box, because once you add an item to it, that item is available only to a user who has at least read and execute permissions.

Note, however, that if you are using CommandShell, you can use UNIX commands to manipulate an item in a drop box, provided that you already know the name of the item. As mentioned above, A/UX directory permissions allow a user with write and execute permission to enter and change the contents of a directory.

Default access permissions

When you create a file or a folder, the system automatically assigns certain preset access permissions for the file or the folder as regards you (that is, the owner), your group, and other system users. As shipped, the A/UX default access permissions are as follows:

For regular nonexecutable files The default access permissions for newly created regular text files are as follows:

- **Owner:** read, write
- **Group:** read
- **Others:** read

Folders and executable files Newly created folders and compiled programs are automatically assigned the following default permissions:

- **Owner:** read, write, execute
- **Group:** read, execute
- **Others:** read, execute

Changing default permissions For information on changing default permissions, see *A/UX Local System Administration.*

Shell script permission

A **shell script** is a text file that contains one or more A/UX commands. These commands run as a program when you double-click the shell script file icon in the Finder or enter its name as a command in CommandShell. A/UX does not detect that a newly created shell script is anything other than a regular text file. Therefore, it assigns the default permissions for a text file. After you create a shell script, assign execute permission to the text file. For directions on changing permissions of a file or a folder, see "Changing Permissions," later in this chapter. For further information on shell scripts, see *A/UX Shells and Shell Programming*.

When you are denied permission

If you try to work with a file or a folder in the Finder without the proper permission, alert boxes inform you of the problem. Figure 5-1 shows the alert boxes that appear if you try to open a folder or a file for which you do not have the appropriate permissions.

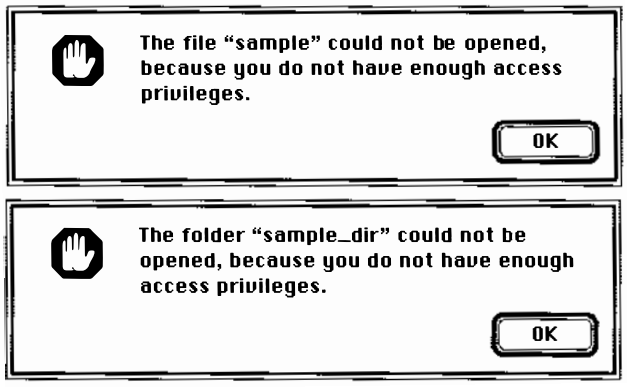


Figure 5-1 The alert boxes that inform you that you lack the appropriate permissions to open a file or a folder

If you have read permission for a folder but you do not have write permission, the folder appears as shown in Figure 5-2.

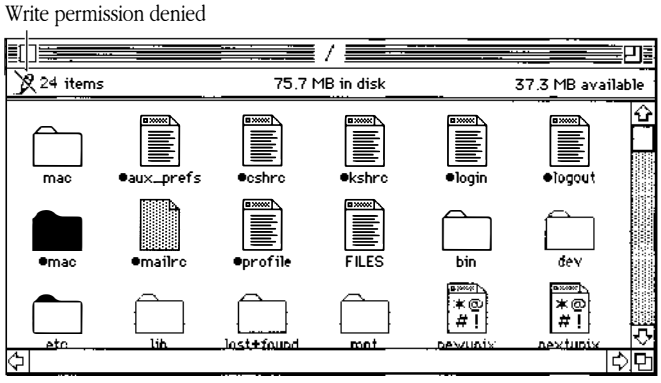


Figure 5-2 Write permission to a folder denied

Some file and folder icons change their appearance when you do not have permission to use them. See "The Finder Icons" in Chapter 2, "Using Files, Folders, and Directories," for descriptions of them.

Similar warnings are displayed on the command line in CommandShell if you attempt to work without the appropriate permissions.

Changing permissions

There are several ways of changing access permissions. The traditional UNIX command-line interface uses the `chmod` (or *change mode*) command. However, A/UX provides a much easier way to do this. It provides dialog boxes that allow you to look at and change the permissions of a file or a folder while you are working in the Finder.

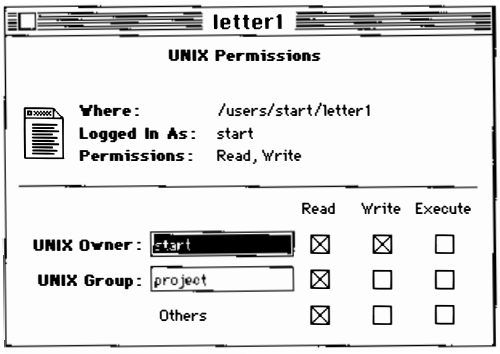
◆ **Note** You cannot change the permissions of an alias. You must work with the permissions of the original file. ◆

To see the permissions of the file `letter1` in the `start` folder and to change the permissions, perform the following steps:

1 **With the `start` folder open, select `letter1` by clicking its icon.**

Don't double-click the icon. You need to select it, not to open it.

2 **Open the File menu and choose UNIX Permissions.**



The dialog box shows you the following information:

- The name of the file or folder and its appropriate icon
- Its pathname, so that you know its location in the file system
- Your login name
- Your permissions
- A chart of the file permissions, showing check boxes with read, write, and execute permission for the three categories of users (owner, group, others)

  The chart also shows you the names of the owner of the file and its group.

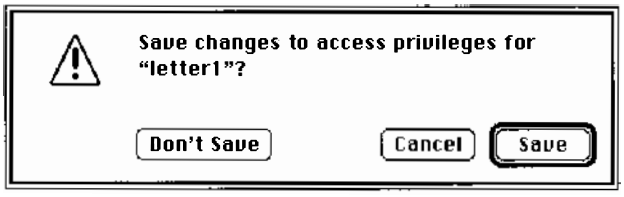
The chart tells you the following about the file `letter1`:

- It is owned by `start` and the owner has read and write permission. In other words, if you are logged in as `start`, you can read the file and change it.
- The group name is `project` and the group has only read permission. If you are logged in as one of the login names assigned to this group, you can only read this file. You cannot change it.
- All other users have only read permission. They can only read this file; they cannot change it.

3 **To give the group write permission, click the check box in the Write column in the UNIX Group row.**

4 **Click the close box.**

The UNIX Permissions dialog box is now replaced by an alert box.



There are three choices:

- Save closes the alert box and the UNIX Permissions dialog box, and saves the changes you have made to the permissions.
- Don't Save closes the alert box and the UNIX Permissions dialog box without saving the changes you have made in the permissions.
- Cancel closes the alert box but does not close the UNIX Permissions dialog box.

5 **Choose Save in the alert box.**

6 **Redisplay the UNIX Permissions dialog box for the file `letter1`. It shows that the group now has both read and write permission.**

7 **Click the Write permissions box for the group to remove write permission; then save the change by repeating steps 4 and 5.**

Changing folder permissions

Changing the permissions of a folder is no different, in principle, from changing the permissions of a file.

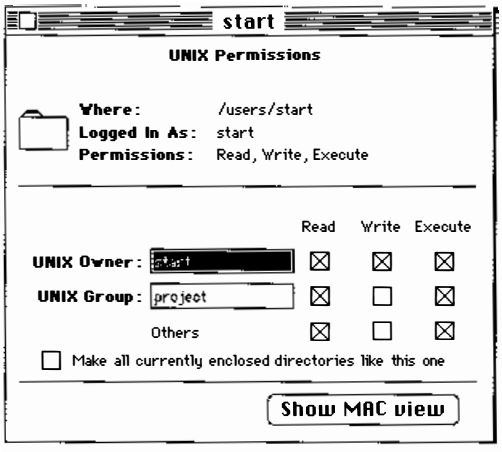
◆ **Note** You cannot change the permissions of an alias. You must work with the permissions of the original file. ◆

To check and alter the permissions of the `start` folder, perform the following steps:

1 **Double-click the `/` icon to open the `/` folder.**

2 **Double-click the `users` folder icon to open it.**

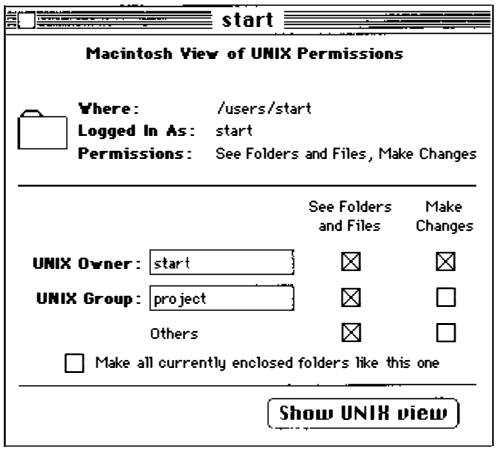
3 **Click the `start` icon to select it; then choose UNIX Permissions in the File menu.**



Use this dialog box just as you used the UNIX Permissions dialog box to view and alter file permissions in "Changing File Permissions," earlier in this chapter.

Note the button labeled Show Mac View, at the bottom of the dialog box. If you click this button, the dialog box is replaced by a dialog box that displays the folder permissions in Macintosh terminology rather than the UNIX terminology that the UNIX Permissions dialog boxes have used thus far.

Since the effects of changing UNIX folder (or directory) permissions are confusing, this dialog box serves as a reminder of what you can or cannot do with the folder.



This dialog box shows the folder's UNIX permissions in Macintosh terminology. Note that the button at the bottom of the dialog box now reads "Show UNIX View." You can toggle back to the UNIX view dialog box by clicking that button.

▲ **Warning** Do not confuse the Macintosh view of UNIX folder permissions with Macintosh file-sharing permissions. The differences between UNIX permissions and Macintosh file-sharing permissions are described later in this chapter. See "Differences Between UNIX and Macintosh File-Sharing Permissions." ▲

Differences between UNIX and Macintosh file-sharing permissions

The differences between UNIX permissions and Macintosh file-sharing permissions can be summed up as follows:

- Macintosh file-sharing permissions affect file sharing over AppleTalk. UNIX permissions affect other users on your machine and across all UNIX networks.

- All files and folders created within the UNIX file system (rather than in the Macintosh file system, such as in MacPartition), automatically are assigned default UNIX permissions. These default permissions are described earlier in this chapter (see "Default Access Permissions").
- Folders and their contents are assigned Macintosh file-sharing permissions only if the owner of the folder has made it available to other file-sharing users.
- UNIX has three types of permission (read, write, and execute, described in "UNIX File Access Permissions" earlier in this chapter) that the owner of the file or folder can assign to every item within a folder separately (that is, each item can have any combination of permissions). Macintosh file sharing uses a different set of permissions that can only be assigned to folders, not to files. The three types of Macintosh file-sharing permission are as follows:
  - See Folders: You can open the folder.
  - See Files: You can open any file within the folder.
  - Make Changes: You can change the contents of any file within the folder.

A comparison of UNIX permissions terminology and Macintosh file-sharing terminology is illustrated in Figure 5-3.

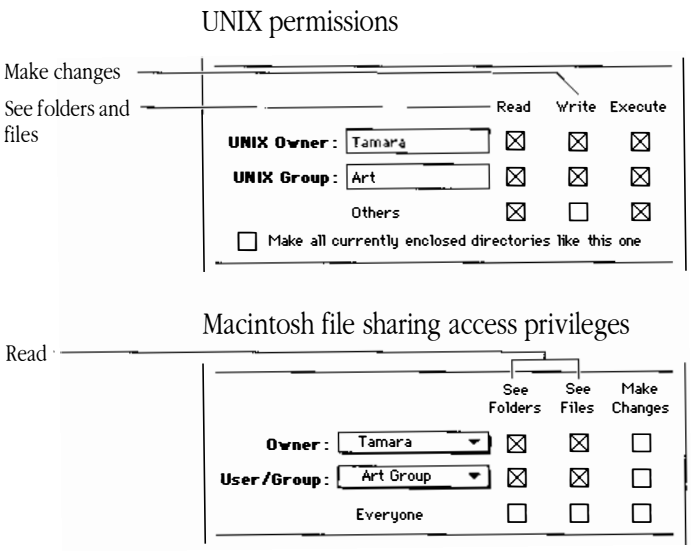


Figure 5-3 UNIX permissions terminology compared with Macintosh file-sharing terminology

6 Writing with TextEditor

This chapter describes how to use the TextEditor application to create and edit text files. It presents tutorials with step-by-step instructions that show you how to accomplish simple writing and editing tasks.

This chapter contains the following sections:

- What is TextEditor?
- Starting TextEditor
- Saving a new document
- Editing an existing document
- Formatting and other features
- Printing
- Quitting TextEditor

If you are not familiar with Macintosh text-editing tools, read through this chapter in sequence. Otherwise, you should consult “Formatting and Other Features,” and use other sections as needed.

What is TextEditor?

TextEditor is an application that allows you to create and edit text files using the mouse and menu commands in the traditional Macintosh manner. It creates a file that contains only the text characters that you type on your keyboard (including tab and return characters). This is called a **text-only file** (or an **ASCII text file**). When you create a document with word-processing or desktop-publishing software, unless you save the file as *text only,* the file contains many formatting commands. Although these formatting commands are invisible on your screen, they might confuse other programs that try to use your file. A text-only file can be read by any text-editing or word-processing application. Moreover, you can use it to write programs or shell scripts, which should never contain hidden formatting characters.

To preserve the text-only nature of its text files and still allow you certain formatting choices, TextEditor gives you the option of saving the file's formatting information, but it saves this information in a separate file called a **resource fork** and saves the text characters in a text-only file. These formatting choices include adjusting the tab settings and choosing fonts. These features are described later in this chapter.

Since TextEditor reads and writes text-only files, you can use it to work with files created with any other text-only text editor. Thus, you can edit MacWrite® files saved with the Text-Only option. When you select the Open command, TextEditor's standard file dialog box displays a list of all text files in the folder (or the *current directory*, in UNIX parlance), regardless of the program used to create the file.

The resource fork has the same filename as the text file, but it is preceded by a percent sign (%).

Like most UNIX systems, A/UX also comes with a commonly used UNIX text editor called `vi` (*Visual Editor*). If you are an experienced `vi` user, you can continue to use `vi` to read and write text files from the CommandShell command line. For information on CommandShell, see Chapter 3, "Using CommandShell." Naturally, TextEditor can read and edit text files created with `vi`, and vice versa.

The following section teaches you how to use TextEditor to create a document. During the course of these tutorials, please be sure that you log in as `start` and are working in the `start` folder.

Starting TextEditor

You can start TextEditor from the A/UX Finder by double-clicking the TextEditor icon, an alias of the TextEditor icon, or a text-file icon (provided that TextEditor is the default editor). You also can start TextEditor from a CommandShell window.

If you are working in a CommandShell window, you can start TextEditor by entering the `TextEditor` command. An untitled TextEditor window appears.

The following tutorials teach you how to work with TextEditor after starting it from the Finder.

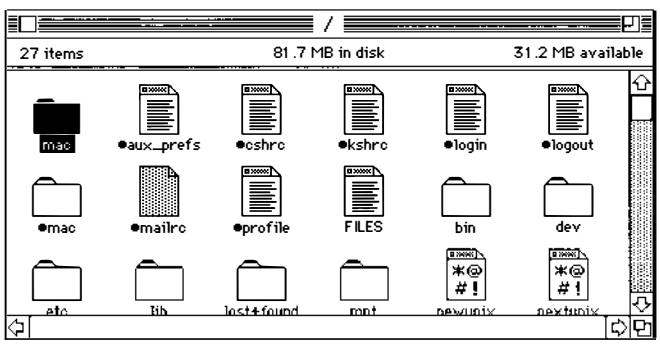
Starting TextEditor from the A/UX Finder

This tutorial teaches you how to start TextEditor from the A/UX Finder by creating an alias of the TextEditor icon and by double-clicking the alias.

To find the TextEditor icon, open the `/mac/bin` folder (for a description of pathnames such as `/mac/bin`, see "UNIX Pathnames," in Chapter 2, "Using Files, Folders, and Directories").

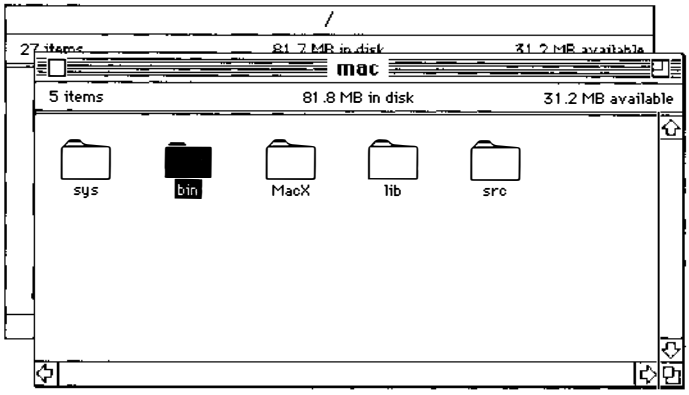
1 **Double-click the icon for the / folder.**

The `/` folder opens, displaying the `mac` folder icon.



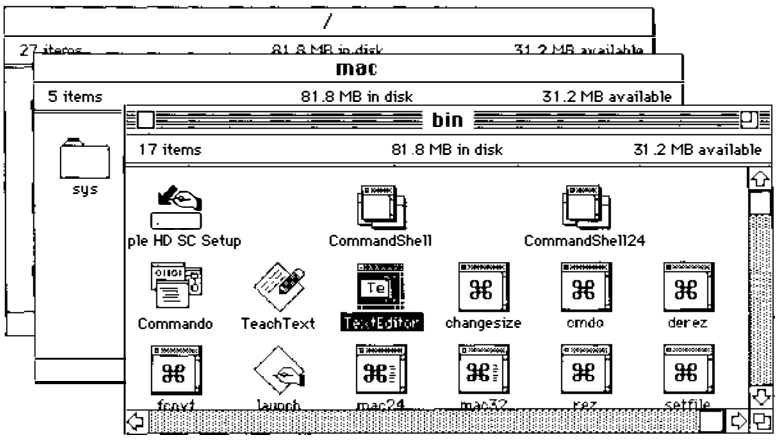
2 **Double-click the `mac` folder icon.**

The `mac` folder opens, displaying the `bin` folder icon.



3 **Double-click the `bin` folder icon.**

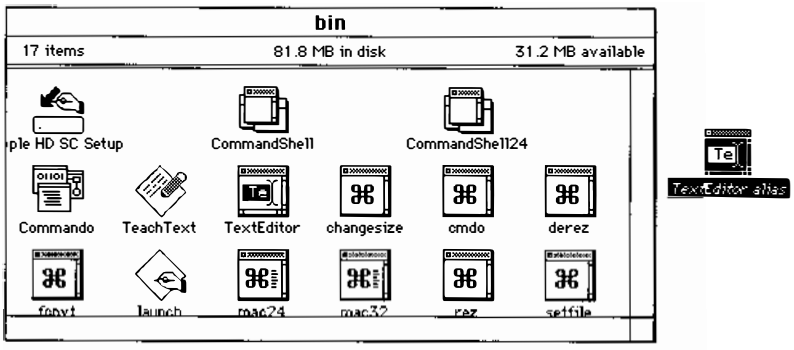
The `bin` folder opens, displaying the TextEditor icon.



4 **Select the TextEditor icon to highlight it, choose Make Alias from the File menu, and drag the *TextEditor alias* icon to the desktop.**

If an alert box appears that asks you whether you want the alias icon to appear on the desktop, choose Yes. If not, drag the icon to the desktop.

You can now use the *TextEditor alias* icon without having to open folders.



Now that you have created the *TextEditor alias* icon and moved it to the desktop, use it to create a new document as follows:

- **Double-click the *TextEditor alias* icon.**

A TextEditor window named *Untitled* appears. You can now begin to create your text file.

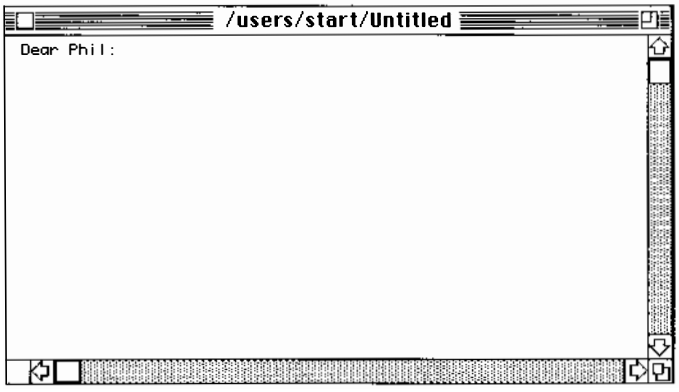
Entering text

Begin by creating an office memo as follows:

1 **Type**

```
Dear Phil:
```

Your screen should look like this:



2 **Press the RETURN key twice and type**

```
I received your letter about the purchase of land for a new
office building.
```

You have probably typed past the edge of the screen. Unlike many word processors, TextEditor does not automatically move to the next line when you type past the right edge of the screen. This is a feature that programmers find useful.

3 **Move the I-beam to where you want the line break to be; then click.**

This places the insertion point on the line. You also can move the insertion point to the left by pressing and holding the LEFT-ARROW key.

4 **Press RETURN to move the rest of the sentence to the next line.**

5 **Move the insertion point to the end of the text and press RETURN twice to start a new paragraph.**

6 **Continue typing (remember to press RETURN to go to the next line before you reach the edge of the screen again).**

```
It's true that the financial reports for the last quarter
are not in yet, but there is a general feeling that the
numbers look good. This might be the perfect time to submit
your plan.
```

7 **Press RETURN twice to create a new paragraph, then type the following:**

```
I don't want to rush you, but perhaps you should get ready
to take advantage of a real opportunity.
```

Cutting and pasting text

The sentence that you typed in step 7 might look better right before the material you typed in step 6. The two paragraphs would then read as follows:

I don't want to rush you, but perhaps you should get ready to take advantage of a real opportunity.

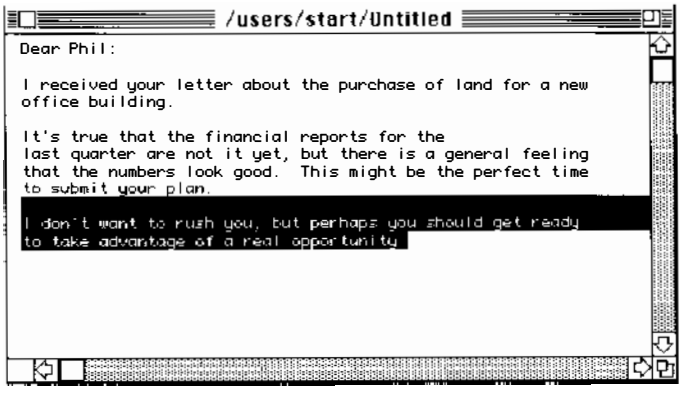
It's true that the financial reports for the last quarter are not in yet, but there is a general feeling that the numbers look good. This might be the perfect time to submit your plan.

1 **Place the I-beam just before the first letter of the sentence beginning: "I don't want . . ."**

2 **Hold down the mouse button and move the mouse so that the I-beam moves past the period after the phrase *real opportunity*.**

3 **Release the mouse button.**

The text is now selected.



You can perform various operations with a block of selected text. In this case, you are going to cut and paste the text.

4 **Choose Cut in the Edit menu.**

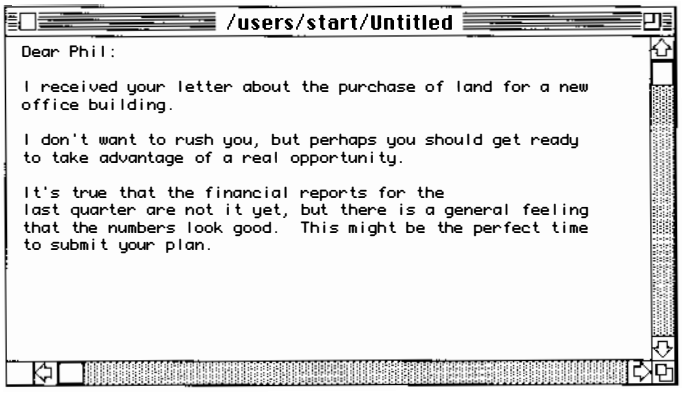
The selected text disappears. The passage you have cut is saved on the Clipboard. If you choose the Show Clipboard command in the Edit menu, you see a window showing the selected text saved in the Clipboard. For now, continue with Step 5.

5 **Move the I-beam to the end of the first paragraph and click RETURN twice to create a new paragraph.**

This places the insertion point where you are going to paste the text that you just cut.

6 **Choose Paste in the Edit menu.**

The selected text appears in its new location.



The selected text remains on the Clipboard until you replace it with another block of selected text. If you wanted to, you could paste copies of it in any number of other places in the document.

To save this memo, see the next section, "Saving a New Document."

Saving a new document

Since this document is new, if you wish to use it again you must save it and give it a filename as follows:

Follow these directions:

1 **Display the File menu.**

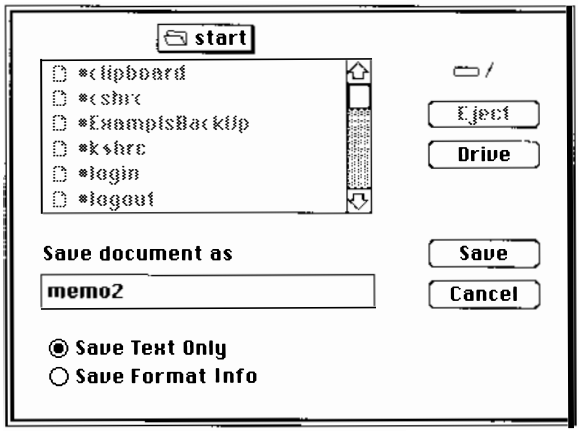
The first three of the following four commands allow you to save a file:

- Save
- Save As
- Save a Copy
- Revert to Saved

These four commands are described at the end of this exercise, after Step 5.

2 **Choose Save As.**

The Save As dialog box asks you to select a name for the file.



3 **Type the name** `memo2` **in the "Save document as" field.**

4 **Be sure that the Save Text Only radio button is selected.**

If you had used any of the formatting options (described later in this chapter), you could have saved them in a separate file by selecting Save Format Info. The document would then be saved in two files, `memo2` and `%memo2`. The second of these, the resource fork, would preserve the formatting information. However, since you haven't used the formatting options, it isn't necessary to create an extra file.

5 **Click Save.**

The memo is saved as a file with the filename `memo2`.

The other Save commands work as follows:

- **Save:** If the file in the active window already has a filename, the Save command automatically saves it under its current name, without closing it. The original version of the file of that name is overwritten in the process. This menu item is dimmed (and therefore cannot be used) if the file hasn't been modified since it was last saved.
- **Save As:** In addition to using this command to name a new file (as you have just done), you can use it while working on a file that already has a name. This lets you save an edited file under a new name, leaving the original intact. The file that you originally opened remains unchanged, just as it was when last saved.
- **Save a Copy:** This command saves the file, in its current state, under a new filename. You can then continue editing the *original* file.
- **Revert to Saved:** Use the Revert to Saved command to throw away any changes you have made since you last saved the document. This command is dimmed if the document has not been modified since it was last saved.

Editing an existing document

The following tutorials show how to edit or rewrite a document file that already exists.

Opening the file

Suppose you want to edit a text file that already exists. If TextEditor is running, you can open the file for editing by choosing Open in the File menu. This allows you to open any text-only file, regardless of what application was used to create the file.

If you are in the Finder, and if TextEditor is your default text editor, you need only double-click the icon of the file to be edited (or click it once to select it and choose Open in the File menu). TextEditor starts running and the file you have clicked is opened for editing.

If TextEditor is not still running, follow these steps:

1 **Open the `start` folder if it is not already open.**

2 **Double-click the `memo1` file icon.**

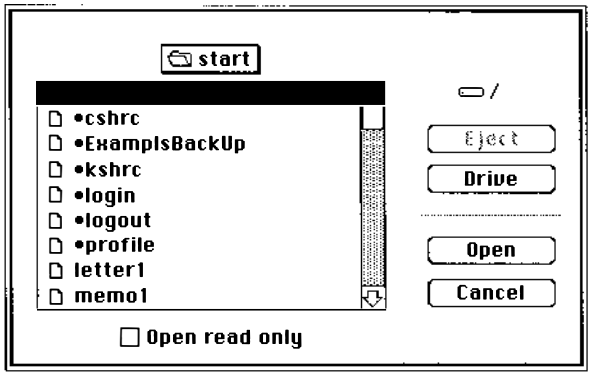
The `memo1` file is opened and the document is displayed. You are ready to alter this document and save it under a new name.

If you have not quit TextEditor since the last tutorial, it is still running and you are working in the `start` folder. Be sure that you are logged in as start and are working in the `start` folder, which contains all the tutorial material.

Follow these steps:

1 **Choose Open in the File menu.**

A dialog box appears:



2 **Double click `memo1`.**

The document appears in a window and is ready for editing.

◆ **Note** You can open a file to which you have read permission but not write permission. To do this, be sure that you have selected "Open read only" (at the bottom of the Open dialog box). If you open a document to which you do not have write permission, a lock icon appears at the bottom right of the window, as in Figure 6-1. You can read the document but you cannot change it. ◆

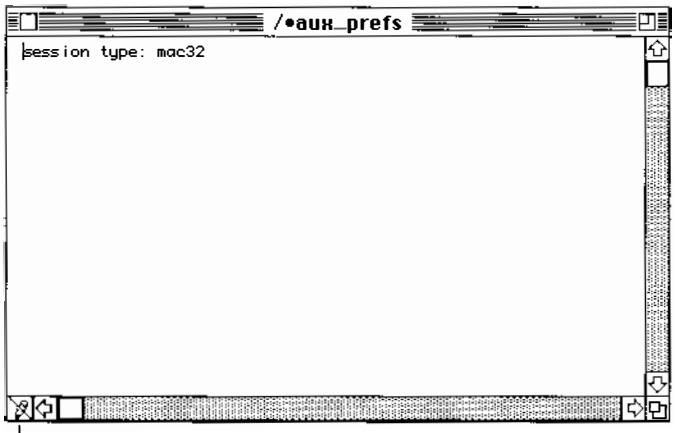


Figure 6-1 A read-only document

Deleting and rewriting text

Examine the beginning of the document on your screen. Notice the sentence that begins halfway through the second line of the first paragraph of `memo1` ("Every salesperson who's . . .").

1 **Use your mouse to highlight the phrase** *`Every salesperson who's`***; this is now the selected text.**

Place the blinking cursor just before the word Every and hold down the mouse button while moving the mouse. Drag the cursor just past the word who's; then release the mouse button.

2 **When the phrase is selected, type the following:**

```
The salespeople who have
```

The selected text disappears as soon as you begin to type. This is the fastest way to replace a block of text. It saves you the trouble of first deleting text and then typing the new text.

3 **Follow the same steps to select the letter** `s` **at the end of the word** *`knows`* **in the next line; then press Delete to delete the letter.**

Copying and pasting between documents

Next, you will add the entire memo you have just edited to the bottom of a business letter. The letter is in the `start` folder, in the file `letter1`.

First select the material to be copied, as follows:

1 **With the window that contains `memo1` displayed, choose Select All in the Edit menu.**

This highlights the entire document.

2 **Choose Copy in the Edit menu.**

The selected text (in this case, the entire memo) is saved on the Clipboard.

3 **Choose Open in the File menu.**

This displays a list of all the files in the `start` folder. See Figure 6-10.

Now prepare the document that is to receive the copied text, as follows:

1 **Double-click `letter1`.**

2 **Scroll to the end of the letter (drag down the scroll box at the right of the screen).**

3 **Place the insertion point at the end of the signature and press RETURN twice to start a new paragraph; then choose Shift Left in the Edit menu to move the insertion point to the left margin.**

4 **Type the following PS:**

```
PS: To give you a clear idea of our level of commitment to
customer support, I'm appending a memo I recently sent to
my staff.
```

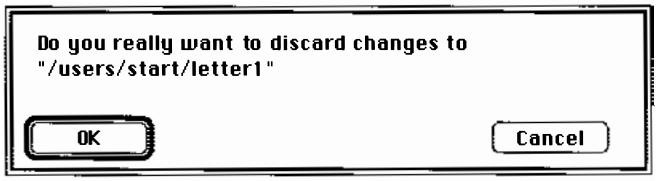
5 **Press RETURN twice to skip two lines, then choose Paste from the Edit menu.**

All of the copied text appears at the insertion point.

Since other users use these tutorials, don't save the changes.

1 **Choose Revert to Saved in the File menu.**

The Revert to Saved command causes all changes to the document to be removed. A dialog box appears.



2 **Click OK.**

3 **Click the close box of the window (the small square at the upper left of the window).**

The window that contains `memo1` is still displayed.

Close it without saving the changes, as follows:

- **Choose Close from the File menu. This is the same as clicking the close box.**

Finding and changing text

One of the most important time-saving features of a text editor is its ability to search through a document for a specific word, phrase, or string of characters and to change it automatically.

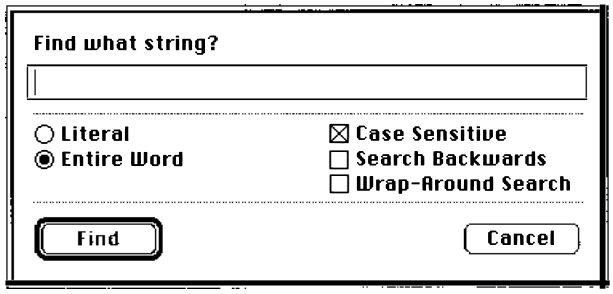
Finding text

To find a word, phrase, or character string, follow these steps:

1 **Open the `start` folder and double-click the `memo1` icon to open the document.**

2 **Choose Find in the Find menu.**

A dialog box appears.



3 **Click the Entire Word button and the Case Sensitive button.**

Click the Entire Word button to tell the system to find the item only when it is an independent word (that is, when it is not part of another word). You would click Literal instead of Entire Word if you wanted to search for a string of characters even when they are embedded in another word. Thus, if you click Literal and search for the word *it,* the system finds *bit, split, flit,* and so on.

Click the Case Sensitive button to tell the system to search only for words with the same uppercase and lowercase letters as the word you indicate.

4 **Type `GOOD` in "Find what string?"**

5 **Click Find.**

Notice that the word `GOOD` in line 2 is highlighted.

The Find dialog box gives you the following options as well:

- **Search Backwards:** Searches backward from the current selection to the beginning of the file. (Normally, the search moves forward and stops at the end of the file.)
- **Wrap-Around Search:** Searches forward from the location of the cursor to the end of the file, then starts again at the beginning of the file and continues the search up to the starting cursor position.

◆ **Hints on using Find** You can reverse the direction of a current search operation by pressing SHIFT as you select the menu item or by pressing SHIFT as you click OK. For example, if you are in the middle of a file and you want to find a string that occurs earlier in the document, hold down the SHIFT key as you click Find. The search then proceeds backward through the first part of the file. The direction is changed for the current search only. ◆

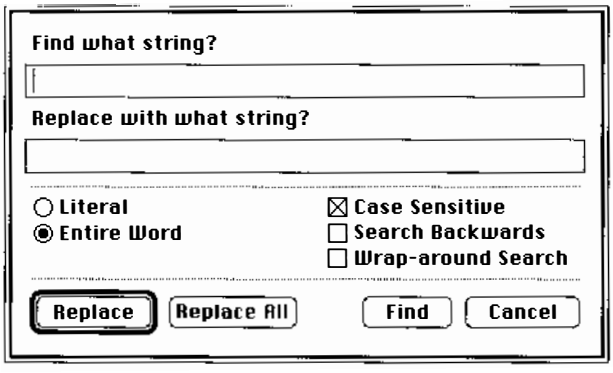
Replacing text

To find a word, phrase, or text string and replace it automatically with a different word, phrase, or text string, follow these steps:

1 **Open the `start` folder; then open `memo1`.**

2 **Choose Replace in the Find menu.**

The Replace dialog box appears.



3 **Click Entire Word and Case Sensitive.**

Click the Entire Word button to tell the system to find the item only when it is an independent word (that is, when it is not part of another word). You would click Literal instead of Entire Word if you wanted to search for a string of characters even when they are embedded in another word. Thus, if you click Literal and search for the word *it*, the system finds *bit*, *split*, *flit*, and so on.

Click the Case Sensitive button to tell the system to search only for words with the same uppercase and lowercase letters as the word you indicate.

4 **Type `GOOD` in "Find what string?"**

5 **Type `excellent` in the field labeled "Replace with what string?"**

6 **Click Find.**

Notice that the word `GOOD` in line 2 is highlighted.

7 **Click Replace (or press RETURN).**

The word `GOOD` is replaced by the word `excellent`. The next occurrence of `GOOD` is then highlighted, allowing you to repeat the operation.

To skip this occurrence of the word without changing it, click Find. TextEditor leaves the highlighted word unchanged and searches for its next occurrence.

The Replace dialog box gives you the following options as well:

Replace All: Changes all occurrences of the word `GOOD` (or whatever string you indicate) automatically.

Cancel: Removes the dialog box. No further action is taken.

Search Backwards: Searches backward from the current selection to the beginning of the file. (Normally, the search moves forward and stops at the end of the file.)

Wrap-Around Search: Searches forward from the location of the cursor to the end of file, then starts again at the beginning of the file and continues the search up to the starting cursor position.

Formatting and other features

If you use any formatting features, you can save the formatting information by selecting Save Formatting Information in the Save As dialog box. This causes an extra file to be saved (the resource fork), which contains the formatting information.

The Edit menu and the Window menu make the following formatting features available to you:

- Selecting fonts (for screen display and for printing)
- Selecting tab settings
- Automatically aligning text with the previous line (Auto Indent)
- Showing invisible characters, such as tabs, spaces, and returns
- Shifting a block of text left or right by one tab stop
- Aligning selected text with the top line of the selection
- Arranging multiple windows to be stacked one over the other or tiled (placed alongside one another)
- Marking a place in the file

The following sections explain how to use these features.

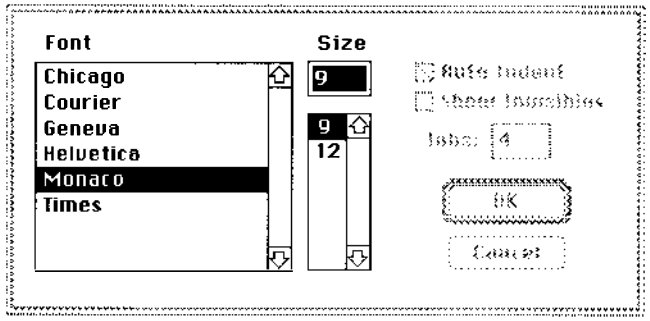
Selecting fonts

To change fonts, follow these directions:

1 **Choose Format in the Edit menu.**

The Format dialog box appears.

2 **Select the desired font and size.**



3 **Click OK.**

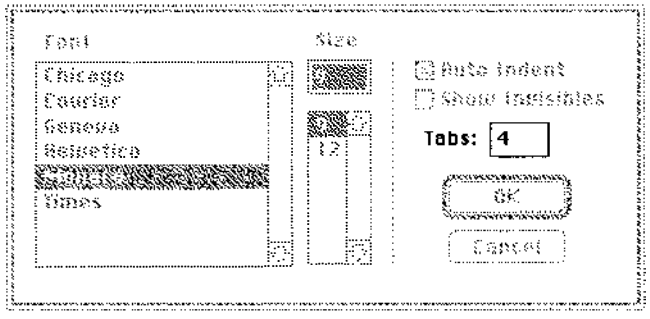
Selecting tab settings

To change tab settings, follow these steps:

1 **Choose Format in the Edit menu.**

The Format dialog box appears.

2 **To change the tab setting, type the desired number of spaces in the Tabs field.**



3 **Click OK.**

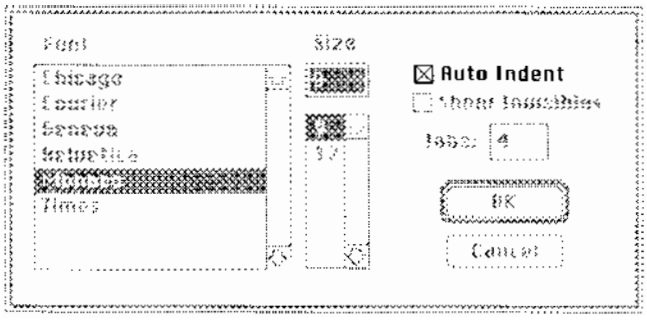
Automatically aligning text

Auto Indent aligns a selected block of text or a line with the previous line. To turn Auto Indent on, follow these steps:

1 **Choose Format in the Edit menu.**

The Format dialog box appears.

2 **Click the check box so that Auto Indent is selected.**



You can click it again to deselect it, thus turning Auto Indent off.

3 **Click OK.**

Showing invisible characters

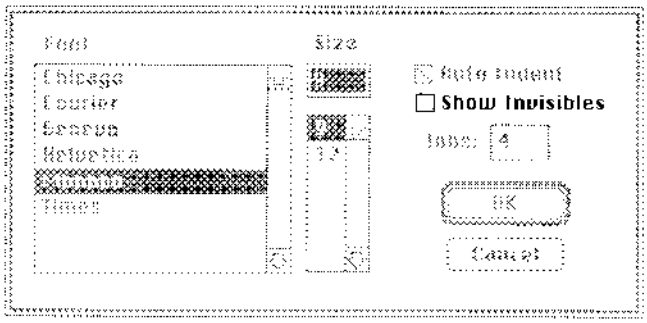
Spaces, tabs, returns, and control characters don't appear on your screen unless you click Show Invisibles. Follow these steps:

1 **Choose Format in the Edit menu.**

The Format dialog box appears.

2 **Click the check box so that Show Invisibles is selected.**

You can click it again to deselect it, thus hiding the invisible characters.



3 **Click OK.**

When you choose Show Invisibles, the invisible characters are displayed as follows:

Δ	tab
◊	space
¬	return
¿	all other control characters

Shifting a block of text left or right

To shift an entire block of text one tab stop to the left (or the right), follow these steps:

1 **Select the block of text.**

2 **Choose Shift Left (or Shift Right) in the Edit menu.**

Aligning text with the top line of text

To align a block of text with the top line of the selection, follow these directions:

1 **Select the block of text.**

2 **Choose Align in the Edit menu.**

Arranging multiple windows

If you are editing several documents at once, you have a choice of stacking or tiling the windows. The tutorial that follows shows you how to do this.

Stacking and tiling windows

To see the difference, follow these steps:

1 **Choose Open in the File menu.**

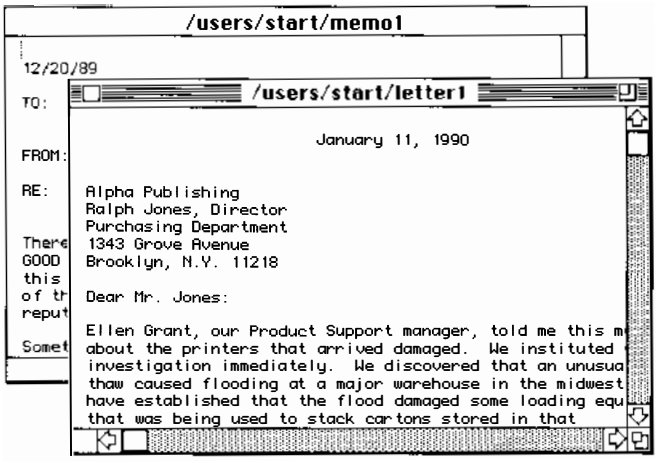
2 **Double-click the `memo1` file in the `start` folder.**

The document appears in a window and is ready for editing.

3 **Choose Open in the File menu.**

4 **Double-click the `letter1` file.**

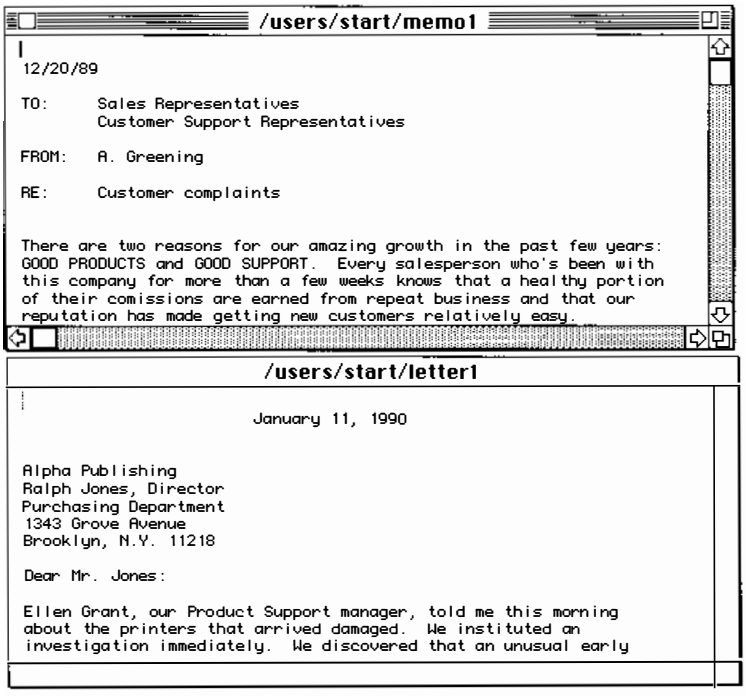
The windows are stacked by default, as shown here.



To tile the windows, follow this step:

- **Choose Tile Windows in the Window menu.**

The windows are laid out alongside one another. Note that the sizes of the windows change so that they can fit on the screen.



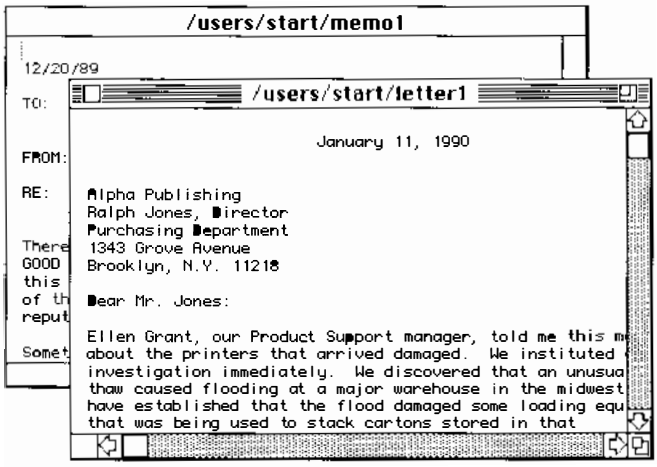
Tiling makes it easy to work with several windows at once. To use this feature most effectively, however, it's best to have a large monitor. On a small monitor, the windows might become too small.

△ **Important** When a window becomes too small, the text in the window disappears and you can no longer work with it. To work with it, you must reopen the file in a larger window.

To return the windows to a stacked layout, do as follows:

- **Choose Stack Windows in the Window menu.**

  The windows are now stacked.



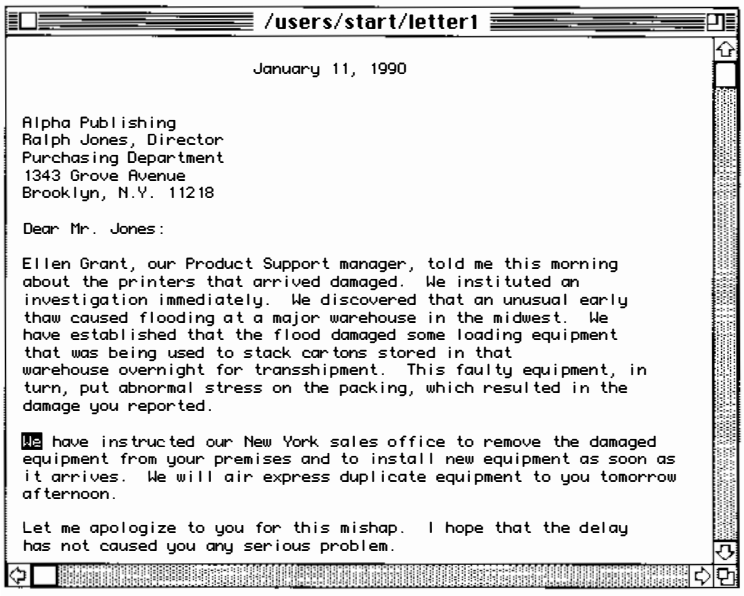
Marking a place in the file

If you need to return periodically to specific locations in a long or complex document, you can place invisible named markers at those points. You can then jump instantly to any of the marked places in the document. This saves you the time and trouble of having to scroll through the document to find those places.

The following tutorial teaches you how to mark and unmark a document. The tutorial uses `letter1` (in the `start` folder) as a sample document, although marking is most useful in long, complex files.

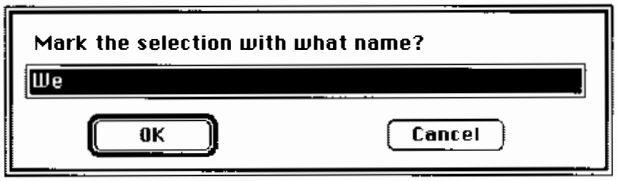
To place two named markers in `letter1`, the first at the beginning of the second paragraph ("We have instructed . . .") and the second at the beginning of the third paragraph ("Let me apologize . . ."), follow these steps:

1 **Highlight the word "We" at the beginning of the second paragraph.**



2 **Choose Mark in the Mark menu.**

A dialog box appears.



The text box contains the highlighted word, which you will use as the name of the marker. If you want to give the marker a different name, type it in the text box.

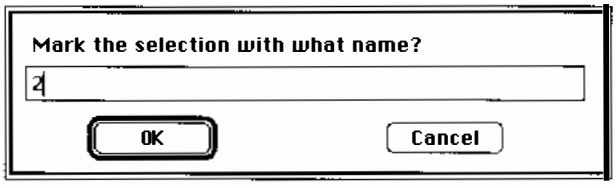
3 **Click OK.**

You have named the first marker *We.*

4 **Place the insertion point at the beginning of the third paragraph of** `letter1`**.**

5 **Choose Mark in the Mark menu again.**

6 **Type the numeral** `2`**. That is the name of the second marker.**



7 **Click OK.**

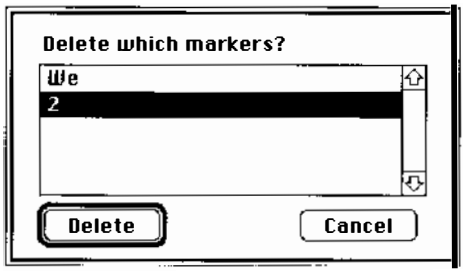
Now display the Mark menu. It contains a list of the invisible named markers that you have placed in the document.

Choose We. The insertion point moves to the We marker. Choose 2 and the insertion point moves to the third paragraph.

To remove these markers, follow these steps:

1 **Choose Unmark in the Mark menu.**

A dialog box appears.



2 **Highlight the name of the marker you want to remove. Select marker 2.**

3 **Click Delete.**

If you look at the Mark menu, you can see that the marker you have deleted is no longer on the list.

Printing

TextEditor allows you either to print an entire document or a selection from a document. Be sure that your computer is properly connected to a printer and that you use the Chooser (in the Apple menu) to choose a printer. For information on printer connections, see Chapter 7, "Printing."

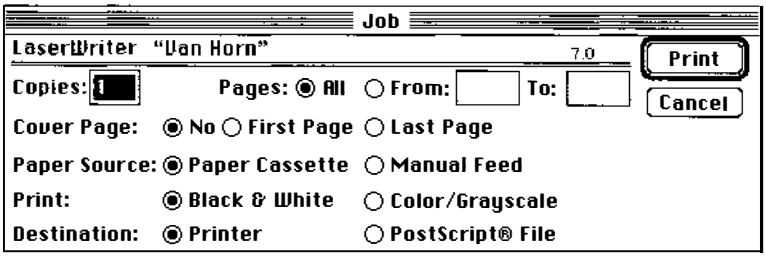
Printing an entire document

To print an entire document, follow these steps:

1 **Open the document in TextEditor.**

2 **Choose Print Window in the File menu.**

You see the Print dialog box.



3 **Click Print to begin printing.**

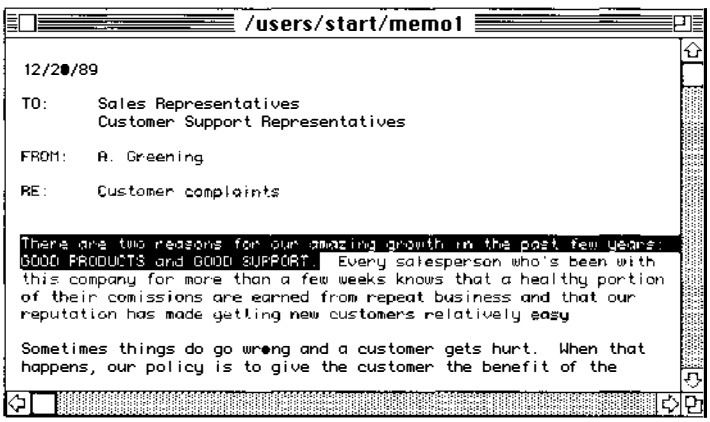
Printing a selection of a document

To print a selection of the document, first select a block of text, as follows:

1 **Place the insertion point at the beginning of the desired selection.**

2 **Hold down the mouse button and drag to the end of the desired selection.**

The selected text is highlighted.



3 **Choose Print Selection in the File menu.**

The Print dialog box appears, as shown at the top of page 6-28.

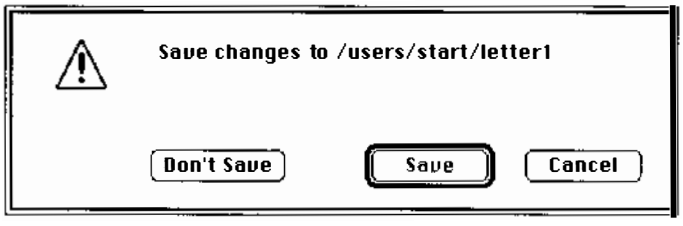
4 **Click OK to start printing.**

Quitting TextEditor

To quit TextEditor to perform other tasks or to free memory for other programs, do as follows:

- **Choose Quit from the File menu.**

If you have made changes to a file, you see a Save Before Quitting dialog box, which asks you whether you want to save those changes.



Click Save to save, click Don't Save to quit without saving, or click Cancel to cancel the Quit command.

To save the document as text-only file, click Save Text Only in the Save As dialog box. To save a resource fork file with formatting information (in addition to the text file), click Save Format Information.

7 Printing

This chapter discusses printing with the Macintosh interface and printing with the UNIX `lpr` command. It contains the following sections:

- Understanding printing
- Choosing a printer
- Printing the Macintosh way
- Printing with `lpr`
- Printing the contents of a CommandShell window

You can read this chapter in its entirety or go directly to those sections that are of use to you.

Understanding printing

A/UX provides several printing utilities that print files created by a text editor (such as `vi` or TextEditor), by a word processor, or by other Macintosh or UNIX applications.

Before you can print a document, you must have a printer properly connected to your system or to the network. See *Setting Up Accounts and Peripherals for A/UX* for information on connecting a printer to the computer. For basic information on connecting a printer to a network, see *A/UX Networking Essentials.*

Printer connections

You can connect a printer in three basic ways:

- **Connect directly to a printer port on the Macintosh computer.**

  A/UX does not support the LaserWriter SC or the Personal LaserWriter SC.

◆ **Note** A LaserWriter IISC printer that is directly connected to the SCSI port won't work with A/UX. ◆

- **Connect to an AppleTalk network through the LocalTalk cable system or an EtherTalk interface card and Ethernet cable.**

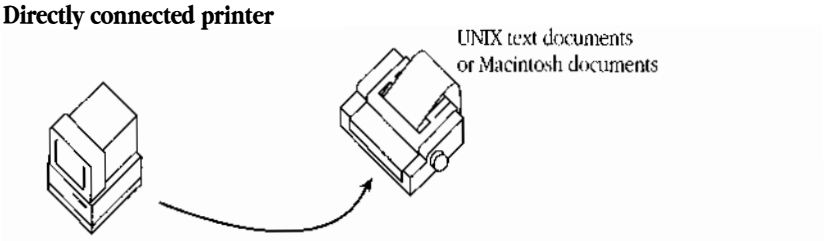
  Any computer on the network can send files created with a text editor or a Macintosh application to the printer. The files are printed in the order in which they are received.

- **Connect remote UNIX printer to another A/UX or UNIX computer on a UNIX network. Printing is done with the UNIX print commands.**

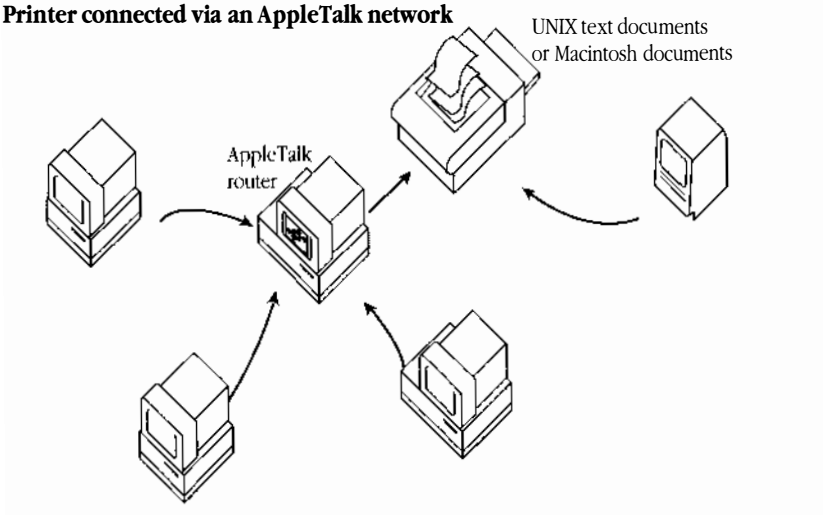
  Any computer on the network can send text files to the printer. The files are printed in the order in which they are received.

  Figure 7-1 shows the different printer configurations.

Directly connected printer



Printer connected via an AppleTalk network



Remote printer connected via a UNIX network

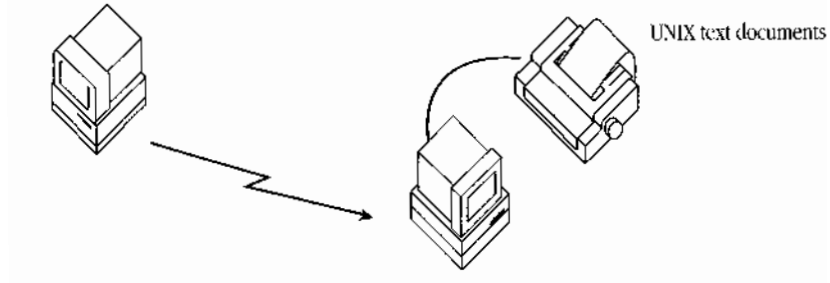


Figure 7-1 Three types of printer connections

Choosing a printer

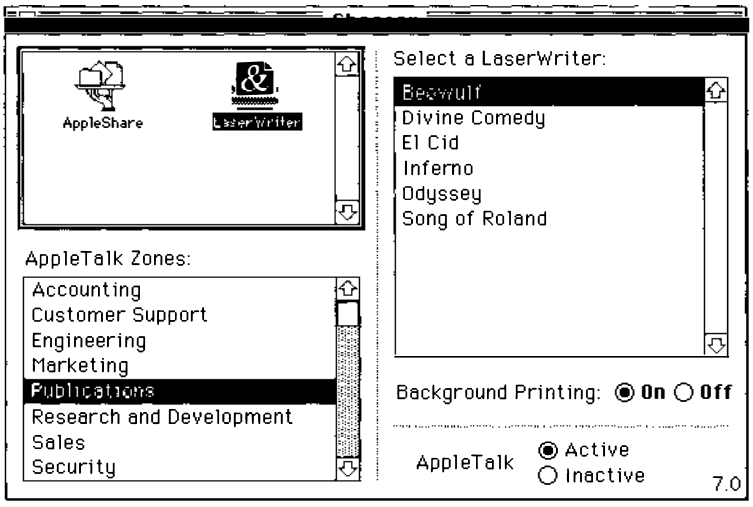
Before A/UX can print a file, it must know which printer to use. Use the Chooser (in the Apple menu) to select a printer. Some applications direct you to choose Page Setup after using the Chooser. For further information, see the guide that came with the application you are using.

You can choose any printer that is connected to your network or your computer through AppleTalk software and LocalTalk (or LocalTalk-compatible) and EtherTalk cables.

Follow these steps to choose a printer that is connected directly to your computer or is on your AppleTalk network:

1 **Choose Chooser from the Apple menu.**

The Chooser dialog box appears. You see an icon representing each of the printer types for which you have printer resources installed in the currently active system file.



2 **Click the icon representing the type of printer you want to use.**

3 **Select the appropriate zone from the AppleTalk Zones list.**

The zone name is highlighted.

4 **Select the appropriate printer name in the AppleTalk printer list.**

The printer name is highlighted.

5 **Click the close box.**

The Chooser dialog box disappears; you are ready to print.

Printing the Macintosh way

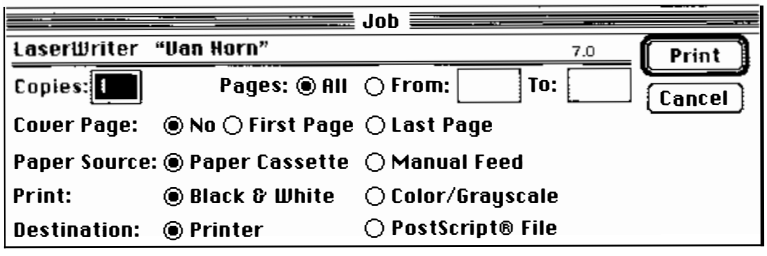
You can use the Finder to print a Macintosh file from A/UX (for example, one created by a third-party application or by TextEditor). You must have either a printer that is directly connected to the computer or to an AppleTalk network printer (or one that is compatible with AppleTalk software) connected through LocalTalk (or EtherTalk) cables, router, and built-in AppleTalk software.

Follow these steps to print a Macintosh document from the Finder (this is the same as printing a document from the Finder in the Macintosh OS.):

1 **Select the document you want to print by clicking its icon.**

2 **Choose Print from the File menu.**

You see the Print dialog box.



3 **Click Print.**

You also can print from within a Macintosh application. Consult the manual that came with the application for more information on printing.

PrintMonitor

If the system has messages for you regarding a file that you are trying to print from the Finder, a flashing icon appears over the Applications menu in the Finder. You can read the message and respond as necessary by opening the Applications menu and choosing PrintMonitor.

Printing with `lpr`

You can use the A/UX `lpr` (*line printer*) command to print files created with text editors (such as `vi` or TextEditor). Several sample files exist in the `start` folder. This tutorial uses one of the sample files.

A/UX spools the files to be printed, that is, it stores them on disk in a printing queue until the printer is ready for them. The spooler prints them in the order in which they are received.

Figure 7-2 illustrates the printing queue.

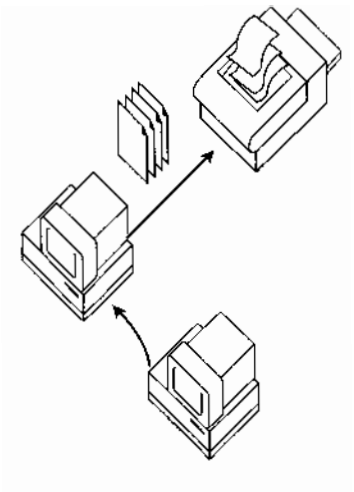


Figure 7-2 The printing queue

◆ **Note** The `lpr` spooler doesn't format documents. You must use a formatting command such as `pr` or `troff` to format documents before you send the job to the printer. For further information, see `troff`(1) and *A/UX Text-Processing Tools*, Chapter 2, "`troff/mm` Tutorial." ◆

Sending a file to a printer connected directly or through AppleTalk

To practice using the `lpr` command to print on a printer that is connected to your computer directly or through an AppleTalk network, follow these steps:

1 **Log in to the start account.**

2 **Use the Chooser to select the printer.**

3 **Choose CommandShell in the Applications menu.**

4 **Enter**

```
lpr -Piw letter1
```

This command sends the file `letter1` to the printer.

Sending a file to a remote UNIX printer

To practice using the `lpr` command to print on a printer connected to another UNIX system, follow these steps:

1 **Be sure that your `/etc/printcap` file is set up.**

For information on setting it up, see *A/UX Local System Administration.*

2 **Log in to the start account.**

3 **Choose CommandShell from the Applications menu.**

4 **Enter**

`lpr -P` *printername* `letter1`

Replace the italicized word with the name of the printer that you want to use. This command sends the file `letter1` to the printer.

Finding out how many files are waiting in the printing queue

A/UX spools printing jobs, placing them in a queue. The printer handles them on a first-come, first-served basis. If you share your printer and there are other jobs ahead of yours, those jobs are printed first. Your file is printed when your turn comes.

■ **To display a list of the print jobs in the printing queue, enter the command**

`lpq`

A list appears that looks something this:

Rank	Owner	Job	Files	Total size
active	jms	3	*filename*	720 bytes
1st	pzp	4	*filename*	1500 bytes
2nd	alp	5	*filename*	2451 bytes

The first column shows the rank, the second shows the owner of the file sent to the printer, the third shows the identification number of the print job, the fourth column shows the filename (including its path), and the last column shows the size of the file.

Canceling a printing job

To cancel a printing job before it's completed but after you've sent it to the printer, use the `lprm` command with the ID number of the printing job.

- **Enter**

  `lprm` *ID-number*

  Substitute the ID number of the printing job (such as `lpr 398`) for *ID-number*. The ID number is in the third column (labeled `Job`) in the list of printer jobs shown in the previous section.

  The following message appears as A/UX cancels the job:

  ID-number `dequeued`

  For more information about the `lpr` command, see `lpr`(1) in *A/UX Command Reference.*

Printing the contents of a CommandShell window

If you have a printer connected to your computer directly or through an AppleTalk network, you can print a selection from a CommandShell window.

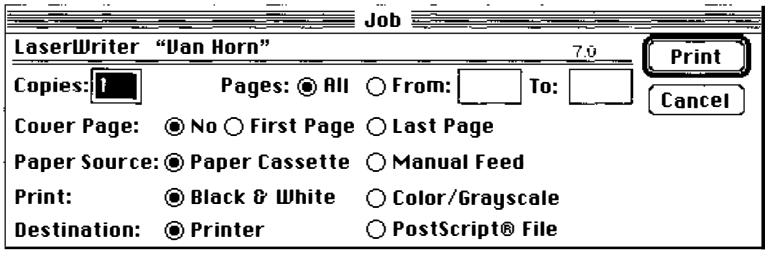
If you have a selection of text in your CommandShell window (for instance, a series of commands that you want to save in hard copy), print the selection as follows:

1 **Click and drag to select the text you want to print.**

The text appears highlighted.

2 **Choose Print Selection from the File menu.**

The Print dialog box appears.



3 **Click OK to print or click Cancel to cancel the printing command.**

To set printing specifications for the selection, use the Page Setup command in the File menu. See the owner's guide that came with your computer for more information on Page Setup.

8 Customizing Your Work Environment

This chapter describes features you can customize that work differently in A/UX than in the Macintosh OS or that are specific to A/UX. It contains the following sections:

- Changing your session type
- Changing your password
- Your personal System Folder
- Adding application programs
- Changing shells
- Changing the default text editor
- Changing the time zone
- Displaying and hiding dot files
- Macintosh customization features that are disabled in A/UX

Changing your session type

When you choose Change Session Type in the Options menu (with the Login dialog box displayed), you see the dialog box shown in Figure 8-1.

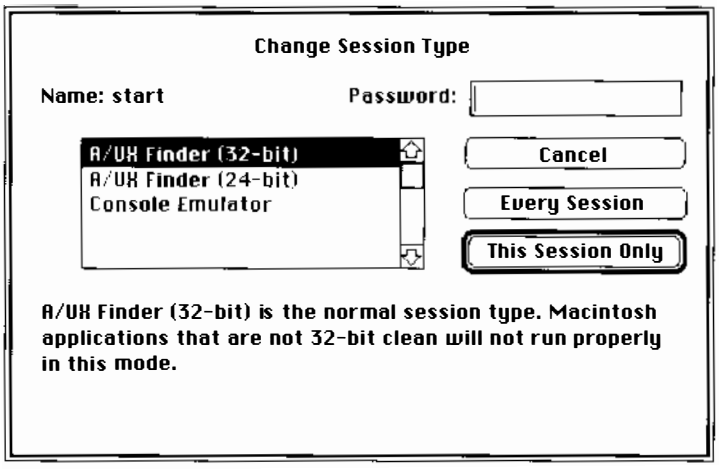


Figure 8-1 The Change Session Type dialog box

A/UX is shipped with the following options:

- **X-11** (Not shown in Figure 8-1): This makes the X-11 graphical interface available to you if it has been installed during the A/UX installation process. If you have installed A/UX on a disk with a capacity of less than 160 megabytes, X-11 is not installed and does not appear in the dialog box.
- **A/UX Finder (32-bit):** This is the default setting. For a description of this option, see the next section,"32-Bit Address Versus 24-bit Address."
- **A/UX Finder (24-bit):** For a description of this option, see the next section,"32-Bit Address Versus 24-bit Address."
- **Console Emulator:** This session type allows you to work in the command-line interface only. No Finder appears. This feature is meant primarily for debugging purposes and to correct system problems. For more information, see "Using the A/UX System Console" in Chapter 3, "Using CommandShell."

32-bit address versus 24-bit address

When you use A/UX with Macintosh files and with software created for the Macintosh computer, you might run into trouble with programs created for earlier versions of the Macintosh computer. The reason is that two kinds of Macintosh applications run in A/UX: **24-bit addressed** applications and **32-bit addressed** applications. The latter are often called *32-bit clean.* These terms refer to the way the application uses memory.

By default, A/UX is set to run in 32-bit addressing mode, which can run applications that are 32-bit clean. If you need to change the setting, do so before you log in. See the procedure described below.

△ **Important** When you run applications in 24-bit addressing mode, you don't have access to the entire Macintosh environment that exists in 32-bit addressing mode. Turn on 24-bit addressing mode only when it's necessary. △

Unfortunately, it's not easy to tell what software will run in 32-bit addressing mode until you try to run it. If the software doesn't work properly, try setting the login mode to 24-bit addressed, as follows:

1 **Choose Logout in the Special menu under the A/UX Finder.**

After a short wait, the Login dialog box appears.

2 **Type your login name in the appropriate text box.**

3 **Choose Change Session Type in the Options menu.**

You see the dialog box shown in Figure 8-1.

4 **Type your login name and password in the appropriate fields.**

5 **Choose A/UX Finder (24-Bit).**

6 **Click This Session Only.**

If you want to use this session type whenever you log in, click Every Session.

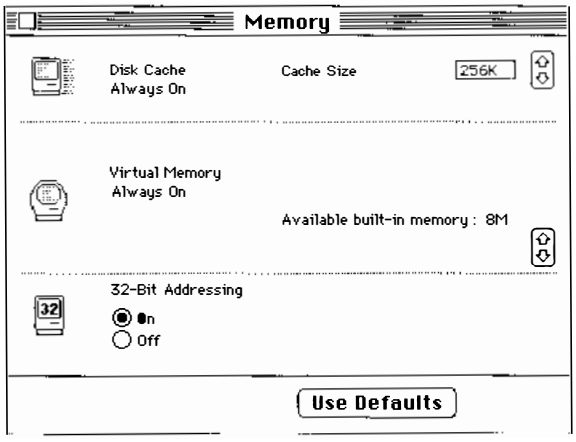
The Login dialog box reappears. Note that the password, which you entered into the Change Session Type dialog box, is transferred to the Login dialog box.

7 **Complete the login process.**

You can also change the session type by turning 32-bit addressing on or off in the Memory control panel. Do this as follows:

a. Choose Control Panels in the Apple menu.

b. Double-click the Memory icon to open the Memory control panel.



c. In the 32-Bit Addressing field, click the On button to select 32-bit addressing; click the Off button to select 24-bit addressing.

d. Click the close box to close the control panel.

The change of session type takes effect the next time you log in.

Changing your password

It's important to change your password often to prevent others from discovering the password and logging in to your account. Use a password that you can remember without writing it down. Don't use a password that is easy to deduce, such as your name spelled backward, your computer login name in capital letters, or the name of a family member.

Display the Login dialog box. If you are already logged in, you must choose Logout in the Finder's Special menu to display the Login dialog box. Follow these steps to change your password:

1 **Choose Change Password from the Options menu.**

The Change Password dialog box appears.

It lists the special restrictions that apply to the characters you can use in a password. If your system administrator overrides these requirements, a description of them does not appear in the dialog box.

2 **Enter your login name.**

3 **Enter your old password.**

4 **Enter your new password.**

Another dialog box directs you to confirm your new password.

5 **Enter your new password again.**

The Login dialog box reappears with the Name and Password fields filled in. Thus, you can use the Options menu again before completing your login, if necessary.

6 **Click the Login button.**

You are logged in to A/UX and your new password takes effect. You must enter it the next time you log in.

Your personal System Folder

When a user account is created for you, a personal System Folder is normally created at the same time; it is placed in your home directory.

If you do not have a personal System Folder, you can create one as follows:

1 **Choose CommandShell in the Applications menu to activate CommandShell.**

If a CommandShell window does not open, choose Open in the CommandShell File menu.

2 **Enter the following:**

```
systemfolder
```

The process of creating a System Folder in your home directory takes place automatically.

Your personal System Folder functions much like the System Folder in the Macintosh OS, and is represented by the icon in Figure 8-2.

Figure 8-2 The personal System Folder icon

The global System Folder, which is located in `/mac/sys`, is used by accounts that have no personal System Folder. That is, if you open the `/` folder, then open the `mac` folder, then open the `sys` folder, you will find the global System Folder. You are discouraged from making changes to it unless you are administering the system and making changes that are meant to affect all users.

If you examine the contents of the `/mac/sys` folder, you will see that it contains two other system folders in addition to the one labeled System Folder: they are the Startup System Folder and the Login System Folder.

The items in the Startup System Folder and the Login System Folder control the startup and login procedures, respectively.

The personal System Folder controls several aspects of your working environment. For example, you install fonts for many word-processing applications in the System Folder, and all applications that are to appear in your Apple menu are installed in the Apple Menu Items folder that is in the System Folder. Other applications that are activated when you log in are installed in the Extensions folder that is in the System Folder. These are shown in Figure 8-3.

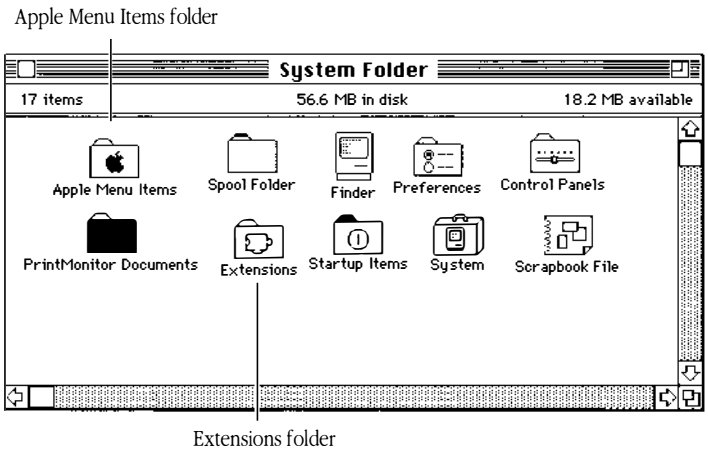


Figure 8-3 An open System Folder

Adding application programs

When you install an application program on your system, it is recommended that you install it in your home directory folder. If you are the system administrator and you install an application that is to be used by all users of the system, install it in the `/mac/bin` folder. This folder is automatically read by all user accounts that are set up with the `adduser` command (discussed in *Setting Up Accounts and Peripherals for A/UX*).

Add the application to the `/mac/bin` folder as follows:

1 **If the application is on a floppy disk, insert it into the floppy-disk drive and double-click its icon to display the files or folders to be transferred.**

2 **Double-click the disk icon labeled with the `/` to open it.**

3 **Locate the `mac` icon and double-click it to open it.**

4 **Locate the `bin` folder and drag the appropriate files or folders from the floppy disk to the `bin` icon.**

If you want to be able to start the application by double-clicking its icon on the desktop, use an alias of its icon as follows:

- **Highlight the icon and choose Make Alias in the File menu.**

  You can move the alias icon to the Desktop. You also can move it to the Apple Menu Items folder in the System Folder to make it available in the Apple menu.

Changing shells

You can change the default shell to the Bourne or the Korn shell by using the `chsh` command. For further information on this command, see `chsh`(1) in *A/UX Command Reference*. You can change shells temporarily, while you are logged in, as follows:

- **To change to the Korn shell, display a CommandShell window and enter `ksh`**
- **To change to the Bourne shell, display a CommandShell window and enter `sh`**
- **To change to the C shell, display a CommandShell window and enter `csh`**

The three shells are described in detail in *A/UX Shells and Shell Programming*.

Changing the default text editor

As shipped, A/UX uses TextEditor as its default text editor. This means that whenever you double-click the icon of a text-only file, TextEditor begins operating, and the text appears in a TextEditor window.

To set a different text editor as the default editor, you need to know where in the file system the editor you want is located, that is, you need to know its pathname. For information on pathnames, see "UNIX Pathnames," in Chapter 2, "Using Files, Folders, and Directories."

If you are working in the C shell, you can change the default text editor by changing an **environment variable** in the `.login` file in your home directory folder. If you are working in the Korn or the Bourne shell, change the equivalent line in your `profile` file. Notice that the names of these files begin with a dot (`.`). It is therefore called a **dot file.**

◆ **Note** In A/UX, as in other versions of UNIX, dot files are used to give special directions to the system. Whenever you type a dot file's name in a CommandShell window, remember to begin the filename with a dot. However, in the A/UX Finder, the labels of the dot file icons are preceded by a bullet (•) instead of a dot. ◆

If you are working in the C shell, whenever you log in to your user account, the system reads your `.login` file to create your working environment. If you are working in the Korn shell or Bourne shell, it reads your `.profile` file.

To change your default text editor, follow these steps:

1 **Make A/UX Finder the active application.**

2 **Open your home directory folder.**

3 **If you are working in the C shell, double-click the `.login` file icon in your home directory to open the file. If you are working in the Korn or Bourne shell, open the `.profile` file.**

4 **If you are using the C shell, add a new line to the end of the `.login` file as follows:**

```
setenv FINDER_EDITOR editorpathname
```

If you are using the Korn or the Bourne shell, add a new line to the end of the `.profile` file, as follows:

```
FINDER_EDITOR=editorpathname
```

Replace the word in italics with the full pathname of the editor you wish to set as the default editor. For example, if the default editor has been changed, you can change it back to TextEditor by typing the TextEditor's pathname as the last item on the line. If you are using the C shell, add the following line at the end of the `.login` file:

```
setenv FINDER_EDITOR /mac/bin/TextEditor
```

Note that there is a space before the editor's pathname (`/mac/bin/TextEditor`, in the case of TextEditor).

If you are using the Korn shell or the Bourne shell, in the `.profile` file, type the following to reset the default editor to TextEditor:

```
FINDER_EDITOR=/mac/bin/TextEditor
```

Do not type a space before or after the equal sign.

5 **Save the changed `.login` (or the `.profile`) file.**

6 **Log out and log in again. When you log in, the system rereads the `.login` (or the `.profile`) file and provides you with the specified editor.**

To set the default text editor to `vi`, which is a commonly used UNIX editor, replace *editorpathname* (in Step 4) with the pathname

```
/usr/bin/vi
```

To set the default text editor to TeachText, replace *editorpathname* (in Step 4) with the pathname

```
/mac/bin/TeachText
```

Changing the time zone

The clock in your system is set to Pacific Standard Time (PST) by default. If you live in another time zone, you need to set the system time. A/UX does not recognize settings made with the General Controls control panel or the Alarm Clock desk accessory.

Follow these steps to set the system time:

1 **Choose CommandShell in the Applications menu (on the far right side of the menu bar).**

2 **Enter `settimezone` in the CommandShell window.**

A list of major world regions appears.

```
/Useful Commands/settimezone (set timezone)
Enter the letter corresponding to your region.
        f  Africa
        a  Australia, New Zealand
        c  Canada
        e  Europe
        i  Iceland, Caribbean
        x  Mexico
        m  Middle East
        s  South America
        u  United States
        w  Western Pacific, East Asia
        o  Other

        -  Cancel
Enter letter: w
```

3 **Enter the letter that corresponds to your region.**

For example, if you live in the United States, type `u`. If you live in Japan, type `w` for Western Pacific. Another menu appears, listing the time zones within the region.

```
Enter the letter corresponding to your time zone.
        c  Peoples Republic of China
        h  Hong Kong
        j  Japan
        r  Republic of China
        k  Republic of Korea
        m  Samoa
        s  Singapore

        -  Return to previous menu
Enter letter: j

The time zone has been set to Japan
The corresponding date will be Mon Feb 19 23:08:21 JST 1990
This change will take effect the next time you log in.
#
```

4 **Enter the letter that corresponds to your time zone.**

For example, if you live in Japan, type `j` for Japan.

If your time zone isn't listed, type `o` for the Other option, which lets you select your time zone relative to Greenwich Mean Time (GMT). For details on this method, see "Setting the System Time" in the *A/UX Installation Guide.*

After you enter the time zone, a message appears, confirming the setting.

5 **Type `date`.**

The `date` command should now display the proper date and time. If it does not, repeat the `settimezone` procedure. Make sure you choose the correct time zone and give the correct time and date.

Displaying and hiding dot files

The files whose filenames begin with a dot (`.`), the so-called dot files, are normally not displayed when you run the `ls` command in CommandShell to list the contents of a folder. They are therefore called **hidden files.** However, when you open a folder in the Finder, they are displayed (with a bullet in place of the dot) by default.

The following sections tell you how to display the hidden files in CommandShell and how to hide them in the Finder.

Displaying hidden files in CommandShell

To display the hidden files when you list the contents of a folder with the `ls` command, use the `-a` option.

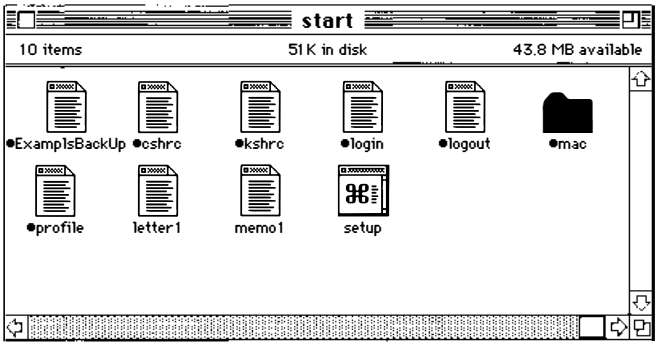
■ **Enter the command as follows:**

`ls -a` *name*

In place of *name,* use the name of the directory whose contents you are displaying. For further information on the `ls` command, see Chapter 4, "Using UNIX Commands and Commando."

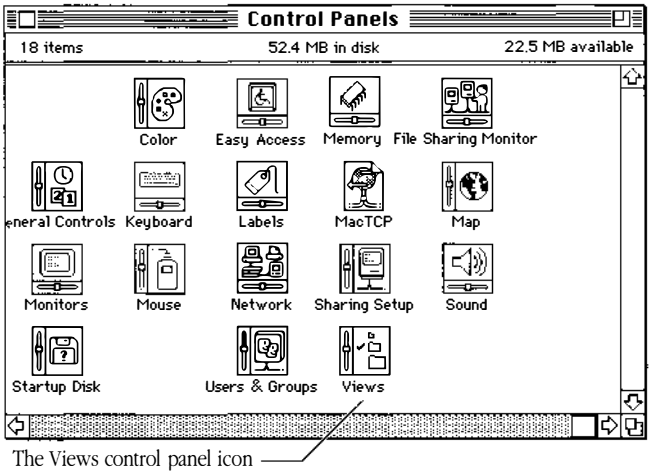
Hiding dot files in the Finder

By default, the dot files are displayed in the Finder. The `start` folder appears.



You can choose not to display the dot files in the Finder as follows:

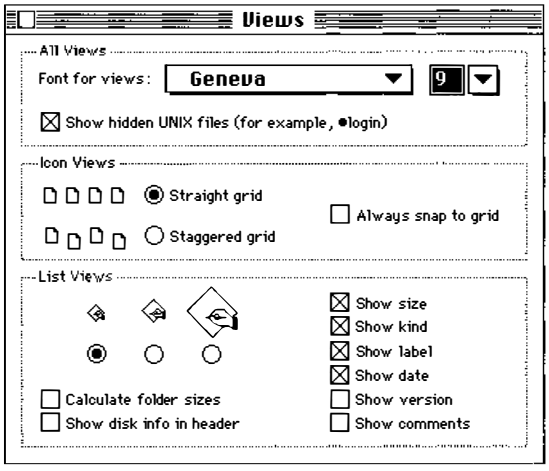
1 **Choose Control Panels in the Apple menu.**



The Views control panel icon

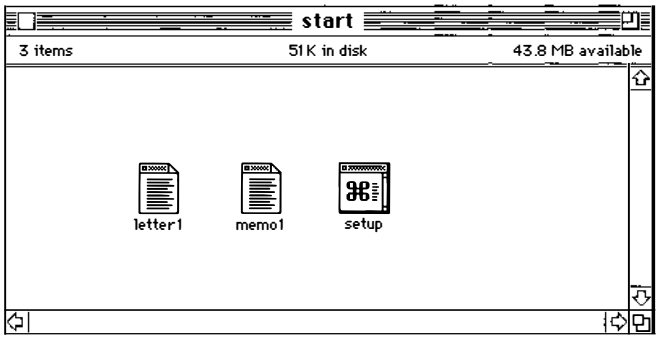
2 **Double-click the Views control panel icon.**

The Views dialog box appears.



3 **Click the check box "Show hidden UNIX files" to turn it off.**

After you close this dialog box, the `start` folder displays no dot files.



You can redisplay the dot files by repeating the steps listed above to recheck "Show hidden UNIX files."

Macintosh customization features that are disabled in A/UX

Most of the customization features in the Macintosh OS that are available to A/UX users work just as they do under the Macintosh OS and are therefore not described in this guide. The following sections describe Macintosh customization features that are diasabled in A/UX.

Virtual memory

In the Macintosh OS, the Memory control panel allows you to turn virtual memory on and off. A/UX does not permit this. Virtual memory is always on. The Memory control panel, which appears after you double-click the Memory icon in the Control Panels folder (under the Apple menu), indicates this, as is shown in Figure 8-4.

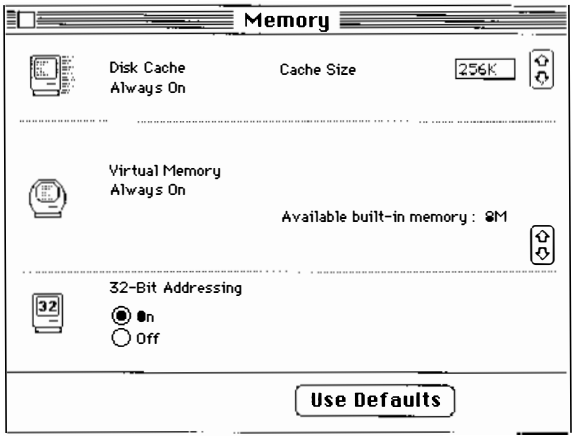


Figure 8-4 The Memory control panel

Key repeating

In the Macintosh OS, the Keyboard control panel (found in Control Panels, under the Apple menu; see Figure 8-5) allows you to change the key repeat rate and the delay until repeat. These options are disabled in A/UX.

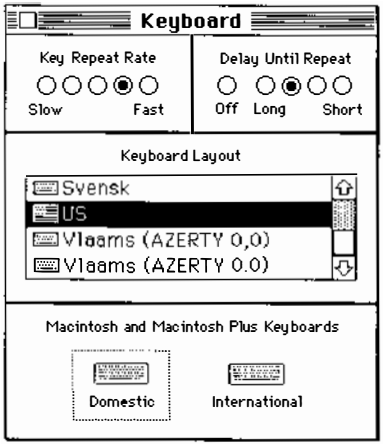


Figure 8-5 The Keyboard control panel

9 A/UX Reference

This chapter provides a quick reference for the menu commands that you encounter while working in the Finder environment, the CommandShell environment, the terminal emulator, and the TextEditor application. This chapter describes the function of each command in the order in which they appear in each menu.

This chapter contains these sections:

- The Finder environment
- The CommandShell environment
- Terminal emulation
- The TextEditor application

The Finder environment

This section describes the commands to which you have access when you are working in the Finder. The Finder is an application that allows you to have more than one application open and running at the same time. The Finder also grants you easy access to all of the files, applications, and utilities on your system.

The Apple menu

The Apple menu contains the list of available desk accessories and information items identifying versions of software and their developers. Figure 9-1 shows a sample Apple menu. Your Apple menu contains the desk accessories that you have installed on your system.

Figure 9-1 The Apple menu

About This Macintosh

This command identifies the hardware and system software you are using and presents various items of information regarding the allocation of memory. When you change to another application, this command becomes "About *application name*..." and displays proprietary information about the active application. Figure 9-2 shows the About This Macintosh dialog box. The system software you are using is shown beside System Software.

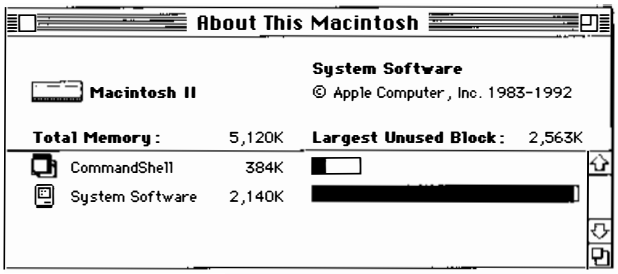


Figure 9-2 About This Macintosh dialog box

Desk accessories

Desk accessories are like mini-applications that you can use while you're working in the Finder or another application. Several desk accessories—Alarm Clock, Calculator, Chooser, Control Panels, Key Caps, Note Pad, Puzzle, and Scrapbook—are shipped with your computer. You can add others by placing them in the Apple Menu Items folder that is in your System Folder. See the guide that came with your Macintosh computer for information about these desk accessories.

The File menu

The File menu, shown on the left in Figure 9-3, contains the commands that manage your desktop environment. If you hold down the OPTION key while displaying the File menu, the OPTION-File menu appears, which is shown on the right in Figure 9-3 . The only differences are that the Close command in the File menu is replaced by Close All in the OPTION-File menu and the Sharing command of the File menu is missing from the OPTION-File menu.

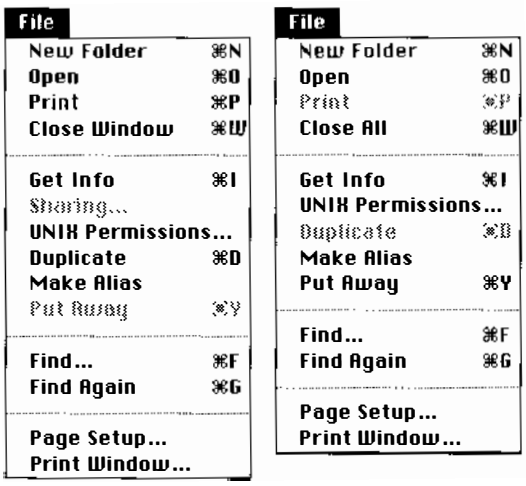


Figure 9-3 The File menu (on the left) and the OPTION-File menu (on the right)

New Folder

This command creates a new folder, also called a directory, in the active window. Each new folder is created with the name *Empty Folder*. You can immediately change the name of the folder by typing a new name while the title is still selected. The Command-key equivalent is COMMAND-N.

Open

This command opens the selected item in the Finder. This can be a folder, an application, or a file. The Command-key equivalent is COMMAND-O.

Print

This command prints whatever item is selected in the Finder. The Command-key equivalent is Command-P.

Close Window

This command closes the active window. The Command-key equivalent is COMMAND-W.

Close All

To choose this, display the Finder menu with the OPTION key held down. The Close All command closes all open windows on the desktop.

Get Info

This command displays a window that contains file information about the currently selected item. Figure 9-4 shows the Get Info window for the `letter1` file in the `start` folder.

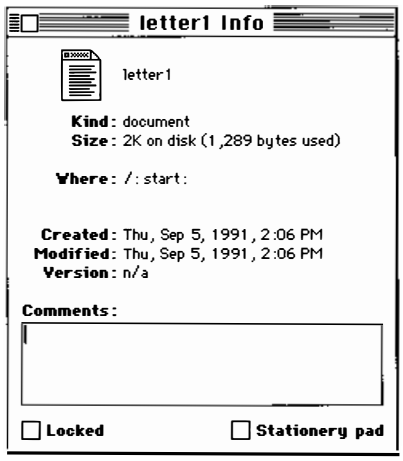


Figure 9-4 The Get Info window

The Get Info window reports the kind of file, its size, its location, its creation date, the date the file was last modified, and the version of the application that was used to create the file. The window also contains a text field in which you can enter and store comments about the file. It is useful to store such information as the version of the file, other files related to this one, or the version of the application, if it's not reported by the application. The Command-key equivalent is COMMAND-I.

Sharing

This command allows you to specify the Macintosh file-sharing permissions for the folder that is highlighted when you display the Sharing dialog box (as shown in Figure 9-5).

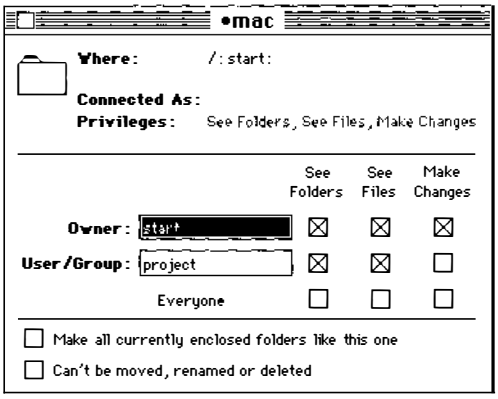


Figure 9-5 The Sharing dialog box

UNIX Permissions

If you choose this with a file icon selected, the UNIX Permissions dialog box for files appears, as shown in Figure 9-6.

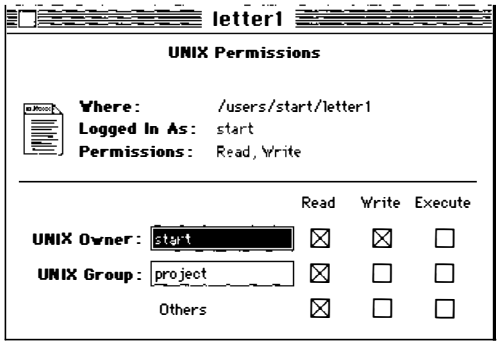


Figure 9-6 The UNIX Permissions dialog box for file permissions

If you have highlighted a folder before choosing UNIX Permissions, the UNIX Permissions dialog box for folders appears, as shown in Figure 9-7.

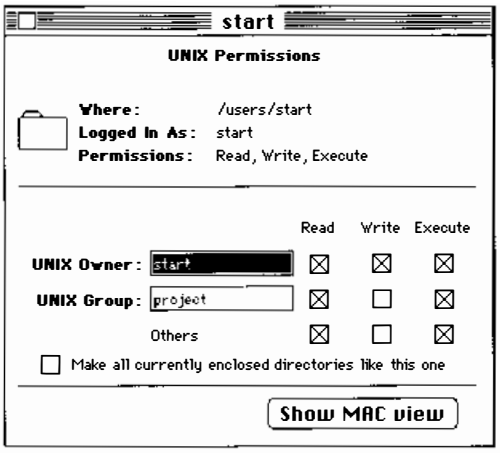


Figure 9-7 The UNIX Permissions dialog box for folders

This shows the permissions of the selected folder in UNIX terminology. You can display its permissions in Macintosh terminology by clicking Show Mac View. The dialog box shown in Figure 9-8 appears.

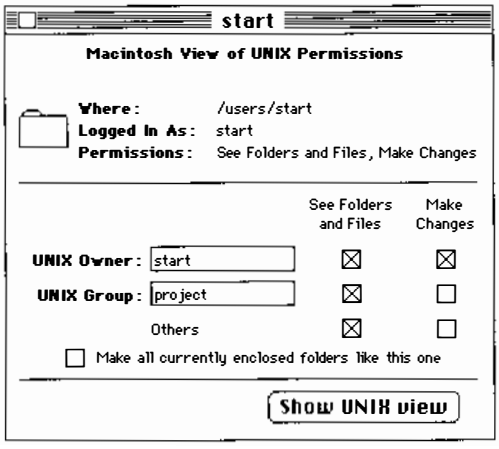


Figure 9-8 The Macintosh view of UNIX folder permissions

Duplicate

This command makes a copy of a selected file, folder, or application. The Command-key equivalent is COMMAND-D.

Make Alias

This command creates an alias of the selected file. The alias is named with the original filename and the word *alias*. You can move the alias to any location in the file system and double-click its icon to open and use the file.

Put Away

This command restores to its original location a file, folder, or application that was moved to the desktop. The Command-key equivalent is Command-Y.

Find

This command enables you to find a file anywhere on the system. It allows you to select criteria for the search and to broaden or narrow the area to be searched. If you choose Find, the dialog box shown in Figure 9-9 appears. This allows you to search for a file by its name. This search is not case sensitive. The Command-key equivalent is Command-F.

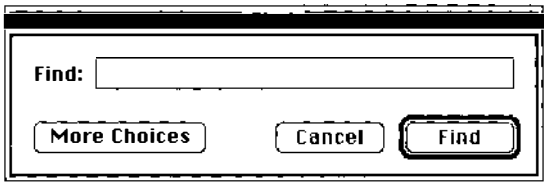


Figure 9-9 The Find dialog box with the minimum choices

If you click on More Choices, the dialog box shown in Figure 9-10 appears. This allows you to add more criteria for your search. For example, the "name" button displays a pop-up menu of search criteria (name, size, kind, label, date created, date modified, and so on). The pop-up menu that is displayed when you click on the "contains" button varies, depending on the choice you have made in the "name" pop-up menu.

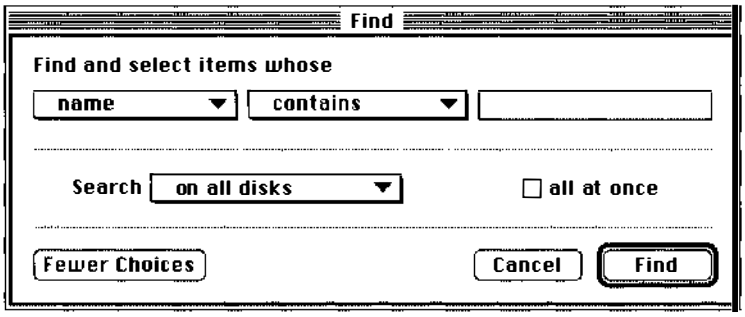


Figure 9-10 The Find dialog box after choosing More Choices

The Fewer Choices button redisplays the initial dialog box.

Find Again

This command allows you to repeat the search you performed with Find. See Find, above. The Command-key equivalent is Command-G.

Page Setup

This command presents the Page Setup dialog box for the printer type that you have selected in the Chooser. Figure 9-11 shows the Page Setup dialog box for a LaserWriter printer.

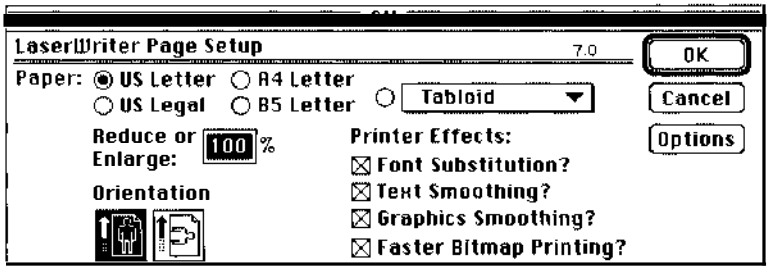


Figure 9-11 The LaserWriter Page Setup dialog box

Print Window

This command prints a listing of the contents of the active window. When you choose this command, the Print dialog box appears. When you click OK, a directory listing is sent to the printer you have selected in the Chooser.

The Edit menu

The Edit menu, shown in Figure 9-12, contains commands that you use to edit text in windows. You also can use the editing commands with most desk accessories.

Figure 9-12 The Edit menu

Undo

This command nullifies the last text editing or formatting change that you made. It does not nullify command execution. The Command-key equivalent is COMMAND-Z.

Cut

This command copies any selected text to the Clipboard and removes the text from the window. The text is stored in the Clipboard until it's replaced by text sent there as the result of another Cut or Copy command. The Command-key equivalent is COMMAND-X.

Copy

This command copies any selected text to the Clipboard but does not remove it from the window. The text is stored in the Clipboard until it's replaced by text sent there as the result of another Cut or Copy command. The Command-key equivalent is COMMAND-C.

Paste

This command inserts the contents of the Clipboard into the window starting at the insertion point. The Command-key equivalent is COMMAND-V.

Clear

This command removes any selected text from the window and does not copy it to the Clipboard. Text removed with the Clear command is no longer available. Choosing Clear is equivalent to pressing the DELETE key.

Select All

This command selects all of the text in the window. The Command-key equivalent is COMMAND-A.

Show Clipboard

This command displays the contents of the Clipboard in a separate window.

The View menu

The View menu provides commands to alter how the contents of a disk or a folder are displayed in the Finder. A check mark appears next to the active listing type. The View menu is shown in Figure 9-13.

Figure 9-13 The View menu

Small Icon

When you view the contents of a disk or folder by small icon, you see a miniaturized representation of the icons of the different files, applications, and folders it contains. Figure 9-14 shows a folder whose contents are viewed by small icon.

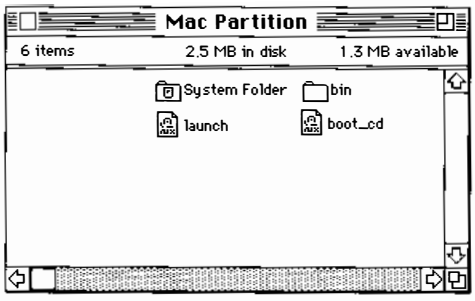


Figure 9-14 A folder's contents viewed by small icon

Icon

When you view the contents of a disk or folder by icon, you see the full-size representation of the icon of each file, folder, or application. Figure 9-15 shows a folder whose contents are displayed by icon.

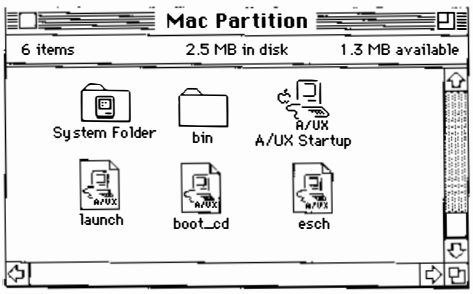


Figure 9-15 A folder's contents viewed by icon

Name

When you view the contents of a disk or folder by name, an alphabetized list of the different files, applications, and folders appears in the window. Figure 9-16 shows a folder whose contents are displayed by name.

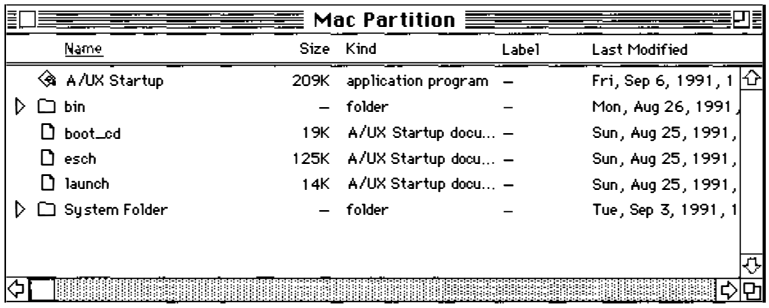


Figure 9-16 A folder's contents viewed by name

The list you see has five columns:

- **Name:** This column shows the name of the files, folders, or applications in the window.
- **Size:** This column shows how much memory the item occupies on the disk.
- **Kind:** This column shows whether an item is an application, folder, or file. If it is a file, the file type is shown.
- **Label:** This column shows what label you have given to the item by using the Label menu (described later in this chapter).
- **Last Modified:** This column shows the date and time that the file, application, or folder was last changed.

◆ **Note** You can enlarge the window to see all of the information. ◆

Size

When you view the contents of a disk or folder by size, the applications, files, and folders in the window are listed in order, from largest to smallest. Figure 9-17 shows a folder's contents viewed by size.

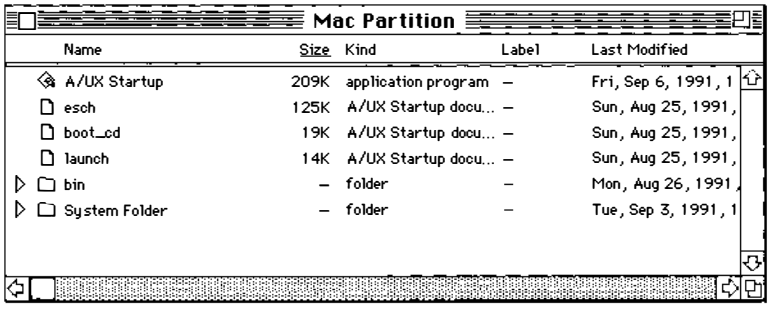


Figure 9-17 A folder's contents viewed by size

The size of a file, application, or folder is the amount of memory it occupies. After the name of the item you see a number followed by a K, or kilobyte, which is equal to 1024 bytes. The number 390K next to the application HyperCard means that it occupies 390 kilobytes of memory on the disk. A standard double-sided floppy disk can hold up to 800K of memory. The average hard disk containing A/UX can hold up to 160 megabytes (MB) of information. A megabyte is equal to 1024 kilobytes.

Kind

When you view the contents of a disk or folder by kind, the files, folders, and applications are listed alphabetically by type. Figure 9-18 shows a folder's contents viewed by kind.

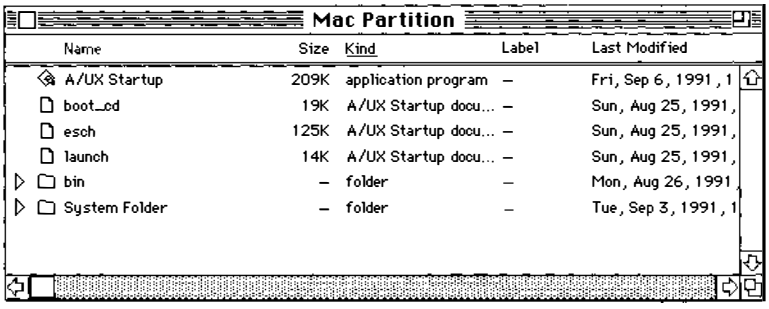


Figure 9-18 A folder's contents viewed by kind

Label

The Label menu in the Finder allows you to give a label to every file or folder, which categorizes the items in the folder (see "The Label Menu" later in this chapter for further information). Viewing the contents by label sorts them in the order in which the labels occur in the Label menu. See Figure 9-19 for a folder that uses labels and is viewed by label.

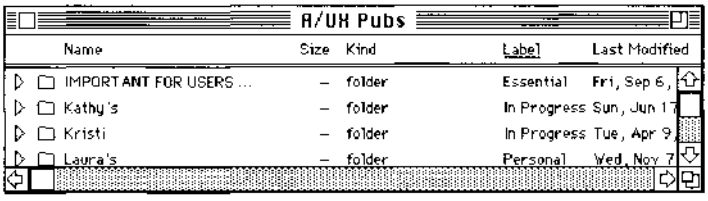


Figure 9-19 A folder's contents viewed by label

Date

When you view the contents of a disk or folder by date, the different files, applications, and folders in the window are displayed with the most recently created or modified one listed first. Figure 9-20 shows a folder's contents viewed by date.

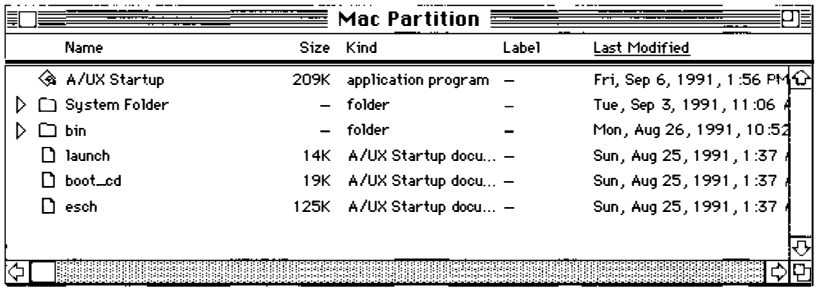


Figure 9-20 A folder's contents viewed by date

The Label menu

The Label menu supplies a list of labels that you can apply to any file or folder. You can then choose Label in the Views menu to list items according to the labels you have assigned to them. Figure 9-21 shows the Label menu.

Figure 9-21 The Label menu

The Special menu

The Special menu contains the commands you use to log out, shut down the system, and restart the computer. It also provides commands that you use for special tasks, such as deleting the files that you placed in the Trash. Figure 9-22 shows the Special menu.

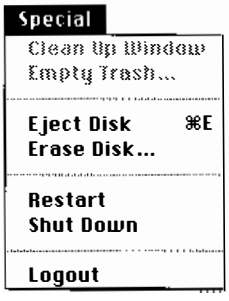


Figure 9-22 The Special menu

Clean Up Window

This command rearranges icons on a disk or in a folder so that they are easier to see. You can use this command only when you are viewing the contents of a disk or folder by icon or by small icon.

Empty Trash

This command deletes any items you have placed in the Trash. Once you empty the Trash, the items cannot be recovered.

Eject Disk

This command causes a floppy disk in the floppy disk drive to be ejected. The Command-key equivalent is COMMAND-E.

Erase Disk

This command completely erases any information on the selected disk. To use this command, you must first highlight the name of the disk you want to erase.

Restart

This command shuts down the computer and starts it up again. When you use A/UX, you must enter the root account password to use this command.

Shut Down

This command shuts down the computer. You must enter the root password to use this command.

Logout

This command ends the current work session. When you choose this command, all open applications are closed and you return to the Login dialog box.

The Balloon Help Menu

The Balloon Help menu makes balloon help available or turns balloon help off. This menu is shown in Figure 9-23.

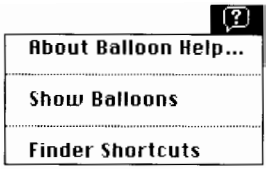


Figure 9-23 The Balloon Help Menu

About Balloon Help

This displays a brief description of how balloon help works.

Show Balloons

This causes a balloon with a brief help message to appear whenever you position the pointer on a menu or a menu item.

Finder Shortcuts

This choice offers you one or more quick summaries of ways to use the features of the Finder.

The Applications menu

This menu is labeled by the icon of the active application at the far right of the menu bar.

The Applications menu contains a list of the available applications (for example, Finder, CommandShell, and any other applications that are currently running). To make an application active, choose it in this menu. Figure 9-24 shows the Applications menu with the Finder selected.

Figure 9-24 The Applications menu

Hide Application

This command hides the currently active application. In the case of Figure 9-24, the current application is the Finder.

CommandShell

This command makes CommandShell the active application, which displays an untitled CommandShell window like the one in Figure 9-25. If you have used a CommandShell window earlier and have not closed it, it is brought to the front of the other windows and becomes the active window.

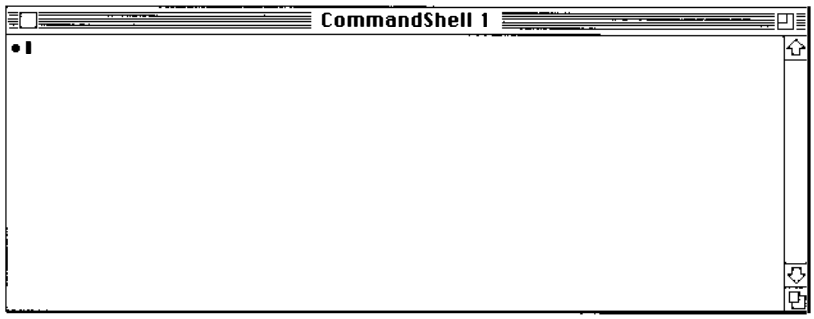


Figure 9-25 A CommandShell window

Finder

This command returns you to the Finder desktop from whatever process A/UX is running.

The CommandShell environment

This section describes the commands to which you have access when you're working with CommandShell. You access CommandShell by choosing it in the Apple menu.

The CommandShell File menu

The CommandShell File menu contains the commands that manage the CommandShell window environment. Figure 9-26 shows the CommandShell File menu.

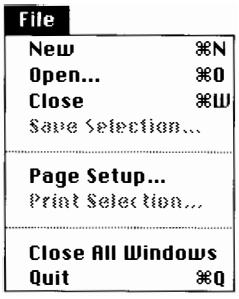


Figure 9-26 The CommandShell File menu

New

This command creates a new CommandShell window and places it on the desktop. The Command-key equivalent is COMMAND-N.

Open

This command displays a dialog box that allows you to open a selected file. The Command-key equivalent is COMMAND-O.

Close

This command closes the active window. The Command-key equivalent is COMMAND-W.

Save Selection

This command displays a dialog box that allows you to save, under a name you specify, any text you select in a CommandShell window.

Page Setup

This command displays a dialog box that allows you to alter printer settings.

Print Selection

This command displays a dialog box that allows you to send to the printer any data you have selected in a CommandShell window.

Close All Windows

This command closes all CommandShell windows on the desktop.

Quit

This command turns off CommandShell. Use this only when it is necessary to turn off all applications in order to load fonts; otherwise leave CommandShell by reactivating the Finder or whatever other application you need to use. If you choose Quit, CommandShell is no longer available in the Applications menu. The Command-key equivalent is COMMAND-Q. You can restart CommandShell from the Apple menu, because there is an alias of the CommandShell file in the Apple Menu Items folder that is in the System Folder. Do not remove this alias.

The CommandShell Edit menu

The CommandShell Edit menu, shown in Figure 9-27, contains the commands that you use to edit text in windows. In addition, you can also access the Commando utility from this menu.

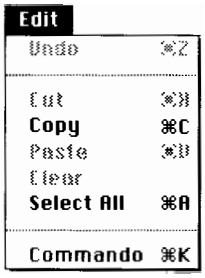


Figure 9-27 The CommandShell Edit menu

Undo

This command nullifies the last text editing or formatting change that you made. It does not nullify command execution. The Command-key equivalent is COMMAND-Z.

Cut

This command copies any selected text to the Clipboard and removes the text from the window. The text is stored in the Clipboard until it's replaced by text sent there as a result of another Cut or Copy command. The Command-key equivalent is COMMAND-X.

Copy

This command copies any selected text to the Clipboard but does not remove it from the window. The text is stored in the Clipboard until it's replaced by text sent there as a result of another Cut or Copy command. The Command-key equivalent is COMMAND-C.

Paste

This command inserts the contents of the Clipboard into the window, starting at the end of the text. The Command-key equivalent is COMMAND-V.

Clear

This command removes any selected text from the window and does not copy it to the Clipboard. Text removed with the Clear command is no longer available. Choosing Clear is equivalent to pressing the DELETE key.

Select All

This command selects all of the text in the window. The Command-key equivalent is COMMAND-A.

Commando

This command invokes the Commando command-line building application. This is especially useful when you are creating a compound command line in a CommandShell window. The Command-key equivalent is COMMAND-K.

The CommandShell Window menu

The CommandShell Window menu contains the commands you use to manipulate and access CommandShell windows. Figure 9-28 shows the CommandShell Window menu.

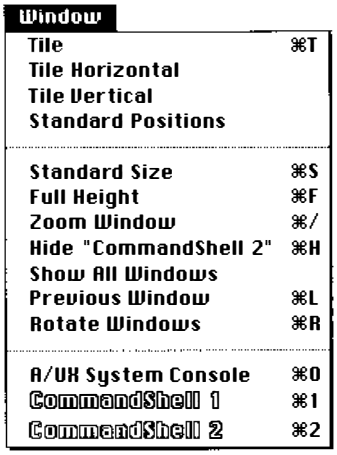


Figure 9-28 The CommandShell Window menu

Tile

This command rearranges all windows on the desktop as shown in Figure 9-29.

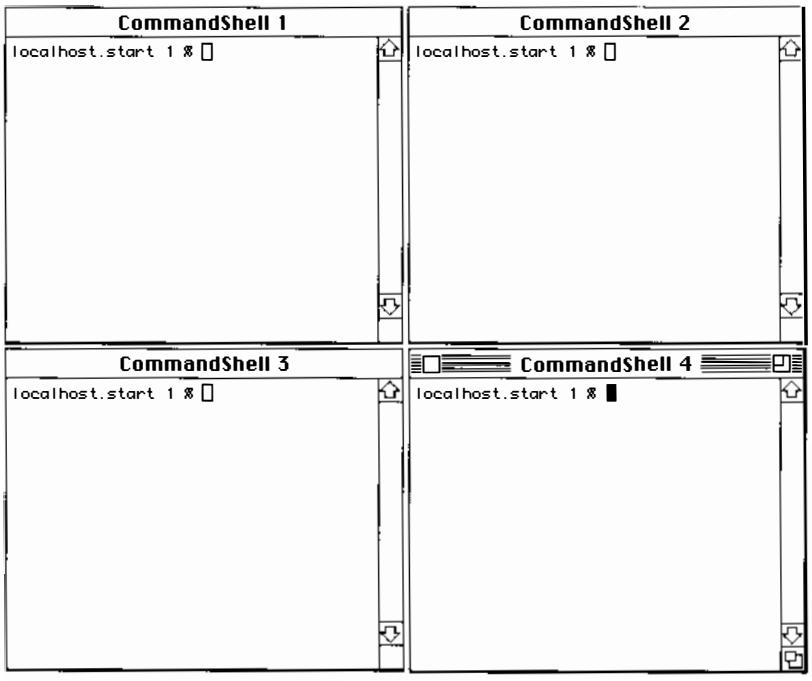


Figure 9-29 Tiled windows

The Command-key equivalent is COMMAND-T.

Tile Horizontal

This commands rearranges all windows on the desktop as shown in Figure 9-30.

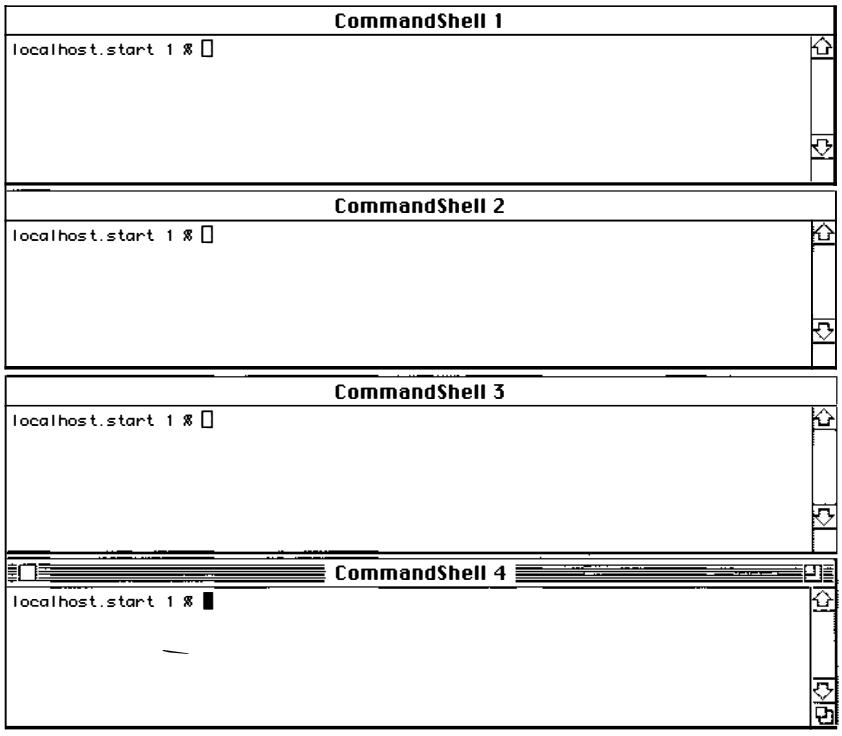


Figure 9-30 Horizontally tiled windows

Tile Vertical

This command rearranges all windows on the desktop as shown in Figure 9-31.

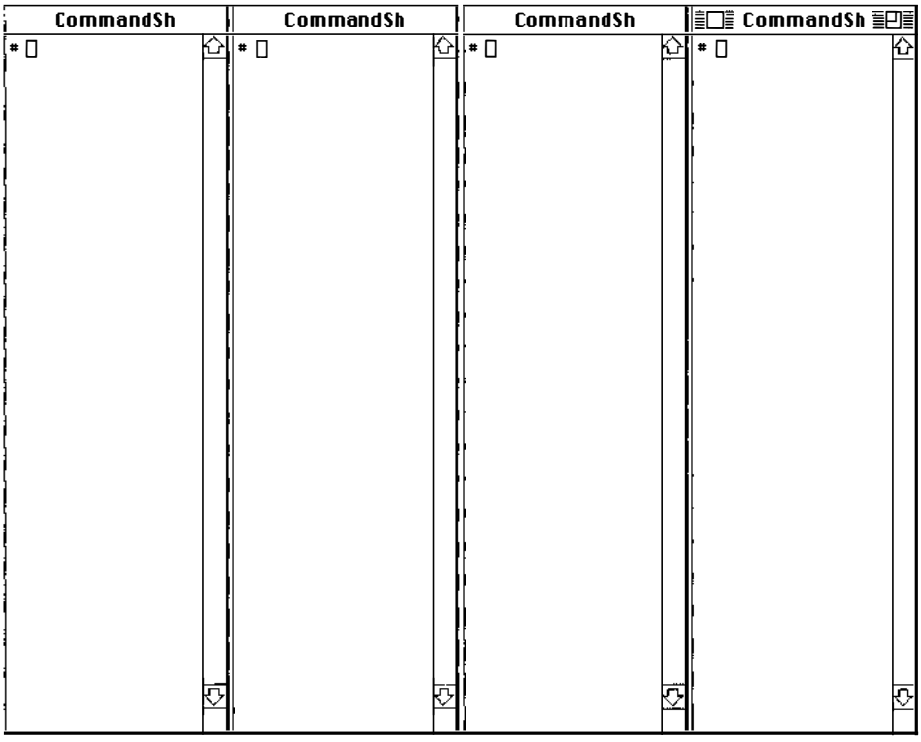


Figure 9-31 Vertically tiled windows

Standard Positions

This command rearranges all windows on the desktop as shown in Figure 9-32.

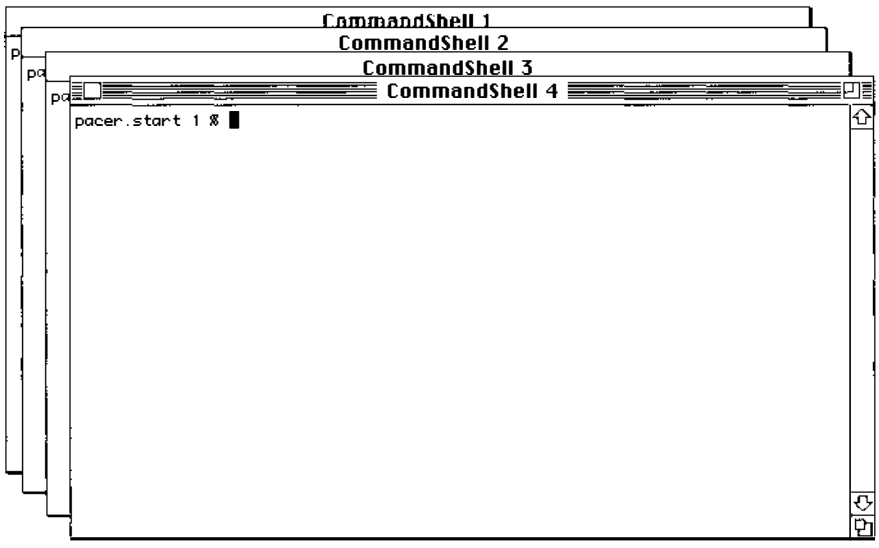


Figure 9-32 Standard window positioning

This is the standard stacking arrangement of all CommandShell windows as they are created.

Standard Size

This command returns the active window to its standard size, if it has been changed. The Command-key equivalent is COMMAND-S.

Full Height

This command changes the size of the active window so that it is as long as the screen allows. The Command-key equivalent is COMMAND-F.

Zoom Window

This command increases the size of the active window so that it is as large as the screen allows. Choosing Zoom Window is equivalent to clicking the zoom box in the upper-right corner of the window. The Command-key equivalent is COMMAND-/.

Hide "Window Name"

This command hides the active window from view. The window name appears in place of the phrase *Window Name*. The window is not closed but merely hidden from view. All accessible CommandShell windows are listed at the bottom of the Window menu. The Command-key equivalent is COMMAND-H.

Show All Windows

This command displays all of the CommandShell windows listed at the bottom of the Window menu, including the A/UX System Console window, which contains system messages about all of the currently running A/UX system processes.

Previous Window

This command redisplays the last window you accessed *before* you activated the current window. The Command-key equivalent is COMMAND-L.

Rotate Windows

This command brings the rear window to the front each time the command is chosen from the menu. The Command-key equivalent is COMMAND-R.

A/UX System Console

This command activates the A/UX System Console window, which contains system messages about all of the currently running A/UX system processes. The Command-key equivalent is COMMAND-0 (zero).

Names of all accessible CommandShell windows

This is a list of all currently accessible CommandShell windows. This list includes any hidden windows as well. Choosing a window name in the list activates that window.

The CommandShell Fonts menu

The CommandShell Fonts menu, shown in Figure 9-33, contains the list of available fonts that you can use in CommandShell windows. Only monospaced (fixed width) fonts are supported in CommandShell. When you choose a font, all of the text in the window, not just the selected text, is displayed in that font.

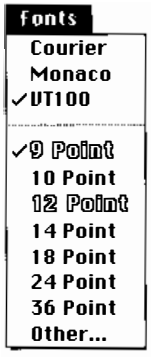


Figure 9-33 The CommandShell Fonts menu

The CommandShell Fonts menu allows you to specify which of the available fonts to use in the CommandShell window, as well as the point sizes that determine the size of the text as displayed on the screen and as printed. The smallest preselected point size is 9 point, and the largest is 36 point.

The last item in the menu (Other) allows you to enter any desired type size. When you select Other, the dialog box shown in Figure 9-34 appears.

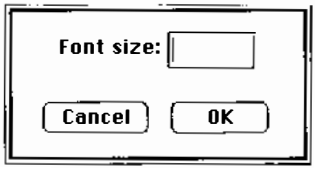


Figure 9-34 The Font Size dialog box

The CommandShell Commands menu

The CommandShell Commands menu allows you to change the environment within CommandShell windows. The CommandShell Commands menu is shown in Figure 9-35.

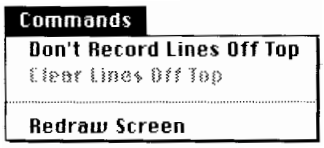


Figure 9-35 The CommandShell Commands menu

Don't Record Lines Off Top

This command marks the window as the barrier for text entry. Any text exceeding the boundaries of the active window is not recorded and thus not accessible.

Clear Lines Off Top

This command erases any information that scrolls off the top of a CommandShell window.

Redraw Screen

This command redraws all of the pixels that make up the screen. You use this command if, at some point, a window is not completely redrawn.

The CommandShell Preferences menu

The CommandShell Preferences menu allows you to edit some of the properties of a CommandShell window. Figure 9-36 shows the CommandShell Preferences menu.

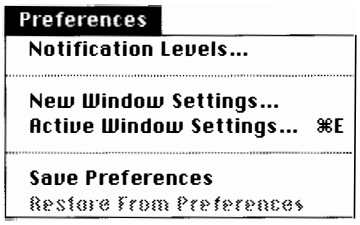


Figure 9-36 The CommandShell Preferences menu

Notification Levels

This command displays a dialog box that allows you to control how system messages are displayed when CommandShell is *not* the active application.

New Window Settings

This command displays a dialog box that allows you to set some of the default parameters, such as font and font size, for a new CommandShell window.

Active Window Settings

This command displays a dialog box that allows you to alter some of the properties of the active window, such as the name of the window. The Command-key equivalent is COMMAND-E.

Save Preferences

This command saves any changes you have made to a CommandShell window.

Restore From Preferences

This command causes a CommandShell window to revert to the state it was in when you last saved the preferences, if you have made any changes since then. If you have not altered the window, the command is dimmed on the menu.

The Keys menu

The Keys menu is a part of the VT102 terminal emulation, and it allows you to choose from both a keypad and a cursor-movement pad. The Keys menu is shown in Figure 9-37.

Figure 9-37 The Keys menu

Keypad

This command provides an on-screen keypad that you can use with your mouse pointer. The keypad is shown in Figure 9-38.

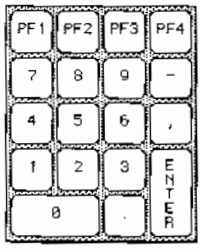


Figure 9-38 The keypad

Cursor

This provides an on-screen cursor pad from which you can choose cursor movements with your mouse pointer. The cursor pad is shown in Figure 9-39.

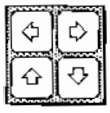


Figure 9-39 The cursor pad

No Scroll

This is a VT102 feature that is not used under A/UX.

Terminal Emulation

You can configure your terminal emulation by clicking on Terminal Settings in the Active Window Settings or the New Window Settings dialog box. These dialog boxes are displayed if you choose either Active Window Settings or New Window Settings in the Preferences menu.

Click on Terminal Settings to display the Terminal Settings dialog box, which is shown in Figure 9-40.

General setup options

When you display the Terminal Settings dialog box, the General icon is highlighted, and the settings icons shows in Figure 9-40 are displayed.

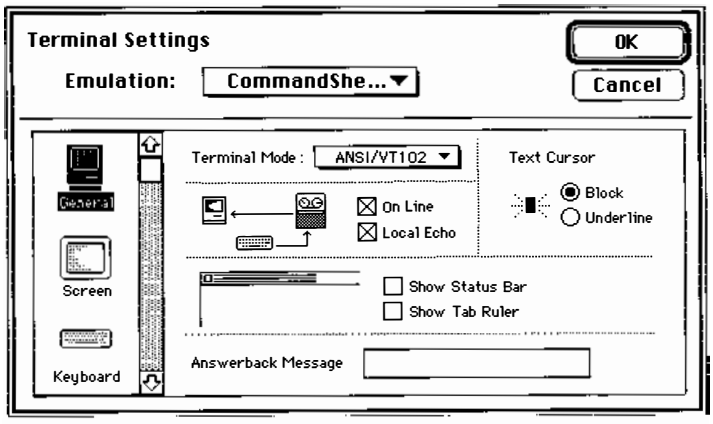


Figure 9-40 The Terminal Settings dialog box

This offers the following choices:

- Terminal Mode
- On Line or Local Echo
- Show Status Bar
- Show Tab Ruler
- Answerback Message
- Text Cursor

Terminal Mode

This allows you to choose between ANSI/VT102 and the VT52 emulation. If you choose VT52, the Character Set dialog box (discussed in "Character Set Setup Options," later in this chapter) is disabled.

On Line/Local Echo

This allows you to choose whether your computer is on line (that is, able to communicate with another computer) or off line. With On Line selected, you should also select the Local Echo option so that characters you type to send to another computer are also displayed on your screen. The Local Echo option is disabled if you unclick On Line, because then your screen automatically displays what you type. The default setting is On Line, Local Echo.

Show Status Bar

The status bar appears at the top of the window. It is shown in Figure 9-41.

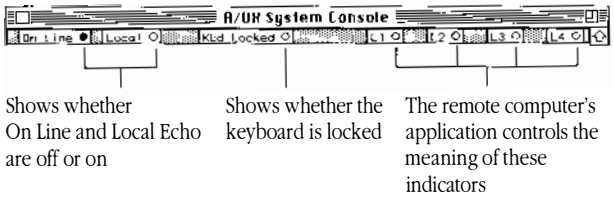


Figure 9-41 The VT102 status bar

The status bar shows whether you have turned On Line and Local Echo on or off. It also shows whether the remote computer to which you are sending data has turned off your keyboard temporarily. This happens if you are sending data too fast for it to handle. It turns your keyboard on again when it is ready to receive more data. By default the status bar is not displayed.

Show Tab Ruler

Select this to display a tab ruler at the top of the window, just below the status bar, if it too is displayed. The tab ruler is shown in Figure 9-42.

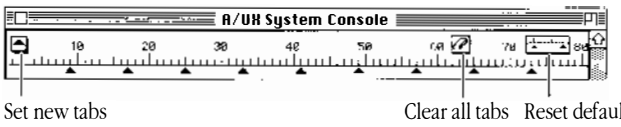


Figure 9-42 The VT102 tab ruler

Choose this to reset the tabs, which are set every 8 spaces by default. You can set new tabs by dragging tab icons from the new tabs icon at the left of the ruler. Click and drag existing tabs to move them. The buttons at the right clear all set tabs and reset the default tabs every 8 spaces. By default, Show Tab Ruler is turned off .

Answerback Message

This allows you to supply an identification response of 1 to 20 characters to the remote computer, if it requires one. The VT102 Tool sends the answerback string when the other computer requests it. To send the answerback string manually, press CONTROL-RETURN. To ask for the answerback string from the remote computer, press CONTROL-E

Text Cursor

This allows you to choose whether the cursor is an underline or a block. The default is a block.

Screen setup options

When you select the Screen icon at the left of the dialog box, the box shown in Figure 9-43 appears.

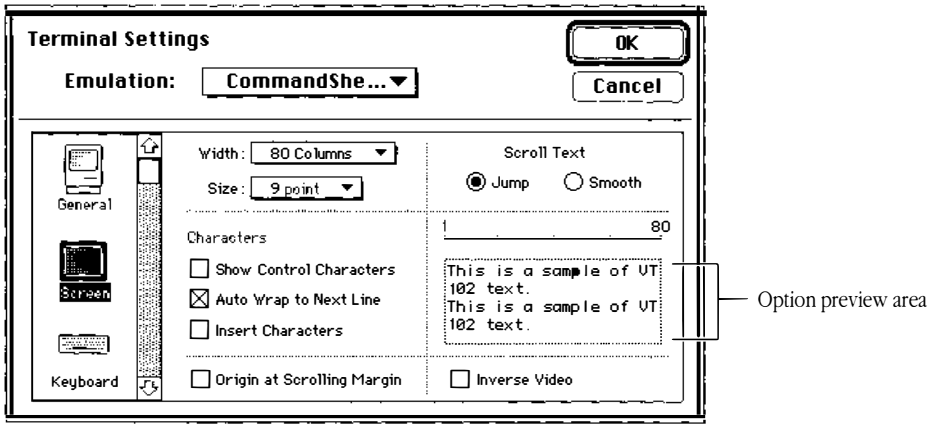


Figure 9-43 Screen setup options dialog box

The option preview area shows you how your window will look if you select various options. It displays changes you make in the width and size of the characters, whether to display control characters, to wrap to the next line automatically, whether text should scroll smoothly or jump a line at a time, whether to display in inverse video, and whether added text should be inserted or should overwrite existing characters.

Width/Size

When you click the Width field, a pop-up menu appears that allows you to choose an 80-column or a 132-column line. If your CommandShell window is set at a different width, that width appears as a third option in the pop-up menu. The scale in the option preview area changes according to your selection. The default is 80 columns.

▲ **Warning** Save any currently displayed text that you want to keep before you change the width setting. When you change the width setting, any text displayed in your window is lost. Text that was recorded as it scrolled off the top of the window is still available to be scrolled back into the window. ▲

When you click the Size field, a pop-up menu appears that allows you to choose 9-point or 12-point screen characters. If you have chosen a different size type from the CommandShell Font menu, that font size appears as a third option. The default is 9-point type (or whatever you have chosen in the CommandShell Font menu)

Show Control Characters

Under most circumstances, you do not need to display control characters (for instance, Carriage Return). To display these characters, check this box. By default, this box is unchecked.

Auto Wrap to Next Line

This forces the text to continue on the next line automatically when it reaches the edge of the window, rather than going beyond the edge of the window. This option is unavailable when Show Control Characters is checked. By default, Auto Wrap is unchecked.

Insert Characters

When this check box is unchecked, text inserted before existing text writes over the existing text. If you check this box, the new text is inserted and pushes existing text to the right. Characters pushed beyond the right margin are lost. This option is unchecked by default.

Origin at Scrolling Margin

This determines whether the cursor can move outside the scrolling region (the area between the top and bottom margins). In addition, this option determines whether screen addressing is in absolute or relative coordinates. Usually, the remote computer determines the appropriate setting for this option. The default setting for this option is unchecked.

Scroll Text (Jump or Smooth)

When new data are sent to the window but the window is already filled with text, it automatically scrolls down to display the newly arriving information. If you select Smooth, the text scrolls more slowly than if Jump is selected, but it scrolls smoothly, which makes it easier to read the text as it scrolls by. If Jump is selected, the text moves jerkily a line at a time. The default is Jump.

Inverse Video

If this check box is unchecked, the window displays black text on a white background. If it is checked, the window displays white text on a black background. The default is unchecked.

Keyboard setup options

When you select the Keyboard icon, the dialog box shown in Figure 9-44 appears.

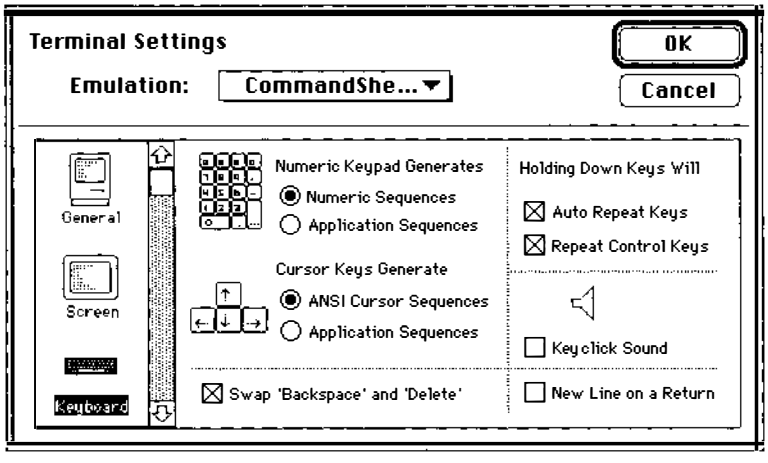


Figure 9-44 The Keyboard setup options within the Terminal Settings dialog box

Numeric Sequences/Application Sequences

If Numeric Sequences is selected, the keys on the keypad generate characters that match the typical numeric, comma, period, and minus sign keys on the VT102-type keyboard (in accordance with ANSI specifications). If Application Sequences is selected, the keys on the keypad generate special escape sequences (specified by Digital Equipment Corporation). Numeric Sequences is selected by default.

ANSI Cursor Sequences/Application Sequences

If ANSI Cursor Sequences is selected, when you press cursor keys, ANSI cursor-control sequences are transmitted to the remote computer. If Application Sequences is selected, when you press cursor keys, cursor-control functions (specified by Digital Equipment Corporation) are transmitted to the remote computer. By default, Cursor Sequences is selected.

◆ **Note** If unexpected characters appear when you press cursor keys or choose them from the Keys menu (see "The Keys Menu" earlier in this chapter) and the cursor does not move, the application on the remote computer might not be accepting input from cursor keys. Perhaps the cursor key setting does not match what the remote application expects. ◆

Swap Backspace and Delete

If this is unchecked, pressing DELETE sends a backspace character (ASCII 08); pressing OPTION-DELETE sends a delete character (ASCII 127).

If this is checked, pressing the DELETE key sends a delete character (ASCII 127); pressing OPTION-DELETE sends a backspace character (ASCII 08).

Auto Repeat Keys

When this box is checked, TAB, RETURN, BACKSPACE, ENTER, ESCAPE, and noncontrol keys repeat when held down. If it is not checked, they do not repeat. This box is checked by default.

Repeat Control Keys

When this box is checked, keys used to generate control characters repeat when held down. When it is unchecked, they do not repeat. Generate control characters by simultaneously pressing both CONTROL key and another key. By default, this box is unchecked.

Keyclick Sound

When this box is checked, pressing a key causes the computer to create an audible clicking sound. The default setting for Keyclick is unchecked.

New Line on a Return

When this option is unchecked, a line feed is interpreted as only a line feed (not as a carriage return/line-feed pair). When a line-feed character is received from the remote computer, the cursor moves down one line, but stays in the same column, rather than moving to the beginning of the next line. Pressing the Return key sends a carriage return character

When this option is checked, a line feed is interpreted as a carriage return/line-feed pair. When a line-feed character is received from the remote computer, the cursor moves to the first position on the next line. Use this option when incoming data do not move down to the beginning of the next line. Pressing the Return key sends both a carriage return character and a line-feed character.

The default setting is for the box to be unchecked.

Character Set setup options

When you select the Character Set icon, the dialog box shown in Figure 9-45 appears.

This dialog box allows you to specify character sets for display on your screen. If you selected the VT52 mode in the General settings, this dialog box is not available.

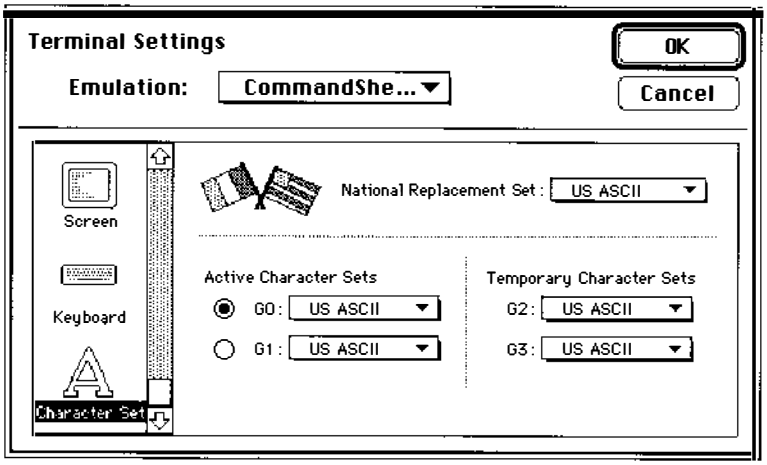


Figure 9-45 The Character Set options dialog box

National Replacement Set

Click this to display a pop up menu (shown in Figure 9-46) for choosing a national replacement set.

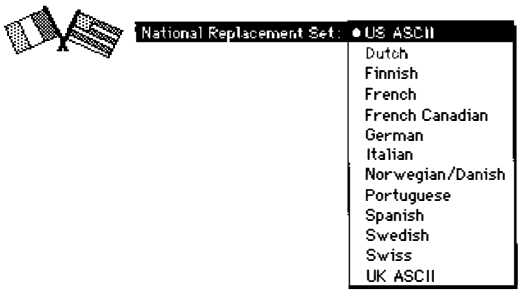


Figure 9-46 The National Replacement set menu

US ASCII, the standard set of letters, numbers, and symbols used in North American English computers, is the default character set on this menu. UK ASCII is the same as US ASCII but with the pound sterling symbol (£) instead of the number sign (#). Dutch, Finnish, French, French Canadian, German, Italian, Norwegian/Danish, Portuguese, Spanish, Swedish, and Swiss are various character sets with accented characters.

When you specify anything other than US ASCII, the International option becomes available when you pop up any of the G0-G3 menus, as shown in the lower portion of the Character Set dialog box illustrated in Figure 9-47. For instance, when you select French as the National Replacement set, French also appears when you pop up any of the G0-G3 menus.

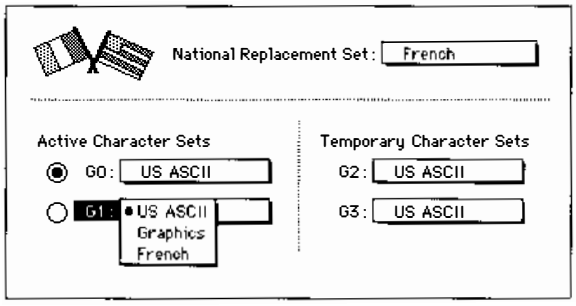


Figure 9-47 Active and Temporary character sets available if French is selected

Active Character Sets

These pop-up menus (G0 and G1) specify the active character set and an alternate. Both menus contain the same list of character sets, and US ASCII is the default for both menus. The G0 menu is the default for the active character set.

You can change the selection on either of these menus by pulling down the menu and choosing a different character set; you can change the active character set by clicking the other button.

Temporary Character Sets

These pop-up menus (G2 and G3) specify the two temporary character sets. Both menus contain the same list of character sets, and US ASCII is the default for both menus. You can change the selection on either of these menus by pulling down the menu and choosing a different character set.

The character sets specified in the G2 or G3 menus can be swapped for only one character at a time (that is, either G2 or G3 temporarily becomes the active character set, one character is generated, and then the VT102 Tool switches back to either G0 or G1, whichever was the last active character set).

The Keys menu

See "The Keys Menu" in "The CommandShell Environment," earlier in this chapter.

The TextEditor application

TextEditor is a word-processing application with which you create text documents using the mouse and Macintosh-like editing techniques.

The TextEditor File menu

The TextEditor File menu, shown in Figure 9-48, contains the commands for creating, opening, printing, closing, and saving TextEditor files.

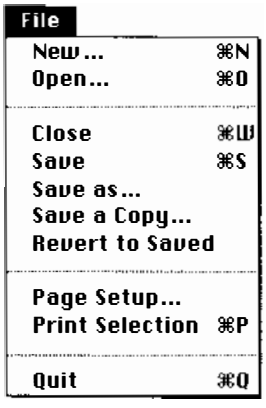


Figure 9-48 The TextEditor File menu

New

This command creates a new document. When you choose New, you see the New dialog box, shown in Figure 9-49. In this dialog box, you enter a name and select a folder location for the document to be stored. The Command-key equivalent is COMMAND-N.

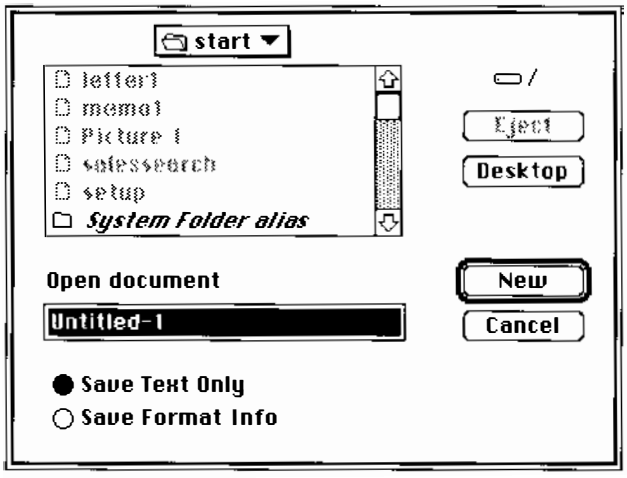


Figure 9-49 The New dialog box

Open

This command allows you to open documents created with TextEditor and any text-only file stored in the A/UX file system. When you choose Open, you see an Open dialog box that allows you to select any text file. The Command-key equivalent is COMMAND-O.

◆ **Note** If you try to open a document that's already open in another window, that window is brought to the front. Whenever you open a file, it appears in a new window. ◆

Close

This command closes the active window. The Command-key equivalent is COMMAND-W.

Save

This command saves the file in the active window under the file's current name, without closing the window. This menu item is dimmed if the contents of the window haven't been modified since the file was last saved. The Command-key equivalent is COMMAND-S.

Save As

This command displays a dialog box that allows you to make a copy of the currently active file and to save it under a different name. This action allows you to continue editing the file under a new name. The old file is closed under its original name without being changed.

Save a Copy

This command displays a dialog box that allows you to save the current state of the active window to a new file on a disk with the name Copy Of *Filename*. You can then continue editing the old file.

Revert to Saved

This command throws away any changes you have made since you last saved the file in the active window. This command is dimmed if the file has not been modified since you last saved it.

Page Setup

This command displays a dialog box that allows you to set parameters for printing a file. The standard Page Setup dialog box for the type of printer that you have selected in the Chooser is displayed. See the guide that came with your Macintosh computer for more information about the Page Setup dialog box.

Print Selection

This command prints the entire contents of the active window.

Quit

This command closes the TextEditor application and returns you to the Finder, first allowing you to save all open files. The Command-key equivalent is COMMAND-Q.

The TextEditor Edit menu

The TextEditor Edit menu, shown in Figure 9-50, contains a few special menu items in addition to the usual Macintosh editing commands. You use these commands to edit or change the contents of the active window.

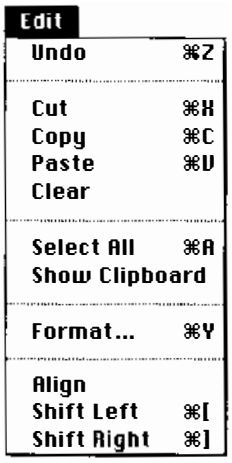


Figure 9-50 The TextEditor Edit menu

Undo

This command nullifies the last text editing or formatting change that you made. The Command-key equivalent is COMMAND-Z.

Cut

This command copies any selected text to the Clipboard and removes the text from the window. The text is stored in the Clipboard until it's replaced by text sent there as a result of another Cut or Copy command. The Command-key equivalent is COMMAND-X.

Copy

This command copies any selected text to the Clipboard but does not remove it from the window. The text is stored in the Clipboard until it's replaced by text sent there as a result of another Cut or Copy command. The Command-key equivalent is COMMAND-C.

Paste

This command inserts the contents of the Clipboard into the window at the insertion point. The Command-key equivalent is COMMAND-V.

Clear

This command removes any selected text from the window. Once text is removed using the Clear command, it is no longer available. Choosing Clear is equivalent to pressing the DELETE key.

Select All

This command selects all of the text in the window. The Command-key equivalent is COMMAND-A.

Show Clipboard

This command displays the contents of the Clipboard in a separate window.

Format

This command displays a dialog box offering a selection of fonts and sizes that you can apply to text selected in a TextEditor window. Figure 9-51 shows the TextEditor Format dialog box.

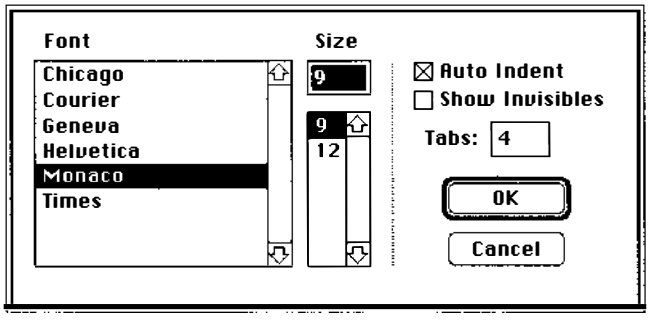


Figure 9-51 The TextEditor Format dialog box

The Command-key equivalent is COMMAND-Y.

◆ **Note** All of the text in the active window, not just the current selection in that window, is shown in the selected font and font size. ◆

Align

This command aligns any selected text with the top line of the selection.

Shift Left

This command moves any text that you select in a TextEditor window one tab stop to the left. The Command-key equivalent is COMMAND-[.

Shift Right

This command moves any text that you select in a TextEditor window one tab stop to the right. The Command-key equivalent is COMMAND-].

◆ **Note** If you hold down the SHIFT key while choosing Shift Left or Shift Right, the selected text shifts by one space rather than by one tab. ◆

The TextEditor Find menu

The TextEditor Find menu, shown in Figure 9-52, contains the commands for searching for and replacing text.

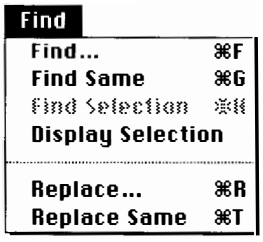


Figure 9-52 The TextEditor Find menu

Find

This command displays the Find dialog box and finds the string that you specify. By default, the editor searches forward from the currently selected text in the active window (and does not wrap around). The Command-key equivalent is COMMAND-F.

Find Same

This command repeats the last Find operation on the active window. The Command-key equivalent is COMMAND-G.

Find Selection

This command finds the next occurrence of the search string in the active window. The Command-key equivalent is COMMAND-H.

Display Selection

This command causes the currently selected text in the active window to scroll into view.

Replace

This command searches for a specified string throughout a file and replaces that string with a different string. The Command-key equivalent is COMMAND-R.

Replace Same

This command repeats the last Replace operation. The Command-key equivalent is COMMAND-T.

The TextEditor Mark menu

A **marker** is a portion of text that has been given a name. Markers are useful for navigating within a document, and they can simplify many search expressions. The upper part of the TextEditor Mark menu contains the commands Mark and Unmark, and the lower part lists all existing markers. To jump to the location of a marker, you simply choose the name of the marker you want from the TextEditor Mark menu, shown in Figure 9-53.

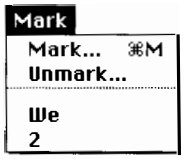


Figure 9-53 TextEditor Mark menu

Mark

This command displays a dialog box that allows you to create a new marker within a TextEditor file. The Command-key equivalent is COMMAND-M.

Unmark

This command displays a dialog box that allows you to remove a marker from a TextEditor file.

The TextEditor Window menu

The TextEditor Window menu allows you to tile or stack any TextEditor windows on the desktop. The TextEditor Windows menu is shown in Figure 9-54.

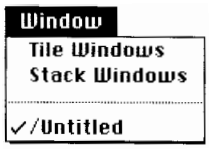


Figure 9-54 The TextEditor Window menu

Tile Windows

This command tiles any open windows as shown in Figure 9-29.

Stack Windows

This commands stacks any open windows as shown in Figure 9-32.

List of open windows

This is not a command, but a list of all currently open TextEditor windows. A check mark appears next to the active window.

A/UX Essentials

Release 3.0

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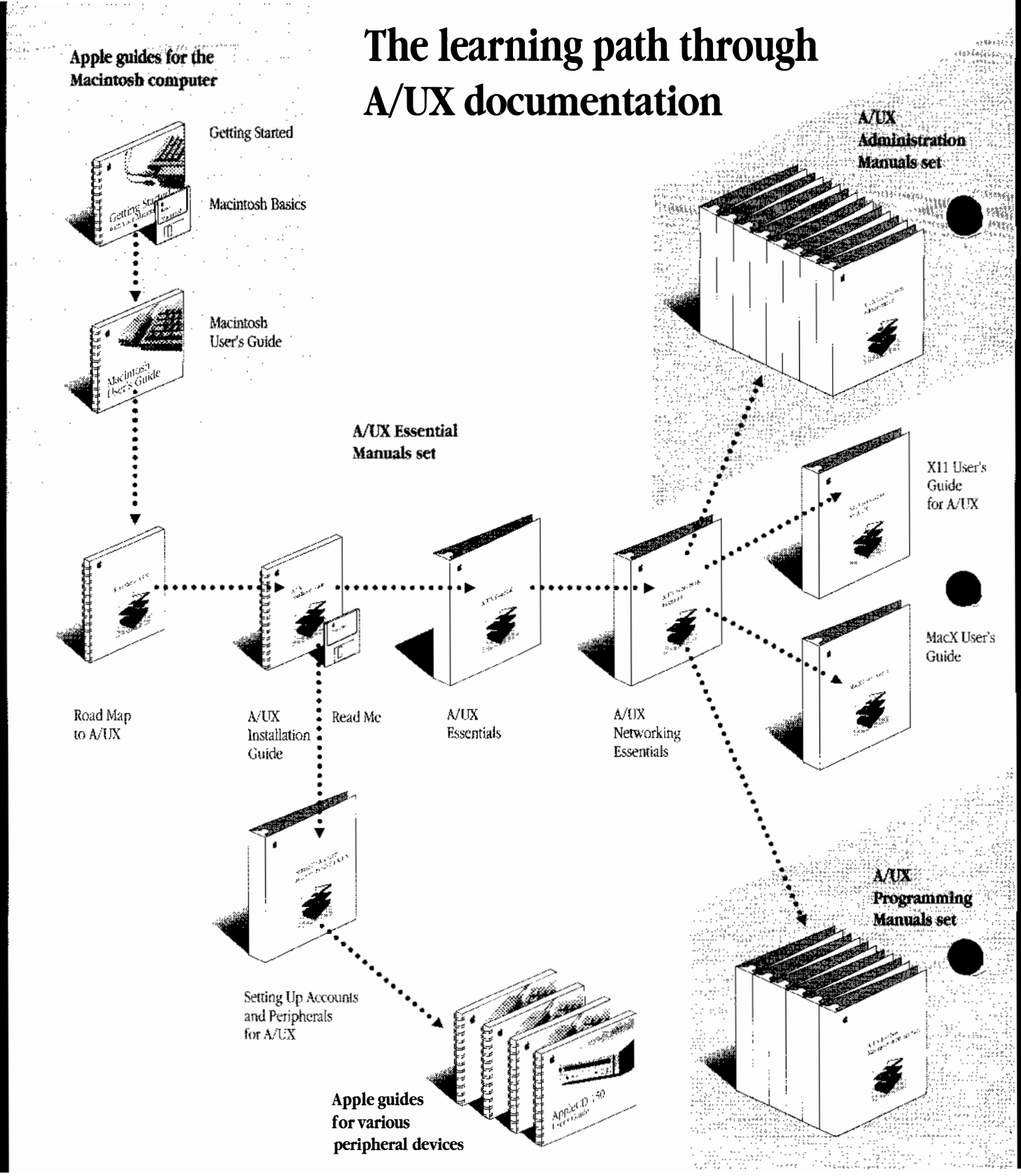

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Glossary

A/UX command The name of an executable file distributed with the A/UX operating system. For example, `ls` is a binary executable file distributed in the `/bin` directory that prints directory information to the terminal; typing `/bin/ls` as a command causes the file to execute. See also **shell program.**

A/UX Startup The Macintosh application that launches A/UX. Under most circumstances, if you cancel the automatic launch of A/UX, you are in **MacPartition** from which you can run some system administration commands.

A/UX Toolbox Libraries, subroutines, and utilities that provide access from A/UX to the Macintosh Operating System and to the Macintosh Toolbox in the Macintosh ROM.

absolute pathname The complete name of a file, given by listing all of the directories leading down to that file, starting from root (`/`) and concluding with the filename itself. The directories leading to the file are separated from each other and from the filename by slashes. For example, `/etc/passwd` is the absolute pathname of the system password file, `passwd`, located in the `etc` directory beneath the root (`/`) directory.

access class In UNIX, designation for access permissions to A/UX files and directories; the three access classes are `owner`, `group`, and `others`. The owner is the person who created the file; the group consists of people, including the owner, who typically work together and need to share files easily; the others class consists of other people using a local system. A file or directory can be set to have different access permissions for each class.

active window The window with which the user can interact, and where the next action takes place. An active window **title bar** is highlighted; it is in the foreground of the screen.

alias In Macintosh terminology, an icon that represents a specific file, folder, or disk icon, and that you can open in place of the original icon. This allows you to leave the original file in its place while moving the alias icon to another place in the file system for convenience. By default, the alias icon uses the name of the original file, plus the word *alias.*

application A program used to perform a particular task, such as computer-aided drawing, document preparation, accounting, or payroll management.

argument A piece of information included on the command line in addition to the command; the shell passes this information to the command, which then modifies its execution in some particular way. Filenames, for example, are often supplied as arguments to commands, so that a command operates on the named file.

argument list All the arguments passed to a program.

ASCII text file See **text file.**

background job A process executed by the Korn or C shell such that the shell is not suspended while waiting for the process to finish. By default, a process starts in the foreground, and the shell waits until the process has finished executing before the shell returns its prompt. You run a process in the background by appending an ampersand character (&) to the end of a command line; the shell prompt reappears instantly, allowing you to run multiple processes simultaneously. See also **foreground job.**

backslash The \ character, often used as an escape character.

binary file A file, such as a machine-language program, whose data is to be interpreted in binary form. See also **text file.**

boot To start an operating system by loading it into the computer memory.

boot device The peripheral device that reads the initial startup instructions of an operating system.

boot disk The disk that contains the initial startup instructions for an operating system.

Bourne shell The standard UNIX System V command interpreter. See also **shell.**

button A push-button image in dialog boxes that you click to designate something resembling an action.

case sensitive Able to distinguish between uppercase characters and lowercase characters. Programming languages are case sensitive when they require all uppercase letters, all lowercase letters, or proper use of uppercase and lowercase letters. For example, AppleSoft BASIC recognizes only uppercase letters. Instant Pascal, however, is not case sensitive; you can use any combination of uppercase and lowercase letters.

central processing unit (CPU) The "brain" of the computer; the microprocessor that performs the actual computations in machine language.

check box A small box associated with an option in a dialog box or window. When you click the check box, you can change the option or affect related options. An option is *on* when you see an *x* in the check box.

choose To pick a command by dragging through a menu. You normally choose a command after you select something for the program to act on, for example, selecting a disk and choosing the Open command from the File menu.

click (verb) To position the pointer on something, and then press and quickly release the mouse button. (noun) The act of clicking.

close box The small box on the left side of the title bar of an active window. Clicking it closes the window.

command line The entire input string that you enter in response to the shell prompt to issue a command or to start a program. The command line includes the command itself and any **arguments** and **options.**

command-line interface The convention for interacting with A/UX by entering a command line.

command mode The operating state in which a program (such as a text editor) interprets the characters you type as commands, rather than as data to be entered into a file.

Commando A command-building tool in A/UX that displays a dialog box for A/UX commands. This allows you to select the options and arguements you want without having to use the command-line interface. Commando also allows you to **pipe** commands.

CommandShell An A/UX application that displays a window for using the **command-line interface.** You can manipulate CommandShell windows just as you do Macintosh windows.

control character A nonprinting character that orders an action to be performed. For example, the interrupt character (by default, entered by holding down The CONTROL key and pressing C) interrupts program execution and returns you to the shell prompt.

C shell The standard BSD and A/UX command interpreter. See also **shell.**

current directory The directory in which you are currently working. This directory is the starting reference point for all **relative pathnames** you enter. Also called the *working directory.*

cursor A symbol on the screen that indicates your position on the command line or inside a file. The cursor is usually a small box or an underscore, and it usually blinks.

device A part of the computer, or a piece of external equipment, that can transfer information.

device driver Kernel-level software that controls the exchange of information between a process and a device.

dialog box A box that contains a message requesting information from you. Sometimes the message warns you that you're asking your computer to do something it can't do, or that you're about to destroy some of your information. In these cases, the message is often accompanied by a beep.

directory A file that contains a list of other files; similar to a folder in a Macintosh hierarchical file system.

directory hierarchy The collection of all files on the currently mounted file systems. See also **hierarchy.**

dot file A file whose filename begins with a dot. UNIX reads these files for specific information concerning login and configuration of the environment, the shell, and so on.

double click (noun) Two mouse clicks in quick succession, interpreted as a single command. The action of a double click is different from that of a single click: for example, clicking an icon selects the icon; double-clicking an icon opens it. (verb) 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.

drag To position the pointer on an object on the screen, press and hold the mouse button, move the mouse, and release the mouse button. When you release the mouse button, you either confirm a selection or move the object to a new location.

environment A list of characteristics that identifies you to the system and influences and constrains your access to it. You can modify many of these characteristics. See **environment variable.**

environment variable An assigned value that controls your use and access of the system and that is available to the current shell and all the child processes invoked from that shell.

Ethernet A hardware medium designed to provide high speed interconnection between computers.

Executable file A file that contains instructions or commands that direct the activity of the computer. See also **program.**

field A data item separated from other data by blanks, tabs, or other specific delimiters.

file (1) For UNIX operating systems, an array of bytes; no other structure is implied by UNIX systems, which even treat peripheral devices like files. (2) For the Macintosh Operating System, any named, ordered collection of information stored on a disk. Application programs and documents are examples of files. You create a file when you type text or draw graphics, give the material a name, and save it on a disk.

filename On UNIX System V operating systems, the name of a file, consisting of up to 14 characters and specified without listing the directory under which the file is located. For example, `passwd` is the filename for the system password file. See also **pathname.**

file system A logical device that contains the data structures that implement all or part of the **directory hierarchy.**

Finder The application that maintains the Macintosh desktop and starts up other programs at the request of the user. You use it to manage documents and applications and to get information to and from disks. It controls the desktop you see upon starting up your computer, unless you specified a different session type.

folder (1) A holder of documents and applications on the Macintosh desktop. Macintosh folders, like UNIX file system directories, allow you to organize information in a hierarchical fashion. (2) For the BSD `mailx` program, a file that you create for saving similar mail messages.

font A collection of print characters unified by a distinctive look. Times Roman, for example, is the default font for `troff`.

foreground job The process attached to the terminal. The shell waits until the foreground job finishs executing before the shell returns its prompt and gives you control again of the terminal. See also **background job.**

fork One of the two parts of a Macintosh file; the data fork contains data accessed through the Macintosh File Manager, and the resource fork contains data used by the application, such as menus, fonts, and icons.

format (1) To divide a disk into tracks and sectors where information can be stored. Blank disks must be formatted before you can save information on them. (2) To process a text file for output with a utility such as `nroff` or `troff`.

group ID (GID) A number that indicates a group to which you belong at login time. As a member of a group, you have access to certain files and directories shared by other members of your group. Each user login name has at least one group ID associated with it.

group permission Permission for the designated group of users to use a file or a directory.

hierarchical file system (HFS) A method of organization in which disk files are grouped together within directories and subdirectories (folders within folders). HFS is used on hard disks and on floppy disks. In a hierarchical file system, a file is specified by its pathname, rather than by a single filename.

hierarchy A directory and any files or subdirectories residing under it. See also **directory hierarchy.**

highlight To make something visually distinct. For example, when you select a block of text using MacWrite, the selected text is highlighted—it appears as light letters on a dark background, rather than dark letters on a light background.

home directory Usually the first directory you enter upon login, as designated in the file `/etc/passwd`. You can tailor your environment by modifying various files in your home directory.

home directory folder The folder that represents the user's home directory on the A/UX Finder.

icon An image on the screen, usually representing an item such as a file, document, disk, or application program that you can select and open.

interactive editor A utility for entering and manipulating text while you view the text. TextEditor and `vi` are both interactive.

job A process that can be stopped, restarted, and moved between foreground and background processing from the C shell or Korn shell.

job number The identification number of a process executed in the background under the C shell or Korn shell. The job number appears next to the command name when you execute the `jobs` command.

kernel A UNIX program that manages the system hardware. For example, the kernel manages files, communicates with peripherals, and handles other low-level resource management tasks.

Korn shell A command interpreter that combines many of the best features found in the standard System V shell (the Bourne shell) and the standard BSD shell (the C shell). See also **shell.**

list To display on a monitor, or print on a printer, the contents of memory or of a file.

local system The computer from which a user originates a network command. See also **remote system.**

local system administration Management of a single computer system. This includes such functions as starting up and shutting down the system, adding and removing user accounts, and backing up and restoring data. See also **network administration.**

log in To identify yourself to the system by entering the login name of your account and your account password.

login name The name of a user's account. Used for identification purposes. Same as the account name.

login prompt The prompt (usually `login:` on UNIX systems) by which a system tells you that it is ready to accept your login name.

login shell The shell that automatically runs after you successfully log in. See also **shell.**

long listing (`ls -l`) A listing of the files in a directory. This is called a long listing because it lists more information than a simple listing, including the permissions, the size of each file, the owner, the number of links, and the date on which the file was last modified.

`lpr` **system** A collection of programs and files that are used to manage UNIX printer operations. These include the print spooler and a series of maintenance commands.

Macintosh Operating System The lowest-level software in the Macintosh. It does basic tasks such as I/O, memory management, and interrupt handling.

Macintosh user interface The standard conventions for interacting with Macintosh computers. The interface ensures users a consistent means of interacting with all Macintosh computers and the applications designed to run on them.

MacPartition The name of the partition that contains the A/UX Startup application and some A/UX utilities such as `fsck` and `ed`.

manual page (or "man" page A screen display of the material in the *A/UX Command Reference* concerning a specific command. Display a man page by entering `man` *commandname* in CommandShell.

menu A list of choices presented by an application program, from which you can select an action. With Macintosh-style programs, menus appear when you use the mouse to point to and press on titles in the menu bar at the top of the screen. Dragging through the menu and releasing the mouse button while a command is highlighted chooses that command.

mount To install a file system onto the directory hierarchy. See also **unmount.**

mouse A small device you move around on a flat surface next to your computer. The mouse controls a pointer on the screen whose movements correspond to those of the mouse. You use the pointer to select operations, move data, and draw with in graphics programs.

mouse button The button on the top of the mouse. In general, pressing the mouse button initiates some action on whatever is under the pointer, and releasing the button confirms the action.

multitasking The ability of an operating system like A/UX to execute multiple processes simultaneously by sharing its central processor and peripherals among processes.

multi-user A mode or ability of an operating system to support several people using the same computer simultaneously.

network A collection of interconnected, individually controlled computers, along with the hardware and software used to connect them. A network allows users to share data and peripheral devices and to exchange electronic mail.

network administration The management of the software and hardware that connects computers in a network. This includes such functions as assigning addresses to hosts, maintaining network data files across the network, and setting up internetwork routing. See also **local system administration.**

operating system Low-level software that controls a computer by performing such basic tasks as I/O, memory management, and interrupt handling.

option An argument included on the command line that instructs a program to alter its output or change its mode of execution. An option is usually a hyphen followed by one or more characters. For example, the `-l` option to the `ls` command makes this utility print extra information, such as the date a file was last saved. Options are sometimes referred to as *flag options*, or *command options.*

others permission Permission to use a file, granted to all the users of a system who are neither the owner of the file nor are in the designated group.

page offset The left margin of a printed page. The default page offset for `nroff` and `troff` is 1 inch.

pathname A filename preceded by its containing directory. A pathname can contain a list of directories, separated from the filename and from each other by slashes. Each item in a pathname is located in the directory named to its left. For example `/etc/passwd` is a pathname for the system password file, `passwd`, located in the `etc` directory beneath the root (`/`) directory. See also **absolute pathname** and **relative pathname.**

peripheral device A piece of hardware, such as a disk drive, modem, printer, or terminal, that is connected to a computer and used for reading or writing data.

permissions Authorization to read, write, or execute a file or directory. Under UNIX operating systems, each capability is assigned on an individual, group, and system-wide basis. Also called the *file mode.*

physical disk The entire set of disk blocks that exist on the actual disk drive hardware.

pipe (noun) (1) A command line that connects two or more commands in a series so that the output of one command becomes the input to the next. (2) An intermediate file in which data is passed from one process to another. (verb) To connect two or more commands in a series so that the output of one command becomes the input to the next.

pipeline A **command line** that contains one or more **pipes.**

pointer (1) An arrow or other symbol on the screen that moves as you move the mouse. You use the pointer to choose commands, select and move icons and text, and draw images. (2) An item of information consisting of the memory address of some other item. The 68030 chip uses one of its internal registers as a pointer to the top of the stack.

port (noun) (1) A socket on the back panel of a computer where you plug in a cable for connection to a network or a peripheral device. (2) A connection between the **central processing unit** and main memory or a device (such as a terminal) for transferring data. (verb) To move software from one computer environment to another.

print spooler A utility that writes a representation of a printed image of a document to disk or to memory, schedules it to print in a queue of other jobs, and then prints it.

process An instance of a program in execution. Usually one copy of a program is stored on a UNIX system like A/UX, but multiple instances of the program—each having its own address space—can be executed simultaneously as separate processes.

program A file containing coded instructions to the computer. A compiled program is a file created first in source code, then transformed by the compiler into object code. A **shell script** is a program that does not need to be compiled because it is interpreted by the shell.

prompt A character or string of characters displayed on the terminal when a program is waiting for input from you. The Bourne and Korn shells, for example, are set by default to display the dollar sign ($) as their prompt; the C shell is set by default to display the percentage sign (%) as its prompt.

pull-down menu A menu that is hidden until you move the pointer to its title and press the mouse button.

radio button A common type of control in dialog boxes. Radio buttons are small circles organized into families. Clicking any button on turns off all the others in the family, like the buttons on a car radio.

redirection A feature of the shell that allows you to pass the output of a command to a file or device instead of to the terminal screen, and to supply a command with input from a file or device instead of from the keyboard.

relative pathname The name of a file, given by listing the directories leading to that file in relation to the current working directory. Directories common to both the working directory and the file are not included in the relative pathname. See also **absolute pathname.**

remote system On a network, any computer other than the **local system.**

resource fork The part of a file that contains data used by an application, such as menus, fonts, and icons. The code of an executable file is also stored in the resource fork. Sometimes called a *resource file.*

ROM An acronym for *read-only memory,* which is memory whose contents can be read, but not changed, and is used for storing permanent information. For example, the ROM in the Macintosh contains the routines for the Macintosh user interface.

root (1) The top directory in a UNIX directory hierarchy. Written as a slash (/), it is the first element in every **absolute pathname.** (2) The user with unlimited system privileges. Also called the *superuser.*

root directory See **root** (1).

root file system The file system that is always present on a UNIX system; the root file system can never be unmounted.

root user See **root** (2).

script A file containing commands. See also **shell script.**

scroll bar A rectangular bar that can be along the right or bottom of a window. Clicking or dragging in the scroll bar causes your view of the document to change.

SCSI See **Small Computer System Interface.**

select (verb) To designate where the next action takes place. To select something using a mouse; you click an icon or drag across text. In some applications, you can select items in menus by typing a letter or number at a prompt, by using a combination keypress, or by using arrow keys. (noun) A command to a device such as a printer to place it into a condition to receive data.

shell A utility that accepts your commands, interprets them, and passes them on to the appropriate programs for execution. A/UX provides three shells: Bourne, C, and Korn. Each can be used as an interpreted programming language. Through shell variables and **environment variables,** you can tailor the environment of your shell for your own needs.

shell program A series of commands to be executed by the shell. A shell program can be entered at the shell prompt or stored in a file. Shell programs that are stored in files are referred to as **shell scripts.** Shell programs are sometimes called *user-defined commands.*

shell prompt A character or string of characters displayed on the terminal to show that the shell is waiting for input from the user. The Bourne and Korn shells, for example, are set by default to display the dollar sign ($) as their prompt; the C shell is set by default to display the percentage sign (%) as its prompt.

shell script A shell program contained in a text file. Entering the name of the shell script from the command line executes the commands listed in the shell script. See **shell program.**

Shift-click A technique that enables you to extend or shorten a selection by positioning the pointer at the end of what you want to select and holding down the Shift key while clicking the mouse button.

shutdown permission Access granted to the root user to run the shutdown program. The shutdown program brings the system to a nearly inactive state before you turn off its power.

size box A box in the lower-right corner of some active windows. Dragging the size box resizes the window.

Small Computer System Interface (SCSI) A specification of mechanical, electrical, and functional standards for connecting small computers with intelligent peripherals such as hard disks, printers, and optical disks.

spooler See **print spooler.**

Stand-Alone Shell The A/UX Startup application that launches A/UX. You can run a limited number of system administration commands from the Stand-Alone Shell.

standard error output The data stream used for error messages returned by a program. By default, the shell directs error output to your terminal screen.

standard input The data stream used for input to a command. By default, the shell accepts as input the characters you type from your keyboard. The less-than sign (<) directs the shell to accept input from a file or device.

standard output The data stream used for output from a command. By default, the shell directs this to the terminal screen. The greater-than sign (>) directs the shell to write the output to a file or device.

substitute user (`su`) The substitute user command (`su`) allows you to work in an account other than the one you are currently logged in to.

superuser The user with unlimited system privileges. Also called *root*.

System V The AT&T standard UNIX operating system. System V Release 2 forms the foundation of the A/UX system.

System Folder A folder containing Macintosh system software. An A/UX system contains a minimum of five system folders.

system software Software that supports application programs by managing memory and by communicating with input and output devices.

terminal A device through which you interact with the computer; namely, the keyboard, mouse, or other input device and the monitor. See also **console.**

terminal emulation An imitation of a terminal type.

text box The place or places in any dialog box where you can type information.

text file A file containing information expressed in text form and whose contents are interpreted as characters using the American Standard Code for Information Interchange (ASCII) format. See also **binary file.**

text-only file See **text file.**

32-bit addressed See **32-bit clean.**

32-bit clean Macintosh applications whose memory addressing is completely compatible with A/UX. Software that is not 32-bit clean is referred to as 24-bit addressed. A/UX allows you to select a 24-bit addressed session type if you need to use earlier Macintosh applications that are not 32-bit clean.

tile To arrange a group of windows so that their edges are touching one another (like the tiles on a tiled floor), rather than overlapping one another.

title bar The horizontal bar at the top of a window that shows the name of the window. When the window is active, the title bar is highlighted with a series of horizontal lines. You can move the window by dragging the title bar.

tree structure The layout of a UNIX directory hierarchy. Organized like an inverted tree, the directory hierarchy begins with the root directory at the top. Branching downward from the root are the rest of the directories and files in the system.

24-bit addressed See **32-bit clean.**

UNIX operating system A general-purpose time-sharing system and related set of utilities, originally developed at AT&T Bell Laboratories. A/UX is an enhanced version of the UNIX operating system for certain Macintosh computers.

unmount To remove a file system from the directory hierarchy. See also **mount.**

user account The permission to log in to A/UX under an assigned login name, usually with a unique password, and usually with a specifically assigned home directory.

user interface The rules and conventions by which a computer system communicates with the person operating it.

user name See **login name.**

user permission Permission for the ower of the file to use it. If a file has only user permission, no other users can read it, write to it, or run it.

utility A software tool used for building or maintaining systems or applications. UNIX provides hundreds of utilities, including compilers, editors, and text formatters.

window (1) The area that displays information on a desktop; you view a document through a window. You can open or close a window, move it around on the desktop, and sometimes change its size, scroll through it, and edit its contents. (2) The portion of a collection of information (such as a document, picture, or worksheet) that is visible in a viewport on the display screen. Each window is internally represented in a window record.

working directory See **current directory.**

world permission See **others permissions.**

write permission Permission to write to a file.

zoom box A small box in the top-right corner of some windows. Clicking on the zoom box resizes the window so that you can see all of its contents (if possible); clicking it again returns the window to its original size.

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The Apple Publishing System

This Apple manual was written, edited, and composed on a desktop publishing system using Apple Macintosh computers and Microsoft Word software. Proof pages were created on Apple LaserWriter® printers. Final pages were created on the Linotronic L300 imagesetter. Line art was created using Adobe Illustrator. PostScript®, the page-description language for the LaserWriter, was developed by Adobe Systems Incorporated.

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Writing Group Lead: Linda Kinnier
Developmental Editors: Paul Dreyfus, Scott Smith
Designer: Lisa Mirski
Art Director: Tamara Whiteside
Production Editor: Ron Morton
Production Coordinator: Jeannette Allen

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