



Apple.

# Grapevine User's Guide

## Beta Draft

Networking & Communications  
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## About This Guide

**T**HIS GUIDE DESCRIBES THE GRAPEVINE PRODUCT AND CONTAINS instructions for installing Grapevine User on your Macintosh and for using the MacPAD connection tool and its related products.

---

## Who should read this guide

This guide is intended for Macintosh users who are connected to an AppleTalk® network and who wish to use the X.25 services provided by the Grapevine Servers on the AppleTalk network.

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## How to use this guide

This guide begins with general product and installation information and then provides instructions for using each aspect of the Grapevine User product.

---

## What each chapter contains

This guide contains the following five chapters.

- Chapter 1 contains general information about the Grapevine product, describes the requirements for using it, and tells you how to install Grapevine User on your Macintosh.
- Chapter 2 discusses the X.25 Chooser and tells you how to use it.
- Chapter 3 contains instructions for using MacPAD to open and close connections to a host computer over an X.25 network.
- Chapter 4 describes the PAD capabilities that MacPAD provides and tells you how to take advantage of these capabilities. All of the appendixes in this guide contain information that relates to this chapter.
- Chapter 5 discusses the Open Book application and gives instructions for using this program.

---

## What each appendix contains

Because PAD technology is fairly technical in nature, this guide provides the following appendixes to supplement Chapter 4:

- Appendix A contains a table that lists the PAD commands and service signals that the Consultative Committee on International Telegraphy and Telephony (CCITT) defines.
- Appendix B contains a table that lists the PAD parameters that the CCITT defines.
- Appendix C contains definitions of the PAD parameters and describes the setting options for each parameter.
- Appendix D contains an ASCII conversion table, which is useful for one of the PAD commands.

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## A quick reference card

For your convenience, you will find a quick reference card at the back of this guide. The card contains instructions for using the X.25 Chooser, for connecting to your host computer, and for using MacPAD commands.

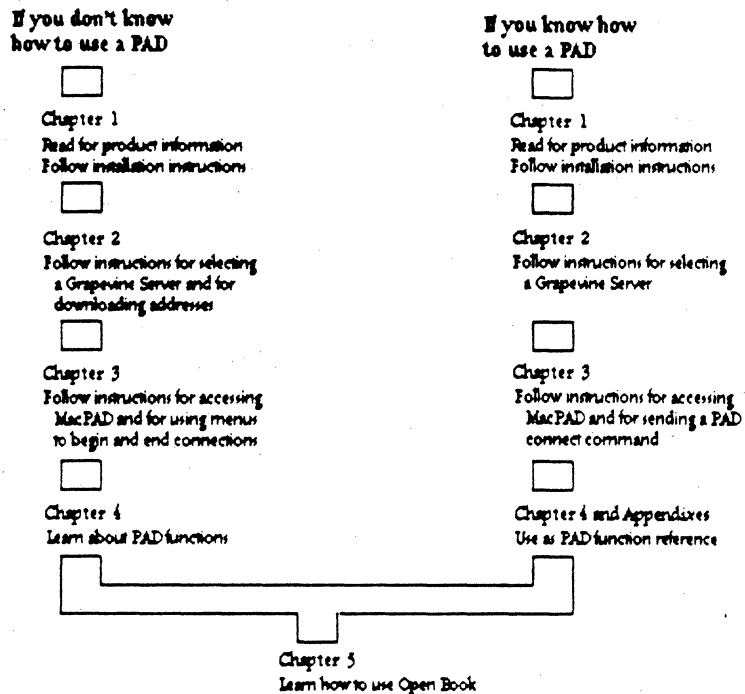
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## Where to look for information

Many MacPAD users are only interested in connecting to a remote host computer, and do not want to learn about packet assembler/disassemblers (PAD) or to perform technical PAD functions. These users can use this guide differently from technical users who know PAD technology.

Use the roadmap in *Figure P-1* to determine the best way for you to use this guide.

■ Figure P-1 Roadmap to the Grapevine User's Guide



## What you need to know

You should be familiar with the Macintosh® computer and know how to perform basic operations, such as opening and closing files and using Macintosh menus and buttons. You do not need to understand X.25 or PAD technology to use these products.

## Conventions

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

### **Boldface type**

As you read, you will notice certain words and phrases in the text appear in boldface type. These are new terms and they are defined in the glossary in the back of this guide. (This feature is not implemented in this beta draft).

### **Special messages**

The following words and symbols indicate special messages to you:

- ◆ *Note:* Text set off in this manner presents an interesting point of information or a consideration that you should make as you read the surrounding text.

---

### **Check list of Grapevine User requirements**

This section briefly lists what you need to run the Grapevine User software. See Chapter 1 for more detailed information about the requirements for this product.

- a Macintosh (Plus, SE, SE30, II, IIX, or IICX) computer with a hard disk and at least one disk drive
- System 6.02 or greater
- at least 1 Mb of RAM
- at least 128K ROMs
- ADSP, Communications ToolBox, X.25 Chooser, and Open Book in your System Folder

Before you can access MacPAD, you need

- to install the Grapevine Workstation software on your system
- to purchase and install a terminal tool for the Communications Toolbox
- to install the MacPAD connection tool into your Communications Toolbox

To use the Macintosh features of MacPAD, you need

- to put X.25 host addresses in an Addresses file in your System Folder (See Chapter 2 for instructions)

---

## Related documents

The *Grapevine User's Guide* is part of a suite of documents for the Grapevine product. The other guides that relate to Grapevine include:

- The *Grapevine Administrator's Guide*, which contains information about installing and maintaining the Grapevine Servers
- The *Grapevine Programmer's Guide*, which contains information about the various programmatic interfaces to the Grapevine product

Because Grapevine works with other products, you may also find the following documents useful

- The *MacTerminal II User's Guide*, which contains information about installing and using terminal tools for the Communications ToolBox
- The *Communications ToolBox Programmer's Guide*, which contains information for developing connection tools, terminal tools, and file transfer tools that use Apple's standard communications format

---

## Grapevine overview

**H**OW CAN A MACINTOSH USER IN AN APPLE TALK NETWORK LOG INTO A HOST computer over an X.25 network?

Apple has an X.25 product that lets Macintosh computers on an AppleTalk network use an X.25 link provided by a server for connecting to remote host computers. This product, called Grapevine, and another Apple product, called the Communications ToolBox, work together to bring the Macintosh touch and feel to the world of X.25.

This chapter describes how Apple brings X.25 into its AppleTalk network system and tells you everything you need to know and do to put Grapevine on your Macintosh.

---

## How Grapevine brings X.25 to your Macintosh

The goals of the Grapevine product are

- to allow a Macintosh computer to support a direct link into a standard public or private X.25 network.
- to provide all of the standard host-to-terminal capabilities that technical users expect from an X.25 product
- to package this functionality in the familiar look and feel that Macintosh users expect from a Macintosh product

This section describes the Grapevine product and how it accomplishes these goals.

---

### A link to the X.25 network

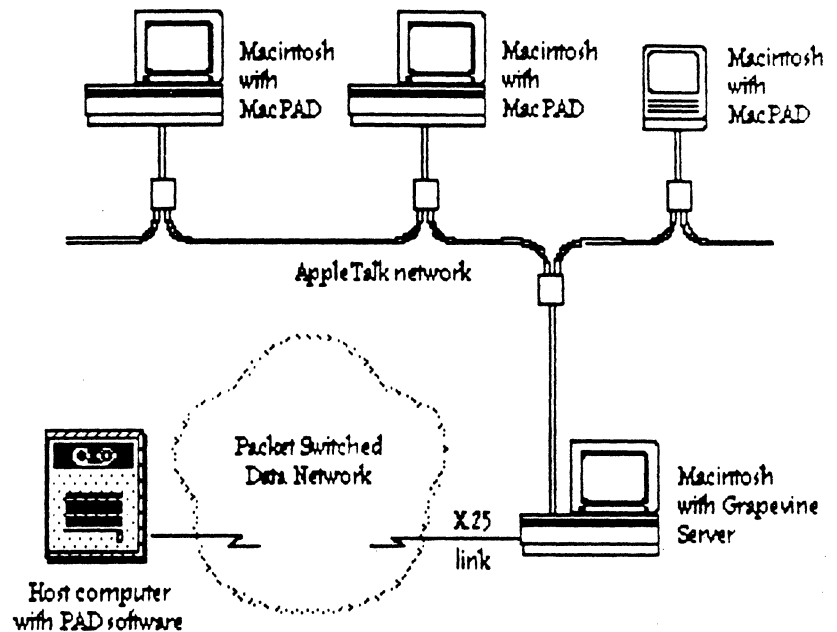
X.25 customers can subscribe to a variety of services from a packet switched, wide area data network. For limited network use, companies often prefer to dial into the network. Networks charge for this service with per call and call length rates. For more substantial use, companies can save money by leasing a direct line into the network, usually for a flat monthly rate.

The Grapevine product has a Grapevine Server component that puts X.25 communications on a Livonia card. The Livonia card, which resides in a NuBus™ slot of a Macintosh II, IIX, or IICX computer, comes with a connector port and the necessary cables to connect the card directly into an X.25 network switch.

*Figure 1-1* shows a Macintosh with Grapevine Server software and an X.25 link to a packet switched data network.



■ Figure 1-1 How Grapevine brings X.25 to the AppleTalk network system



The Macintosh that has the Grapevine Server software is called a gateway because it can support one Grapevine Server for each Livonia card. For example, a Macintosh II computer with five Livonia cards can have five Grapevine Servers. Each Grapevine Server supplies one X.25 link.

### A PAD for host to Macintosh communications

A packet assembler disassembler, or PAD, is a program (or in some cases, a hardware device) that accumulates characters from a terminal, assembles them into X.25 data packets, and transmits the data packets over an X.25 network connection to a Host computer. Similarly, a PAD disassembles X.25 data packets that it receives from the Host computer and displays the characters on the terminal.

A PAD performs other functions as well. For example, a PAD stores information about the display characteristics of a terminal, and these display characteristics can be modified according to what the host computer expects and the terminal supports. Also, a PAD can assemble and send certain X.25 control packets to establish a new X.25 connection, or to interrupt data transfer during an active connection to get status information about the connection or to perform some connection maintenance task.

The Grapevine product has a Grapevine User component which contains a completely CCITT conformant PAD program, called MacPAD. *Figure 1-1* shows several Macintosh computers that have MacPAD and that are connected to the AppleTalk network. These Macs can use the Grapevine Server's X.25 link to connect to a Host computer on the packet switched data network.

---

### **A standard Macintosh communications program**

Macintosh users have come to expect certain similarities between all Macintosh applications. These similarities, such as where the menus appear on your screen and how you use them, help the Macintosh user master a new program more quickly.

The Communications ToolBox standardizes the way you make remote connections from the Macintosh. This product is designed to support any type of connection, such as serial (dial-up) or X.25, any type of terminal, and any type of file transfer method.

Grapevine's PAD software is a connection tool for the Communications ToolBox. For this reason, the Grapevine User disk contains the Communications ToolBox program.

---

### **What you need**

This section describes what you need to have on your Macintosh before you can begin using MacPAD.

---

## Hardware requirements

You can run Grapevine User on a Macintosh Plus, a Macintosh SE, a Macintosh SE30, a Macintosh II, a Macintosh IIX, or a Macintosh IICX. The Macintosh should have a hard disk and at least one disk drive.

---

## System requirements

Grapevine User requires System 6.02 or greater. The Communications ToolBox program requires at least 1 Mb of RAM and 128K ROMs or greater. Under MultiFinder, the Communications ToolBox program requires a minimum memory partition of 384K.

---

## Other software requirements

To use MacPAD, your Macintosh must contain the Grapevine User software and the Communications ToolBox program with the MacPAD connection tool and at least one terminal tool installed in it.

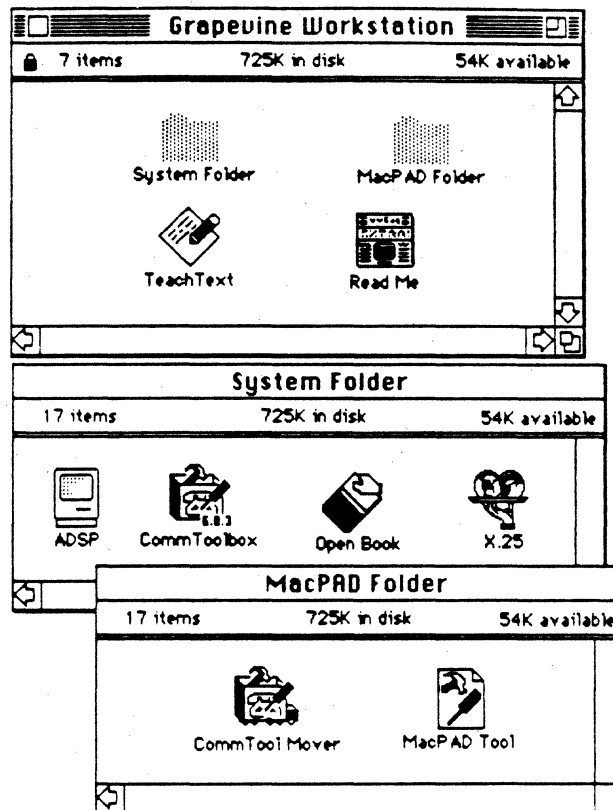
The Grapevine User disk does not contain a terminal tool. You can purchase this from your local Apple dealer. MacTerminal II is one example of a terminal tool for the Communications ToolBox.

---

## What the Grapevine User disk contains

The 800 KB Grapevine User disk contains a System Folder, the MacPAD Folder, an Installer program, the TeachText application, and a ReadMe file. *Figure 1-2* shows the contents of the Grapevine User disk.

■ Figure 1-2 Contents of the Grapevine User disk



---

## System Folder

The System Folder contains :

- **ADSP**, the AppleTalk Data Stream Protocol, which is the software that handles communications over AppleTalk
- **Comm ToolBox**, which is the Communications ToolBox program
- the **X.25** Chooser document, which displays X.25 services to you when you use your Chooser desk accessory
- the **Open Book** application, which simplifies the X.25 connection process

---

## MacPAD Folder

The MacPAD Folder contains:

- Comm Tool Mover, which you use to move MacPAD Tool into your Communications Toolbox
- MacPAD Tool, which has the connection software for X.25 connections

---

## ReadMe and TeachText

The **ReadMe** file contains some basic overview information about the MacPAD product and any last-minute details about Grapevine that are not covered in this guide. When you open ReadMe, the **TeachText** application displays this information to you. You can scroll through the text as you read it. When you are finished, select Quit from the File menu to return to your desktop.

---

## Other files you create

This section describes some programs that are not included on the Grapevine User disk, but that are created by, required by, or used by its programs.

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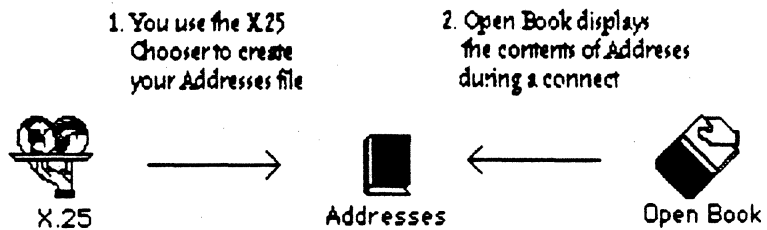
## Addresses

MacPAD uses the Open Book application to display a list of host names during a connect operation. In this way, establishing a connection to your host is as easy as double clicking a name in a list.

Open Book gets its information from a file called Addresses in your System Folder. The Grapevine User disk does not include the Addresses file because your network administrator must get the information for this file from the network vendor when your company subscribes to its service.

In setting up the Grapevine Servers, the network administrator creates a Master Address Book. When the Grapevine Servers are available, you can use your X.25 Chooser to create the Addresses file and to download X.25 addresses into it, as *Figure 1-3* illustrates. Chapter 2 contains instructions for using the X.25 Chooser.

■ **Figure 1-3** Creating an Addresses file



---

## Terminal setting documents

Terminal emulator programs for the Macintosh sometimes allow you to save the current settings and other information into a document. When you double click on this type of document, you launch the program that created the document with the saved settings. This feature saves you time and makes the product easier to use.

---

## PAD profiles

A PAD profile contains a set of parameter settings that define the characteristics of a particular terminal. PAD profiles are used because different host computers work with different types of terminals.

The MacPAD software includes built-in PAD profiles and you can create additional PAD profiles at any time.

The MacPAD menu has a Parameters command that displays the current PAD parameter settings, and that allows you to change these settings, to open other PAD profiles, and to modify and save new PAD profiles as you need them.

PAD profiles are saved as MacPAD documents. *Figure 1-4* shows the icon for a MacPAD document. Chapter 4 contains instructions for saving PAD profiles.

■ **Figure 1-4** A MacPAD document



---

## Installing your X.25 software

This section describes what you do to put MacPAD on your Macintosh.

---

### Installing the Grapevine User system software

To install the Grapevine User system software on your Macintosh:

1. Open your hard disk by double clicking its icon.
2. Scroll through the file and folder icons (or names) until you can see your System Folder.
3. Insert the Grapevine User disk into your disk drive.
4. Open the Grapevine User disk by double clicking its icon.
5. Open the System Folder on the Grapevine User disk.

△ **Important** If the System Folder on your hard disk already contains the Communications ToolBox program with connection tools, terminal tools, or file transfer tools in it, drag Comm ToolBox out of Grapevine User's System Folder and into the trash now. △

6. Choose Select All from the File menu.
7. Drag these files to the System Folder of your hard disk.

The system copies the files, displaying a chart that shows you its progress.

You can now move MacPAD Tool into your Communications ToolBox.

---

### Moving the MacPAD Tool into your Communications ToolBox

When your system contains the Communications ToolBox, you use the Comm Tool Mover application to move MacPAD Tool into your Communications ToolBox.

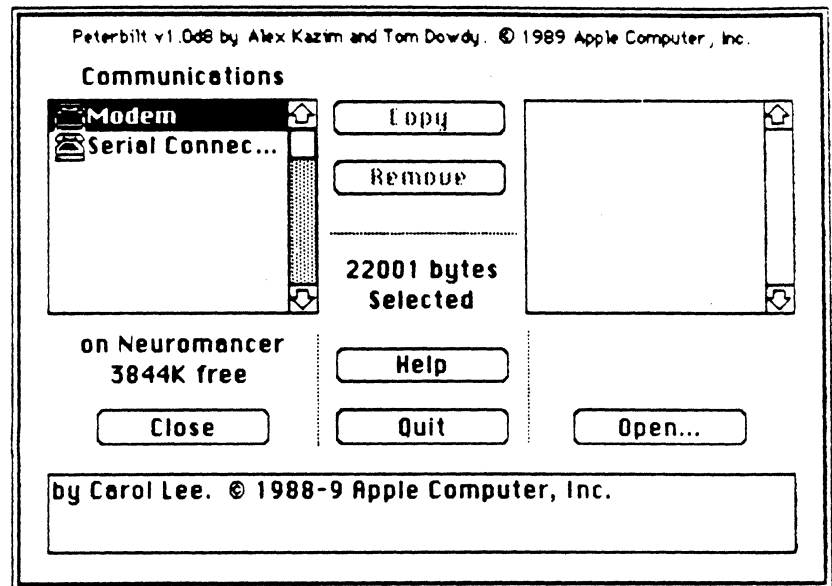
To move MacPAD Tool into your Communications ToolBox:

1. Open the MacPAD Folder and double click on Comm Tool Mover.

Comm Tool Mover displays a dialog, which *Figure 1-5* shows. The left window contains the list of connection tools, terminal tools, and file transfer tools that the Communications ToolBox in your System Folder contains.

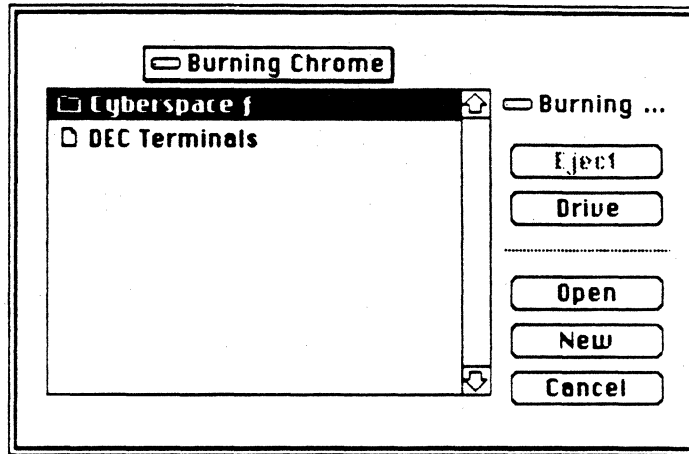


■ Figure 1-5 The Comm Tool Mover dialog



2. Click the Open button that appears under the right window.  
The standard file dialog appears, as Figure 1-6 shows.
3. Click Drive until the file window lists the contents of the Grapevine User disk.

■ Figure 1-6 Comm Tool Mover's file dialog



4. Double click MacPAD Folder to open it.

The right window in the Comm Tool Mover dialog now shows X.25, which is the type of connection that MacPAD Tool supports.

5. Select X.25 and then click Copy.

The program copies X.25 into your Communications ToolBox.

6. Click Quit to close the Comm Tool Mover program.

7. Close your Grapevine User disk and eject it.

---

### Supplying a terminal emulator program

If your Communications ToolBox contains a terminal tool, you can now begin using MacPAD. MacTerminal II is an example of a terminal tool for the Communications ToolBox.

You can find instructions on moving a terminal tool into the Communications ToolBox in the user's guide of your terminal program.

---

## Using the X.25 Chooser

**P**RIOR TO MAKING AN X.25 CALL, YOU MUST EITHER SELECT A GRAPEVINE SERVER or you must download X.25 connection information into your Addresses file.

This chapter tells you how to perform these two tasks from your Chooser desk accessory.

The X.25 Chooser document and Open Book program must be present in the System Folder of your hard disk before you can perform the tasks described in this chapter. See Chapter 1 for instructions on installing these programs on your Macintosh.

---

## What the X.25 Chooser does

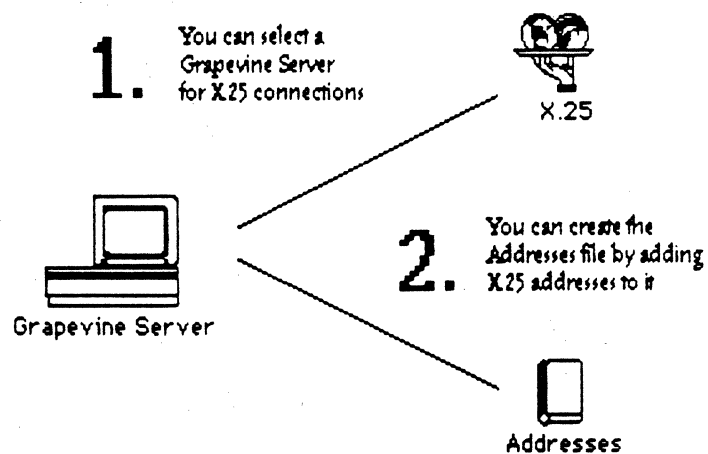
The X.25 Chooser adds the X.25 icon to the list of server and printer icons that you see in your Chooser desk accessory.

Before you can enter a CCITT connect command that successfully establishes an X.25 connection, you must use your Chooser desk accessory to select the Grapevine Server that supports the link your connection will use. You can make this selection from your Chooser desk accessory.

Before you can use the Macintosh user interface to place an X.25 call, you need an Addresses file in your System Folder with X.25 address information in it. The Chooser handles the details of creating the Addresses file in the appropriate folder, downloading all of the necessary X.25 information in the appropriate format, and saving the file.

Figure 2-1 illustrates the two capabilities that the X.25 Chooser provides.

■ Figure 2-1 What the X.25 Chooser provides



## How to use the X.25 Chooser

To use the X.25 Chooser, follow these steps:

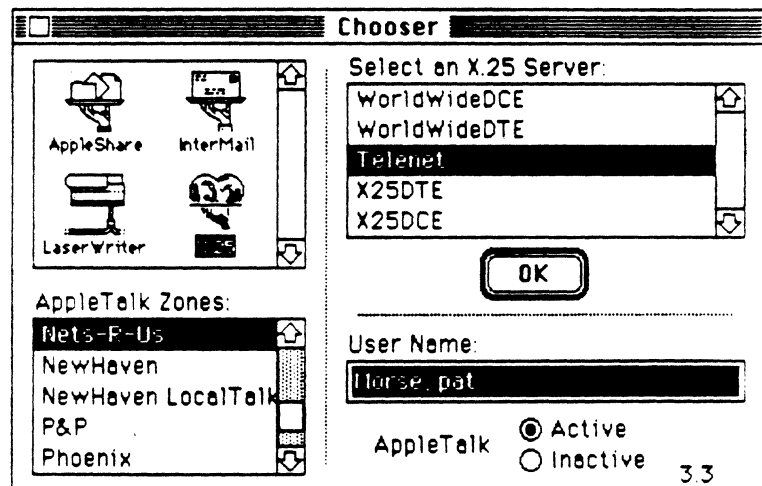
1. Select **Chooser** from the  menu.

The Chooser displays a dialog showing a list of icon choices in the upper left portion of the window, as *Figure 2-2* illustrates.

2. Select the **X.25** icon. If you do not see the X.25 icon, you can scroll through this list to find it.

If you cannot find the X.25 icon in the list, your System Folder probably does not contain an X.25 Chooser. In this case, close the Chooser and follow the Grapevine User installation instructions in Chapter 1 of this guide.

- **Figure 2-2** Selecting a Grapevine Server from the Chooser desk accessory



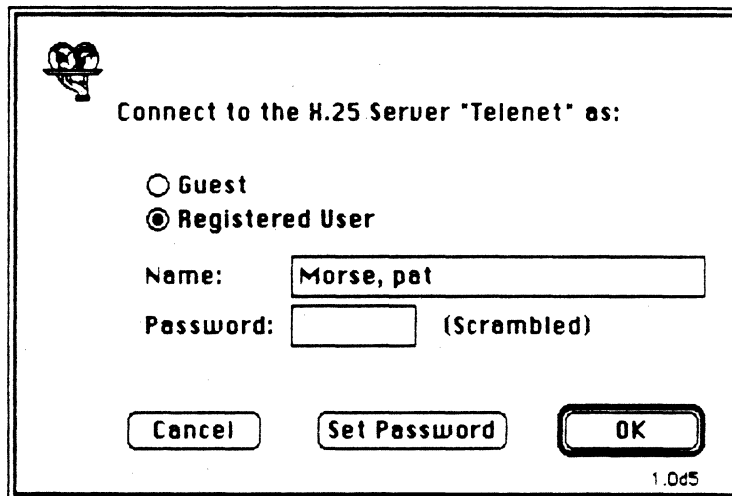
3. Select from the list of AppleTalk zones in the lower left window the zone that contains the Grapevine Servers. If you do not see the name of the zone you want, you can scroll through this list to find it.


When you select a zone that contains Grapevine Servers, the Chooser lists the Grapevine Servers in the upper right window. *Figure 2-2* shows the Chooser dialog displaying a list of Grapevine Servers.

4. Select the Grapevine Server name from the list labeled "Select an X.25 Server." If you do not see the name, you can scroll through this list to find it.
5. Click **Ok**.

At this point, you see another dialog, as *Figure 2-3* illustrates.

■ **Figure 2-3** Gaining access to a Grapevine Server



 Connect to the H.25 Server "Telenet" as:

☐ Guest  
☒ **Registered User**

Name:

Password:  (Scrambled)

1.0d5

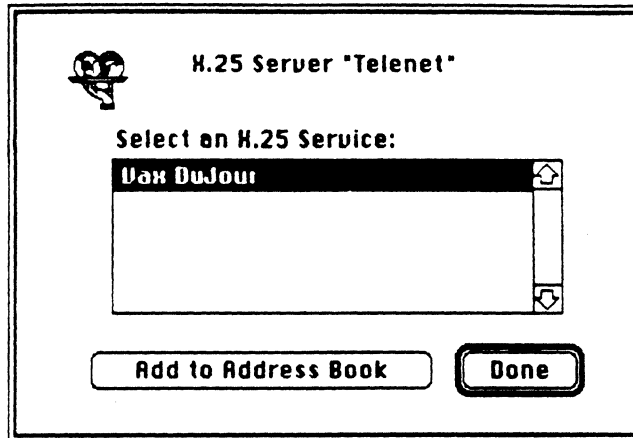
6. If you have a valid user name and password for the Grapevine Server, enter this information in the appropriate boxes and then click OK.

If you do not have a user name and password for the server, click the Guest radio button and Ok.

The Grapevine Server now displays the dialog that *Figure 2-4* shows. This dialog contains a list of X.25 hosts.

If you plan to use Macintosh menus to establish a connection, do steps 7 and 8. If you are familiar with CCITT PAD technology and you prefer to enter PAD commands by typing them directly into your terminal file, you can skip to step 9.

■ **Figure 2-4** Downloading host information to your Addresses file



7. Select the hosts that you want in your Addresses file from the list labeled "Select an X.25 Service." (You can select more than one entry by holding the shift key down as you click each name.)
8. Click **Add to Address Book**.
9. Click **Done**.
10. Close the Chooser dialog by clicking Cancel or by clicking the small box in the Chooser's upper left corner.

You can now use MacPAD to make X.25 calls. Chapter 3 contains instructions for accessing MacPAD and for establishing and ending X.25 connections through a Grapevine Server.





---

## Making X.25 connections

THE COMMUNICATIONS TOOLBOX STANDARDIZES THE WAY YOU MAKE X.25 or any other type of connection on your Macintosh. This chapter tells you how to access MacPAD for X.25 connections.

Because MacPAD allows you to perform actions which are fairly technical in nature, this chapter begins with a section on understanding MacPAD.

Because MacPAD works within the confines of a terminal tool for the Communications ToolBox, the chapter also provides information on accessing MacPAD and on making and ending X.25 connections, using the MacTerminal II program for specific examples.

---

## Understanding MacPAD

MacPAD provides a Macintosh user environment that makes it easy for you to establish X.25 connections and to perform routine PAD operations. MacPAD also supports the standard CCITT dialogs between a terminal and a PAD. This section compares these two very different environments so that you can better understand how to use this tool.

---

### MacPAD sessions

A MacPAD session is a terminal session which you have configured for X.25 connections. When you are in a MacPAD session, the MacPAD menu appears in the menu bar at the top of your screen, as *Figure 3-1* shows.

The section called "Accessing MacPAD", which occurs later in this chapter, describes how to begin a MacPAD session during a MacTerminal II session. Other terminal tools for the Communications Toolbox have similar ways of accessing MacPAD.

When MacPAD is available, your Macintosh looks like a PAD to a host computer on a packet switched data network.

■ **Figure 3-1** The MacPAD menu in a terminal program's menu bar

⌘ File Edit Configure Commands MacPAD

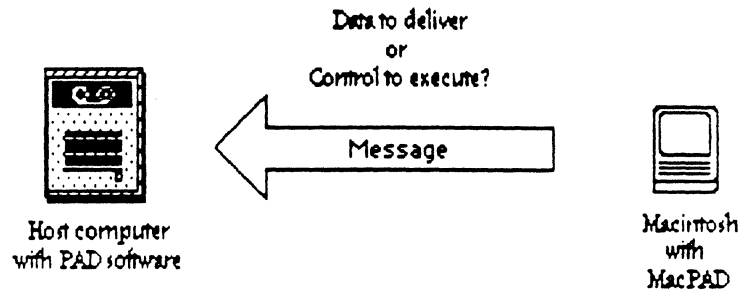
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### Modes of operation

A PAD allows you to send data and to issue commands. When PAD technology was developed, a terminal user needed a way to tell the PAD whether to interpret a line of text as data to transmit to the host or as a command to execute. *Figure 3-2* illustrates this concept.

Normally, a PAD assumed that a line of text was data, and that the terminal was in data transmit mode. To issue a command, the terminal user typed a preset PAD recall character, which put the terminal into command mode, allowing the terminal user to enter a one-line command.

■ Figure 3-2 Host-to-terminal communications



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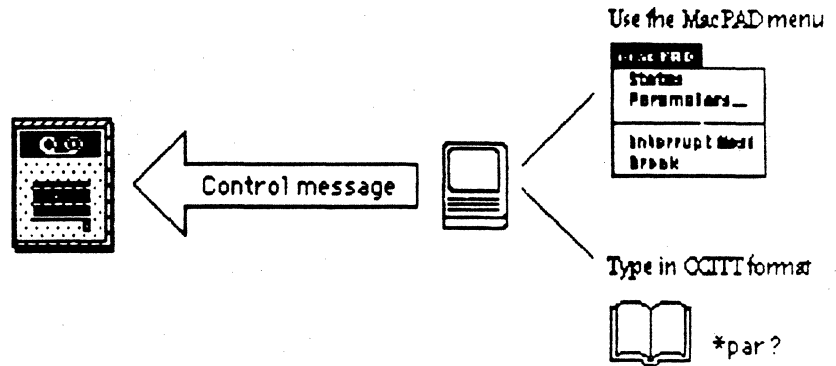
### Ways to use MacPAD

As a functionally complete PAD, MacPAD supports the PAD recall character and other PAD parameters and all of the PAD commands defined by the CCITT. So you can use MacPAD in this way.

As a Macintosh product, however, you can also issue PAD commands through MacPAD menu options. So to use MacPAD, you really don't need to know how to switch between command and data transmit modes.

If you don't know CCITT PAD technology, you can use the menus to connect to your host, to check the status of your call, and to view and modify your PAD parameter settings. If you are a technical user who is familiar with PAD command formats, you can enter any PAD command directly from your terminal session. *Figure 3-3* illustrates these concepts.

■ Figure 3-3 Ways to send PAD control messages



## Interpreting messages

When you type characters into your terminal file, MacPAD displays what you type according to the Local Echo parameter setting. When you send a PAD control message, or PAD service signal as the CCITT calls it, MacPAD displays its response on the next line of your terminal file. Appendix A lists some of the standard service signals with the response messages that you may see during a MacPAD session.

When you use a Macintosh menu to make or end an X.25 connection, MacPAD displays the CCITT connect or clear command on the next line of your terminal file, as if you had typed in this command. You should also see a response message in this case, indicating that the call is established in the first case, or cleared in the latter case.

Chapter 4 describes what you may see in your terminal file when you use the MacPAD menu to send other PAD control messages.

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## Accessing MacPAD

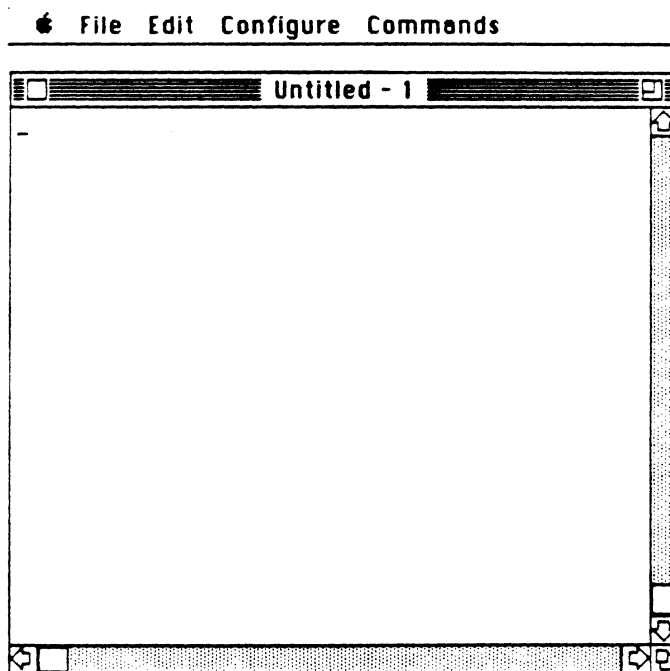
This section explains how you access MacPAD from MacTerminal II. Other terminal tools for the Communications Toolbox have similar methods of specifying an X.25 connection.

1. To begin your MacTerminal II session, double click on the MacTerminal II icon.

MacTerminal II puts you into a new untitled file, where it records everything that you type and that it receives.

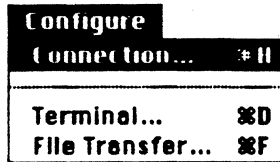
The initial MacTerminal II menu bar, which *Figure 3-4* shows, does not contain the MacPAD menu.

- **Figure 3-4** The initial MacTerminal II menu bar



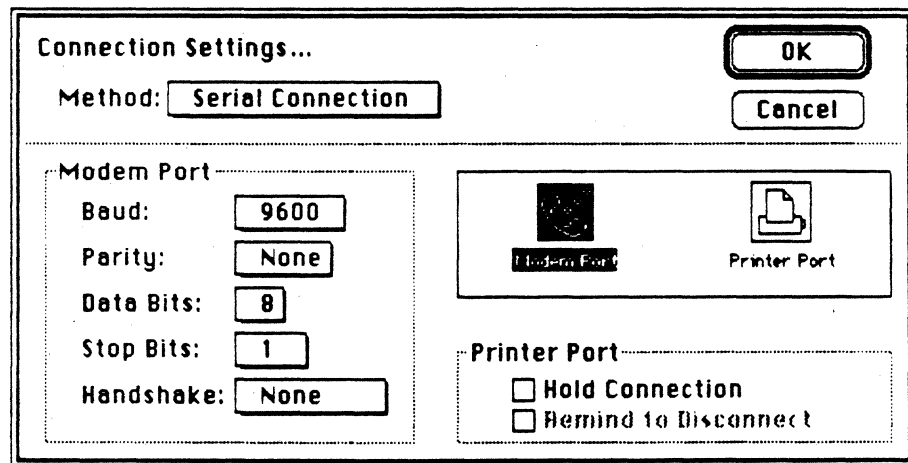
- 2 To get MacTerminal II to display the MacPAD menu, select the Connection option from the Configure menu, as *Figure 3-5* shows.

■ **Figure 3-5** Specifying the connection type



MacTerminal II displays the dialog shown in *Figure 3-6*. The first control in this dialog is a pop-up menu from which you can select a connection method.

■ **Figure 3-6** Selecting the X.25 connection method

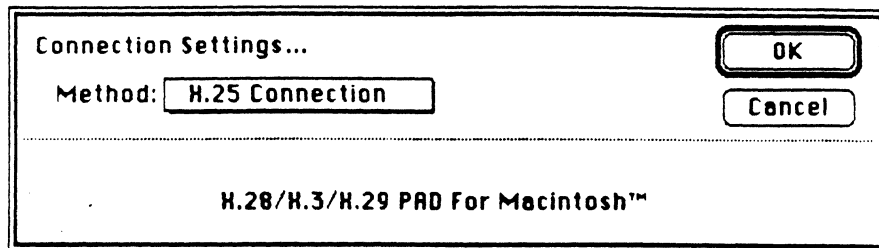


- 3 Select X.25 Connection from the Method pop-up menu.

To make this type of selection, put your cursor on the box and hold your mouse button down to display the list of options. Move the cursor to the option you wish to select and then release your mouse button.

When you select X.25 Connection, MacPAD displays the dialog shown in *Figure 3-7*.

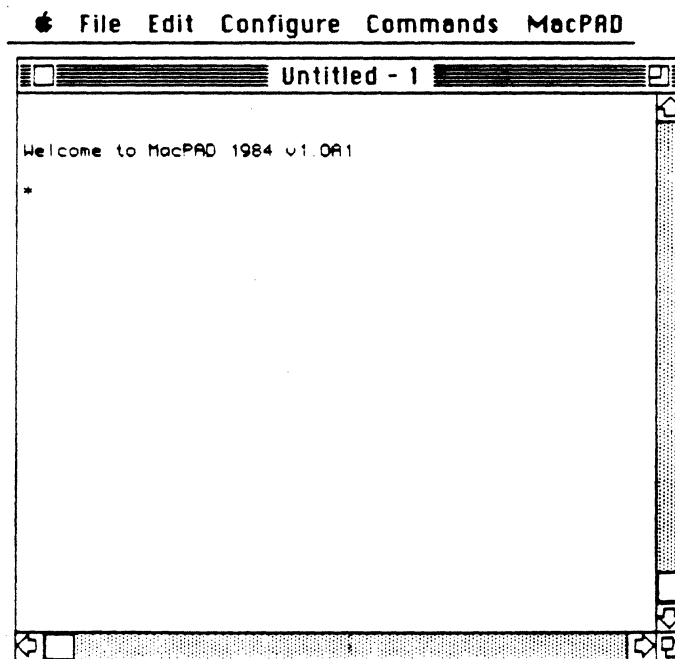
■ Figure 3-7 The initial MacPAD dialog



4. Click OK and the MacPAD menu appears after the Commands menu, as shown in Figure 3-8. MacPAD also displays a greeting message in your file, followed by MacPAD's \* prompt.

You can now begin using MacPAD.

■ Figure 3-8 Position of the MacPAD menu in the MacTerminal II menu bar



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## Making an X.25 call

Like accessing MacPAD, you establish new X.25 connections from your terminal emulator program. This process is often called "establishing a virtual circuit" or "making a call".

You can make an X.25 call during a MacPAD session either by using the Macintosh user interface or by following the standard PAD command mode method.

---

### Using Macintosh menus

To establish a new X.25 connection from the MacTerminal II program, follow these steps:

1. Select Initiate Connection from the Commands menu, as *Figure 3-9* illustrates.

■ **Figure 3-9**     Initiating an X.25 connection

Commands	
Initiate Connection...	⌘I
Kill Connection...	⌘K
Configurations...	⌘L
Clear Screen	
Reset Terminal	

MacPAD invokes the Open Book application, which displays information from the Addresses file in your System Folder. *Figure 3-10* shows this dialog.

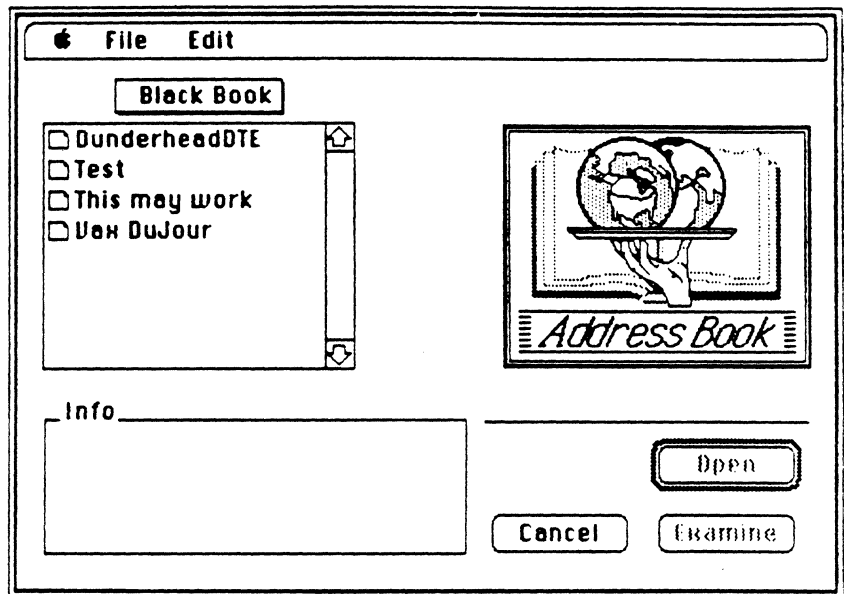
Open Book's upper left window contains a list of Host names. You can scroll through the names if you don't immediately see the name you want.



If you see a message stating that the system cannot locate your Address Book, the Open Book application is probably missing from your System Folder. In this case, click OK to close the alert dialog, quit the program you are running, and follow the installation instructions in Chapter 1 to install all of the Grapevine User software onto your hard disk.

- 2 Select the host you want by clicking on its name and then clicking Open or by double clicking the name.

■ **Figure 3-10** An example Open Book list of names



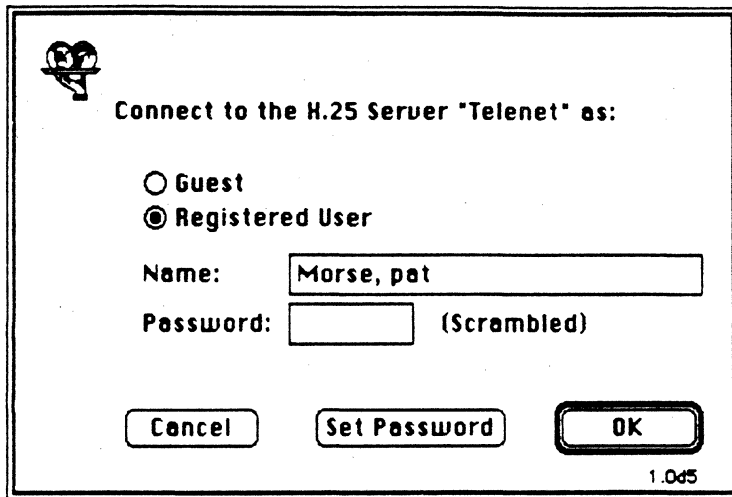
You can find more information about using Open Book in Chapter 5 of this guide.


With the information it gets from Open Book, MacPAD prepares the appropriate X.25 packet and passes it to the Grapevine Server. In the process, MacPAD enters a line of text into your MacTerminal II file. This line contains the PAD connect command that MacPAD created from the Initiate Connection option and the Address Book information.

The Grapevine Server then displays a dialog asking you to enter your Grapevine Server user name and password. *Figure 3-11* shows this dialog.

- 4 Enter your password and click OK or click the Guest radio button and click OK.

■ **Figure 3-11** Gaining access to a Grapevine Server



 **Connect to the H.25 Server "Telenet" as:**

☐ Guest  
☒ **Registered User**

**Name:**

**Password:**  (Scrambled)

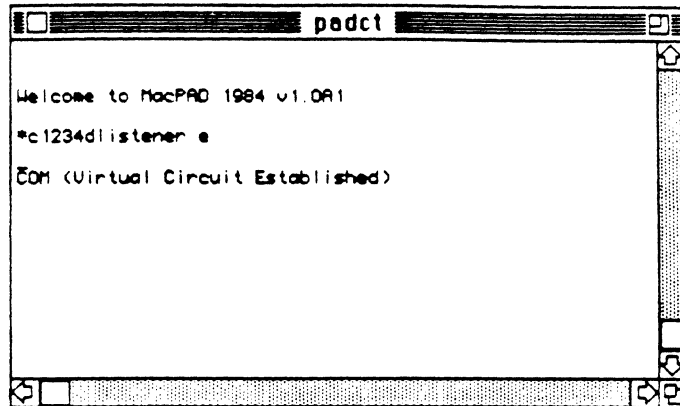
1.0d5

At this point, MacPAD enters a CCITT connect command on the next line of your file and sends this command to the Grapevine Server. The Grapevine Server places your X.25 call and returns a response to MacPAD. MacPAD displays the response message on the next line of your file.

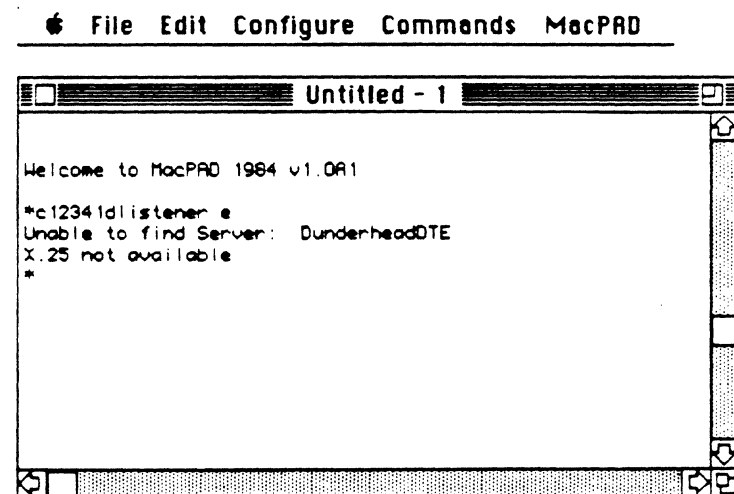
Occasionally, you may not be able to access a particular Grapevine Server. If this happens, try again in a few minutes or contact your network administrator and report the problem.

*Figure 3-12* shows an example of a MacTerminal II session with a successful X.25 connection. *Figure 3-13* shows an example of a MacTerminal II session with a connection attempt that fails.

- Figure 3-12 A successful X.25 connection



- Figure 3-13 An X.25 connection attempt that fails



For security reasons, some remote hosts require you to type in a user name or password after you have established your connection. You should contact your network administrator or host vendor for this information, if it is required.

If, after you have successfully connected to your host, your terminal session behaves strangely, your PAD parameters may need some adjustment. Appendix C defines each of the PAD parameters and tells you how to correct display problems by changing certain settings.

---

## Using command mode

Before you can successfully send a CCITT connect message, you must select a Grapevine Server from the Chooser desk accessory by following the instructions in Chapter 2. Once you select a Grapevine Server, however, you can make X.25 calls to that server at any time, provided the server is available.

To issue the connect command, follow these steps:

1. Type the PAD recall character to put your Macintosh into command mode. By default, this is usually a Control-p.

If you don't know which character to use for PAD recall, you need to see your current parameter settings. You can find instructions for viewing your PAD parameter settings in Chapter 4.

2. Enter a PAD connect command.

A PAD connect command consists of a lowercase "c" followed by the complete network address of the host computer you wish to access. See your network vendor for specific network address information.

3. Send the command by pressing the call forwarding key defined in your PAD parameter settings. In most cases, this is the Return key.

At this point, MacPAD sends your connect command to the selected Grapevine Server, who places your X.25 call and returns a response to MacPAD. MacPAD displays the response message on the next line of your MacTerminal II file.

*Figure 3-12* shows an example of a MacTerminal II session with a successful X.25 connection. *Figure 3-13* shows an example of a MacTerminal II session with a connection attempt that failed.

---

## Ending an X.25 Call

When you have finished using your host computer, you should terminate your X.25 connection from your terminal emulator program.

To end an X.25 connection from MacTerminal II, select Kill connection from the Commands menu, as *Figure 3-14* shows.

■ **Figure 3-14** Ending an X.25 call

Commands	
Initiate Connection...	⌘I
Kill Connection...	⌘K
Configurations...	⌘L
Clear Screen	
Reset Terminal	

When you end your call in this way, MacPAD displays a "CLR CONF" message, which indicates that the call is cleared.

You may now make another X.25 call, select another connection method from your terminal emulator, or Quit.

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## Sending PAD commands

**W**HEN THE MACPAD MENU APPEARS ON YOUR SCREEN, YOU CAN PERFORM PAD control functions by sending commands to MacPAD or to the remote host. PAD control functions include checking the status of your call, displaying or modifying your PAD parameter settings, and sending certain X.25 control packets that affect the X.25 connection in some way.

With MacPAD, you can perform these PAD control functions by using commands from the MacPAD menu or, if you are familiar with the PAD commands that the CCITT defines, by sending these commands as you do with any standard PAD interface.

This chapter describes how to perform the PAD control functions that MacPAD provides.

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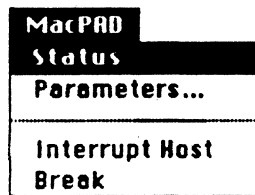
## Checking the status of your X.25 connection

You can determine the status of an X.25 connection at any time that the MacPAD menu is present on your screen by using MacPAD's Status command.

To use MacPAD's Status command:

1. Choose Status from the MacPAD menu, as *Figure 4-1* shows.

■ **Figure 4-1** Choosing the MacPAD Status command



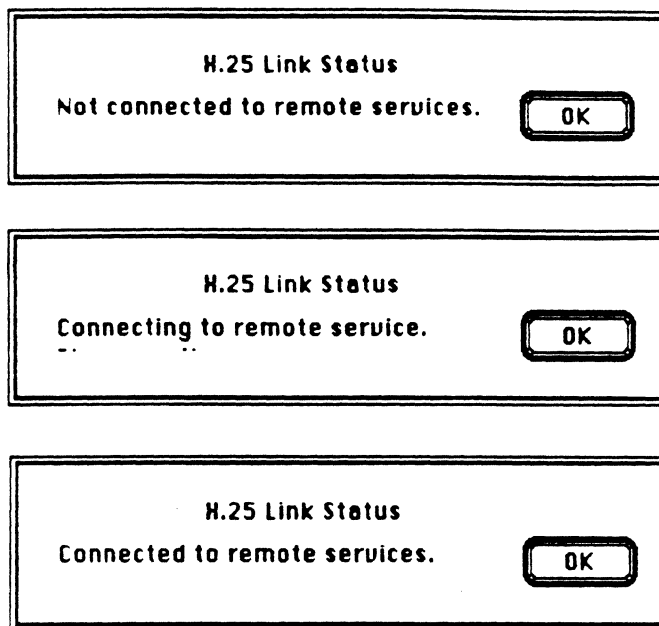
MacPAD displays a dialog that contains information about your current X.25 connection. MacPAD's status dialogs refer to an X.25 connection as an X.25 link.

2. When you have read the information in a status dialog, click OK to close the dialog.

*Figure 4-2* shows the status dialogs that you see when you do not have an X.25 connection, while you are waiting for a call to be established, and when you do have an active connection.



■ **Figure 4-2** Examples of MacPAD status dialogs



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## Setting PAD parameters

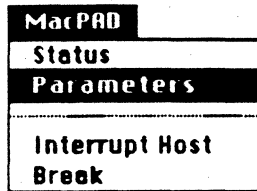
In most cases, when you establish a connection with a host computer, the host's PAD will determine and set your PAD parameters correctly. So you rarely need to change these settings.

You can, however, view and modify the current PAD parameter settings at any time that the MacPAD menu is present on your screen by using MacPAD's Parameters command.

To use MacPAD's Parameters command:

1. Choose Parameters from the MacPAD menu, as *Figure 4-3* shows.

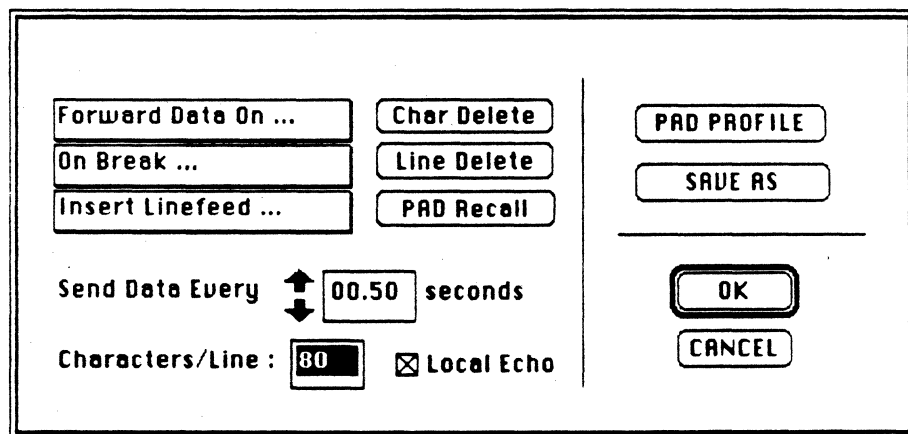
■ Figure 4-3 Choosing MacPAD's Parameters command



MacPAD displays a dialog that contains information about your current PAD parameter settings. *Figure 4-4* shows the Parameters dialog.

2. Click OK to put the current settings into effect or click Cancel to close the dialog without changing the settings. (If you do not change any settings, OK and Cancel do the same thing.)

■ Figure 4-4 The Parameters dialog



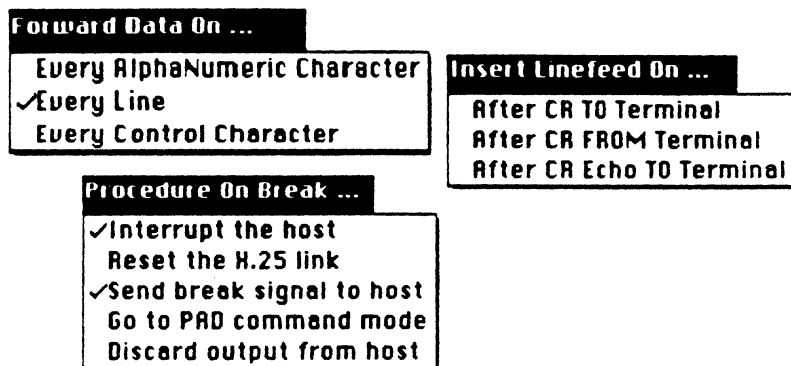
This section describes the Parameters dialog and tells you how to use the various controls that it contains. You can find information on how to determine what a specific setting should be in Appendix C.

## Using pull-down menus

The Parameters dialog contains pull-down menus that you use to display and to change the settings of the Forward Data On, Procedure On Break, and Insert Linefeed On parameters. *Figure 4-5* shows the options that are available under each of these menus.

This section describes how to use the menus. Appendix C contains information on how to determine which settings to use for these parameters.

- **Figure 4-5** Setting options for the Forward Data On, Procedure On Break, and Insert Linefeed On parameters



To use a pull-down menu

1. Place your cursor in the shadow box that you wish to select and hold down your mouse button.

You then see all of available settings for the selected parameter. MacPAD is using the settings with a check mark. MacPAD is not using the settings that contain no check mark.

2. To put a check mark on a setting that MacPAD is not using, move your cursor to the desired setting and then release your mouse button. To remove a check mark from a setting that MacPAD is using, move your cursor to the setting and release your mouse button.

## Displaying a character assignment

The Parameters dialog contains buttons that you use to display the character that is assigned to perform a character delete, a line delete, and a PAD recall action.

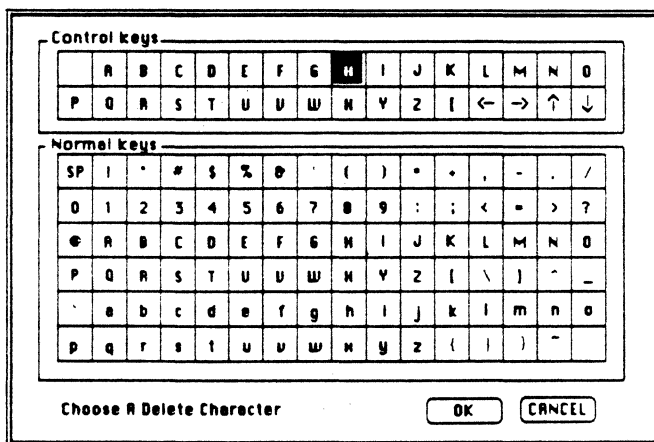
This section describes how to use the buttons to make a character assignment. Appendix C defines these parameters.

To see which character is assigned to any of these parameters:

1. Click the button whose character assignment you wish to see.

MacPAD displays a dialog like the one that *Figure 4-6* shows. The dialog describes in its lower left corner the action to be performed and displays every character that you can assign for that action.

■ **Figure 4-6**     Displaying a character assignment



MacPAD inverts the currently assigned character (displays a white character on a black background). In the figure, a Control-h (which represents the delete key on your Macintosh) performs a character delete.

2. To change the assignment, either click on the character you want or type the character.

To assign a control character, click any character in the upper half of the dialog or press the control key at the same time you type the character.

To specify a normal keystroke, click a character in the lower portion of the dialog or type the character.

3. Click OK to put the new character assignment into effect or click Cancel to close the dialog without changing the assignment. (If you do not make a change, OK and Cancel do the same thing.)

---

### Changing the other parameter settings in the Parameters dialog

The Parameters dialog displays settings for three additional parameters. This section describes how to make the settings. See Appendix C for a description of these parameters and their possible settings.

#### Send Data Every

To change the value of the parameter labeled "Send Data Every"

1. Click on the small arrows that appear in front of the text box until the box to the right of the arrows contains the desired number.

When you click on the arrow that points up, MacPAD increases the value by 5. When you click on the arrow that points down, MacPAD decreases the value by 5.

#### Characters/Line

To change the value of the Characters/Line parameter

1. Select the box.
2. Type in the number of characters that you want MacPAD to display on each line of your terminal file.

## Local Echo

The control for the Local Echo parameter is a check box. If you want MacPAD to display the characters you type, the check box should contain an X. If you are seeing two of each character you type, you probably need to turn Local Echo off. Local Echo is off when its check box is empty.

To change the current value of a check box:

Click on the box.

When you click an empty check box, an X appears in the check box. When you click a check box with an X in it, the X disappears.

---

## PAD Profile, Save As, OK, and Cancel

The right portion of the Parameters dialog contains several buttons. These are PAD Profile, Save As, OK, and Cancel.

You use the PAD Profile and Save As buttons for opening and saving PAD profiles, respectively. You can find instructions for using PAD profiles later in this chapter.

You click OK to put the parameter settings from the current Parameters dialog into effect without permanently saving them into a PAD profile.

You click Cancel to close the Parameters dialog without putting any changes into effect.

---

## Using PAD profiles

MacPAD provides the three standard CCITT profiles and you can create additional PAD profiles as you need them.

This section describes how to save PAD profiles and how to open PAD profiles that you have saved.

In most cases, when you establish a connection with a host computer, the computer will determine and set your PAD parameters correctly. So you will rarely need to use PAD profiles.

## Creating a PAD Profile

To make a new PAD profile, follow these steps:

1. Choose Parameters from the MacPAD menu to display the Parameters dialog.
2. Set each of the parameters as needed.
3. Click Save As.

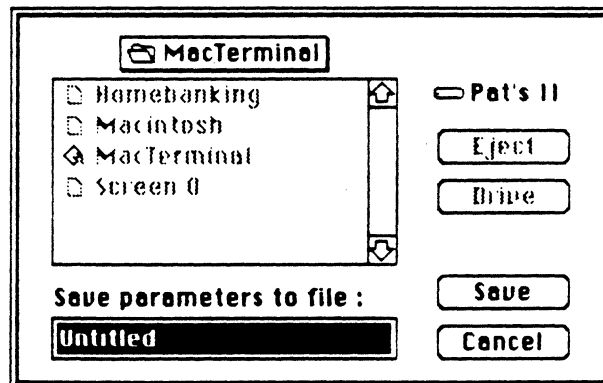
MacPAD displays a dialog, asking you to specify a file name. *Figure 4-7* illustrates this dialog.

4. Enter a name for your new PAD profile.

You can give a PAD Profile any name you wish, but it is helpful to choose a name that will have meaning to you in the future.

5. Click Save to save the profile or click Cancel to close the dialog without saving the profile.

■ **Figure 4-7** Saving PAD parameter settings to a PAD profile



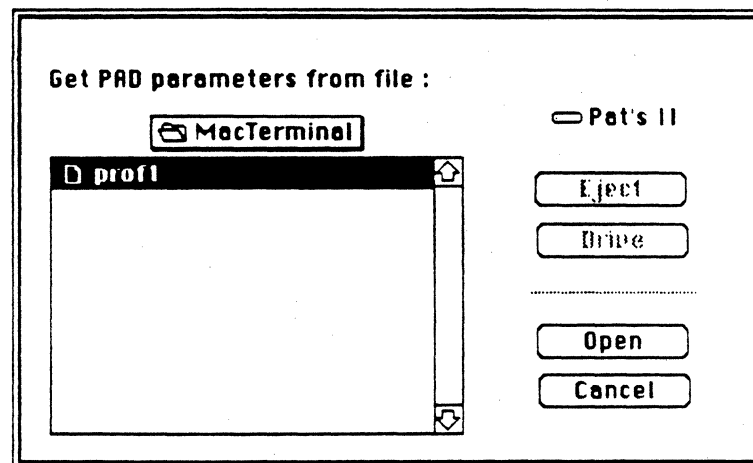
## Opening existing PAD profiles

To open an existing PAD profile, follow these steps:

1. Choose Parameters from the MacPAD menu to display the Parameters dialog.
2. Click PAD Profile

MacPAD displays a dialog that contains the list of PAD profiles and folders from your current folder, as *Figure 4-8* illustrates.

■ **Figure 4-8** Opening an existing PAD profile



3. Double click on the name of the PAD profile that you wish to open.

The Parameters dialog now contains the parameter settings for the selected PAD profile.

You cannot use the PAD Profile button in the Parameters dialog to open any of MacPAD's built-in profiles. You can, however, use a prof command to access these profiles. For more information, see the section on "Using PAD commands," which occurs later in this chapter.



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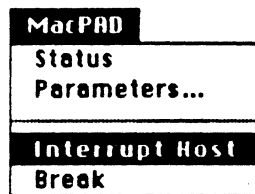
## Interrupting the host

The MacPAD menu provides an Interrupt Host command that you can use during an active connection to send an X.25 interrupt packet to the host computer. An interrupt packet can affect your X.25 connection in any of several ways, depending on how the remote host processes this type of packet.

To send an interrupt packet to the host:

1. Choose Interrupt Host from the MacPAD menu, as *Figure 4-9* illustrates.

■ **Figure 4-9** Choosing the MacPAD Interrupt Host command



2. Wait for a response to appear on the next line of your file.

MacPAD sends the packet to the Grapevine Server, which forwards the packet to your host and waits for an acknowledgement. When it receives the acknowledgement, the Grapevine Server notifies MacPAD and MacPAD displays a message on the next line of your file.

When you see an acknowledgement message in your file, you know that the host received your interrupt.

---

## Issuing a break signal

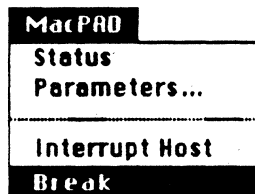
MacPAD allows you to send a break character to MacPAD or to the remote host. MacPAD provides this feature because the Macintosh keyboards do not contain a break key.

You can only send a Break signal while you have an active X.25 connection.

Figure 4-10 shows how you issue a break signal to MacPAD.

MacPAD responds to a break signal according to the current "Process Break as" parameter setting. If MacPAD sends a break signal to the host, the host processes the break in its normal manner, which may vary from host to host.

■ **Figure 4-10** Choosing the MacPAD Break command



---

## Using PAD commands

This section contains instructions for entering PAD commands directly into your terminal file and then lists the commands that you use to obtain link status information, to see or change your PAD parameter settings, to change your PAD profile, and to send certain X.25 control packets.

You can find a brief summary of the PAD commands in Appendix A.

The following instructions assume that MacPAD is using its default PAD profile, which is prof1.

- ◆ When you connect to a host, the host's PAD may transparently change some of your PAD parameter settings.

To send any PAD command, follow these steps:

1. Type Control-p to put MacPAD into command mode.

MacPAD displays its \* prompt, which indicates that MacPAD is waiting for a command from you.

2. Type the command.

3. Press the return key to send the command.

MacPAD executes the command and displays its service signal response on the next line of your file.

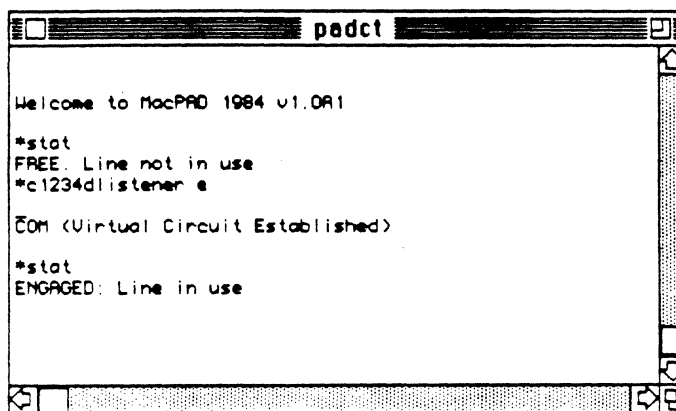
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## stat

Use the **stat** command to display the current status of your X.25 link.

Figure 4-11 shows examples of the stat command.

- **Figure 4-11** Sending a CCITT stat command



---

## par? and set?

The CCITT defines two PAD commands that you can use to display your current parameter settings. These are the **par?** and **set?** commands.

When you issue either of these commands, MacPAD displays in CCITT format the current settings of all 22 PAD parameters. The CCITT format of each parameter is:

parameter number:setting

A comma separates each parameter in the list.

You can find a list of the PAD parameters by their CCITT parameter numbers in Appendix B. Appendix C contains more detailed definitions of the parameters and gives information about their possible settings.

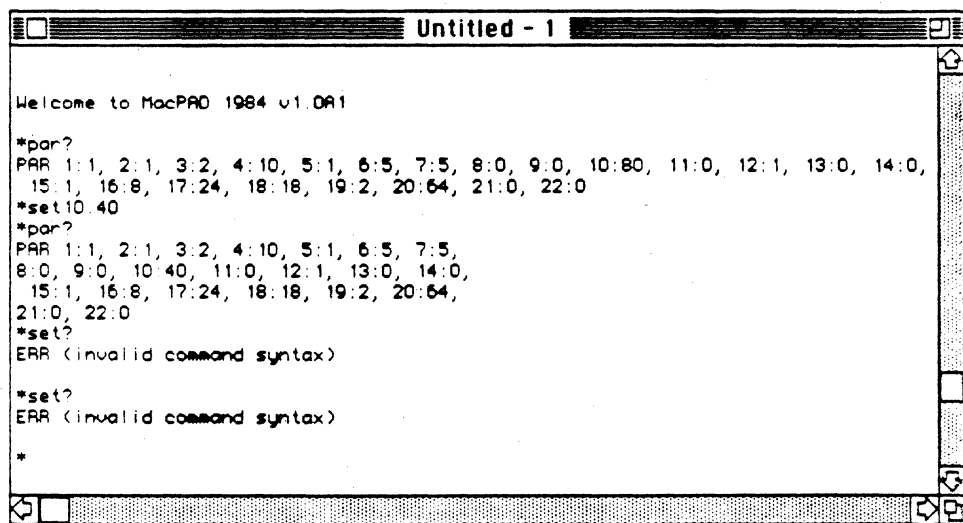
Figure 4-12 shows a sample terminal session with these commands. Notice that MacPAD's response to each of these commands is the same.

---

## set

The CCITT defines the set command for changing the value of one or more of your current PAD parameter settings. Figure 4-12 shows a sample terminal session with several set commands.

■ Figure 4-12 Sending the par?, set, and set? commands



In most cases, when you establish a connection with a host computer, the computer's PAD will determine and set your PAD parameters correctly. So you will rarely need to change these settings.

The correct format of the set command is:

```
set parameter list
```

Use the following format for each parameter:

`parameter number:ASCII decimal value`

Separate each parameter in the list with a comma. Do not include any space characters. You can find a list of the PAD parameters by their CCITT parameter numbers in Appendix B.

---

### **prof1, prof90, and prof91**

The CCITT defines three standard PAD profiles and provides a `prof` command that you can enter directly from your terminal file to put a particular profile into effect.

MacPAD uses `prof1` as its default PAD profile. With `prof1`, MacPAD displays the `*` prompt when you enter the PAD recall character and echoes characters according to the forwarding signal parameter setting.

MacPAD also provides `prof90` and `prof91`. With `prof90`, MacPAD does not display the `*` prompt when you enter the PAD recall character and echoes characters only after a specified time period.

`Prof91` is a data transmit profile that does not provide a PAD recall capability and that does not always echo characters that you type.

When you have specified `prof91`, you can only change the profile by using the MacPAD Parameters command to specify a PAD recall character for your session. When you can use a PAD recall character, you can issue the `prof` command to change to another PAD profile.

---

### **int, clr, and reset**

The `int`, `clr`, and `reset` commands each send a specific type of X.25 packet to the host. You use the `int` command to send an X.25 interrupt packet across the link. You use the `clr` command to send a clear request packet. You use the `reset` command to send an X.25 reset packet to the host.

The host processes these types of packets in its normal manner, which differs from host to host.

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## Using Open Book

**W**HEN YOU ARE WORKING WITH YOUR ADDRESSES FILE, YOU ARE ACTUALLY using the Open Book application. Addresses is an address book, which is a file that Open Book creates when you use this application.

This chapter describes the Open Book application and its address books, explains what an address book contains, and tells you how to use Open Book to build, examine, and edit this type of file.

---

## Understanding Open Book

Open Book hides the technical details required to establish an X.25 call by showing you only a list of host names from an address book, like Addresses.

Address books, however, also contain hidden server and other network address information for each of the hosts you see in the list.

This section describes Open Book and its address books and tells you what an address book contains.

---

### Open Book and your address books

The Grapevine User disk provides the Open Book application and the X.25 Chooser. The X.25 Chooser uses Open Book to automatically create your Addresses file when you use your Chooser desk accessory to add host names to your address book.

### Open Book

The Open Book program displays in a Mac-like way information from an address book. You use Open Book to select a host for a connect operation and you can also use Open Book to view, add to, and edit the contents of an existing address book or to build a new address book.

Although Open Book is a stand-alone application that you can launch from your desktop, Open Book also allows other programs to launch it. For example, MacPAD launches Open Book when you use the Macintosh interface to initiate a connection.



## Address books

An address book, like Addresses, contains connection information on the hosts that you need to access. This includes X.25 connection information for a host you access through an X.25 network and can also include additional types of connection information from other products that use Open Book.

Grapevine does not initially provide an Addresses file on the Grapevine User disk because Open Book automatically creates this file when you use the Chooser's Add to Address Book option, or when you first access Open Book either directly or through another program, like MacPAD.

You can create additional address books at any time. When you create a new address book, you can give it any name you choose.

---

### What an address book contains

Each address book contains a list of one or more **entries**. Each entry contains the host's name and any information required for a program like MacPAD to place a call to that host. *Figure 5-1* illustrates what an address book contains.

■ **Figure 5-1** Contents of an address book

Entry (name of host)	X.25 Server subrecord	X.25 Connection subrecord	Other ??? subrecord
Dow Jones			
Apple VAX			
Accounts			

## **X.25 subrecords**

Address books have two types of subrecords for X.25 entries. These are

- X.25 Server
- X.25 Connection

The X.25 Server subrecord contains the name and zone of a Grapevine Server in the AppleTalk network.

The X.25 Connection subrecord contains either the X.25 network address of the host, so MacPAD can place a call to that host; or it contains specifications that make it possible for your Macintosh to receive an X.25 call from the host. The data in this subrecord must conform to the CCITT recommendations for technical content and format.

## **Other subrecords**

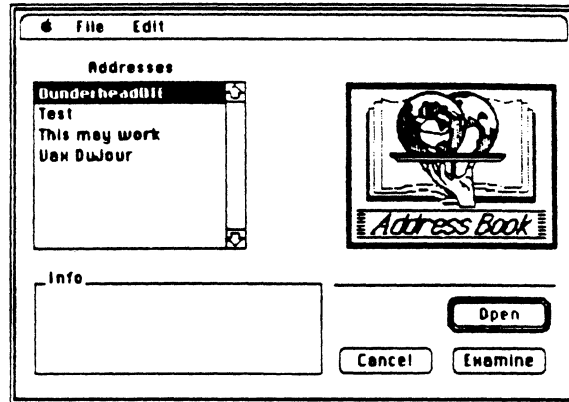
A developer can adapt Open Book for other types of connections by adding other subrecords to the address book structure. The name of a subrecord normally identifies the type of information that the subrecord contains.

---

## **The Open Book dialog**

The Open Book program displays information from an address book in a dialog like the one *Figure 5-2* shows.

■ Figure 5-2 An Open Book dialog



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### The menu bar

When you are using Open Book, you cannot use the menus in the menu bar at the top of your screen. Because of this limitation, the Open Book dialog provides its own menu bar for editing entries and for accessing other address books, if you have any available to you.

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### The entry list window

The **entry list window** contains the list of host names for the current address book. The name of the address book that you are viewing appears above this window.

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### The information box

The information box contains helpful hints about a selected item or control. When you first see the Open Book dialog, the first name in the entry list window is highlighted and the information box contains information about that host. If the entry list window is empty, the information box is also empty.

When you select another item from any of Open Book's lists, a brief description of the selected item appears in the information box.

When you place your cursor on a menu, option, or button and hold your mouse button down, the information box contains a description of the control.

---

### **The picture**

The hand holding two worlds represents the server function of the Grapevine software. The X.25 communications software resides on a Grapevine Server, which you access remotely over AppleTalk.

Open Book also displays subrecords in this area of its dialog.

---

### **The Open, Cancel, and Examine buttons**

You use the Cancel button to quit Open Book without making a selection.

You must select an entry or subrecord to use the Open or Examine buttons.

You use the Open button to open the selected entry to your program and to quit Open Book. (If you launch Open Book from your desktop, the Open button is dimmed and you cannot use it.)

You use the Examine button to see a selected entry's subrecords or a selected subrecord's data.

---

## **Maintaining an existing address book**

With the X.25 Chooser, you can create your Addresses file and put entries into it automatically. You can find information on using the X.25 Chooser in Chapter 2 of this guide.

This section describes how to use Open Book to view and modify the contents of an address book.

---

## Launching Open Book

Maintaining an address book is easiest when you cannot use the Open button in Open Book's dialog. For this reason, when you want to view and modify the contents of an address book, you should launch Open Book directly from your desktop.

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## Opening an address book

Open Book always lists the entries from your Addresses file in its initial dialog.

To locate and open another address book, follow these steps:

1. Select Open from the File menu.

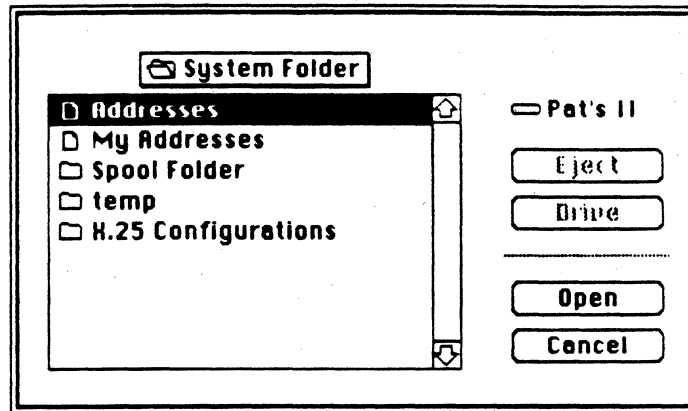
The program displays the standard File dialog. The shadow box at the top of the dialog contains the name of the folder that you are currently viewing. The window below the pop-up menu contains a list of the address books and folders that the current folder contains, as *Figure 5-3* shows. The names of other types of files are dimmed and you cannot open these files within Open Book.

2. Open any address book or folder in the list by double clicking on the item or by selecting the item and then clicking Open. Click Cancel to return to the Open Book dialog without selecting a folder or address book.

If you open a folder, its name appears in the pop-up menu above the File window and the file window contains the address books and folders in the selected folder.

If you open an address book, the file dialog disappears and Open Book displays in its entry list window the entries from the newly selected address book.

■ **Figure 5-3** The standard File dialog



---

## Editing an entry

You can use the Open Book Edit menu to cut, copy, paste and clear entries. You normally cut or copy entries to paste them into another address book.

## Copying an entry

To copy an entry, follow these steps:

1. Select the entry that you want to copy in the entry list window.
2. Choose Copy from Open Book's Edit menu.

Open Book puts a copy of the entry with all of its subrecord data onto your clipboard, where it remains until your next cut or copy operation.

The original entry remains intact in its current position in the address book.

When a copy of an entry resides on your clipboard, you can use the Paste option in Open Book's Edit menu.

### Cutting an entry

To cut an entry, follow these steps:

1. Select the entry that you want to cut in the entry list window.
3. Choose Cut from Open Book's Edit menu.

Open Book removes the entry from the address book and puts it with all of its subrecord data onto your clipboard, where it remains until your next cut or copy operation.

When a cut entry resides on your clipboard, you can use the Paste option in Open Book's Edit menu.

### Pasting an entry

When an entry resides on your clipboard, you can paste the entry in the current address book or in another address book that already exists or that you now create. You can find instructions for opening an existing address book earlier in this chapter. You can find instructions for creating a new address book later in this chapter.

To paste an entry into the address book that Open Book is currently displaying, follow these steps:

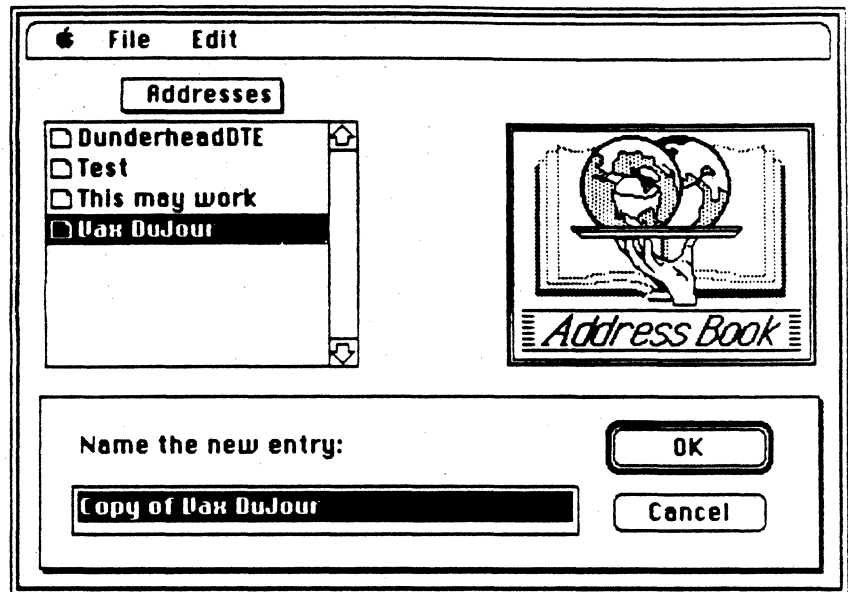
1. Select Paste from Open Book's Edit menu.

Open Book displays a dialog like the one *Figure 5-4* shows. Open Book considers any entry on your clipboard to be a new entry and so it displays the New Entry dialog in the lower portion of its window.

2. Type in the name that you want to give the entry.
3. Click OK.

The entry list window now contains the name you gave the entry in step 2. Open Book automatically puts the entry in alphabetical order in the list.

■ Figure 5-4 Pasting an entry



### Clearing an entry

You use the Clear option from the Edit menu to delete an entry from an address book.

To delete an entry, follow these steps:

1. Select the entry that you want to delete in the entry list window.
2. Choose Clear from Open Book's Edit menu.

Open Book clears the selected item from the address book and removes its name from the entry list window.

---

### Displaying subrecords

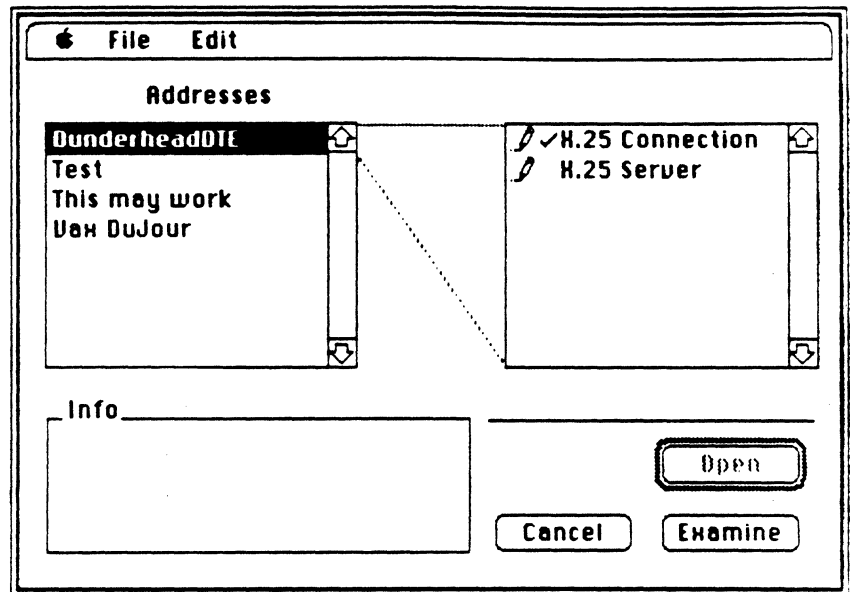
To display the subrecords of an entry, follow these steps:



1. Select the entry from the entry list window.
2. Click Examine.

The list of subrecords replaces the picture in the dialog, as *Figure 5-5* illustrates.

■ **Figure 5-5** Examining an entry's subrecords



A pencil icon and possibly a check mark precede each subrecord in the list. The pencil, if it is not dimmed, indicates that you can view and modify the subrecord's information. A check mark indicates that the subrecord has some information in it.

In *Figure 5-5*, the X.25 Connection subrecord contains some information, while the X.25 Server subrecord is empty. You can see and edit the contents of both of these subrecords, which the pencil icons indicate.

---

## Modifying the data in a subrecord

This section describes how to modify the contents of the X.25 Connection and X.25 Server subrecords.

### Modifying the X.25 Connection subrecord

To modify the X.25 Connection subrecord, follow these steps:

1. Select the X.25 Connection subrecord.
2. Click Examine.

Open Book displays the X.25 Connection dialog, which *Figure 5-6* illustrates.

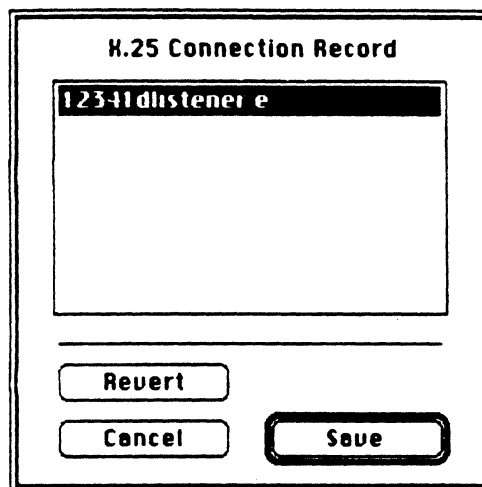
3. Type the current X.25 network address of the host. (You should get this information from your network administrator or from your network vendor.)

Do not put a "c" in front of the network address. MacPAD does this automatically when it uses the data in this subrecord to make an X.25 call.

4. Click Save to save the new information.

If you do not want to save the information, you can click Revert or Cancel to undo the changes that you just made. If you click Revert, Open Book continues to display the subrecord contents. If you click Cancel, Open Book closes the X.25 Connection dialog and displays the list of subrecords.

■ **Figure 5-6**     Modifying the contents of an X.25 Connection subrecord



### **Modifying the X.25 Server subrecord**

To modify the X.25 Server subrecord, follow these steps:

1. Select the X.25 Server subrecord.
2. Click **Examine**.

Open Book displays the X.25 Server dialog, which *Figure 5-7* shows.

3. Select the zone in which the Grapevine Server resides from the list of AppleTalk zones in the dialog's upper left window. You can scroll through this list if you don't immediately see the zone you want.

If the list does not contain the zone, you can enter this information into the text edit box labeled "Zone".

4. Select the Grapevine Server that supports connections to the host named in this entry from the list of X.25 servers in the dialog's upper right window. You can scroll through this list if you don't immediately see the server you want.

If the list does not contain the Grapevine Server you want to select, you can enter this information into the text edit box labeled "Name".

5. Click Save to save the new information.

If you do not want to save the information, you can click Revert or Cancel to undo the changes that you just made. If you click Revert, Open Book continues to display the subrecord contents. If you click Cancel, Open Book closes the X.25 Server dialog and displays the list of subrecords.

■ **Figure 5-7** Editing an X.25 Server subrecord

The screenshot shows a dialog box titled "X.25 Server" (implied by the caption). It is divided into two main sections: "Zones:" and "H.25 Servers:". The "Zones:" section contains a list box with the following items: Mon1/2nd, Net Com, Net Com Doc, Nets-R-Us (highlighted), NewHaven, NewHaven LocalTalk, POP, Phoenix, and PPG Zone. The "H.25 Servers:" section contains a list box with the following items: WorldWideDTE, WorldWideDCE, Telenet, H25DTE, and H25DCE. Below these lists are two text boxes: "Name:" with the text "DunderheadDTE" and "Zone:" with the text "Nets-R-Us". At the bottom left, there is an "Info:" section with the text: "Select a zone, then a server. You can just type in the zone and server names if you can't see the ones you want." At the bottom right, there are three buttons: "Revert", "Cancel", and "Save".

---

## Building a new address book

This section describes how you use Open Book to create a new address book and put entries into it.

---

## Creating a new address book

To create a new address book, follow these steps:

1. Select New from Open Book's File menu.

You then see a dialog like the one *Figure 5-8* shows.

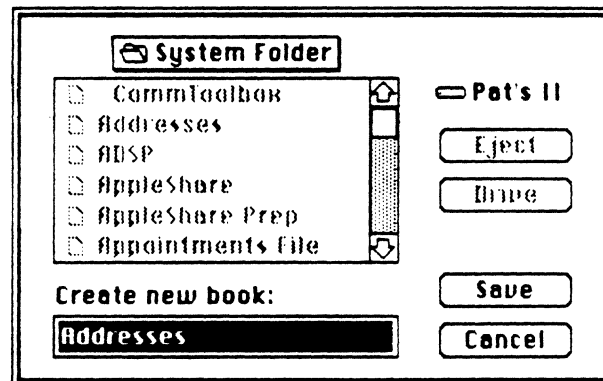
2. Type in the name that you wish to give your new address book.

You can give the new address book any name you wish.

3. Click OK.

Open Book creates your new address book and displays its name above the entry list window. The entry list is empty because you don't have any entries in it. You can now begin adding entries to this address book.

■ **Figure 5-8** Creating a new address book



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## Adding entries

To add new entries to an address book, follow these steps:

1. Select New Entry from Open Book's Edit menu.

You then see a dialog like the one *Figure 5-9* shows.

2. Type in the name that you wish to give your new entry.

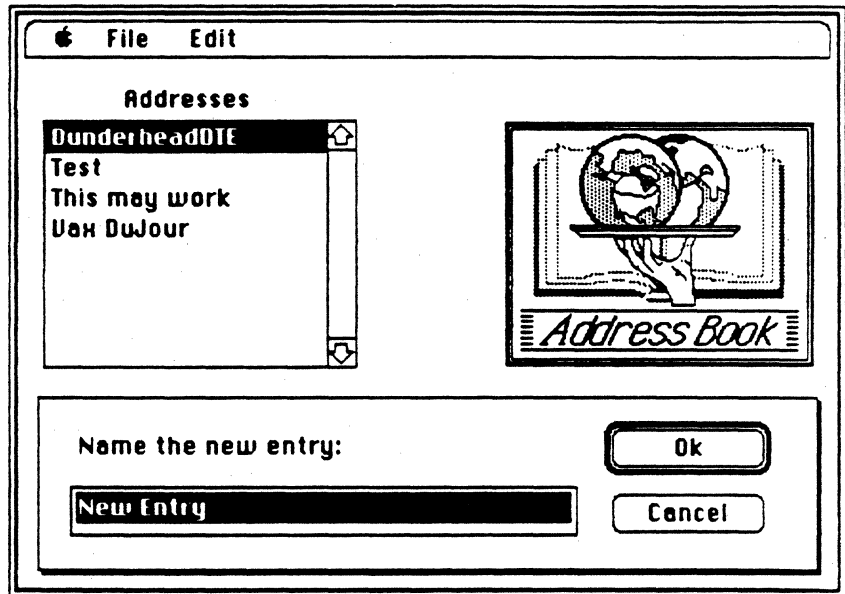
You should give the entry the name of the host that you are calling when you select this entry.

3. Click OK.

Your new entry now appears in the entry list window with an entry icon preceding it.

When Open Book creates a new entry, it automatically attaches all of the known subrecords to the new entry. The subrecords, however, are empty until you put some data into each of them.

■ **Figure 5-9** Adding a new entry to an address book



## Putting data into subrecords

You must display the list of subrecords for an entry before you can put information into them.

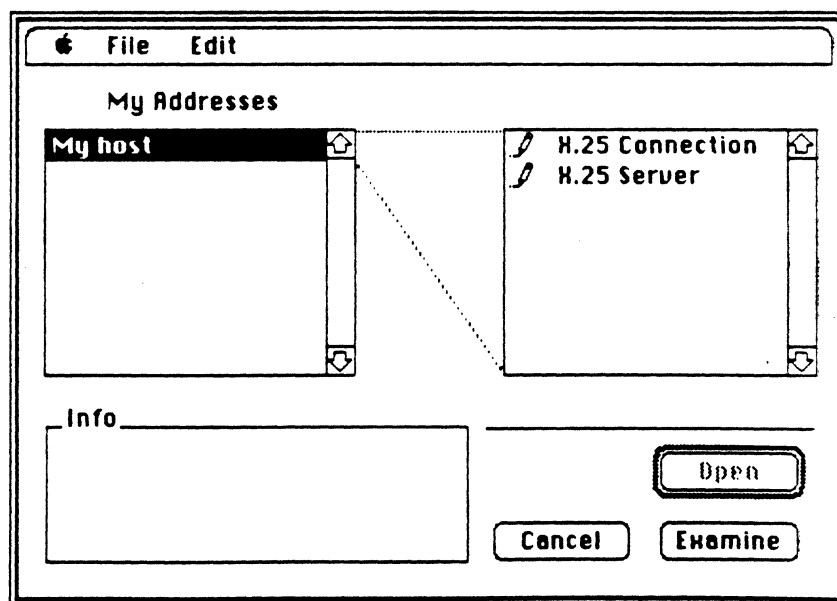
To display the list of subrecords for your new entry, follow these steps:

1. Select the entry name in the entry list window.
2. Click Examine.

The list of subrecords replaces the picture in the dialog.

The X.25 Connection and X.25 Server subrecords have pencil icons but no check marks, which indicates that you can edit these subrecords and that they are currently empty. *Figure 5-10* illustrates how a new entry's subrecords appear in Open Book's dialog.

■ **Figure 5-10** Subrecords that contain no data



### Putting data into the X.25 Connection subrecord

To put data into the X.25 Connection subrecord, follow these steps:

1. Select the X.25 Connection subrecord.
2. Click Examine.
3. Type the full X.25 network address of the host.

Do not put a "c" in front of the network address. MacPAD does this automatically when it uses the data in this subrecord to make an X.25 call.

*Figure 5-6*, which appears earlier in this chapter, shows an example of an X.25 network address in an X.25 Connection subrecord dialog.

4. Click Save.

The X.25 Connection subrecord is now preceded by both a pencil and a check mark. The check mark indicates that the subrecord now contains data.

### Putting data into the X.25 Server subrecord

To put data into the X.25 Server subrecord, follow these steps:

1. Select the X.25 Server subrecord.
2. Click Examine.

Open Book displays the X.25 Server subrecord dialog. *Figure 5-7*, which appears earlier in this chapter, shows an example of an X.25 Connection subrecord dialog.

3. Select the zone in which the Grapevine Server resides from the list of AppleTalk zones in the dialog's upper left window. You can scroll through this list if you don't immediately see the zone you want.

If the list does not contain the zone, you can enter this information into the text edit box labeled "Zone".

4. Select the Grapevine Server that supports connections to the host named in this entry from the list of X.25 servers in the dialog's upper right window. You can scroll through this list if you don't immediately see the server you want.

If the list does not contain the Grapevine Server you want to select, you can enter this information into the text edit box labeled "Name".



5. Click Save.

A pencil and a check mark now precede both the X.25 Connection and X.25 Server subrecords, which indicates that these two subrecords contain data. If the information in these two subrecords is valid, MacPAD can place a call to the host when you double click this entry during a connect operation.

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## Quitting Open Book

When you finish working in an address book, you quit Open Book by clicking Cancel. You do not lose any of the information in the address book when you quit Open Book.

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## PAD Commands and Service Signal Responses

THE FOLLOWING TABLE SHOWS THE PAD COMMANDS AS YOU MIGHT enter them directly into your terminal file, specifies the function that the command performs, and gives the possible service signal response to the command.

<u>PAD Command</u>	<u>Function</u>	<u>Service signal response</u>
STAT	Requests status information concerning the virtual call	FREE or ENGAGED
CLR	Clears a virtual call	CLR CONF or CLR ERR
PAR?	Displays the current values of the PAD parameters	PAR followed by a list of Parameter number:value
SET?	Same as PAR?	PAR followed by a list of Parameter number:value
PROF	Sets the PAD parameters to a standard set of values	Acknowledgement
RESET	Resets the virtual call	Acknowledgement

<u>PAD Command</u>	<u>Function</u>	<u>Service signal response</u>
INT	Transmits an interrupt packet	Acknowledgement
SET	Sets specified parameter values	Acknowledgement
Selection PAD	Sets up a virtual circuit (a new connection)	Acknowledgement

---

## The PAD Parameters

THE FOLLOWING TABLE LISTS THE PAD PARAMETERS BY THEIR parameter number and gives a brief description of each. Appendix C lists these parameters alphabetically by name and contains information for determining their settings.

Parameter Number	Description
1	PAD recall character
2	Echo (characters you type are displayed)
3	Forwarding signal
4	Idle timer delay (in number of seconds)
5	Ancillary device control
6	Control of PAD service signals
7	Procedure on break
8	Discard output

Parameter Number	Description
9	Padding after CR
10	Characters per line
11	Binary speed
12	Flow control
13	Linefeed insertion
14	Padding after LF
15	Editing
16	Character delete
17	Line delete
18	Line display
19	Editing PAD service signals
20	Echo mask
21	Parity treatment
22	Page wait

---

## How to determine PAD parameter settings

**T**HIS APPENDIX DEFINES EACH OF THE PAD PARAMETERS THAT YOU CAN SET with MacPAD's Parameters command and discusses their possible settings. For your convenience, the parameters are in alphabetical order.

---

### Ancillary device control

The CCITT defines ancillary device control as parameter 5.

This parameter controls whether or not flow control characters (Control-S and Control-Q) can be used. You cannot set this parameter from MacPAD's parameters dialog. With MacPAD's default PAD profile, you can use these characters.

---

### Binary speed

The CCITT defines binary speed as parameter 11.

This parameter sets the speed of transmission between a terminal device and a remote PAD. Because MacPAD runs in your Macintosh, this parameter is not necessary and you can't set it from MacPAD's Parameters dialog.

---

## Character delete

The CCITT defines character delete as parameter 16.

The character delete parameter assigns an ASCII character to perform a character delete. In most cases, you can use the delete key on your Macintosh keyboard (which MacPAD displays as a Control-h) to delete a character after you type it. A PAD only allows you to delete a character before you send it to the host.

---

## Characters/line

The CCITT defines characters per line as parameter 10.

The characters per line parameter allows you to specify to the PAD the number of characters that MacPAD displays on a line.

This parameter is especially useful for applications that communicate directly with hardcopy devices, like a printer or Teletype machine.

---

## Discard output

The CCITT defines discard output as parameter 8. When discard output is set, all incoming messages from the Host are ignored by the PAD. MacPAD's Parameters dialog includes a Discard Host Output as an option under the Procedure On Break pull-down menu.

---

## Flow control

The CCITT defines flow control as parameter 12.

The flow control parameter specifies if the PAD should notify your host computer when its buffers are full so that the host will stop sending data until your terminal can process the data.

You cannot use MacPAD's Parameters dialog to set this parameter.

---

## Editing

The CCITT defines editing as parameter 15.



The editing parameter specifies whether you can edit a line of data before you send it to the host computer. You cannot set this parameter from the MacPAD Parameters dialog; but MacPAD allows you to perform character deletes and line deletes while you are sending data to your host.

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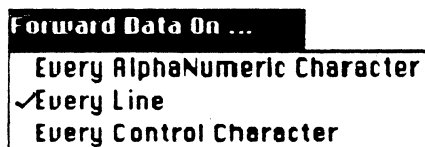
## Forwarding Signal

The CCITT defines forwarding signal as parameter 3.

The forwarding signal is a keystroke that instructs MacPAD to send the characters that you have typed in your terminal file to the host computer. MacPAD's default forwarding signal is the return key.

Figure C-1 shows the menu of options for the Forwarding signal parameter as it appears in the Parameters dialog. If you choose "Every AlphaNumeric Character", MacPAD sends each character to the host when you type it. If you choose "Every Line", MacPAD sends an entire line of information when you press return. If you choose "Every Control Character", MacPAD waits for you to type a control character before it sends your data to the host.

■ Figure C-1 Forwarding signal options



The CCITT set service signal, which is described later in this chapter, allows you to be more specific in making the PAD forwarding character assignment.

---

## Line delete

The CCITT defines line delete as parameter 17.

The line delete parameter assigns an ASCII character to perform a line delete. In most cases, you use a Control-x to delete the line you are typing. A PAD only allows you to delete a line before you send it to the host.

---

## Line display

The CCITT defines line display as parameter 18.

The Line Display parameter tells the PAD which ASCII character you are using to redisplay a line after characters are deleted. This is a nice feature when you are sending PAD commands from a hardcopy device. This parameter is unnecessary on a Macintosh, however, and is not available in MacPAD's Parameters dialog.

---

## Linefeed Insertion

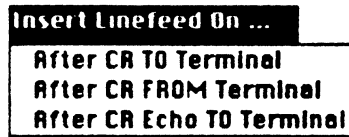
The CCITT defines linefeed insertion as parameter 13.

The Line Feed and Carriage Return (CR) characters work together to complete one return operation. Some devices and some applications require the PAD software to send both a CR and a LF character to indicate a return operation. Other devices and applications require only a CR character to indicate a return operation. With the LineFeed Insertion parameter, MacPAD can accommodate this difference by inserting LF characters appropriately.

*Figure C-2* shows the menu of options for the LineFeed Insertion parameter as it appears in the Parameters dialog. You can see that MacPAD does not insert linefeed characters because none of the options in the figure have a check mark.

If MacPAD is displaying the lines that you type on top of each other, you should set "After CR FROM Terminal". If MacPAD is displaying response messages on top of each other, you should set "After CR TO Terminal" and "After CR Echo TO Terminal". See the "Using the pull-down menus" section for instructions on setting these options.

■ Figure C-2 Linefeed insertion options



---

## Local Echo

The CCITT defines local echo as parameter 2.

The Local Echo parameter tells the PAD whether it should display on your Macintosh the characters that you type.

If you are seeing two of every character that you type, you need to turn off local echo. If you are not seeing any of the characters that you type, then you may need to turn on local echo.

---

## PAD Recall Character

The CCITT defines PAD recall character as parameter 1.

The PAD recall character parameter assigns an ASCII character that puts the PAD into its command mode.

The default PAD recall character is Control-p, which the Macintosh interprets as a Data Link Escape (DLE) character.

---

## PAD service signal control

The CCITT defines PAD service signal control as parameter 6.

This parameter controls whether or not you see the PAD prompt and whether MacPAD displays response messages to the PAD commands you issue. You cannot set this parameter from MacPAD's parameters dialog. With MacPAD's default profile, you see the PAD \* prompt and the service signal responses to your commands.

---

## Padding after CR

The CCITT defines padding after CR as parameter 9.

The Padding after CR parameter can be used to prevent data loss during network transmissions when the CR (Carriage Return) character is used as a signal. To prevent such data loss, the PAD software has the ability to insert up to seven padding characters after each CR that it passes to the network.

Because MacPAD can handle transmissions without padding characters, you cannot set this parameter from the Parameters dialog.

---

## Padding after LF

The CCITT defines padding after LF as parameter 14.

The Padding after LF parameter can be used to prevent data loss during network transmissions when the LF (Linefeed) character is used as a signal. To prevent such data loss, the PAD software has the ability to insert up to seven padding characters after each LF that it passes to the network.

Because MacPAD can handle transmissions without padding characters, you cannot set this parameter from the Parameters dialog.

---

## Procedure on Break

The CCITT defines the procedure on break parameter as parameter 7.

The Procedure on Break parameter tells the PAD what to do when you choose the Break command from the MacPAD menu.

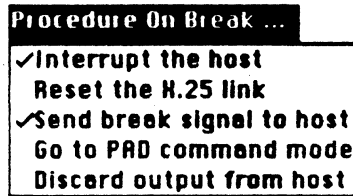
Break is an ASCII character that appears on some keyboards or that is sometimes programmed as a control key or function key. In the early days of interactive programs, a terminal user often sent a break signal to interrupt an application without terminating it. When the application saw the break signal, it would stop the current process and display its prompt to the user.

*Figure C-3* shows the settings that the Parameters dialog provides for the Procedure on break parameter.

The MacPAD default setting causes MacPAD to send a break signal to the host when you choose Break from the MacPAD menu. The host processes the break in its normal manner, which varies from host to host.

If "Interrupt the Host" has a check mark, MacPAD sends an X.25 interrupt packet when you choose Break from the MacPAD menu. If "Reset the X.25 link" is checked, MacPAD sends an X.25 reset packet to the host when you use MacPAD's Break command. If "Go to PAD command mode" is checked, you can put MacPAD into its command mode by choosing Break from the MacPAD menu. The "Discard output from host" option causes MacPAD to ignore all incoming packets from the host.

■ **Figure C-3** Procedure on break options



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## Send Data Every

The CCITT defines an idle timer delay as parameter 4.

Under normal conditions, MacPAD sends data from your Macintosh to the host computer according to how you set the Forward Data On parameter.

In some cases, however, MacPAD automatically sends data at a specified time interval. You use the Send Data Every parameter to specify the time interval in seconds that MacPAD waits before sending your data to the host.

The PAD profile that MacPAD uses determines whether MacPAD uses the Forward Data On or Send Data Every parameter. See the section on PAD profiles for details.

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## ASCII Conversion Table

THE FOLLOWING TABLE CONTAINS THE DECIMAL AND HEXADECIMAL equivalents of each ASCII character. If you use the CCITT set command to set a character assignment parameter, you need to specify the decimal equivalent of the ASCII character you specify. You can get that information from this table.

Decimal	Hex	ASCII	Decimal	Hex	ASCII
0	00	NUL	11	0B	VT
1	01	SOH	12	0C	FF
2	02	STX	13	0D	CR
3	03	ETX	14	0E	SO
4	04	EOT	15	0F	SI
5	05	ENQ	16	10	DLE
6	06	ACK	17	11	DC1
7	07	BEL	18	12	DC2
8	08	BS	19	13	DC3
9	09	HT	20	14	DC4
10	0A	LF	21	15	NAK

*continued*

■ Table number (*continued*) Code Translation

Decimal	Hex	ASCII	Decimal	Hex	ASCII
22	16	SYN	48	30	0
23	17	ETB	49	31	1
24	18	CAN	50	32	2
25	19	EM	51	33	3
26	1A	SUB	52	34	4
27	1B	ESC	53	35	5
28	1C	FS	54	36	6
29	1D	GS	55	37	7
30	1E	RS	56	38	8
31	1F	US	57	39	9
32	20	SP	58	3A	:
33	21	!	59	3B	;
34	22	"	60	3C	<
35	23	#	61	3D	=
36	24	\$	62	3E	>
37	25	%	63	3F	?
38	26	&	64	40	@
39	27	'	65	41	A
40	28	(	66	42	B
41	29	)	67	43	C
42	2A	*	68	44	D
43	2B	+	69	45	E
44	2C	,	70	46	F
45	2D	-	71	47	G
46	2E	.	72	48	H
47	2F	/	73	49	I



■ Table number (*continued*) Code Translation

Decimal	Hex	ASCII	Decimal	Hex	ASCII
74	4A	J	101	65	e
75	4B	K	102	66	f
76	4C	L	103	67	g
77	4D	M	104	68	h
78	4E	N	105	69	i
79	4F	O	106	6A	j
80	50	P	107	6B	k
81	51	Q	108	6C	l
82	52	R	109	6D	m
83	53	S	110	6E	n
84	54	T	111	6F	o
85	55	U	112	70	p
86	56	V	113	71	q
87	57	W	114	72	r
88	58	X	115	73	s
89	59	Y	116	74	t
90	5A	Z	117	75	u
91	5B	[	118	76	v
92	5C	\	119	77	w
93	5D	]	120	78	x
94	5E	^	121	79	y
95	5F	_	122	7A	z
96	60	`	123	7B	{
97	61	a	124	7C	
98	62	b	125	7D	}
99	63	c	126	7E	~
100	64	d	127	7F	DEL

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# Glossary

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active connection:

address book:

Addresses file:

ADSP:

AppleTalk Data Stream Protocol:

AppleTalk Network System:

AppleTalk network:

AppleTalk zones:

break signal:

CCITT:

Chooser desk accessory:

click:

clipboard:

Comm ToolBox:

command mode:

Communications ToolBox:

configure:

connection maintenance:

connection method:

connection tool:

connector port:

control function:

control messages:

control packets:

data transfer:

data transmit mode:

data:

desk accessory:

dial-up connection:

dialog:

disk drive:

entry list window:

entry:

file transfer method:

file transfer tool:

gateway:

Grapevine Server:

hard disk:

host computer:

host vendor:

interrupt host:

interrupt packet:

invoke:

K:

KB:

launch:

link:

local echo:

MacPAD document:	remote host computer:
MacPAD session:	remote host:
MacPAD:	ROM:
Master Address Book:	serial connection:
memory partition:	service signal:
menu bar:	set:
menu:	set?:
network address:	status dialog:
network administrator:	subrecord:
network switch:	TeachText:
network vendor:	terminal emulator:
Open Book:	terminal settings document:
packet assembler disassembler:	terminal tool:
packet switched data network:	terminal:
packet switched wide area data network:	user interface:
PAD command:	virtual circuit:
PAD interface:	wide area network:
PAD parameter setting:	X.25 call:
PAD parameters:	X.25 Chooser:
PAD profile:	X.25 connection:
PAD recall character:	X.25 control packet:
PAD:	X.25 data packet:
par?:	X.25 link:
parameter settings:	X.25 network connection:
pencil icon:	X.25 network:
prof1:	X.25 packet:
prof90:	X.25 services:
prof91:	
ReadMe:	