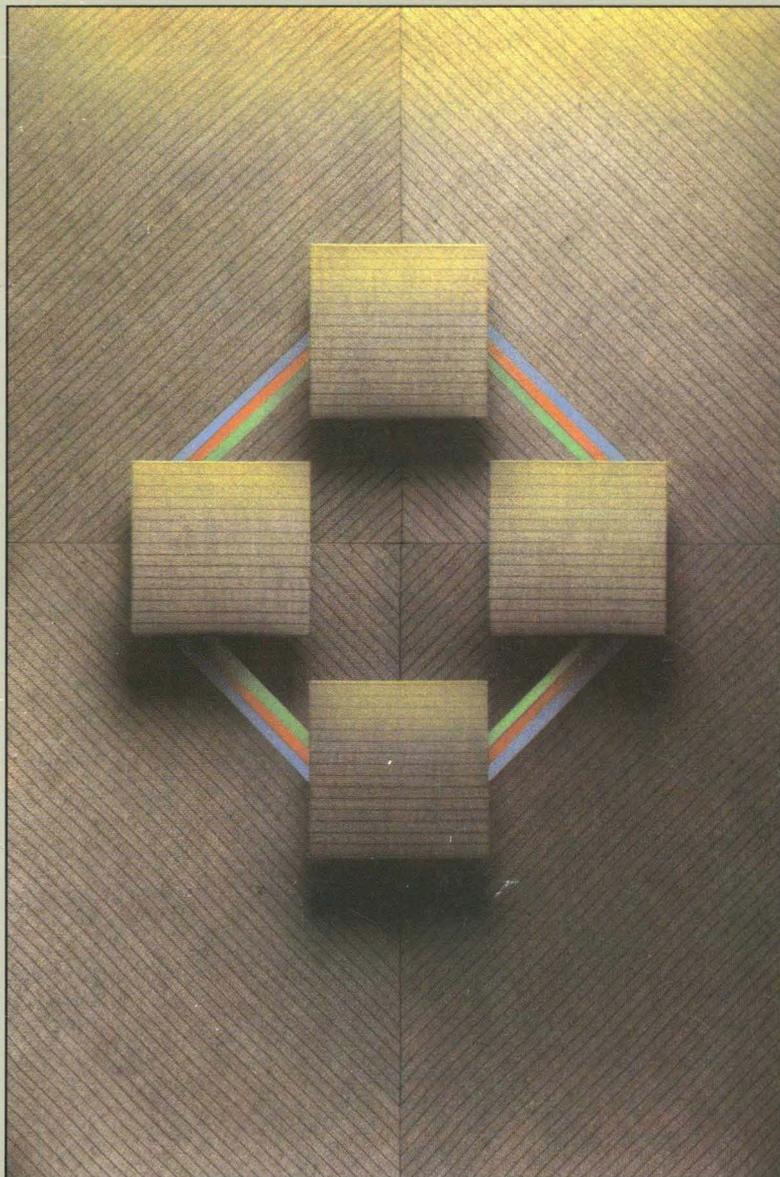
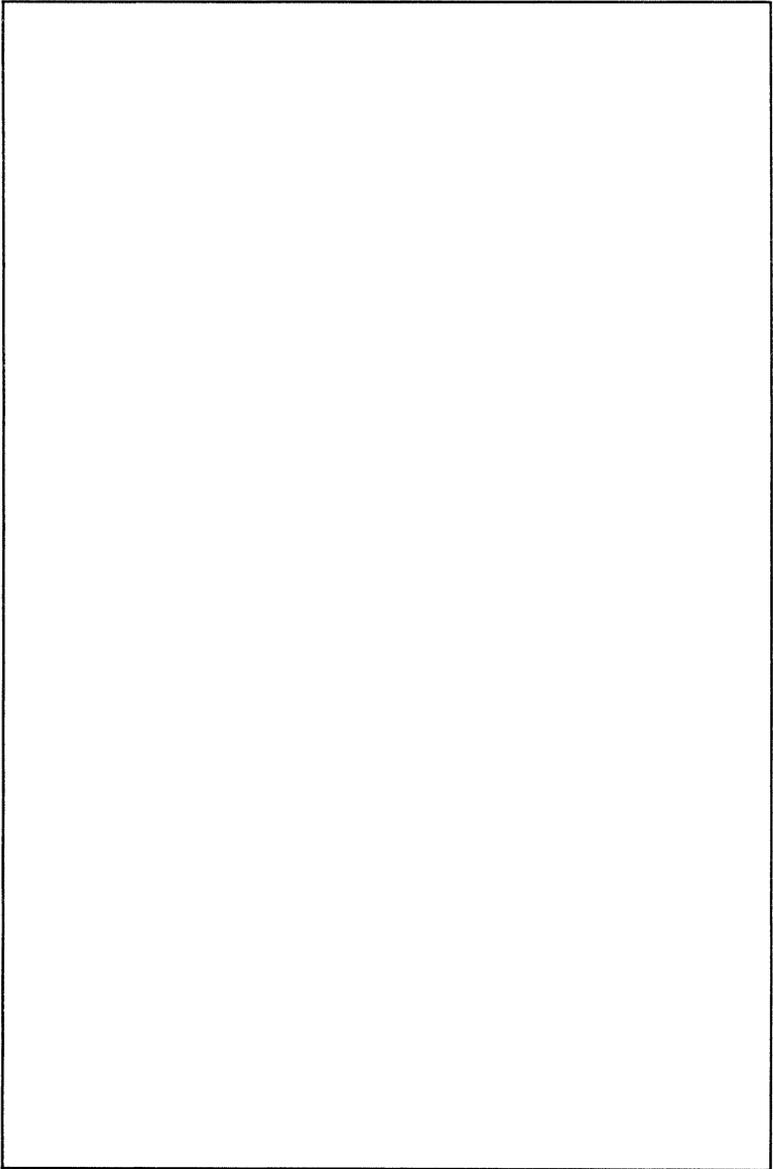


CODEX



4000 Series LAN
User's Guide

CODEX



**4000 Series LAN
User's Guide**

Notice

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User/Reader Comments

Your attention is directed to the last page of this document which is a Codex-addressed reply form to be used for evaluating the effectiveness of this manual. All comments are beneficial to both you, the product consumer, and to Codex, the supplier.

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Preface

This is a guide to using your terminal or IBM Personal Computer (PC or PC XT)* on a Codex Local Area Network (LAN). The Guide has three major sections, Codex LAN, Disktalk, and Printtalk. Depending on your system, you may need all three sections or only the first section.

Codex LAN is the first section, five chapters that explain the function of a network and basic local area network concepts. They describe how to connect to the system and use network commands. All users will need to read these chapters. If you are a first time user of the network, study the first section carefully before you begin working.

Chapter 4, The Command Summary, lists all network commands alphabetically briefly describes their functions. Once familiar with the system, you will need to use this summary only infrequently to look up network commands.

At the front of the Guide is a Reference Sheet. Use it to list your terminal's characteristics and names and address of network resources you use often.

The Disktalk and Printtalk sections explain special software written for IBM PCs and PC XTs. These two sections assume that you are acquainted with the operation of an IBM PC and with PC DOS* version 2.0 or later.

Disktalk and Printtalk are software packages designed for IBM PCs and PC XTs that are connected to the network via PC Entryway cards. Disktalk software allows you to share databases and applications with other users on your network. Printtalk allows you to manage printing functions on shared network printers associated with your PCs.

*IBM PC, PC XT and PC DOS are trademarks of IBM Corporation.

Preface (continued)

CONVENTIONS USED IN THIS GUIDE

Throughout this Guide, certain keystrokes that you use are represented as shown below. The actual keystroke you use will depend on your terminal's keyboard. The IBM PC or PC XT keyboard has an Enter key. Other terminals have an Enter key, a Return key, or an Execute key.

<i>Symbol</i>	<i>Keystroke</i>
[CR]	Carriage Return or Enter
[TAB]	Tab key
Ctrl-N	Control key plus another key (N)

Chapter 1

Introducing Codex LAN

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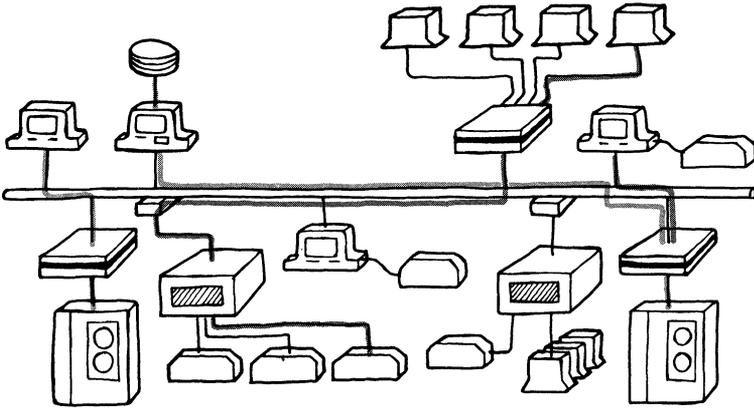


Figure 1-1. A Codex Local Area Network.

THE CODEX LOCAL AREA NETWORK

The Codex Local Area Network (LAN) is a communications network that interconnects data and word processing equipment within facilities such as office buildings, factories, and laboratories. The Codex LAN allows otherwise incompatible devices to communicate with one another using a common transmission medium (cable).

Devices are connected to a Codex LAN through Entryways. Entryways are interface units that give devices access to the transmission cable. The Entryway connects to the LAN cable, and user equipment connects to the Entryway. Some Entryways contain processor boards, each having several ports. Each port connects to a device. Some of these Entryways can support up to 24 pieces of user equipment. Other Entryways are cards that insert into an expansion slot of an IBM PC or PC XT. The network shown in Figure 1-1 uses both kinds of Entryways.

VIRTUAL CIRCUITS

Devices on the network communicate through circuits (links) created by software known as the Codex LAN Virtual Circuit Service. These circuits are known as virtual circuits because

they are established by software. Virtual circuits carry data between any two devices in the network without regard to the physical location of the device. Virtual circuits can also carry data between different networks. The colored lines between devices in Figure 1-1 show typical virtual circuits.

You can create virtual circuits yourself through network commands. Other circuits will be created for you by your Network Administrator. You can break only those circuits that you create. You will not be able to break circuits created by your Network Administrator.

When you issue a command to connect your terminal to a host computer, you are creating a virtual circuit that remains in effect until you break it. This Guide explains how to create and break these connections.

You cannot break circuits that are created by your Network Administrator using other network software processes. These circuits are used to connect devices that are always paired together, for example, a microcomputer and a specific printer. The circuit is established automatically when the associated Entryways are powered on.

DEVICE TYPES

Virtual circuit connections are established according to the types of devices involved and each device's role in the network.

When your network is established, devices are defined according to their function. You can think of devices as falling into one of three categories: data devices, command devices, or command/data devices. The classification of a device determines whether you can use the device to create a virtual circuit or whether the device simply serves as the target (endpoint) for a circuit created by another device.

- **Data devices** cannot create virtual circuits. They can serve only as targets for circuits created by another device. A line printer without a keyboard is a data device; it only receives data. You cannot use it to issue a command to create a circuit.
- **Command devices** generate commands to create circuits to other devices, but they cannot serve as targets for circuits

created elsewhere on the network. An example of a command device is a computer terminal that is solely dedicated to entering data but that cannot be used by another device for display-only purposes.

- **Command/data devices** can create virtual circuits or can serve as the targets for other devices's circuits. A printer with an attached keyboard could be designated as a command/data device because you can use it to enter commands (to create circuits), and it can be connected to and used as a data device by another user on the network.

A device's type also determines in what modes the device can operate.

Function	Device		
	Data	Command	Command/Data
Creates a circuit			
Serves as target			

DEVICE MODES

A mode is the operating state of a device. Devices attached to a Codex LAN operate in one of three modes: Command, Connected, or Idle. The following paragraphs explain each mode.

Command Mode

When your device is in Command mode, you can issue network commands to create a virtual circuit between your device and another device or a service on the network. When a command or command/data device first enters Command mode, it displays the following message:

You may now enter Codex LAN commands

>

Connected Mode

When you issue a command to connect your terminal to a host computer, you are creating a virtual circuit between the two devices. When this circuit is established, both devices enter Connected mode and can exchange data.

When you break this circuit by using a special string of characters known as the Disconnect Sequence (explained later in this section), each device returns to the mode from which it began. Your terminal would return to Command mode, and the printer would return to Idle mode.

Idle Mode

When a device is in Idle mode, any other device can connect to it. Command devices are never in Idle mode and thus are never targets for virtual circuits.

Not all devices can operate in all three modes. Only a command/data device can switch to any one of the three modes of operation. A data device can only be in either Idle mode or Connected mode. It can never be in Command mode because it cannot be used to issue network commands. A command device can only be in either Command mode or Connected mode. Because it cannot be a target for another device's circuit request, it can never be in Idle mode.

- When a device is in Command mode you can use it to issue Codex LAN commands.
- A device is in Connected mode when it is connected, by a virtual circuit, to another device.
- When a device is in Idle mode it can serve as the target for a circuit created somewhere else in the network.

MODES

Function	Mode		
	Data	Command	Command/Data
Command			
Connected			
Idle			

The next section explains how network devices are identified.

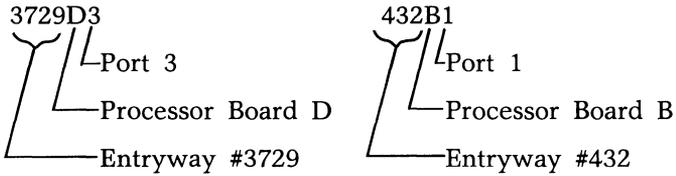
NAMES AND ADDRESSES

Each device on a network has an address and may have one or more names. You use these names and addresses to connect your terminal to another device or to a service. To connect your terminal to another device or service on your network, you must know its name or address. The following paragraphs explain addresses and names.

Your Network Administrator can supply you with a list of network addresses and names. At the back of this Guide is a sheet you can use to record addresses and names of equipment or services you use frequently.

Device Addresses

Every device connected to a Codex LAN has a unique address, which describes its exact physical location in the network. For equipment connected to 4001 or 4002 Entryways, this address is based on the Entryway to which the device is connected and which port (connector) on the Entryway it uses. This address consists of three items: the Entryway serial number, the processor board ID letter, and the number of the port on the processor board. Sample addresses are shown below and explained in the paragraphs that follow.



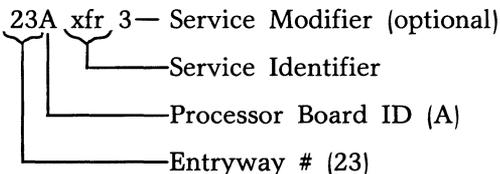
- **Entryway Number.** The address of the Entryway to which the device is attached. This address, which is also the Entryway's serial number, is printed on a label on the Entryway's rear panel.
- **Processor ID.** A letter, A through D, that corresponds to the processor board to which the device is attached. The board ID is printed on the Entryway's rear panel.
- **Port Number.** The specific port on a board to which the device is connected. The number and type of ports on a board depend upon the type of board. Port identifiers are printed on the Entryway's rear panel.

When you are using an address as part of a network command, you must always type the device address as shown above. Do not type spaces between the parts of an address.

Service Addresses

Services are internal software resources, such as the File Transfer Service, that are available to network users. A service resides on a processor board in an Entryway. Your Network Administrator has a list of addresses of services you can use.

A service address is similar to a device address, with a few modifications. A service address consists of the Entryway number, the processor ID letter, plus the name of the service and a service modifier. A sample service address is shown below and explained in the paragraphs that follow.



- **Entryway Number.** The address of the Entryway on which the service runs. The address, which is also the Entryway's serial number, is printed on a label on the Entryway's rear panel.
- **Processor ID.** A letter, A through D, that corresponds to the processor board on which the service runs. The board ID is printed on the Entryway's rear panel. When you type a service address as part of a network command, you must type a space between the processor ID and the service identifier.
- **Service Identifier.** The name assigned to a particular service by the Network Administrator. When you type a service address as part of a network command, you must type a space between the service identifier and the service modifier.
- **Service Modifier.** If your network contains several versions of a service, this modifier identifies the specific version of the software. A service modifier is optional and may not always be included in a service address.

Names

A resource's address describes its exact physical location on the network. A resource's name usually describes its function and is often easier to use and remember than its address. Names are assigned by the Network Administrator. Typical names might be JIM'S CRT or ACCOUNTING'S VAX.

When you use a device's name as part of a network command, you do not have to know exactly where the device is or to what port on an Entryway the device is connected. Thus, if you want to connect your terminal to PERSONNEL7, you do not have to know that yesterday its address was 254B3 and that today, because it has been moved, its address is 4456C2.

Unique and Rotored Names. Resource names can be either unique or rotored. A unique name is associated with a single device only. A rotored name is one that is shared among several devices.

If you want to connect to a computer and you specify the unique name VAXPORT7 in your Connect command, you will be connected with that specific port. If someone else is using that port, you will have to try again later or try to connect to another port. If, however, you have access to several ports that are all called by the same rotoed name VAXPORT, you can use the shared name. You will be connected to any free resource with that name.

In Figure 1-2 you can see the relationship between names and addresses.

Your Network Administrator will publish a list of resource names. Because many characters including spaces can be used in a resource's name, you must type a name exactly as it appears on the list. You may, however, type letters in uppercase or lowercase.

If a resource name appears on a list as VAX 1, you may type `vax 1`. You may not, however, use `VAX1` or `vax1` because the space is a character in the resource's name.

The next two chapters explain how to connect to the network and use network commands.

Introducing Codex LAN

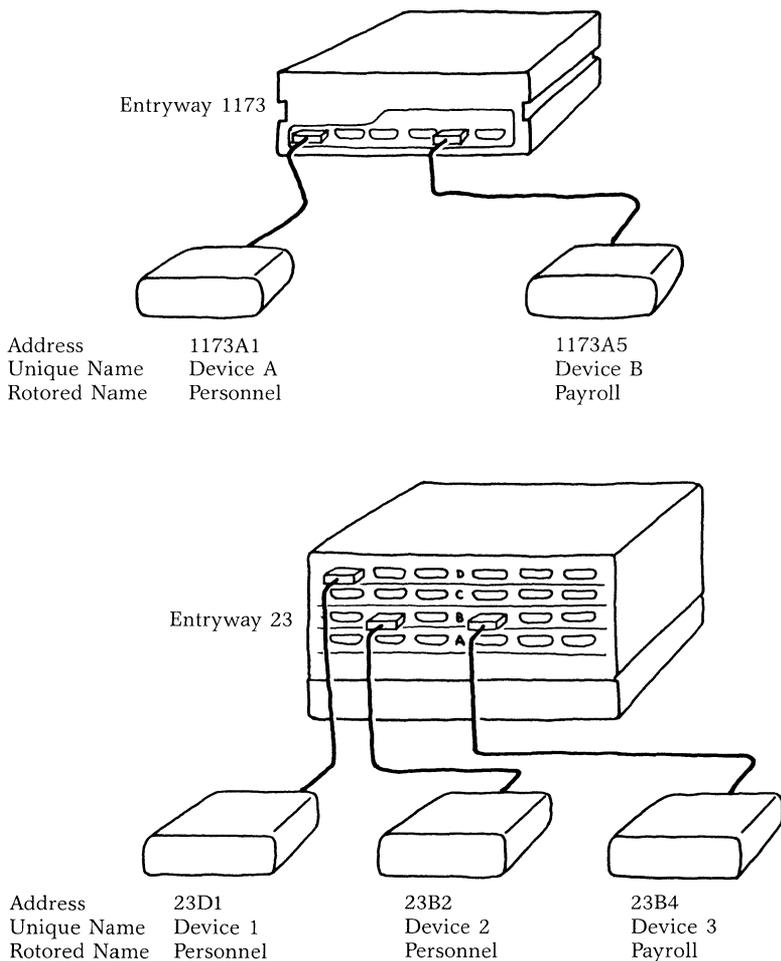


Figure 1-2. Names and Addresses

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Getting on the Network

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INTRODUCTION

This section explains how to get on the network and how to use network commands to make and break virtual circuits. All network user commands are discussed; however, your terminal or workstation may be configured for only some of the commands. One of the first commands you will learn displays all the commands you can issue from your workstation.

Any discussion of an IBM PC or PC XT refers to PCs with PC Entryway cards installed.

The Data Link Escape Character

Certain character strings, known as sequences, act as commands when you transmit them across a virtual circuit. These sequences break or hold the circuit you are currently using. If you want to send these sequences as part of your data (rather than using them as a command to affect the circuit), you must precede them with a character known as the Data Link Escape Character.

If you are using an IBM PC or PC XT, your Data Link Escape Character is Ctrl-P. If you are using another kind of workstation, ask your Network Administrator for the Data Link Escape Character that you should use.

CONNECTING TO THE NETWORK

How you connect to the network depends upon the equipment you are using. Remember that you must be in Command mode to issue network commands.

Connecting Your Terminal to the Network

If you are using a terminal that is attached to a 4001 or 4002 Entryway, your terminal could be a command device or it could be a command/data device. If it is a command device, you will see the `>` prompt on your screen, indicating that the terminal is in Command mode.

Codex LAN software includes a "timeout" feature. If your terminal has been defined as a command/data device and you do not enter a command for a certain period of time, which is determined by your Network Administrator, the timeout feature returns your terminal to Idle mode. To enter Command

mode, enter the Command Mode Initiation Character. This character is defined by your Network Administrator and can be a Carriage Return, Tab, or other keystroke.

Connecting Your PC to the Network

To use an IBM PC or PC XT as a network terminal, you must use special software that enables you to communicate on the LAN. This software, the Codex ANSI Terminal Emulator (CATE), allows your PC to function as a network workstation as well as a standalone workstation.

To connect to the network, first boot your PC according to the instructions outlined by your Network Administrator. When you have booted the PC, you will see a DOS prompt similar to:

```
C>
```

When you see the DOS prompt, invoke the Terminal Emulator by typing CATE and a Carriage Return:

```
C>CATE[CR]
```

Your screen will display the message:

```
Codex ANSI Terminal Emulator
Exit Sequence
/Ctrl-W/quit/CR/
Strike any key to continue
```

To enter Command mode, press the Carriage Return or Enter key. The standard Codex LAN prompt will appear:

```
You may enter Codex LAN commands
>
```

You are now able to use the commands explained in the next section.

ENTERING COMMANDS

You use Codex LAN commands to create and break virtual circuits and to list and change some of the characteristics of your terminal.

You issue these commands by typing a single line of text from your terminal when it is in Command mode. Your terminal is in Command mode when you see a > prompt in the left margin of the screen.

You may use uppercase or lowercase letters to enter the command. End the command line with a Carriage Return (shown here as [CR]).

You can enter commands in a number of ways. For example, to establish a virtual circuit between your terminal and the host computer VAX 1, enter any one of the command lines shown below (Characters you type are shown in color; characters shown in black are screen responses). An explanation of each command follows.

```
>Connect vax 1 [CR]
>C[TAB]onnect VAX 1[CR]
>con vax 1[CR]
>c vax 1 [CR]
```

Using Full-Name Commands

In the first example, you enter in the full name of the command and the name of the device, ending the line with a Carriage Return. The other examples illustrate two features of the Codex LAN software, Word Completion and abbreviation.

Using Word Completion

To use Word Completion, enter any portion of a command word, then type the completion character (shown here as a [TAB]). Codex LAN will automatically complete the spelling of the word. If the portion you entered is ambiguous, that is, when two or more commands begin with the same characters, Word Completion is not performed. Codex LAN returns an error message, aborts the command, reissues the > prompt and waits for a new command. The command is also aborted if the network software does not recognize the abbreviation you used.

The Word Completion character is defined by your Network Administrator. You can also use the List command to display your Word Completion character. List is explained later in this section.

Word completion is not available on the IBM PC or PC XT.

Using Abbreviations

You can abbreviate command words as long as you enter enough initial characters to differentiate the command word from all other possible words. Abbreviate by typing the first few characters of the command word, a space, then the rest of the command line. When you abbreviate, Codex LAN does not finish the spelling of the word as it does in Word Completion.

If you abbreviate the command in such a way that the network software cannot recognize it or differentiate between two similarly spelled commands, the command is aborted and the LAN prompt appears on your screen.

CORRECTING MISTAKES IN ENTERING COMMANDS

If you make a mistake when you enter the command line, use either the Backspace or Line-Delete feature to correct the error.

Using Backspace

If you enter part of a command incorrectly but have not entered the entire command word, use the Backspace key to back up and correct the error.

The default method of backspacing is to use the Backspace key or type a Ctrl-H (hold down the Control key and press the H key). Check with your Network Administrator to see if your terminal is configured for a different Backspace character.

If you have already completed an entire command word such as Connect or Set, you cannot backspace into the command word; you must use Line Delete.

Using Line Delete

To delete an entire command or command line, use the Line-Delete (DEL) character. The command is deleted, and Codex LAN reissues its prompt and waits for a new command. Check with your Network Administrator to see if your terminal has been configured for a different Line-Delete character.

You can also use the List command (explained in the next section) to display your Line-Delete and Backspace characters.

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Using the Network

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GETTING HELP

Two commands allow you to review the parameters set for your terminal and the list of commands you may use.

Using the Help Command

This command gives you a list of all network commands you can use from your terminal. To request Help, enter a question mark at the prompt:

```
>?[CR]
```

A sample Help command and response follow. Here the only commands a user can issue are Connect, List, and ? (Help).

```
>?  
connect  
list  
?
```

Using the List Command

The List command displays your terminal's address and names and the current values for your Disconnect and Hold Sequences (explained later). If you are using a terminal different from the one you usually use, it is a good idea to use List to review the terminal's characteristics before you begin working.

To use this command, enter LIST[CR]. The response will resemble the one shown below.

```
>LIST  
backspace = /bs/ line-delete = /del/ disconnect = /esc/P/  
echo = (on) word complete = /ht/ hold = /xyq/  
  
identities =  
(1) 479b3  
accounting 7  
chris's crt
```

In this example, the terminal's network names are ACCOUNTING 7 and CHRIS'S CRT. Its address is 479b3. The (1) indicates that CHRIS'S CRT is on Network 1.

Screen displays for values such as the Disconnect Sequence will look different from the actual keystrokes you must use. For example, the Word Completion value shown as /ht/ represents the Tab key. Ask your Network Administrator to explain any values that you do not understand.

MAKING THE CONNECTION

The commands discussed below enable you to establish a virtual circuit, put a circuit on hold, and reestablish a connection currently on hold.

Using the Connect Command

Use this command to establish a connection (virtual circuit) between your terminal and another device or service. You can refer to the device or service by using its network address or by using its rotated or unique name. Sample commands are shown below.

```
>CONNECT susan's crt[CR]
```

```
>c host 1[CR]
```

```
>connect 324b2[CR]
```

A series of connected networks is known as an internet. You can connect to a resource on a different but connected network by issuing a global Connect command. To issue a global Connect command, place an asterisk before the name of the device or service.

```
>CONNECT *susan's crt
```

Because a global Connect command searches all networks in the internet, it puts a heavy performance burden on the system. You should use the global Connect command only when you know either the resource's unique name, such as VAX1, or its exact physical address on the internet, such as 342B2.

Responses to the Connect Command

Codex LAN responds to the Connect command with the message:

```
connecting . . .
```

If the connection is successful, you will see a response message that displays the network address of the device, such as:

```
connecting . . . (1) 6b1 success
```

Both devices then enter Connected mode.

If the connection was not successful, an error message is displayed. Samples follow.

```
>CONNECT susan's crt
connecting . . .
No response for specified name
>CONNECT 66b2
connecting . . .
Resource is busy
```

Under some circumstances, you may receive an error code instead of a message. These numbers are usually associated with problems on the network. Error codes and their meanings are listed in Chapter 5 of this Guide.

Using the Hold Sequence

The Hold Sequence works like the Hold button on a telephone. It is a special set of characters that you transmit to the Entryway of the device with which you are connected. It allows you to establish a second connection without breaking the first one you created. The first connection is put on hold (the device remains in Connected mode), and your terminal returns to Command mode.

You can use this feature only if your terminal has been configured for Multiple Virtual Circuits. The number of circuits you can create is determined by your Network Administrator. This feature is not available on the IBM PC or PC XT.

The Hold Sequence is determined by your Network Administrator. You must transmit your Hold Sequence exactly as it is given to you. Unlike commands or device names, this sequence cannot be typed in either upper- or lowercase.

For example, your terminal's Hold Sequence is QXZ. You are connected to the network device HOST 1, and you transmit the string of characters QXZ. The following message will appear:

```
Virtual circuit 1 on hold
You may enter Codex LAN commands
>
```

Your terminal is in Command mode, but HOST 1 is still in Connected mode. If you then issue a List command from your terminal, this connection would appear as:

```
Virtual circuit 1 to
(1) 352b1
host 1
```

Even though you are not using the circuit, no other device can connect to HOST 1 because HOST 1 remains in Connected mode.

Codex LAN software assigns a sequential number to each circuit you create, beginning with circuit 1. If you have established three virtual circuits and you disconnect circuit 2, the List command will display circuits 1 and 3. The software does not renumber circuits. The next circuit you create becomes the new circuit 2.

If you want to transmit as part of your data the same character string as your Hold Sequence, you must precede the Hold Sequence with the Data Link Escape Character (explained in the Introduction to this section).

Using the Resume Command

Use this command to reestablish a connection you have placed on hold. When you establish more than one circuit, Codex LAN identifies each circuit by number. You must use this number to identify the circuit you wish to use. (If you have created more than one virtual circuit, use the List command to determine the circuits' numbers.)

To reestablish a connection with virtual circuit 2, enter RESUME2[CR].

A typical Resume command and network response would appear as:

```
>RESUME 2  
Resumed
```

To disconnect a circuit you have placed on hold, use the Abandon command (see page 3-6).

Using the Ctrl-WQuit Command

If you have an IBM PC or PC XT and you want to exit the terminal emulator program and return to PC DOS, enter the following command:

```
>Ctrl-WQuit[CR]
```

You can also transmit Ctrl-WQuit while you are connected to a network resource.

When you are connected to a network resource and you transmit Ctrl-WQuit, you are quitting only the emulator program. Quitting the emulator program does not break the connection between your computer and the resource with which you were connected. Thus, you can switch back and forth between PC DOS and the network resource. When you invoke the emulator again (using the CATE command), you are still connected to that resource.

Because Ctrl-WQuit does not break a circuit, the network resource you were using when you transmitted Ctrl-WQuit remains in Connected mode, and no other user can connect to it. Remember to break the circuit when you are finished using it by transmitting a Disconnect Sequence.

DISCONNECTING

Three commands enable you to break circuits that you have created: Abandon, Quit, and the Disconnect Sequence. Each has a specific application.

Using the Abandon Command

You use the Abandon command to disconnect a virtual circuit that you have placed on hold. You must use the number of the virtual circuit that you wish to break. (If you have established more than one circuit, use the List command to display circuits and their numbers.) Enter the command as shown below:

```
›ABANDON 2 [CR]
```

When the command is successful, you will not receive a screen message. If you type a number that does not correspond to an existing circuit, you receive the message:

```
No such virtual circuit
```

Using the Disconnect Sequence

The Disconnect Sequence is a special set of characters that you transmit to the device with which you are connected. When you transmit a Disconnect Sequence, you break the active virtual circuit between your terminal and another device. Your terminal enters Command mode; the other device enters Idle mode.

The Disconnect Sequence is determined by your Network Administrator. As with the Hold Sequence, you must transmit it exactly as it is given to you.

For example, your terminal's Disconnect Sequence is `yqy`, and you are connected to HOST 1. When you transmit the string of characters `yqy`, the circuit between your terminal and HOST 1 is broken. The standard Codex LAN prompt (`>`) appears on your screen, indicating that you are in Command mode. HOST 1 enters Idle mode, and other users can connect to it.

If you use an IBM PC or PC XT, your Disconnect Sequence is always `Ctrl-T` and cannot be changed.

If you want to transmit as part of your data the same character string as your Disconnect Sequence, you must precede the Disconnect Sequence with the Data Link Escape Character.

Using the Quit Command

If your terminal is a Command Data device, you would use the Quit command to exit Command mode and enter Idle mode. When your terminal is in Idle mode, other devices can establish a connection to it.

This command is not available on the IBM PC or PC XT.

The Quit command and system response are shown below.

```
>Quit  
Idle
```

This command also disconnects all virtual circuits that you have placed on hold.

If you have circuits on hold when you issue this command, the system asks if you want to abandon those circuits. If you answer "yes" by typing `Y`, the circuits are broken and your terminal enters Idle mode. If you answer "no" by typing `N`, the Quit command is aborted and your terminal remains in Command mode. These sequences are shown below.

```
>Quit  
Abandon existing virtual circuits? (Y/N) Y  
Idle
```

```
>Quit  
Abandon existing virtual circuits? (Y/N) N  
>
```

The **Quit** command also causes all values that were changed through the **Set** command (see below) to return to the default values established by your Network Administrator.

MAKING CHANGES

Under certain circumstances you may want to change particular characteristics of your terminal. You do so using the **Set** command. These changes remain in effect only until you issue a **Quit** command. ■ **Note:** You should always consult with your Network Administrator before you use the **Set** command.

This command cannot be used with the IBM PC or PC XT.

Using the Set Command

You can use this command to turn your terminal's Local Echo on or off and to change your Disconnect and Hold Sequences.

Local Echo

The Local Echo facility allows you to display your keyboard entries when your terminal is connected to a network device that does not echo characters back (repeat them on the screen). Because most intelligent resources such as host computers already have their own echo facility, your local echo is usually turned off, but your keystrokes are still displayed.

To turn your echo on, enter the **Set** command as follows:

```
›SET ECHO ON[CR]
```

Remember that the **List** command displays the current status of your Local Echo.

Disconnect and Hold Sequences

If you know that data you want to transmit contains the same character string as your Disconnect or Hold Sequence, you can use the **Set** command to change these sequences temporarily. Using this command can be more convenient than preceding each sequence by the Data Link Escape Character.

This command is not available on the IBM PC or PC XT.

To change the Disconnect or Hold Sequence, enter the **Set** command, specify which sequence you are changing, then type a new value enclosed in slashes.

For example, to change a Disconnect Sequence to `+@T`, enter the following command line:

```
>SET DISCONNECT /+@T/[CR]
```

To change a Hold Sequence to `!$*`, enter the command as shown below:

```
>SET HOLD !/$*/[CR]
```

Certain rules govern your choice of a Hold or Disconnect Sequence.

The Disconnect and Hold Sequences can be up to four characters long and can be made up of both printing and nonprinting ASCII characters. A printing ASCII character is any of the alphabetic, numeric, or special characters on your keyboard. A nonprinting ASCII character is one that ordinarily has no displayed representation, such as an Escape or Carriage Return keystroke.

To include nonprinting characters in your Disconnect or Hold Sequence, type the keystrokes as you normally would. For example, to change the Disconnect Sequence to `Ctrl-X`, follow these steps:

- 1) Enter the Set command.
- 2) Specify Disconnect.
- 3) Type a slash.
- 4) Hold down the Ctrl key while typing X.
- 5) Type the final slash.
- 6) End the line with a Carriage Return.

The first character of one sequence cannot be repeated in either that sequence or in another sequence except as the first character. The following examples illustrate this restriction:

A Disconnect Sequence of *abad* is illegal because the letter "a" is repeated in the sequence.

If a Disconnect Sequence is *abc*, a Hold Sequence of *daf* is illegal because the "a" in the Hold Sequence is not the first character in that sequence.

EXAMPLES

Example 1

Mel Feasance is an accountant in the law firm of M & N Domain. His associate Jan is on vacation, and Mel is borrowing Jan's terminal to research the salaries of the firm's newest junior partners. For this research, he needs to use files in the Finance and the Personnel departments.

If he were using his own terminal, Mel would start by attempting to connect to the first resource that he needs to use. Because Mel is using Jan's terminal, he uses the List command to display the characteristics of Jan's workstation:

```
>list  
backspace = /bs/ line delete = /del/ disconnect = /esc/P/  
echo (off) word complete = /ht/ hold = /xyq/  
identities =  
(1) 379c2  
finance3  
jan's crt
```

For his research, Mel needs to use the computer in the Finance Department. Several ports on the computer share the rotored name FINCOMP. It makes no difference which port Mel uses; any one will do.

```
>c fincomp  
connecting . . . (1) 922A1 success
```

The address of the specific FINCOMP port to which he has connected is 922A1.

As he works, Mel realizes that he needs one item of information from the files in the Personnel Department's computer. He assumes that he can get this information in just a few minutes and quickly return to the files he was using in the Finance Department's computer. To maintain his connection to the Finance computer Mel transmits the terminal's Hold Sequence to FINCOMP:

```
xyq  
>
```

Mel can now connect to the computer in Personnel; no one can connect with the port he was using in Finance.

Just to be sure that the port is still connected, Mel issues another List command:

```
>l
backspace = /bs/ line delete = /del/ disconnect = /esc/P/
echo (off) word complete = /ht/ hold = /xyq/

identities =
(1) 379c2
finance3
jan's crt

Virtual circuit 1 to
(1) 922a1
fincomp
```

The circuit has been put on hold and has been identified as virtual circuit 1.

The Personnel Department is on a different but connected network. On Jan's desk is a list of all the unique names of the ports on Personnel's computer. Mel chooses one of the names, hoping to be connected:

```
>c *personnel3
connecting . . .
Resource is busy
```

Mel waits a few minutes and tries again:

```
>c *personnel3
connecting . . . (2) 47b3 success
```

After a while, other members of the firm begin to complain. Mel is tying up a connection to the Finance Department's computer. Submitting to the pressure, Mel agrees to relinquish his circuit to FINCOMP.

Not willing to give up both connections, he first transmits a Hold Sequence to the computer in Personnel, then breaks the circuit to Finance's computer:

```
xyq
>abandon 1
```

Being the cautious type, he uses List again, just to be sure that he still has a connection to Personnel:

>l

backspace = /bs/ line delete = /del/ disconnect = /esc/P/
echo (off) word complete = /ht/ hold = /xyq/

identities =

(1) 379c2

finance3

jan's crt

Virtual circuit 2 to

(2) 47b3

personnel3

Note that the circuit number remains 2, even though circuit 1 has been broken.

Mel then goes back to work using the circuit he put on hold:

>Resume 2

His work almost finished, Mel realizes that he needs just one more piece of information that is on file in Finance's computer. He transmits a Hold Sequence to PERSONNEL3 and tries to connect with FINCOMP again:

>c fincomp

connecting . . .

Resource is busy

Mel decides to stop working and go to lunch. He enters a Quit command to exit Command mode, and the system reminds him that he still has a circuit on hold:

>q

Abandon existing virtual circuit? (Y/N)

He answers Y, and the screen displays:

Idle

The circuit to PERSONNEL3 is broken; both terminals, the one Mel is using and PERSONNEL3 return to Idle mode. Another user can connect to either device.

Example 2

Miss Demeanor also works for M & N Domain. As an ambitious junior partner, she has been working furiously on her first brief. She is using her IBM PC XT to assemble her research and write a first draft. She also needs access to files in the firm's Research Library computer. Since her PC is part of the firm's LAN, she can use files in that computer without climbing two flights of stairs. The PC DOS prompt is displayed on her workstation. From PC DOS, she invokes the Codex ANSI Terminal Emulator and issues a Connect command:

```
C>CATE

                          Codex ANSI Terminal Emulator
                          Exit Sequence
                          /Ctrl-W/quit/CR/
                          Strike any key to continue

You may enter Codex LAN commands
>c research lib
connecting . . . 85b1 success
```

After collecting the preliminary information she needs, Miss Demeanor decides to return to her PC files and polish her opening statement. If she breaks the circuit to RESEARCH LIB, she takes the chance that all ports on the computer will be busy when she needs those files again. Miss Demeanor transmits Ctrl-WQuit, leaving 85b1 in Connected mode, and returning her PC to PC DOS:

```
Ctrl-WQuit
C>
```

Her opening statement completed, Miss Demeanor decides to return to her work in the Research Library's files:

```
C>CATE

                          Codex ANSI Terminal Emulator
                          Exit Sequence
                          /Ctrl-W/quit/CR/
                          Strike any key to continue
```

At 6 p.m., Miss Demeanor breaks her connection to RESEARCH LIB by transmitting Ctrl-T (the Disconnect Sequence). She then exits the emulator program and returns to PC DOS:

```
>Ctrl-WQuit
C>
```

Example 3

Ms. Elizabeth (Liddy) Gation is a senior partner and tax specialist with M & N Domain. She is currently defending a client accused of misrepresenting his income to the IRS. She needs to use files in the Research Library's computer. Because she is a senior partner a port on the computer has been reserved for her use.

She tries to connect her terminal to the computer port using that port's unique name, but in her haste she types the wrong characters:

```
>c ms. liddy
connecting . . .
No response for specified name
```

Her second attempt is more successful:

```
>c ms. l. gation
connecting . . . 85c2 success
```

Gation works for about 45 minutes. When she is almost finished she notices that the circuit has been broken and her terminal is in Command mode.

Suspecting a problem with the terminal's characteristics, she enters the List command. Her terminal displays:

```
>l
backspace = /bs/ line delete = /del/ disconnect = /$100/
echo (on) word complete = /ht/ hold = /xyq/
identities =
(1) 429a2
ms. l. gation
```

Gation transmitted her Disconnect Sequence (\$100) in the data stream between her terminal and the computer in the Research Library.

Gation is working with finances, and the current Disconnect Sequence is likely to occur again. She changes the sequence by using the Set command:

```
>set disconnect /ZZZZ/
```

She enters List again to confirm that the change has been made:

)l

backspace = /bs/ line delete = /del/ disconnect = /ZZZZ/

echo (on) word complete = /ht/ hold = /xyq/

identities =

(1) 429a2

ms. l. gation

The new Disconnect Sequence will remain in effect until Gation issues a Quit command; then the Disconnect Sequence will revert to \$100.



Chapter 4

Command Summary

Following is a summary of network commands and sequences. Material enclosed in brackets in the format lines represents variables such as network addresses or names.

ABANDON

>ABANDON [circuit number] [CR]

Disconnects a virtual circuit that has been placed on hold. Available only to users whose terminals are configured for multiple virtual circuits. Not available on the IBM PC or PC XT.

CATE

A>CATE [CR]

Allows an IBM PC or PC XT to exit PC DOS and invoke the Terminal Emulator.

CONNECT

>CONNECT [resource name or address] [CR]

Creates a virtual circuit between the device issuing the command and the resource specified in the command line.

CTRL-P

The Data Link Escape Character used on an IBM PC or PC XT.

CTRL-T

The Disconnect Sequence used on an IBM PC or PC XT.

CTRL-WQUIT

>Ctrl-Wquit [CR]

Allows an IBM PC or PC XT to exit the Terminal Emulator and return to PC DOS. This sequence can be transmitted as a command or as a sequence. When transmitted from a device in Connected mode, the receiving device remains connected.

DATA LINK ESCAPE CHARACTER

A character that precedes a set of characters (such as a Hold Sequence) and allows that sequence to be sent as data rather than as a command to affect the virtual circuit in use. The Data Link Escape Character for the IBM PC or PC XT is Ctrl-P.

DISCONNECT SEQUENCE

A character sequence that breaks the active virtual circuit between the device transmitting the sequence and the resource to which the device is connected. The Disconnect Sequence for the IBM PC or PC XT is Ctrl-T.

HELP

>?[CR]

Lists all network commands that can be used from the terminal issuing the command.

HOLD SEQUENCE

A character sequence which, when transmitted, places the active virtual circuit on hold. The transmitting device returns to Command mode; the receiving device remains in Connected mode. Available only to users whose terminals are configured for multiple virtual circuits. Not available on the IBM PC or PC XT.

LIST`>LIST[CR]`

Displays the device's address, and names its current operating characteristics (Local Echo, Hold Sequence, Word Completion, and so forth).

QUIT`>QUIT[CR]`

Causes the Command/Data device issuing the command to enter Idle mode. It disconnects all virtual circuits that have been placed on hold and causes all parameters changed through the Set command to revert to their original values. Not available on the IBM PC or PC XT.

RESUME`>RESUME [circuit number] [CR]`

Reactivates a virtual circuit that has been placed on hold. Available only to users whose terminals have been configured for multiple virtual circuits. Not available on the IBM PC or PC XT.

SET`>SET [characteristic] [new value] [CR]`

Makes temporary changes to some of a terminal's operating characteristics. New values for a Hold or Disconnect Sequence must be entered in slashes. Characteristics changed by this command return to their original values when a Quit command is issued. Not available on the IBM PC or PC XT.

Chapter 5

Error Codes

The meanings of the numeric error codes returned by the Codex LAN software are explained below.

<i>Number</i>	<i>Meaning</i>	<i>Action</i>
0	Failure. The operation did not complete successfully. The most common cause of failure is a timeout in the network software.	Try again.
3	Bad parameter. A bad parameter value was passed internally to the network, an illegal version number or an out-of-bound value for any parameter having a fixed, system-defined set of allowed values. This is a programming error.	Consult your Network Administrator.
9	Timeout. The remote Entryway failed to respond to a network message within the timeout limit (approximately 10 seconds). Condition results when the processor is temporarily overloaded or when the Entryway is short of memory space. Condition can occur any time communication between Entryways is attempted.	Try again.
11	Network resource not available. The named device or service is currently busy and cannot be connected to. This code appears only when the specified name is a unique name.	Try again.

58	Local connection descriptors exhausted. The local Entryway has no available memory space in which to perform the operation.	No corrective action is possible.
60	Connection cannot be broken. The device to be disconnected is not active, the device is not connected, or an attempt has been made to disconnect the command interpreter from a device.	No corrective action is possible.
65	Local buffers exhausted. The local Entryway has no available memory space in which to perform the possible operation.	No corrective action is possible.
69	Remote buffers exhausted. The remote Entryway has no available memory space in which to perform the operation.	No corrective action is possible.
150	Local device data structures exhausted. The local Entryway has no available memory space in which to perform the operation.	No corrective action is possible.
151	No such resource. Either the specified resource is not configured or it is inactive.	Consult your Network Administrator.
152	Local process descriptors exhausted. The local Entryway has no available memory space in which to perform the operation.	No corrective action is possible.
199	No memory. The internal Entryway memory resources that communicate with the user board are not available.	No corrective action is possible.

201	No response for specified name. The specified name cannot be found on the network. The Entryway with that resource may have failed. The Entryway also may be temporarily overloaded and unable to respond.	Try again.
202	All ports busy. All ports or services associaed with the specified name are busy. This code is returned only when the specified resource is a rotoed name.	Try again.
203	No response from address. No Entryway responds to the specified address.	Try again.
204	No nth name. No nth aliased name exists in the name table for the specified address. This error is associated with the Programming Environment. It is not returned by the Command Interpreter.	Consult your Network Administrator.
205	Stream broken. An I/O operation is requested on a stream that has been broken. This error is associated with the Programming Environment. It is not returned by the Command Interpreter.	Consult your Network Administrator.

Chapter 6

Introducing Disktalk

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DISKTALK FUNCTIONS

Disktalk is a software package that allows IBM PC users shared access to files. Disktalk is installed on the hard disk of the IBM PC XT on your network. You can then use the files on the XT's hard disk as though they were actually stored in your workstation. You can also share reports and other information with other PC users on the network. Even though your own PC does not have a hard disk, you have all the benefits of hard-disk storage.

Disktalk does not significantly change the way in which you use your PC. The only difference is that you use commands to replace certain physical actions. For example, you issue a Mount command instead of inserting a floppy disk into your PC's drive.

The next section presents Disktalk terms and concepts that you should understand before you begin using the software. Subsequent sections describe booting procedures, commands, and utilities.

DISKTALK CONCEPTS AND TERMS

This section explains basic Disktalk concepts and defines terms you will need to know to use your system.

Server

Disktalk software is installed on a network IBM PC XT. The XT is often referred to as a server station because it provides access to the files on its hard disk. A network may have more than one server station.

Logical Drives

Disktalk allows you to use your PC as though it had more memory and more disk drives than it actually has. This software creates logical drives and assigns them to your workstation. When Disktalk is installed you can use your PC as though it had six drives instead of two. Logical drives are identified by the letters A: through F:. You use these logical drives as you would any other diskette drive. However, instead of inserting a floppy disk, you assign (or mount) volumes to these drives.

Volumes

When your system is installed, your Network Administrator creates a series of delimited storage areas on the server's disk. These storage areas are known as volumes. Volumes are used to store sets of files. You use volumes in the same way you use floppy disks, to store information. One volume can be assigned to each logical drive on your PC. Because Disktalk provides shared access to a hard disk, you and other network users can assign the same volume to your separate PCs simultaneously.

Each volume on the disk has a unique name that is assigned by the Network Administrator.

Directories and Pathnames

Directories are special volumes that act as pointers or indexes to other volumes or other subdirectories. They allow Disktalk to locate volumes efficiently. Directories and other volumes are organized in a hierarchy stemming from the disk's master directory.

If your network has one XT server station, the name of the master directory for that station's disk is ROOT. If you have more than one server on your network, one server's master directory is ROOT; master directories of other servers have different names.

An example of this hierarchy of directories and volumes is shown in the following example.

The Sales Department for Bottom Line, Inc. uses a network PC to evaluate product sales in various regions of the country. Each sales region is identified by a letter, A through D. Sales data for each region is stored in one of the company's network servers in volumes REGIONA through REGIOND. The organization of these volumes and their directories can be illustrated as shown in Figure 6-1.

To access files in the volume REGIONB, the software would begin with the master ROOT directory. From there it would go to EASTDIR. EASTDIR "points" to REGIONB.

Thus, the route that the software takes to locate REGIONB would appear as:

ROOT → EASTDIR → REGIONB

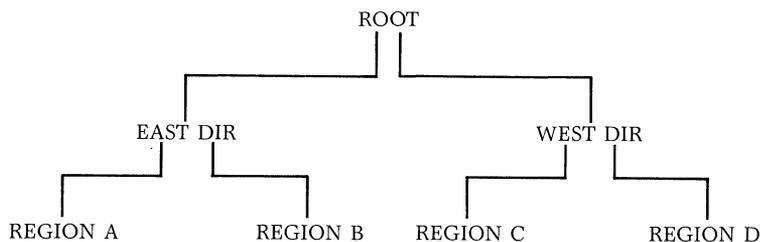


Figure 6-1. Directory Organization, ROOT Master Directory

This list of directories and volumes is known as a pathname. When you want to refer to a particular volume in a Disktalk command, you must specify its pathname in the command line. When you enter a pathname as part of a command, begin the pathname with a backslash (\), and separate each volume name with another backslash, as follows:

`\ROOT \EASTDIR \REGIONB`

The Payroll Department of Bottom Line, Inc. uses another XT to store data on sales commissions. The volumes on their server's disk are also organized by region. Figure 6-2 shows the organization of the files and directories on the Payroll Department's PC XT.

Information on commissions is located in files stored in the volume REGIONB. To access this volume, you would specify the pathname:

`PAYROLL \EASTDIR \REGIONB`

Notice that two different volumes on separate servers have the same name. However, the master directory for each disk is different and thus points to different volumes.

Passwords

In addition to assigning volume names, your Network Administrator can also determine who has access to certain volumes and the level of access to these volumes. The Network Administrator assigns passwords to volumes. Passwords determine the

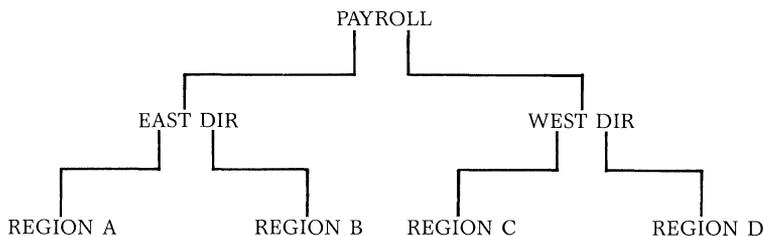


Figure 6-2. Directory Organization, PAYROLL Master Directory

kind of access rights you have to any given volume. Access rights can be divided into three levels: public, group, and private. Public access volumes generally have no password; anyone who knows the names of these volumes may use them. Group access is restricted to a smaller number of users, and private access may be reserved for a Network Administrator or a user's storage or working volume.

In addition to limiting the number of users who have access to a volume, the Network Administrator can limit the access rights that a user has, that is, what a user can do with the files in a specific volume. Access rights are defined as Read-Write, Write-Only, and Read-Only.

- **Read-Write** access allows you unlimited privileges including the right to delete files or an entire volume on a hard disk.
- **Write-Only** access allows you to create, change, or delete volumes. It allows you to create a file within a volume; however, you cannot read other files in that volume. Once you create a file and close it, you cannot open or read that file again.
- **Read-Only** access allows you to look at files on a volume but does not permit you to make changes to the files. With this level of access you can run a program, print data files, or transfer those files to another volume, but you may not change the contents of the volume's files.

A volume may have more than one password assigned to it. One password may limit access rights to Read-Only; another may allow Read-Write access.

For example, all the staff of the Payroll Department of Bottom Line, Inc. has access to the files in the volume 1985TAXES. There is no public access to this volume. A user must enter a password to mount the volume. Group access is limited to Read Only rights, and the group-access password is LIMPET. Read-Write access is available to only the Manager and Assistant Manager, who use the password IM A MANAGER.

When a volume is protected by a password, you must enter the password (preceded by a colon) after the volume name on the command line, as shown below:

```
\ROOT \ACCOUNTINGFILES:DEBIT
```

Here the password for the volume ACCOUNTINGFILES is DEBIT. The colon separates the volume name from the password.

Your Network Administrator will supply you with a list of passwords that you can use.

Default Passwords

Your Network Administrator can create a default password for a volume. The system will use this password and the access rights the password grants if you do not specify a different password for a volume. If you have access to the Boot-Options menu (explained in Chapter 7), you can specify one of your assigned passwords as the default password for an operating session. When you work with volumes that share a common password and you specify that password as your default, you will not have to enter the password each time you access a volume. The system will supply the password automatically.

A default password assigned by your Network Administrator can have limited access rights associated with it. It may, for example, allow a large number of users to read files in a certain volume but not allow them to make changes to those files.

When you boot (load) Disktalk on your PC, you may be asked to enter a user password. Your user password is different from a volume password. Be careful not to confuse the two. User passwords are explained in Chapter 7 in the section entitled "Booting Your System."

Chapter 7

Getting Started on Disktalk

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INTRODUCTION

This section explains how to load the Disktalk software from your boot diskettes into your workstation. The boot diskettes are created by your Network Administrator. They contain Disktalk software and often automatically assign certain volumes to your logical drives. The steps you take when you boot your workstation will depend on whether your Network Administrator has set up your boot diskette to include the Boot Options menu. The Boot Options menu allows you to make certain changes to your system. These changes are explained in this chapter.

BOOTING YOUR SYSTEM

To boot your system from the boot diskette, follow the procedures described below.

- 1) Verify that your PC's system power is off.
- 2) Insert your cold boot diskette (Disktalk Boot Diskette 1) into Drive A (usually the left drive). Close the drive door.
- 3) Turn on your PC. After the PC runs a power-on self-test, the drive access light on the diskette drive illuminates. The PC is reading information from the diskette and loading the Disktalk software.
- 4) When the first diskette has loaded, a screen message prompts you to insert Disktalk Boot Diskette 2. Press any key to continue the loading process.
- 5) When the diskette completes loading, a screen message appears requesting your user name and user password (if a password is required). Your user name and password are assigned by the Network Administrator.

Enter your name:

Enter password:

Type in your password, then press Enter. Remember that your user password is different from a particular volume password.

Once you have entered your password you have completed the booting procedure. To reboot your system later (provided that

you have not turned off the power to the PC), press Ctrl, Alt, Del. You will need only Disktalk Boot Diskette 2 to reboot your system.

What the screen displays after you have booted your PC depends on whether the Boot Options menu has been installed on your PC.

If you enter your password and the screen display resembles the Initial Screen with No Boot Options Available, then your station does not have access to the Boot Options menu. If you see the DOS prompt A), skip the next section and turn to Chapter 8, "Managing Files and Volumes." The next section explains the Boot Options menu.

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Enter your name:
Enter your password:

Mounting volumes...

Booting host operating system...

A: Hard disk volume \ROOT\IBM DOS A Read and Write access
B: Hard disk volume \ROOT\TAXES85 Read and Write access
C: Not mounted
D: Not mounted
E: Not mounted
F: Floppy drive 1
A)

Initial Screen with No Boot Options Available

USING THE BOOT OPTIONS MENU

The Boot Options menus allow you to make certain changes to information that has been loaded into your PC during the boot procedure. Changes that you can make include:

- Changing the operating system used by your workstation (remember that you must always use IBM DOS 2.0 or higher)

Getting Started on Disktalk

- Assigning different volumes to your workstation
- Changing the size of the user memory in your workstation
- Specifying a different default password for a particular operating session

If the initial screen displays the message shown below, Boot Options has been installed on your PC.

Change boot options (Y/N)?

You must answer Y or N and [CR]. This prompt has no default answer.

If you do not want to make changes to your system, answer N. The screen will display a message and list the volumes currently assigned to your logical drives. At the end of the display you will see the DOS prompt A>. You can begin using Disktalk commands. This sequence is shown in the Initial Screen with Boot Options Available.

Codex Corporation Personal Computer Network
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Enter your name:

Enter your password:

Change boot options (Y/N)? N

Mounting volumes...

Booting host operating system...

Codex Corporation Personal Computer Network
Copyright (c) 1983, 1984 by Davong Systems, Incorporated

A: Hard disk volume ROOT IBM DOS A Read and Write access

B: Hard disk volume ROOT TAXES85 Read and Write access

C: Not mounted

D: Not mounted

E: Not mounted

F: Floppy drive 1

A>

Initial Screen with Boot Options Available

If you want to make changes type Y. The first Boot Options menu appears on the screen.

Enter command letter:

Boot Options Menu

Valid commands are:

- A – Assign hard disk volumes and diskette drives
- M – Change memory size allocations
- N – Change user name/password
- P – Patch parameters

- Q – Quit boot option entry and boot system

- T – Set/Clear turnkey boot
- W – Write current configuration boot volume

Item entry conventions

Use the arrow keys on the numeric keypad to move the cursor
(BackSpace) erase the character just typed (left of cursor)
(Del) erase the character under the cursor
(Ctrl)(End) erase all characters from cursor to end of the field

Boot Options Menu

The top part of the screen displays the commands you can enter. Type the first letter of the command you want to use. Do not press Enter.

The lower part of the screen displays the keys you use to move the cursor or edit your responses. The bottom line of the screen is reserved for error messages. When you make a mistake or the program cannot do what you request, a message flashes on the line. The message remains there until you type another key.

The Q (Quit) command terminates the Boot Options menu. When you enter Q, your workstation quits the Boot Options menu and uses any changes you made to complete the boot process.

When you select a command, the screen displays a menu listing the changes you can make with that command.

Assigning a Hard Disk

The Assign command allows you to see and change the default network disk volumes assigned to your station during the booting process. When you enter A from the Boot Options menu, a menu similar to the Assign Menu appears on your screen. The menu displays the current Working Directory and lists the volumes assigned to each of your logical drives.

Command: Assign

Assign hard disk volumes, diskette drives, and default passwords
During volume assignments, use :F1, :F2, :F3, and :F4
for floppy drives 1-4.

Working directory \ROOT

Volume

A.....IBM DOS A
B.....WORD PROC
C.....Not mounted
D \FINANCE \PAYROLL85
E.....Not mounted
F.....:F1

Enter default groups access XXXXXXXXXXXXX
password
Enter default owner access XXXXXXXXXXXXX
password

Press (End) when all necessary information has been entered.
Press (Esc) to abort the screen and return to Boot Options Menu

Assign Menu

The Working Directory. You use the Working-Directory line to identify the Master, or Working, Directory for the volumes assigned to your logical drives. By using a Working Directory you do not have to enter the full pathname of volumes associated with that Directory in order to assign those volumes to drives. The Working Directory is, in effect, a default pathname.

In the Assign Menu, the Working Directory is ROOT. The volumes IBM DOS A and WORD PROC share this ROOT Master Directory. Their full pathnames are \ROOT\IBM DOS A and ROOT\WORD PROC. To assign the volume ROOT\TAXES85 to Drive C: you would enter only the volume name TAXES85 and its password. Do not type the backslash when you enter only a volume name.

To change the Working Directory, use the up arrow key to move the cursor to the Working-Directory line. Press the Del key to delete the current contents of the line. Enter the complete pathname of the new Directory. Remember to begin the pathname with a backslash.

Once you enter a new Working Directory, it remains your default pathname until you change it or quit the Boot Options program. You can always override the Working Directory by typing the entire pathname when the system prompts you to enter a volume name.

Volumes. You can change the volumes assigned to your logical drives or add a volume to an unassigned drive by typing over the information displayed on the screen. Press the Enter key at the end of the new pathname.

If you have more than one server station on your network, you can assign a volume from a second server. Type the full pathname for that volume you are entering. When you boot your PC be certain that the Disktalk server station volume that you specify will be operating on the network. If a disk server station is not operating, Disktalk displays a message informing you that the volume is not mounted. If that occurs, reboot your workstation and use Boot Options to assign another volume.

The Assign Menu shows you that the volume \FINANCE\PAYROLL has been assigned to logical drive D:. This volume resides on a different server station and thus has a different Master Directory (FINANCE). Because the volume uses a Master Directory different from the Working Directory, you must enter the full pathname of the volume.

Passwords. You must include a volume's password (preceded by a colon) when you enter a new volume name or pathname.

Default Passwords. The Default Passwords lines allow you to see and change your current default password. If you will be using a certain volume extensively during an operating session, you can enter that volume's password as the default. The system will supply the default when you enter commands to access files in that volume.

You can change the default password by substituting another valid password. You cannot use these lines to create new passwords or change the access rights they grant.

If no default passwords have been assigned by the Network Administrator, the Default Passwords fields will appear as a row of X's. If a password has been assigned, the field will be blank. To display the password, move the cursor to the beginning of the field.

Exiting the Assign Menu. If you press the Escape (Esc) key while the Assign menu is displayed, the menu is aborted, and you are returned to the main Boot Options menu. Any changes you have made are ignored.

If you press the End key from anywhere in the Assign menu, changes that you have made are incorporated into your system and you are returned to the Boot Options menu. You can also incorporate these changes by stepping through each line of the menu (using Enter). Press Enter at the end of the last field. Again, you are returned to the Boot Options menu.

Changing User Memory Requirements

If you are using an IBM PC XT as your workstation, you can define the user memory requirements for your PC. In that case, Disktalk knows how much RAM to allow for program operation and how much memory to allow for a disk cache.

When you enter M, the Memory command, the screen shown in the Memory Menu appears.

Command: Memory

Change memory size allocation.

Use this command to control the disk I/O performance by selecting an appropriate size for your user memory space.

NOTE: The total memory of the system is divided between the disk cache space and the user memory space. The user memory space should be at least 90K bytes. All excess memory will automatically be assigned to the disk cache memory.

User memory space (in kbytes)..... 175

Press (End) when all necessary information has been entered.

Press (Esc) to abort the screen and return to Boot Options Menu.

Memory Menu

Change the memory size by typing over the existing number. The following is a good working rule for assigning memory: Have the workstation user memory space as large as the size of the largest program you plan to use plus about 25K. The remainder of the workstation memory is used for the disk cache. After you choose the memory space you want, press End. The program returns to the Boot Options menu.

If your PC does not have enough memory to run Disktalk after you assign user memory space, the screen displays the message when the system attempts to boot:

Reducing user memory size to fit available memory . . .

You can correct this situation by rebooting your workstation, returning to the Boot Options menu, and changing the size of your user memory. This option increases the amount of memory your system can use.

Setting Your Name and Password

When you booted Disktalk at your workstation, you were asked to type in your name. You can use the Name/Password menu to supply your name automatically as a default so that you do not have to type it at the beginning of each session. The password option allows you to choose the password you enter when you log on to the Disktalk system.

To change your name and/or password, enter N from the Boot Options menu. The Name/Password screen follows.

Command: Name/Password

Change user name/password

Use this command to set your name and password.

If you answer 'N' to 'Allow boot parameter change', the system will not allow you to make any more changes to this boot diskette and no questions will be asked during the boot-up procedure.

```
Operating system ..... IBM DOS 2.0
Allow user name change? (Y/N) ..... Y
Allow boot parameter change? (Y/N) ..... Y
Enter default user name ..... X
Enter password ..... XXXXXXXXXXXXXXXXXXXX
Press (End) when all necessary information has been entered.
Press (Esc) to abort the screen and return to Boot Options Menu.
```

Name/Password Menu

Your cursor will be on the "Enter default user name" line. Type in the name that you want to appear when you boot up your PC. Use Ctrl-End to erase a name. When you type a name on this line, the next time you boot your system the screen displays your name and asks for confirmation.

As an example, if you had entered MIKE on the default user name line, when you booted your system, the screen would display the following line instead of requesting your name:

Is your name MIKE (Y/N)?

As in the Assign menu, if no password has been assigned to you, the "Enter password" line will appear as a row of X's. If a password has been assigned, the field will be blank. Move the cursor to the beginning of the field to display the password.

You can also change the default operating system. When you use Disktalk to support the IBM DOS 2.0 operating system, you can accept the default answer. When you want to boot with another operating system such as IBM DOS 2.1, you must

change the default operating system entry. Remember that the system you use must be IBM DOS 2.0 or higher.

This menu contains two other prompts: "Allow user name change?" and "Allow boot parameter change?" If you answer N to "Allow user name change?" you cannot change the user name when you use the boot diskette again. The name is "frozen" on your Boot diskette. If you change "Allow boot parameter change?" to N, you cannot use the Boot Options menu. The "Change boot options?" question is not asked when you next boot your PC.

Press **End** to exit this menu. Disktalk returns you to the initial Boot Options menu.

Quitting the Boot Options Menu

When you are finished, enter **Q** to quit the Boot Options menu. The system responds with the question:

Update boot options? (Y/N)

If you answer **N**, the changes you made will stay in effect for the current operating session only. They will return to their original values when you reboot your system.

If you answer **Y**, your changes are written to the hard disk. You can alter these new values only through the Boot Options menu.

■CAUTION: *Do not use the options shown for Turnkey, Write, and Patch. These options are reserved for the Network Administrator.*

Chapter 8

Managing Files and Volumes

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INTRODUCTION

This chapter describes Disktalk commands and utilities. You must be using IBM DOS 2.0 or higher to use these commands. Enter all commands when your DOS prompt (shown here as A>) appears on the screen. ■ **Note:** This chapter does not include instructions for either backing up or restoring your volumes. Refer to the manuals supplied with your IBM PC for information on the BACKUP and RESTORE functions.

USING THE MOUNT COMMAND

The Mount command is the equivalent of inserting or removing a floppy disk from a drive. You use Mount to associate a volume with a specific logical drive. You can also use this command to remove a volume from a drive and to display a list of currently mounted volumes.

Listing Mounted Volumes

In creating your boot diskettes, your Network Administrator may have assigned volumes to some or all of your logical drives. If your station has the Boot Options menu, you may have made certain assignments yourself. To review the volumes associated with your logical drives, enter the Mount command at the DOS prompt, as shown below. End the command with a [CR].

A>MOUNT

A sample Response to Mount Command screen follows. Notice that passwords are not displayed, but your access rights to the volumes are shown.

A> Mount

Current volume assignments:

A: Hard disk volume \ROOT\IBM DOS A Read/Write access

B: Hard disk volume \ROOT\WORD PROC Read/Write access

C: Not mounted

D: Hard disk volume \FINANCE\PAYROLL85 Read/Only access

E: Not mounted

F: Floppy drive 1

Response to Mount Command

Mounting a Volume

When you mount a volume, you are associating that volume with one of your available logical disk drives (identified by the letters A: through F:). A volume must be mounted on a drive before you can access the files in that volume.

If the screen response to your Mount command shows that one or more of your logical drives is empty, you can assign a volume to that drive. To make the assignment you use a longer version of the Mount command.

To mount a volume, you must specify the name of the hard disk on which the volume is physically located, the name of the volume, and its password. As an example, the volume TAXES85, located on the ROOT hard disk, has the password \$FILES. To mount this volume on your logical Drive C:, enter the following command line. End the line with a [CR].

```
A>MOUNT C: \ROOT\TAXES85:$FILE
```

■ **Note:** The password that you are typing in will not appear on the screen.

In response to this command, the screen displays a listing of all drives, confirming that the volume has been mounted.

Remember that if you do not supply a password, the system will assign the default password to the volume name. This default may limit your access rights to that volume.

If you want to use a program that is stored on a floppy disk rather than on a server's hard disk, you can mount a diskette drive as you would a volume:

```
A>MOUNT E: :F1
```

The command line shown above mounts the floppy drive :F1 as a volume on Drive E:.

You can mount only volumes that have already been created. Disktalk will not let you mount a volume that does not yet exist.

Dismounting a Volume

When you dismount a volume, you remove it from its logical drive. To dismount a volume, enter the Mount command and specify the drive letter. The command line shown below dismounts the volume associated with logical Drive E:.

A)MOUNT E:

The screen displays a listing of all drives, confirming that the volume has been dismounted.

If you dismount a volume that was assigned to a logical drive during the booting procedure, the volume will be dismounted only for the current operating session. When you reboot your PC, the volume will be mounted again.

Disktalk will not allow you to dismount the volume on which your PC's operating system resides. This volume must always be mounted on one of your logical drives.

USING THE FORMAT COMMAND

You use the Format command to prepare a volume or diskette for receiving and storing information. If you do not specify anything in the Format command line, the system formats the volume as a double-sided floppy disk equivalent with 360K storage.

■CAUTION: *The Format command erases any data that may already exist on the volume you are formatting. If you want to save this data, you must back up the files before you issue the Format command.*

When you enter the Format command, you must specify the drive letter associated with the volume you wish to format, as follows:

A)FORMAT C:

The command above formats the volume assigned to your logical Drive C:.

When the formatting is complete, Disktalk displays a message, as shown below.

A)FORMAT F:

**Insert new diskette for Drive F:
and strike any key when ready**

Formatting . . . Format complete

format another (Y/N)?

Format Options

The Format command includes several options that you can use to specify a particular volume's storage size and format.

You can format a hard-disk volume mounted on logical Drive C: as a single-sided, 8 sectors per track, equivalent to a floppy diskette by issuing the command line:

```
A)FORMAT C:1/8/H
```

The volume on Drive C: is formatted as a floppy-equivalent volume and can be used as a floppy diskette.

The Format options are explained in the following paragraphs.

/S Option. This option copies the operating system files COMMAND.COM, IBMBIO.COM, AND IBMDOS.COM from the current default volumes to the new volume or diskette. The operating system files must exist on the default volume. These files are hidden on the diskette or volume. If you enter a DIR command to that diskette or volume, the file names will not appear. Instead you will see two files labeled * and **.

/H Option. This option instructs Format to format a hard-disk volume.

/V Option. When you use /V, Disktalk prompts you for a volume name. The volume name you enter is written to the disk.

/1 Option. This option allows you to format a volume as a single-sided diskette. The storage area will be 160K. You may only use this option when you are formatting DOS 2.0 volumes.

/2 Option. With this option, you format a volume as a double-sided diskette with 320K memory.

/8 Option. When you specify this option, Disktalk allocates eight sectors per track in your volume. You can use this option when you are formatting a volume that has the same storage area as either a single- or double-sided diskette. If you do not specify /8, Format allocates nine sectors per track.

/9 Option. This option specifies the default allocation of nine sectors per track.

USING THE DISKCOPY COMMAND

The Diskcopy command allows you to copy the contents of a floppy diskette onto a hard-disk volume of equal or greater size. You use this command to copy the contents of a floppy-equivalent hard-disk volume onto a floppy diskette or to copy the contents of a volume from one volume to another.

To create a floppy-equivalent hard-disk volume, use Diskcopy to copy a floppy diskette onto the hard-disk volume. (You can also use Format to format a floppy-sized volume.) When you use Diskcopy to copy a hard-disk volume to a floppy diskette, the floppy diskette is automatically formatted, if it has not been formatted previously. Once you have issued this command, the hard-disk volume is treated as a floppy-equivalent volume. You may treat that volume as you would any other floppy diskette, except that you can only mount and dismount it. You cannot remove it from the computer.

To convert a floppy-equivalent hard-disk volume back to an empty hard-disk volume, use the Format command. Remember that Format erases any files on a volume.

When you issue a Diskcopy command you specify the drive from which you want to copy the volume (the source drive) followed by the drive letter to which you want the volume copied (the destination drive). The Diskcopy command includes several options:

- /1 copies a volume as a one-sided diskette
- /2 copies a volume as a double-sided diskette
- /8 specifies 8 sectors per track
- /9 specifies 9 sectors per track
- /H copies to a hard disk volume

As an example, suppose that your floppy drive is mounted on logical Drive F: and a 360 kbyte volume is mounted on Drive E:. To copy the contents of the floppy to the hard-disk volume, enter the command line:

```
A>DISKCOPY F: E:/H
```

The files on the floppy diskette are copied to the hard-disk volume mounted on Drive E:.

Copy Command

You can also use the DOS Copy command to copy files from a floppy-equivalent volume to a floppy diskette or to copy files from one floppy diskette to another. This command will copy only the files specified and will append them to any files which already exist on the destination volume. Refer to your DOS command guide for more information on this command.

USING THE DISKCOMP COMMAND

With DISKCOMP you can compare the entire contents of a floppy diskette and a floppy-equivalent volume or compare two hard-disk volumes. You would use this command after you use Diskcopy to verify that the contents of both volumes are the same. Diskcomp compares all tracks on a track-for-track basis and displays a message if the tracks are not equal.

You can use several options when you are comparing two floppy-equivalent volumes:

- /1 compares one-sided diskettes
- /2 compares double-sided diskettes
- /8 specifies 8 sectors per track
- /9 specifies 9 sectors per track, the default

If you do not enter any option, Diskcomp automatically determines the size from the source volume.

To issue a Diskcomp command, identify first the source drive (the drive containing the files from which you want to compare) and then the destination drive (the drive containing the files to which you want the files compared).

To compare the contents of the hard-disk volume mounted on Drive B: to the floppy diskette mounted on Drive F:, issue the following command:

```
A>DISKCOMP F: B:
```

You may also want to refer to your DOS command guide before you use Diskcomp.

USING THE PARK COMMAND

The Park command moves the read/write heads on your hard disk away from the data area on the disk. When the hard disk is running, the heads fly on a cushion of air just a few microns above the disk surface. Parking the heads places the heads beyond the usable area of your hard disk and saves the disk from undue wear. Not all Winchester-technology disk drives automatically park the heads when you turn the power off. When you are moving the hard disk or leaving it turned off overnight you should park the heads. ■ **Note:** If you have a \$P option (print pathname) in the prompt command under DOS 2.0, you cannot use this command. If you request this option, DOS must read the current Directory in order to retrieve and print the current pathname; therefore, Park is negated.

When you issue a Park command, Disktalk searches the drive tables and locates the highest-numbered cylinder. The heads are placed over that cylinder. The Park command parks the heads of every drive attached to the IBM PC or PC XT.

Use the following command line to issue the Park command:

```
A) PARK
```

You can use Park even if you are not running Disktalk on an installed drive; however, you must specify the cylinder number over which you want the heads parked. This is usually the highest cylinder number on your disk. For example, if the hard disk drive has 306 cylinders, enter:

```
A) PARK 306
```

Chapter 9

Using Printtalk

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INTRODUCING PRINTTALK

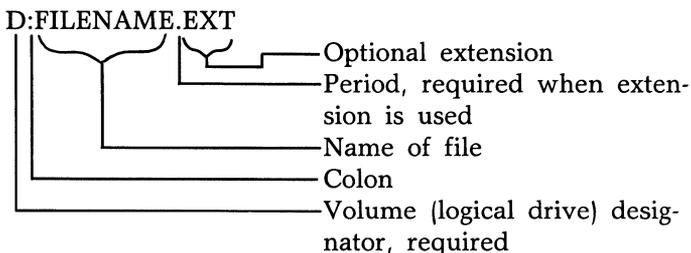
Printtalk is another software package that runs on your network IBM PCs and PC XTs. Printtalk runs in conjunction with Disktalk and allows you to manage certain printing functions on network printers that are associated with your PC workstations.

With Printtalk you can print one or multiple files, cancel a file to be printed, terminate all files in a Print queue, or print a file in its absolute binary image. You can also examine the list of files waiting to print on your printer or print on another printer on the network.

You perform each Printtalk function by using an option associated with the basic Print command. Each Print command line contains the specific Print command option you want to use and a file designator known as the File Specification. You can enter commands in uppercase or lowercase. Here they are shown in uppercase.

FILE SPECIFICATIONS

A file specification (also abbreviated 'filespec') identifies the file you want to print. The parts of a filespec and its format are shown below.



YOUR DEFAULT PRINTER

When your system is established, your Network Administrator assigns you a default printer. You can elect to use this printer, or you can override the default and choose another printer.

In most cases, to use the default printer you do not have to specify the name of the printer in the command line. If you want to specify the default printer, enter /P in the command line. To select another printer, you must know its name.

MANAGING PRINTTALK FUNCTIONS

The command options described below enable you to send files to print and to remove files from a Print queue.

You issue Printtalk commands when you see the system prompt on your screen. (In this Guide, the system prompt is shown as A>). You can issue the Print command from any of your logical drives. The files you print can reside on the same or a different drive. For example, from A: you can issue a command to print a file that is stored in the volume on logical Drive E:.

Each Printtalk command line consists of the basic Print command, a command option, and the filespec for the file you wish to print. You can print on the default printer assigned to you, or you can print files on another printer by including the name of the printer on the command line. With Printtalk you can use individual command options or combine options in a single command line.

The first option discussed, Help, displays print options and the syntax of Print commands.

Using the Help Option

The Help option displays a menu that lists the Print command options you can use. To request Help, enter the command line shown below. Use a space to separate the Help option `/?` from the Print command; end the line by pressing the Enter key.

```
A>PRINT /?
```

The Help Screen shows the Help command line and screen response. The letters and characters represent command options. When you use an option on a command line, you must precede it with a slash (`/`).

The second line on the screen shows the syntax of the Print command. Material enclosed in brackets represents an option that you can choose if you wish.

DSI PRINT syntax:

```
PRINT [[d:] filename[.ext][/P][/C]...]  
[/?][/T][/R][/A][/M][/S][/@(printer)][/$(username)][/@*][/$*]
```

Options:

/T – terminates all files queued by the user, rest of command line ignored

/C – cancels the file preceding the /C and all file names following up to the file (but not including) preceding a /P

/P – prints the preceding and following files up to the file preceding /C

/R – restart the current printing file after readjusting printer (jam..etc)

/A – prints the file as an absolute binary image, default will trim trailing blanks and expand tabs

/M – change to compressed print mode

/S – will close and queue the current PRNSAVE output file

/? – will display this message and rest of command line are ignored

/@(printer) – will direct all the PRINT actions to the printer specified

/(user) – PRINT will direct all actions for the user specified,

****/@*** and **/\$*** specify all printers and all users

****parentheses are required only if you have spaces in printer or user name**

Examples:

```
PRINT b:MYFILE  
PRINT file1 file2 file3/C /@(my printer)  
PRINT /M file1 /C file2 file3 /P /S
```

Printing a Single File

To print a single file on your default printer, enter the Print command and the filespec, leaving a space between the command and the name of the file, as shown below:

```
A>PRINT A:FILE.ABC
```

This command prints the file FILE.ABC, located on the volume stored on logical Drive A... When you issue the Print command, the screen responds with a message confirming your command and displaying the status of the file. A sample message is shown in in the Response to Print Command screen.

```
A)print a:file.abc
Adding A:FILE.ABC to be printed . . .
```

```
PRINT status
User:      YOUR NAME
Printer:   YOUR PRINTER
```

File name	Size(bytes)	Approximate time to print	
		Start(hh:mm)	Length(min)
FILE.ABC	640	13:55	001

*Response to Print Command***Printing Several Files**

To send several files to print, enter the Print command then the filespec for each file that you want to print. Separate the filespecs with a space. You may have up to 128 characters in one Print command.

To queue the files PRICE (stored on the volume in logical Drive A:), COST.NYC, and NET (both on Drive C:), enter the following command.

```
A>PRINT A:PRICE C:COST.NYC C:NET
```

The screen displays a status message showing the size of each file and the approximate printing time.

Canceling the Print Command

You can remove all files you have in your Print queue using the /T command option.

```
A>PRINT /T
```

This command option affects only your files waiting in the Print queue for your default printer. Anything that you enter on the line after the /T is ignored.

```
A>PRINT /T A:JOBS.NYC
```

The command line shown above only removes your files from your printer's queue; it does not cause the file JOBS.NYC to be printed.

Canceling Selected Files

You can remove selected files from your Print queue using the /C command option.

```
A>PRINT C:PAYROLL.FEB /C
```

The command line removes the file PAYROLL.FEB from your Print queue. Other files that you may have in the queue are not affected.

You can remove more than one file from your Print queue by issuing the /C as shown below:

```
A>PRINT D:84FILES.FEB /C E:84FILES.MAR /C
```

Combining the Print and Cancel Options

You can remove a file from the Print queue and request that another file be printed by using the /C and /P options on the same command line.

To remove the file EMPLOYEES.DAT from the Print queue and print the file NEWHIRES.DAT, use either of the following command lines:

```
A>PRINT A:NEWHIRES.DAT B:EMPLOYEES.DAT /C
```

```
A>PRINT B:EMPLOYEES.DAT /C A:NEWHIRES.DAT /P
```

If you issue the command to print a file after you issue the Cancel command, you must specify a printer (even when the printer is your default printer).

Using Another Printer

You can print a file on a printer other than the one assigned to you by using the `/@` command option.

If the name of your default printer is `PRINTER44`, but you want to print the files `NEWHIRES` on the printer `DRAFTPRINTER7`, issue the command:

```
A>PRINT A:NEWHIRES /@DRAFTPRINTER7
```

You can use `/@` in conjunction with any other command option. For example, to remove the file `PAYROLL` from the queue of files waiting to print on `DRAFTPRINTER7`, enter the command:

```
A>PRINT B:PAYROLL /@DRAFTPRINTER /C
```

Restarting Print Files

If paper jams in a printer or the printer runs out of paper, the printer usually gives some type of signal and stops printing. When this happens you can restart the print job by issuing the following command:

```
A>PRINT /R
```

The file prints from where the printer jammed. Printing then automatically restarts at the beginning of the jammed file.

Using Space Compression

With the `/M` option you can compress your print files by removing any blank spaces from the end of printed lines.

```
A>PRINT /M C:PAYROLL.FEB
```

■ **Note:** To use the `/M` option, you must have the two files named `PRINT.PRE` and `PRINT.SUF` on your current drive. They contain the escape sequence that turns the compressed printing on and off.

Printing Binary Image Files

The /A command allows you to print a file in its absolute binary image. The data in the file is interpreted as 1's and 0's instead of normal printed characters. This option is used to print data on a plotter or graphics pointer.

To use the /A option for the file NETPROFITS, enter the following command line:

```
A>PRINT /A A:NETPROFITS
```

Chapter 10

Displaying Print Queues

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INTRODUCTION

Certain command options allow you to examine a Print queue to determine when your files will print and how long it will take to print them. You can view a list of the files you sent to your printer, the files another user sent to your printer, all files sent to your printer, or queues for other printers.

DISPLAYING YOUR PRINT QUEUE FOR YOUR PRINTER

The /\$ option allows you to display the names of all of your files that are waiting to print on your default printer. You use this command in conjunction with your system user name. A sample command line is shown below.

```
A)PRINT /$YOURNAME
```

When your user name contains a space (as in CAROL LANE), you must enclose your name in parentheses. You do not need parentheses if your user name is a single word containing no spaces.

The screen display lists your files that are waiting to print, the size of each file in bytes, and the time it will take to print each file. A sample /\$ command screen follows.

Printer		Approximate Time to Print		
File Name	Size(bytes)	Start(hh:mm)	Length (min)	Owner
JAN4MEMO	640	13:55	001	YOUR NAME
PAYOUT.84	3584	13:56	005	YOUR NAME

Screen for /\$ Command

DISPLAYING ANOTHER USER'S PRINT QUEUE FOR YOUR PRINTER

You can see the names of files that another user has sent to your default printer by adding the user's name to the /\$ command line. To use this command you must know the name that user enters to log on to the PC.

To see which files Millie Jones has waiting to print on your default printer, enter the command line:

```
A>PRINT /$(MILLIE JONES)
```

To obtain the same listing for a user whose system name is Robert, enter:

```
A>PRINT /$ROBERT
```

The screen display will be similar to the one following.

Printer		Approximate Time to Print		
File Name	Size(bytes)	Start(hh:mm)	Length (min)	Owner
:PRINTER24				
CHRONFILE 1544		13:11	004	ROBERT

Displaying Another User's Queue

DISPLAYING ALL FILES IN YOUR PRINTER QUEUE

To display a list of all files waiting to print from your default printer, enter the command line:

```
A>PRINT /$*
```

 Displaying Print Queues

The following screen shows a typical response to this command.

```
Printer :PRINTER24
```

File Name	Size(bytes)	Approximate Time to Print		Owner
		Start(hh:mm) (min)	Length	
FILE71	400000	10:57	055	JAMES
JOBSPEC	1522	11:52	003	SUSAN
MEMOA32	640	11:55	001	YOUR NAME

Response to /\$ Command*

DISPLAYING ANOTHER PRINT QUEUE

You can use /@ option with a specific printer name to determine what files you have waiting to print on another printer in your network:

```
A>PRINT /@DRAFTPRINTER8
```

The command above displays the names of all of your files that are queued to print on the printer DRAFTPRINTER8. A sample screen follows.

```
Printer :PRINTER8
```

File Name	Size(bytes)	Approximate Time to Print		Owner
		Start(hh:mm) (min)	Length	
MEMOLIST	100000	08:30	013	YOUR NAME
JOBFILES	640	08:33	001	YOUR NAME

Response to /@ Command

DISPLAYING ALL YOUR PRINT QUEUES

To list all files that you have queued to all printers, use the asterisk character (*) as a wild card:

```
A>PRINT /@*
```

Printtalk displays the queue list for your default printer (shown below as PRINTER24), then displays queues of files you have sent to all other printers.

```
User      :YOUR NAME
```

```
Printer   :PRINTER24
```

File Name	Size(bytes)	Approximate Time to Print		Owner
		Start(hh:mm)	Length (min)	
MAR12MEMO	640	13:55	001	YOUR NAME
FILE.PER	3584	13:56	005	YOUR NAME

Command Response to /@ Command*

DISPLAYING ALL QUEUES ON ALL PRINTERS

You can also use the asterisk when you want to display all files on all printers. The command line is shown below:

```
A>PRINT/$* /@*
```

This command displays all files queued by all users.

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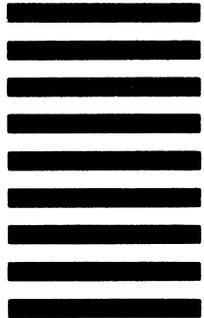
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NETWORK REFERENCE PAGE

Use this page to record your terminal's characteristics and the names and addresses of devices and services that you use frequently. If your system includes Disktalk and Printtalk software, record your system user name and the names of network printers at the bottom of the page.

Your Device's
Address: _____ Device Name: _____
Shared Name 1: _____
Shared Name 2: _____
Backspace Key: _____ Line Delete Key: _____
Disconnect
Sequence: _____ Echo Status: _____
Hold Sequence: _____ Word-Completion
Key: _____

Frequently-Used Connections

Name/Address: _____
Name/Address: _____
Name/Address: _____
Name/Address: _____

Disktalk and Printtalk

User Name: _____
Default Printer: _____
Other Network Printers: _____

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