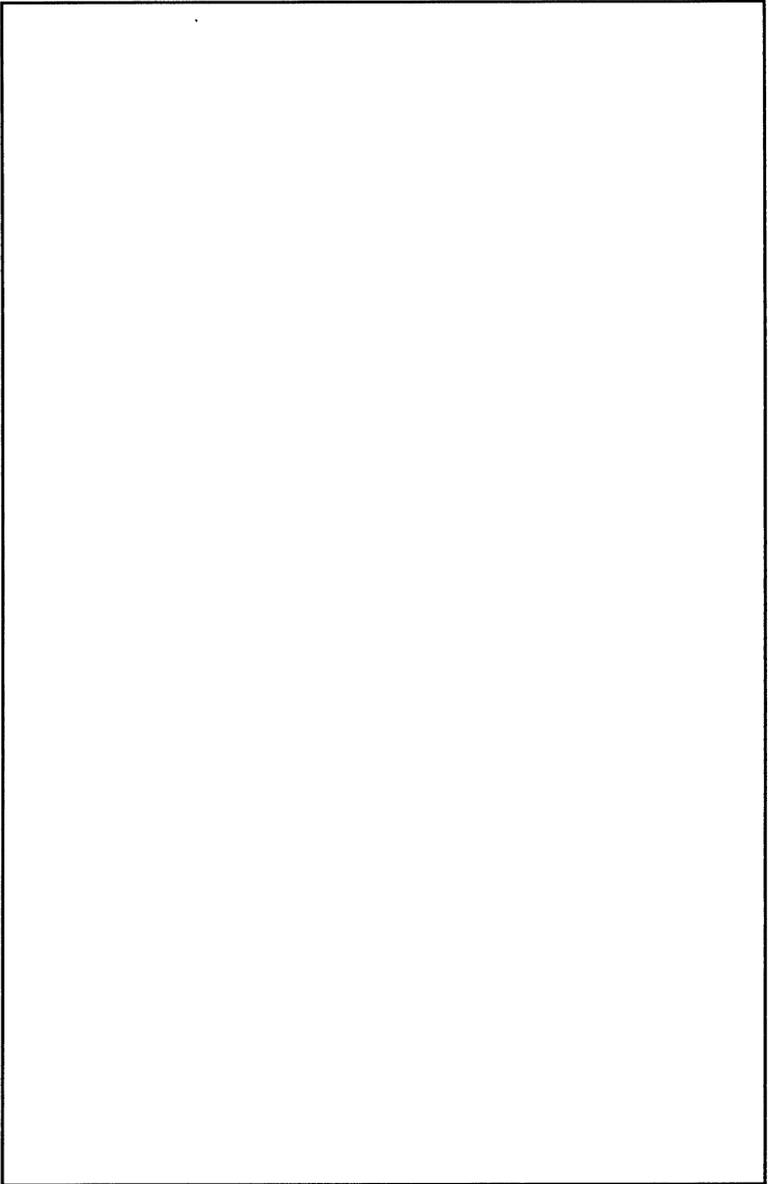


CODEX



**4000 Series LAN
Disktalk and Printtalk**

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 manual is intended for Network Administrators of the Codex LAN Personal Computer Network. The information included will allow you to install as well as initialize the Disktalk/Printtalk system. The Disktalk system allows users of IBM PC XT's to share databases and application programs with other PC and PC XT workstations on the network. The Printtalk system allows IBM PC and PC XT users to share printers with other PC and PC XT workstations.

This Guide assumes that you are acquainted with the operation of an IBM PC* or PC XT* and with PC DOS* Version 2.0 or later.

Chapter 1, *Setting Up Disktalk*, shows you how to install the Disktalk/Printtalk software, create boot diskettes for a Network Server workstation, and create boot diskettes for Disktalk users. Chapter 2, *Managing Your Disk*, describes the HDMGR (Hard Disk Manager) program and how to manage hard-disk resources on your network.

Chapter 3, *Setting Up Printtalk*, shows you how to set up a Printtalk system by defining network printers and creating a print queue. Chapter 4, *Using the PRNMGR Program*, discusses the PRNMGR (Print Manager) program and how to manage printing activity on the network. Chapter 5, *Error Messages*, lists Disktalk/Printtalk error messages. A brief explanation of each message and a suggested corrective action are included.

The *4000 Series LAN User's Guide* provides a general introduction to the Disktalk/Printtalk system and to using Disktalk and Printtalk commands.

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Preface (continued)

CONVENTIONS USED IN THIS GUIDE

The following conventions are used throughout this Guide:

- [CR] This keystroke notation refers to the Enter key on the IBM keyboard.

- Ctrl-T This keystroke notation requires you to press the Ctrl key and simultaneously press another key. The example keystroke can be interpreted this way: Hold down the Ctrl key and then type T.

All the command lines shown in this Guide are in uppercase characters for instructional purposes. You can, however, enter any command, filename, or command option in upper- or lowercase characters.

Chapter 1

Setting Up Disktalk

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GENERAL

This chapter shows you how to install the Disktalk/Printtalk software and set up the Disktalk system on your network. Chapter 3 shows you how to set up the Printtalk system. To initialize the Disktalk system, you must perform three major tasks:

- Create two Disktalk boot diskettes.
- Set up a Disktalk server station and modify one of the boot diskettes for use on the server.
- Boot the server and create a set of two Disktalk boot diskettes for each Disktalk user.

BEFORE YOU START

You should have already installed a 4010 PC Entryway Card into the IBM PC XT server station(s) and into each PC on the network. The appropriate hardware should be in place to connect the Entryway card to the LAN (cable, baseband transceiver, broadband RF modem card and modem). Refer to the *4000 Series LAN Hardware Reference Guide* for details.

In order to set up a Disktalk server station, you must have the following diskettes:

TALK INSTALL
TALK UTILITY
IBM PC DOS (Version 2.0 or 2.1)

In order to create Disktalk boot diskettes, you must have the following master diskettes:

TALK DISK 1
TALK DISK 2

■ **Note:** Codex requires you to purchase one complete set of Disktalk/Printtalk software (TALK INSTALL, TALK UTILITY, TALK DISK 1, and TALK DISK 2) for each Network Server on your network. You may copy this software set only for Disktalk users — that is, workstations using Network Server resources.

CREATING BOOT DISKETTES FOR THE NETWORK SERVER

The first step in setting up a Disktalk server station is creating two boot diskettes for use on the server. To do so, you copy the files from TALK DISK 1 and TALK DISK 2 onto blank floppy diskettes. We recommend that you use a PC, if one is available, rather than a PC XT to perform this task. The file-copying process can be tedious if you do not have two floppy drives, although it can be done on a PC XT by following the screen prompts.

- 1) Insert the IBM PC DOS diskette into floppy Drive A. Power on the PC.
- 2) After diagnostics have completed, type the date and time if prompted.
- 3) Insert a blank double-sided, double-density diskette into Drive B. The diskette should be write-enabled (with no read-only tab).
- 4) Format the diskette by entering:

```
FORMAT /S B: [CR]
```

The /S option transfers necessary PC system files to the blank diskette. The screen will display this message:

```
Formatting...
```

while the formatting operation is active. When the operation completes (after approximately two or three minutes), the screen displays:

```
Format complete.
```

- 5) A prompt asks if you wish to format another diskette. Type N.
- 6) Remove the PC DOS diskette from Drive A. Insert TALK DISK 1 into Drive A. To copy all the files from TALK DISK 1 onto the formatted diskette, enter:

```
COPY A:*. * B: [CR]
```

- 7) When all the files have been copied, remove and label the new diskette Disktalk Boot Diskette #1.

- 8) Insert the PC DOS diskette into Drive A. Enter:

DISKCOPY A: B: [CR]

The system will prompt you to insert two diskettes. Insert TALK DISK 2, the source diskette, into Drive A. Insert a blank diskette, the target diskette, into Drive B. Strike any key when you are ready to proceed.

- 9) When all the files have been copied, a prompt will ask whether you want to copy another diskette. Type N.
- 10) Remove and label the new diskette Disktalk Boot Diskette #2.

The new diskettes you copied, Disktalk Boot Diskette #1 and Disktalk Boot Diskette #2, are used to boot the Disktalk system on the Network Server and are also used to copy boot diskettes for Disktalk users. TALK DISK 1 and TALK DISK 2 are not used further and should be stored in a safe place.

Before proceeding, you should make at least one, preferably two, backup copies of the following four diskettes:

TALK INSTALL
TALK UTILITY
Disktalk Boot Diskette #1
Disktalk Boot Diskette #2

- 1) Back up Disktalk Boot Diskette #1 by formatting the diskette you are copying it to and using the /S option to copy the system files.
- 2) After the format is completed, copy the files by entering

COPY A:*. * B: [CR]

and following the instructions on the screen.

- 3) Copy the remaining three diskettes by entering

DISKCOPY A: B: [CR]

and following the instructions on the screen.

After you copy each diskette, label and store it in a safe place.

CREATING A DISKTALK SERVER STATION

Any IBM PC XT with a hard disk can be used as a Disktalk server station. All the steps required to set up a server are performed on the PC XT. To create a server, you must first format the hard disk, name it, and then allocate space on the disk for the Disktalk and DOS software. ■ **Note:** Formatting destroys all information on a hard disk. If there is any information you wish to save on the disk, save it on diskettes by using the DOS Backup command before you format.

Formatting the Hard Disk

To format the hard disk of a PC XT server, follow the instructions below.

- 1) Put the PC DOS diskette into Drive A (the diskette drive). Power on the PC XT.
- 2) After diagnostics have completed, type the date and time if prompted. Wait for the A) prompt to display.
- 3) Remove the PC DOS diskette. Insert the TALK INSTALL diskette into Drive A.
- 4) To invoke the Installation program, enter:

INSTMOS [CR]

The following screen displays:

CODEX CORPORATION

Codex PC Network

DISKTALK Installation

Version 1.20

Press any key to continue:

- 5) Press any key as prompted to continue with the Installation program. A new screen displays, titled Installation Program Information. ■ **Note:** This installation screen includes a message about additional operating systems. Since Disktalk currently supports one operating system (PC DOS), you can disregard the message.

- 6) Type Y next to the prompt "Do you want to format a hard disk?" A new screen displays, titled Disk Drive Name.

The Installation program asks you to supply a name for the hard disk. This name is used as a server name; its purpose is described later in this section. For a disk or volume name, you can supply any unique name from 1 to 16 characters in length. When choosing a disk name, avoid the following special characters: nonprinting control characters (pressing the Ctrl key and another key), commas, hyphens, backslashes, colons, semicolons, greater than (>), less than (<), or equals (=) symbols, or the vertical line (|).

The hard disk on one server in your network must be given the name ROOT. ■ **Note:** In order for the Disktalk/Printtalk system to operate on your network, the ROOT server must be powered on and running the Disktalk/Printtalk software.

- 7) Type the hard-disk (server) name next to the program prompt, then press Enter.
- 8) Type Y and press Enter to verify the name.

The program now formats and verifies the disk. The whole operation should take approximately seven or eight minutes.

Creating the System Boot Volume

After the disk is formatted, you will create your first volume on it. A volume is any area of contiguous storage space on the hard disk. The first volume you will create is called the System Boot volume. This volume is used to store the DOS and Disktalk software that you will copy onto the hard disk.

When the formatting is completed, the system displays a screen titled Volume Allocation Information.

- 1) Type Y next to the prompt "Do you wish to see the standard configurations?" Press Enter.
- 2) A new screen displays, titled Standard Volume Allocations. Choose option #1 from the menu by typing 1 and pressing Enter. This will create one volume on the disk.

- 3) Do not accept the default disk percentage for the volume size (80 percent). Change this number to 20 percent by overstriking the default value. Then press Enter. This allocates 20 percent of the total disk to the volume you just created.
- 4) The program now displays the disk allocation you chose. If it is correct, press Enter.

When you finish allocating disk space, Disktalk creates the System Boot volume IBM DOS 2.x, where x is the version of DOS you are installing.

Installing DOS and Disktalk Software

After Disktalk initializes the System Boot volume, you install the PC DOS and the Disktalk software into the space you just allocated on the hard disk. The Installation program prompts you to perform the following tasks:

- 1) Remove TALK INSTALL from the diskette drive.
- 2) Insert the IBM PC DOS diskette into Drive A. Press any key when you are ready to continue. Disktalk copies DOS onto the System Boot volume.
- 3) When the copy is completed, remove the PC DOS diskette.
- 4) Insert TALK INSTALL into Drive A. Press any key when you are ready to continue. Disktalk copies the installation files onto the System Boot volume.
- 5) When the system prompts, type the name you will use to log on. Press Enter. ■ **Note:** You can choose any name for a logon name, between 1 and 16 characters in length. Avoid the special characters listed previously in the section entitled Formatting the Hard Disk.
- 6) When the program asks if you wish to change boot options, type N and then press Enter. Disktalk then mounts the System Boot volume.
- 7) Remove the TALK INSTALL diskette. As prompted, insert the PC DOS diskette into diskette Drive A. Press any key to continue. Disktalk now copies the PC DOS system utility programs to the System Boot volume.

- 8) Remove the PC DOS diskette.
- 9) Insert the TALK UTILITY diskette into Drive A. Press any key when you are ready to continue. The program now copies the Disktalk system utility programs to the System Boot volume.
- 10) Remove the TALK UTILITY diskette from Drive A. Store it and the TALK INSTALL diskette in a safe place.

You have completed the procedure for setting up a Disktalk server station. The screen should now prompt you to type the date and time.

Booting the Server Station

Now that you have formatted the server's hard disk and created a volume, you are ready to boot (start up) the server station using the two boot diskettes. Since you are booting the server for the first time, there is an additional procedure you must now perform: Change the information on Boot Diskette #2 to match your station's characteristics.

To boot the server station:

- 1) If the server is off, insert Boot Diskette #1 into the diskette drive. Power on the PC XT.
- 2) If the server is on, insert Boot Diskette #1 into the diskette drive. Press Ctrl, Alt, and Del simultaneously to "warm" boot the system.
- 3) When prompted, remove Boot Diskette #1, then insert Boot Diskette #2 into the diskette drive.
- 4) Press any key when you are ready to continue.

To change the information on Boot Diskette #2 to match the characteristics of the server station, follow the steps below.

- 1) Type your user name if prompted to do so, then press Enter.
- 2) The following prompt displays:

Change Boot Options (Y/N)?

Type Y. The following screen displays:

Disktalk/Printtalk
Setting Up Disktalk

Boot Options Menu

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 the cursor)
 - ** erase the character under the cursor
 - <Ctrl><End>** erase all characters from cursor to end of the field.

- 3) Type A to assign default disk volumes and diskette drives. This screen displays:

Assign Menu

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 \ 1

Volume

- A..... IBM DOS A
- B.....
- C.....
- D
- E.....
- F..... :F1

Enter default groups access passwordXXXXXXXXXXXXXXXXXXXX

Enter default owner access passwordXXXXXXXXXXXXXXXXXXXX

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to Boot Options Menu.

Six logical drives are listed, and they are labeled with the letters A through F. These drives are referred to as logical drives and do not necessarily correspond to the physical drive letters that identify PC drives. The drive letters correspond to the volume assignments you make using the Assign command. The logical drives will be referenced in the text as A: or B:, and so on.

The Working Directory listed on the Assign screen is the hard-disk name you supplied the program when you created the System Boot volume. This will be referenced as the server name. Since you are booting from your own hard disk, you can reference this name as \1. Users who are booting from other workstations and accessing your disk, however, must specify the full server name, for example, \ROOT *not* \1.

The Assign screen shown contains the following entries:

- Next to Working Directory, \1. This identifies your own hard disk as the default directory for the volumes assigned to your logical drives.
 - Next to Volume A, IBM DOS A. This assigns the System Boot volume to Drive A:.
 - Volumes B through E are unassigned.
 - Next to Drive F:, :F1. This assigns the diskette drive to logical Drive F:.
- 4) If these assignments are not displayed, use the cursor and the keys listed and defined at the bottom of the screen to move within the menu and make changes. After the changes are made, press End to return to the Boot Options menu. ■ **Note:** You do not have to assign the diskette drive to the letter specified. You may wish to change this assignment when you create other volumes.

You can assign password protection to the disk volume \1 later, using the Alter command explained in Chapter 2.

- 5) With the Boot Options menu displayed, type M to change user memory size.
- 6) Type the number of 1000-byte blocks that you wish to reserve for user memory. Then press Enter. Keep in mind that Disktalk uses just over 100K of memory to operate as a server station. If the station for which you are preparing the boot diskette has 256K total memory, for example, you would type a user memory value of 150K, which gives you a 6-byte margin.

The final information that you need to establish on the boot diskette is your user name and password.

- 7) Type N to select the User Name and Password option. The Name/Password screen displays. Ensure that the operating system name listed on this screen is correct and that it matches the version of the operating system installed on the server station. The version of PC DOS should be 2.0 or 2.1.

- Type your user logon name, then press Enter.
- Type your logon password, then press Enter.
 - **Note:** You do not have to establish a user name or password. If you do assign them here, you will be required to type them each time you boot the Disktalk system. Refer to Chapter 2, the section entitled Assigning Security to a Volume, for rules concerning password selection.
- 8) Type Q to quit the Boot Options menu.
- 9) Type Y next to the prompt "Update Boot Options?" Press Enter. This saves your boot choices on Boot Diskette #2.
 - **Note:** When you update your boot options, your choices remain in effect until you go back into the Boot Options menu and change them.
- 10) Leave Boot Diskette #2 in the diskette drive. When your screen displays the DOS prompt, enter the following command:

COPY COMMAND.COM F: [CR]

This copies the DOS files that allow you to use just Boot Diskette #2 to warm boot your system — that is, by pressing Ctrl. Alt, and Del simultaneously.

- 11) Remove Boot Diskette #2 and insert the PC DOS diskette into the diskette drive. You must now copy three more files onto the hard disk.
 - Enter:

COPY F:ANSI.SYS [CR]
 - When the file has been copied, enter:

COPY F:BACKUP.COM [CR]
 - When this file has been copied, enter:

COPY F:RESTORE.COM [CR]
- 12) Remove the DOS diskette from the diskette drive.

CREATING BOOT DISKETTES FOR NETWORK USERS

To use the Disktalk system, each Disktalk user must initially boot his/her PC from a set of two boot diskettes. You have already created and modified boot diskettes for a server station. This section will show you how to create these diskettes for network users.

The first boot diskette you create is a copy of Disktalk Boot Diskette #1. The second boot diskette is a copy of Disktalk Boot Diskette #2, but it must be modified to accommodate the user station's characteristics.

To copy Boot Diskette #1, follow these steps. Before you begin, ensure that the system prompt is displayed on the screen of your PC XT. The system prompt is the letter of the drive on which the System Boot volume is mounted. Since IBM DOS A should be assigned to Drive A:, the prompt looks like this: A>.

- 1) Insert Boot Diskette #1 into the diskette drive. This is the boot diskette you created for the server and onto which you copied the PC DOS system files.
- 2) Enter:

```
DISKCOPY F: F: [CR]
```

The screen prompts you to insert the source diskette and then press any key. Since you have already inserted this diskette, just go ahead and press a key to continue.

- 3) Follow the instructions displayed on the screen, inserting a blank double-sided, double-density floppy diskette into Drive F:. The Diskcopy program transfers the data to the destination diskette. Depending on the memory size of the server, you may be required to insert the source diskette a second time, then reinsert the destination diskette in order to copy all the files.
- 4) Repeat this procedure for each user Boot Diskette #1 you wish to create.

You are now ready to create user Boot Diskette #2. As part of this process, you are required to modify the boot options for a specific user name, password, and station memory size. Follow the steps below to accomplish this task.

- 1) Copy the Boot Diskette #2 that you created for the server station, using the procedure described above for copying Boot Diskette #1.
- 2) Reboot the PC with the two boot diskettes.
- 3) Type Y to the prompt "Change Boot Options (Y/N)?" The Boot Options menu then displays.
- 4) Type A to select the Assign command. The Assign screen displays. Any drive assignments created on Boot Diskette #2 will display.
 - The full server name (default directory for the volumes the user will assign to logical drives) should be listed next to Working Directory. If it is listed as \1, overstrike it with the full server name: \ROOT.
 - Ensure that IBM DOS A is assigned to Drive A:.
 - If the station has one diskette drive, ensure that :F1 is assigned to a drive label. If the station has two diskette drives, assign both drives to drive labels. Most users assign these drives to Drives E: and F:.
 - Add default group and owner volume password assignments, remove any that are displayed, or change them. Refer to the *4000 Series LAN User's Guide* for a discussion of default volume passwords.
- 5) Press End to return to the Boot Options menu.
- 6) Select M from the Boot Options menu to change the user memory size. ■ **Note:** Disktalk requires just over 100K of memory to operate at a server station and just over 70K to operate at a user workstation. You must subtract these numbers from the total memory size of the workstation to which you are assigning memory. For example, if the station has 256K total memory, you would enter a user memory value of 150K for a server and 180K for a user station.
- 7) Type the number of 1000-byte blocks reserved for user memory. Press Enter.

8) Type **N** to establish the user logon name and password.

- Check that the operating system name is correct and that it matches the version of PC DOS installed on the server station. The version listed should be 2.0 or 2.1.

You must now decide whether your users will be allowed to change their boot options. If you answer **Y**, the user will be able to invoke the Boot Options menu and change the options you assigned. When you answer **N**, the question "Change Boot Options?" will not be asked when the user boots the system.

- Type **Y** or **N** to allow or disallow boot option changes.
- Type the logon name you wish to assign, press **Enter**.
- Type the user logon password you wish to assign, then press **Enter**. ■ **Note:** You do not have to assign a user name or password. If you do assign a name or password, the user will be required to enter them when logging on to Disktalk. See the section entitled Assigning Security to a Volume, in Chapter 2, for rules on assigning passwords.

9) Type **Q** to quit the Boot Options menu. Type **Y** and then press **Enter** next to Update Boot Options.

Disktalk then writes the changes you made onto the user's Boot Diskette #2. After you save the changes, the Disktalk system reboots, and the volumes assigned are mounted. Boot Diskette #2 is now ready for use.

10) Repeat this procedure to create each Boot Diskette #2.

THE TURNKEY OPTION

Any IBM PC user on the network can warm boot (that is, reboot his system while it is powered on by pressing the **Ctrl**, **Alt**, and **Del** keys) without using either of the Disktalk boot diskettes. In order to implement this, however, you must perform two important network management procedures:

- Install the **BOOT CODE** volume on the **BOOT** subdirectory of the **ROOT** hard disk.
- Set up Turnkey volumes for network users.

Installing the BOOT CODE Volume

Installing the BOOT CODE volume is a two-step process: First you create a volume called BOOT CODE, and then you mount the volume and copy the necessary boot information onto it. To create the BOOT CODE volume, follow this procedure:

- 1) To invoke the HDMGR (Hard Disk Manager) program, enter:

HDMGR

This screen displays:

Enter Command (? for Help): -

HDMGR OPTIONS MENU

- A - Alter volume parameters
- C - Create a volume
- D - Delete a volume
- E - Export file
- I - Import file

- K - Krunch gaps
- L - List volumes on hard disk
- M - Mounted volumes display
- P - Set default passwords
- Q - Quit
- R - Resources
- S - Show protection
- T - Transfer a volume

Use the arrow keys on the numeric keypad to move the cursor.

- <BackSpace> erase the character just typed (left of the cursor)
- erase the character under the cursor
- <Ctrl><End> erase all characters from cursor to end of the field.

- 2) Type C to select the Create command.
- 3) Type \ROOT \BOOT next to Working Directory, then press Enter.
- 4) Type BOOT CODE next to Volume Name, then press Enter.
- 5) Type 320 next to Volume Length, then press Enter.

- 6) Now press End. You do not have to supply any other information for this screen. The following message displays at the lower left of the screen:

Command complete.

- 7) Press End to return to the HDMGR main menu.

You have now created a volume on the ROOT disk whose path is \ROOT\BOOT\BOOT CODE. To mount the new volume, follow the steps below:

- 1) Exit from the Hard Disk Manager by typing Q.
- 2) Use the Mount command to mount the volume you have created on any available drive. For example, to mount the BOOT CODE volume on Drive D:, enter:

```
MOUNT D: \ROOT\BOOT\BOOT CODE  
[CR]
```

- 3) Insert Boot Diskette #2 into the floppy diskette drive. Enter the following command. (The example assumes that the diskette drive is mounted on F: and that the BOOT CODE volume is mounted on D:.)

```
DISKCOPY /H F: D: [CR]
```

The system will prompt you to insert the source diskette into the diskette drive. Because the diskette is already in the drive, just press any key to continue.

- 4) The system will ask if you wish to copy another diskette. Type N.

You have now completed the first step of the procedure that allows a PC to reboot (warm boot) without the two boot diskettes by pressing Ctrl, Alt, and Del. Before proceeding, you must use the Resources command to determine your Network Node ID.

Using the Resources Command

Various procedures such as setting up the Turnkey boot option or defining network printers will require you to supply the Network Node ID of server and user workstations. This is accomplished by selecting the Resources command from the HDMGR main menu.

Setting Up Disktalk

- 1) Next to the system prompt, enter HDMGR to invoke the Hard Disk Manager menu.
- 2) Type R to select the Resources command. A screen displays similar to the one below.

Enter Command (? for Help): -

No.	Unit Name	Resource	Computer	Op.System	User Name
000D12	SUSANA =CLOCK COLOR ACCTNG	Hard Disk Clock Printer Hard Disk	IBM PC	IBM DOS 2.0	SUSAN'S DISK* SALLYM
000D23	SECOND DRIVE	Hard Disk	IBM PC	IBM DOS 2.0	SHARED PC
000D33	PUBS1	Hard Disk	IBM PC	IBM DOS 2.0	BOB W

The screen lists all resources that are currently active on the Disktalk/Printtalk network. Active resources are the devices on your network that are running the Disktalk/Printtalk software. The first entry on the screen, No. (for number), is the unique hexadecimal Network Node ID that identifies each resource. The Unit Name can be the name of a printer or the name of a hard disk. For your workstation, the name would be the hard-disk name you supplied the program when you created the System Boot volume. The User Name is the name entered as the user name on the Change Name and Password screen in the Boot Options menu. The station requesting the information is marked with an asterisk after the User Name.

Since you are setting up the Disktalk system, only your workstation will be listed. When you set up the Turnkey option for network users, you will need to know their Network Node IDs. You can boot the Disktalk system from their workstations and invoke the Resources command. Their Network Node IDs will be listed. If your workstation remains active, your Network Node ID will be listed as well.

Setting Up the Turnkey Volume on a Network Server

To set up a Disktalk server's Turnkey volume, follow the procedure below:

- 1) Place Boot Diskette #1 into the floppy diskette drive. Press Ctrl, Alt, and Del to reboot the system.
- 2) Follow the normal boot procedure, inserting Boot Diskette #2 when prompted.
- 3) Answer Y to the question "Change Boot Options?" The Boot Options menu displays.
- 4) Type T to select the Turnkey option from the menu.
- 5) Type `\1\BOOT` next to Working Directory. Press Enter.
- 6) Type your user name, if you assigned one, next to User Name, then press Enter.
- 7) Press Enter to accept the default answer Y next to Enable Turnkey Boot.
- 8) Next to Station Number, type the hexadecimal Network Node ID of your station, and then press Enter.
- 9) Press Enter for each of the last two lines on the screen. The system will now create the Turnkey volume. When it completes the task, it returns you to the Boot Options menu.
- 10) Remove Boot Diskette #2 from the diskette drive. Now you can reboot (warm boot) your system without a boot diskette by using Ctrl, Alt, and Del. The system responds with the following message:

Rebooting, please wait...

After about 30 seconds, it starts the system boot sequence that normally occurs when you insert Boot Diskette #2. If you are rebooting a server station, rebooting will not interrupt its server activity. ■ **Note:** Do not reboot a server station with a regular DOS diskette in the diskette drive. If you attempt to do so, the system warns you that booting a server with a diskette in the diskette drive will bring the server station down.

Setting Up Turnkey Volumes for Disktalk Users

You can set up a Turnkey option for each Disktalk user. Before you start, you will have to invoke the Resources command from the Boot Options menu to determine the six-digit hexadecimal Network Node ID for each user's station. If the PC has not been booted and is not running Disktalk, it will not be listed when you invoke the Resources command. The first step then is booting the PC. You can then run the Turnkey option from the PC itself or from the server XT.

- 1) Boot the PC or XT.
- 2) In response to the prompt "Change Boot Options (Y/N)?" type Y, and then press Enter. The Boot Options menu will display.
- 3) Type \ROOT\BOOT next to Working Directory, then press Enter.
- 4) Type the user's name next to Enter User Name, then press Enter.
- 5) Press Enter to accept the default answer Y next to Enable Turnkey Boot.
- 6) Type the Network Node ID of the user station, then press Enter. Press End to execute the command.

The Disktalk system now creates the user's Turnkey volume. When the network completes the task, it returns you to the Boot Options menu. Now the user can reboot the system without the boot diskettes by using Ctrl, Alt, and Del.

Repeat this procedure for each PC on the Disktalk system.

INSTALLING NOSS ON A DISKTALK SERVER

You can install the Network Operating System Software (NOSS) on a server station so that the PC XT can act as a LAN Manager as well as a Disktalk server. Included in this software is the Codex ANSI Terminal Emulator (CATE), which allows the XT to emulate an asynchronous terminal on the LAN. Refer to the *4000 Series LAN Administrator's Guide* for a description of the the NOSS software. ■ **Note:** When you install NOSS on a Disktalk system, we recommend that you mount the System Boot volume (IBM DOS A) on logical Drive A:.

To install the NOSS software on a PC XT Disktalk server:

- 1) Use the normal booting procedure to bring up the Disktalk system.
- 2) Type your user name and password as prompted.
- 3) Insert the NOSS DISK 1 diskette into the diskette drive. In this procedure, we shall use logical Drive F: as the floppy-diskette drive assignment.
- 4) Enter F:DINSTALL F:. [CR]

A system prompt asks you to confirm that you wish to create a directory named `\codex` for the NOSS software and the Network Configuration files.

- 5) Type Y to create the directory `\codex`. Press any key when you are ready to proceed.
- 6) When all the files from NOSS DISK 1 have been copied, remove it from the floppy diskette and store it in a safe place.
- 7) Insert NOSS DISK 2 into Drive F:.. Repeat Step 4.
- 8) After all these files have been copied, remove the master diskette from the diskette drive and store it in a safe place.

If you purchased the Codex "starter set" of software, all the NOSS files are now copied onto the hard disk. If you purchased the "full function set," you received a third diskette labeled NOSS EXTEND.

- 9) Insert the NOSS EXTEND diskette into Drive F:.. Repeat Step 4.
- 10) When all the files have been copied, remove the master diskette and store it in a safe place.

Refer to Chapter 2 in the *4000 Series LAN Administrator's Guide* for a discussion of post-installation network management procedures.

After successful software installation, CONFIG.SYS and AUTOEXEC.BAT files are created for you. Entries are made in the AUTOEXEC.BAT file that change the system prompt so that it looks like this (if the System Boot volume is mounted on Drive A.):

```
A: \codex
```

INSTALLING CATE ON A DISKTALK SERVER

The Codex ANSI Terminal Emulator (CATE) allows PCs and PC XT's to connect to other (non-PC) LAN resources. To install the CATE software onto a Disktalk system, follow the steps below. ■ **Note:** When you install CATE on a Disktalk system, we recommend that you mount the System Boot volume on logical Drive A:. Do not install CATE on a LAN Manager. The NOSS software includes the Terminal Emulator.

- 1) Boot up the PC XT and bring up Disktalk.
- 2) Insert the diskette labeled CATE into the floppy-diskette drive. In this example, we shall assign it to logical Drive F:.
- 3) Enter COPY F:.*.* [CR]
- 4) When all the CATE files have been copied, remove the CATE diskette from the diskette drive and store it in a safe place.
- 5) If you do not have a file on your Disktalk system called CONFIG.SYS, you will have to create one. If you do have this file, you will have to edit it. Refer to the *IBM Disk Operating System (DOS) Reference Guide* for instructions on how to do so.
- 6) Enter the following into this file:

```
DEVICE = ANSI.SYS  
DEVICE = NETCI.DRV
```
- 7) If you do not have a file on your Disktalk system called AUTOEXEC.BAT, you will have to create one. If you do have this file, you will have to edit it.

- 8) Enter the following into this file:

MEPPAS

- 9) Reboot the Disktalk system.

You are now ready to use the Codex ANSI Terminal Emulator. Refer to the *4000 Series LAN Administrator's Guide* for a discussion of the commands available with this software.

■ **Note:** Disktalk users who wish to access CATE should mount the System Boot volume (IBM DOS A) on Drive A. The directory name preceding IBM DOS A, or their working directory, must be the hard disk of a server that has CATE installed on it.

Chapter 2

Managing Your Disk

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THE HDMGR PROGRAM

The HDMGR (Hard Disk Manager) program allows you to manage the storage space on the hard-disk drives on the network, assign security and access to volumes, create volumes, and alter volume parameters. This chapter describes how to use HDMGR commands to perform these and other hard-disk management tasks. The instructions in this chapter assume that you have already installed Disktalk on your network.

To invoke the HDMGR program, follow the steps below.

- 1) Power on the PC XT. Use the two boot diskettes to bring up the Disktalk system.
- 2) Enter the following command when the system prompt appears:

HDMGR [CR]

The following screen appears:

Enter Command (? for Help): -

HDMGR OPTIONS MENU

- A - Alter volume parameters
- C - Create a volume
- D - Delete a volume
- E - Export file
- I - Import file

- K - Krunch gaps
- L - List volumes on hard disk
- M - Mounted volumes display
- P - Set default passwords
- Q - Quit
- R - Resources
- S - Show protection
- T - Transfer a volume

Use the arrow keys on the numeric keypad to move the cursor.

- <BackSpace> erase the character just typed (left of the cursor)
- erase the character under the cursor
- <Ctrl><End> erase all characters from cursor to end of the field.

USING THE CREATE COMMAND

When you installed the Disktalk system, you created a volume on your hard disk. Using the Create command from the HDMGR main menu, you can create other volumes on your disk. This command also allows you to name a volume, assign security to it, and change the volume size. ■ **Note:** Remember that after you create a volume, you must mount that volume before you can use it. To mount a volume, you would use the Mount command described in the *4000 Series LAN User's Guide*.

To create a volume, follow these steps:

- 1) Type C to select the Create command from the HDMGR menu. The Create Volume screen displays:

Command: Create

Create Volume

Use this command to add a new volume to the current working directory. You must enter the following options for each new volume you want to create.

Working Directory: \ ROOT

Volume name.....
Volume length in 1K units..... 360
Number of directory entries..... 112
Group passwordXXXXXXXXXXXXXXXXXX
Private passwordXXXXXXXXXXXXXXXXXX
Public access..... RW
Group access..... RW
Private access..... RW

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to HDMGR Options Menu.

The default volume length of 360K provides the same storage capacity as a double-sided floppy diskette. You can change the volume size to whatever size you need; you are limited only by the storage available on the hard disk.

On the Create Volume screen illustrated, the cursor is on the Volume Name line. The default Working Directory is listed as \ROOT. This is the name, in our example, of the server hard disk. When you add a new volume, you do not have to enter the full pathname. The hard-disk name will default to \ROOT. To add a volume to a different disk drive on another server, you would change the default Working Directory or type a complete pathname that includes the other server's hard-disk name next to Volume Name. ■ **Note:** If you run the HDMGR program from a server whose hard disk is the Working Directory, you can use \1 for the hard-disk name.

- 2) Type the volume name next to Volume Name.
- 3) Press Enter to move the cursor to Volume Length in 1K Units (1K equals 1024 bytes).
- 4) Type the number of 1K units you want to allocate for the volume, then press Enter.
- 5) Type the maximum number of directory entries that you want to allow on the volume, then press Enter.

For example, suppose that you want to create a volume and subdirectory named \DOCDIR \WD PROC on the Master Directory \ROOT. This volume will be 3 megabytes long, with a maximum of 512 directory entries. You would fill in the first three lines of the Create Volume screen as shown below.

Command: Create

Create Volume

Use this command to add a new volume to the current working directory. You must enter the following options for each new volume you want to create.

Working Directory: \ ROOT

Volume name..... DOCDIR \ WD PROC
Volume length in 1K units..... 3000
Number of directory entries..... 512
Group password
Private password
Public access..... RW
Group access..... RW
Private access..... RW

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to HDMGR Menu.

- 6) If you do not want to assign password protection to a volume, press End after typing the number of directory entries. Pressing End indicates that you have completed the volume creation. If you do want to assign security, follow the instructions in the section below.

Assigning Security to a Volume

When there is information on a disk volume that you do not want certain users to change or read, you can restrict access to the volume. To restrict access, you must perform two tasks: assign passwords and determine the type of access rights for users with passwords.

There are two types of passwords you can assign to a volume: group passwords and private passwords. As the terms imply, a group password allows a group of users access to a volume, and a private password allows just one user access to a volume.

■ **Note:** You assigned a different type of password when you created user boot options. That password allowed access to the Disktalk system. However, once the user has accessed Disktalk, volume passwords allow access to individual volumes.

When you do not assign passwords to a volume, that volume is open to all users. When you assign a group and/or private password, you restrict access to a group of users or to a single user.

There are four types of access rights to volumes: Read-Write, Write-Only, Read-Only, and No Access.

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

When you assign passwords to a volume, you must specify which type of access rights each user has. There are three categories of users: all users, a specific group of users, and an individual user.

The passwords you select can be character strings from 1 to 16 characters in length. The following characters are illegal: control characters (for example, Ctrl-C), the greater than (>) or less than (<) signs, the equals sign (=), the vertical line (|), the backslash (\).

When access to a volume is restricted by a password, the user must type the password, preceded by a colon (:). For example, if you want to access a file on the volume \MAIN \ACCTS1 that has the password SWORDFISH, you would type the following as the volume name:

```
MAIN \ACCTS1:SWORDFISH
```

To assign passwords and access rights to a volume, follow the steps below with the Create Volume screen still displayed on your workstation. Each of these steps is optional and is determined by the type of password you decide to assign.

- 1) Type the group password, then press Enter.
- 2) Type your private password, then press Enter.
- 3) Next, you must determine the type of public access, if any, you wish to assign to a volume. Public access does not require a password. The default access rights for all Disktalk users are Read (R) and Write (W). With the cursor positioned next to Public Access, follow one of the instructions below.
 - To accept the default (Read-Write) public access rights, press Enter.
 - When you do *not* wish to assign public access to the volume, press the spacebar twice, then press Enter.
 - When you want Read-Only public access, type R, press the spacebar, and then press Enter.
 - When you want Write-Only public access, type W, press the spacebar, and then press Enter.

- 4) Next, you must determine the type of group access you wish to assign to a volume — that is, the access rights of the users who have been assigned a group password. The default access rights of users with group passwords are Read (R) and Write (W). With the cursor positioned next to Group Access, follow one of the steps listed below.
 - When you wish to assign the default access rights (Read-Write), press Enter.
 - When you do *not* want to assign group access to the volume, press the spacebar twice, then press Enter.
 - When you want Read-Only group access, type R, press the spacebar, press Enter.
 - When you want Write-Only group access, type W, press the spacebar, press Enter.
- 5) Do not change the Private Access line, since you will want both Read and Write access to your own volume.
- 6) Press End to complete the command.

■ **Note:** When you password-protect a volume, you must assign public, group, or private (usually private) Read and Write access; otherwise, no one can gain access to the volume.

Creating Volumes in Subdirectories

The example in the last section created a volume in `\ROOT`, the Master Directory of a server hard disk. You can also create volumes in subdirectories on the disk. The examples in this section assume that your Working Directory is `\ROOT`. You can reference this by entering `\1` if the Working Directory is the server name of the hard disk you are booting from.

To create a volume in a subdirectory, you add the subdirectory name when you specify the volume name. If the subdirectory does not already exist, the Disktalk system creates it for you. Follow the steps below to create a volume in an existing or new subdirectory.

- 1) Return to the HDMGR main menu, then type C to select the Create command.
- 2) When the program prompts you for a volume name, type the subdirectory name, a backslash, and then the volume name. To create a volume named ACCOUNTS in the subdirectory ACCTSDIR, for example, enter the following on the Volume Name line:

ACCTSDIR \ACCOUNTS

Press Enter. This creates the subdirectory named \ROOT \ACCTSDIR and the volume ACCOUNTS.

- 3) After you create the volume, you can assign a password and access rights.

Although you created your volumes and they now exist on the hard disk, the system cannot access them until you mount them. You must use either the Mount command or reboot, then use the Assign command from the Boot Options menu.

MAKING CHANGES TO AN EXISTING VOLUME

The Alter command from the HDMGR main menu allows you to change the name or security currently assigned to a volume. You must know the volume's private password, if any, to use this command. If a private password exists and you do not know it, this message displays:

Need private password for rename.

Renaming a Volume and Changing the Security

To change the name of a volume, follow the steps below:

- 1) Type A to select Alter from the HDMGR main menu. A screen similar to the one below displays.

Command: Alter

Alter volume parameters

This command lets you change the name of a hard disk volume. Enter the current name of the volume to be changed in the field labeled source volume path. Use the cursor keys to move to the next field.

Working Directory: \ ROOT

```
Source volume path.....
New volume name .....
New group password.....XXXXXXXXXXXXXXXXX
New private password .....XXXXXXXXXXXXXXXXX
New public access.....RW
New group access .....RW
New private access.....RW
```

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to HDMGR Menu.

- 2) Type the current name of the volume next to Source Volume Path, remembering to precede the volume name with a directory path if necessary. Press Enter or, if the volume has been assigned a private password, type a colon (:) and then the password. If the source volume, for example, is called ACCOUNTS and has been assigned the password SILVER, enter the following:

ACCOUNTS:SILVER

and then press Enter.

- 3) The program displays the same name next to New Volume Name. Type the new volume name over the existing name, then press Enter.
- 4) Type the group password, then press Enter.
- 5) Type your private password, then press Enter.

- 6) Assign public access rights, then press Enter.
- 7) Assign group access rights, then press Enter.
- 8) Do *not* change the private access rights. Just press Enter.
- 9) Press End.

■ **Note:** Users who wish to access the volume you altered must change the corresponding volume name and passwords with the Assign command from the Boot Options menu.

Renaming and Protecting a Hard Disk

You can also use the Alter command to change the name and protection of a hard disk. To change the name of the disk and add password protection, follow the steps below. Remember that each server station must have a unique hard-disk name and that one server must have \ROOT for its hard-disk name.

- 1) Type A to select the Alter command from the HDMGR menu.
- 2) Type a backslash (\), then the old disk name on the Source Volume Path line. Include the password by appending a colon (:) to the name and typing the password. Press Enter.
- 3) The old name displays on the New Volume Name line. Type the new disk name over it. Do not type the backslash. Use the Del key to erase extra characters when the new name is shorter than the old one.
- 4) If you do not wish to change the passwords or access rights, press End. This executes the Alter command and skips over the password-entry process. If you do want to reassign passwords, press Enter to go to the next command line. ■ **Note:** If you have previously assigned a password to the hard disk and want to remove password protection, insert all spaces into the Password field.
- 5) Type the new group password, then press Enter.
- 6) Type your new private password, then press Enter.

- 7) Reassign volume access rights. For example, enter None for public, R for group, and RW for private.
- 8) Press **End** to execute the command.

After you change the disk name and password with the **Alter** command, you must reboot your system and make the corresponding changes using the **Assign** command in the **Boot Options** menu. To accomplish this, follow the steps below:

- 1) Reboot your system by pressing **Ctrl, Alt, Del**.
- 2) Type **Y**, then press **Enter** next to **Change Boot Options (Y/N)**.
- 3) Type **A** to select the **Assign** command.
- 4) Type in the new hard-disk name next to **Working Directory**.
- 5) Type the new group or owner access password. Press **Enter**.
- 6) Type **Q** to exit from the **Boot Options** menu.

Removing a Volume from Your Disk

Use the **Delete** option from the **HDMGR** main menu to remove a volume from a disk. This frees that disk area for other volumes and files. To delete a volume, follow the steps below. The following screen shows sample entries.

Command: Delete

Delete volume

Use this command to remove volumes from the hard disk. Use this command with caution. It will permanently remove all files in the deleted volume from the hard disk. You are prompted to confirm whether you want to delete the volume name you entered.

Working Directory: \ ROOT:MY DRIVE

Delete volume: \ ROOT\ SPREADSHEET: IM OK

Delete volume: \ ROOT\ SPREADSHEET (Y/N) ? Y

Press **<End>** when all necessary information has been entered.
Press **<Esc>** to abort the screen and return to **HDMGR** Menu.

The Delete command does not allow you to delete any subdirectory that still contains volumes. To delete a subdirectory, you must first delete every volume in it. You must have Write access for the subdirectory you want to delete and for its Master Directory. You can then use the Delete command to delete the subdirectory.

USING THE KRUNCH GAPS COMMAND

Deleting volumes from your hard disk can leave gaps of unused space on the disk. With the Krunch Gaps command, you can consolidate unused areas into one large area suitable for accommodating new volumes. ■ **Note:** Before you use the Krunch Gaps option, back up *all* of your volumes to floppy diskettes or a second hard disk. You should never interrupt the Krunch Gaps procedure before it is completed. If you do so, you risk losing an entire volume. A power failure during this process can also cause you to lose a volume.

To use the Krunch Gaps command, follow the steps below:

- 1) Reboot the Disktalk system with the IBM PC DOS diskette.
- 2) Reboot the system again with the TALK INSTALL diskette.
- 3) Return to the HDMGR main menu.
- 4) Type K to choose the Krunch Gaps command.
- 5) Type the name of the hard disk you wish to consolidate and its private password, if any, (for example, \ROOT:PASSWORD). Press Enter.
- 6) Type Y when you see the "Continue?" prompt. Press Enter.
- 7) Press End to execute the command.

When you execute the Krunch Gaps command, the number of volumes and blocks within the current volume that remain to be moved are displayed in the upper right corner of the screen.

When there are no gaps on your disk, the Krunch Gaps command executes very quickly (in tenths of a second). When there are numerous gaps, the command may take several minutes to execute. ■ **Note:** After the Krunch Gaps command has executed, you must reboot your system with the normal booting procedure.

SETTING DEFAULT PASSWORDS

When you plan to assign the same passwords to most of your volumes, you can set up default passwords. When you perform hard-disk management tasks, the system appends the default password to any volume or subdirectory name you enter, which saves typing time and prevents your entering a password incorrectly. If the default password is incorrect, you can override it.

To set default passwords, follow the steps below:

- 1) Return to the HDMGR main menu. Type P to choose the Passwords command. The following screen displays:

Command: Passwords

Set default password

You can use default passwords instead of or in addition to passwords you embed in a pathname. This can save keystrokes and reduce the chance of typing errors.

Group password XXXXXXXXXXXXXXXXXXXX
Private password XXXXXXXXXXXXXXXXXXXX

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to HDMGR Menu.

- 2) Type your group password, if you assigned one. Press Enter.
- 3) Type your private password, if you assigned one. Press Enter.
- 4) Press End to execute the command.

DISPLAYING VOLUME PROTECTION

To display the protection status for a volume, you would use the Show Protection command from the HDMGR main menu. You must have Read access to the volume. When your password is not a Read access password and you invoke the Show Protection command, the system displays an error message.

When you display the protection of a volume, the screen lists the three access types and indicates whether a password has been assigned to the volume. This command does not display the password itself. You would use this command when you cannot remember whether you have assigned protection.

To use the Show Protection command, follow the steps below:

- 1) Display the HDMGR main menu.
- 2) Type S to select the Show Protection command. Press Enter. A screen similar to the one below displays.

Command: Show protection

Show protection

The show protection command displays the access rights for the volume you enter.

Working Directory: \ ROOT

Volume: DOCDIR\ WD PROC

Public access..... None

Group access..... Read. (Group password is present)

Private access..... Read and Write. (Private password is present)

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to HDMGR Menu.

LISTING CURRENTLY MOUNTED VOLUMES

The Mounted Volumes command from the HDMGR main menu displays the current mounted volume assignments and shows which drives are available for use. With this command, you can see the volumes you have activated without having to exit from the HDMGR program. This is helpful when you move or copy files from one volume to another and want to ensure that a particular volume is mounted.

To display the volumes you have mounted, return to the HDMGR menu, and then type M. The screen below displays a sample mounted volumes list.

Enter Command: (? for Help): —

Currently mounted volumes

```
A :HARD DISK VOLUME \ ROOT\ IBM DOS A
B :Not mounted
C :HARD DISK VOLUME \ ROOT\ DOCDIR\ WD PROC
D :Not mounted
E :Not mounted
F :Floppy drive 1
```

TRANSFERRING A VOLUME INTO ANOTHER VOLUME

The Transfer command allows you to copy volumes from one disk to any other disk on the Disktalk network. Because this command copies rather than moves the files in a volume, it is also a convenient way to make backup copies.

This command automatically performs all the tasks required to create a destination volume. It also lets you assign a name and security to the new volume.

Follow the steps below to transfer all the files in a volume to another volume. Note that you can only delete an existing volume if you have the correct access rights.

- 1) Type T to select the Transfer command from the HDMGR main menu. A screen similar to the one below displays.

Command: Transfer

Volume transfer

Use this command to copy an existing volume to a new volume. You normally use this command to make backup(s) of an existing volume.

Working Directory:

```
Source volume .....
Destination volume .....
Destination group password ..... XXXXXXXXXXXXXXXXXXXX
Destination private password ..... XXXXXXXXXXXXXXXXXXXX
Destination Public access ..... RW
Destination Group access ..... RW
Destination Private access ..... RW
```

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to HDMGR Menu.

- 2) Use the up arrow key on the numeric keyboard to move the cursor to Working Directory. Type the name of the drive where the source volume resides, the name of the volume's parent directory, a colon (:), and the volume password, for example, \ROOT \ACCTDIR:SILVER.
- 3) Press Enter.
- 4) Next to Source Volume, type the name of the volume you are copying and its password, then press Enter.
- 5) Next to Destination Volume, type the full pathname of the destination volume, including the server name, any subdirectory names, and the name of the new volume. If the subdirectory does not already exist, the system will create it for you.

- 6) Add security to the new volume if you wish.
- 7) Press End to execute the command.

Note that you must have Write access for the destination directory into which the volume is being copied. If you create a subdirectory with the Transfer command, the new volume and its subdirectory will have identical passwords.

CHANGING THE SIZE OF A VOLUME

Sometimes it is necessary to change the size of an existing volume. It could fill up more quickly than expected and need to be expanded, or a volume with seldom-used files might be larger than necessary, wasting valuable disk space. Use the procedures described below to expand or shrink volumes.

Back up the volume you plan to resize on floppy diskettes or on a second hard disk. Use the Copy or Backup command to back up the volume as a set of files, not as a volume. If you back up the volume as a whole, it will be restored to the original size. As a precaution, you should back up all of your remaining hard-disk volumes before attempting to change any volume sizes.

The procedures used to expand and shrink volumes are similar. They vary only when you have limited free space on your hard disk. In either case, you must first create a new volume of the desired new size. You must then assign the new volume to a drive location and copy the files from the source volume into the new volume. The last step is deleting the source volume and (optionally) renaming the new volume. You can, if you wish, give the new volume the same name as the original volume.

Use the List command in the HDMGR main menu to see if you have enough contiguous free space to create the new volume. If so, proceed to the section titled When There Is Enough Free Space. When there is not enough contiguous free space on the disk, follow the steps in the next section, entitled When You Need More Free Space.

When You Need More Free Space

Use the List command in the HDMGR main menu to check the amount of free space on your disk. When the new volume must be larger than the contiguous free space on the disk, follow the steps below:

- 1) Use the Krunch Gaps command in the HDMGR menu to remove empty spaces between existing volumes.
- 2) Use the List command to see if this has created enough contiguous free space for the new volume.
- 3) If Krunch Gaps created enough space, proceed to the next section, When There Is Enough Free Space. If it did not create enough space, perform the following tasks:
 - Use the Delete command from the HDMGR main menu to remove one or more volumes that you do not need on your hard disk. Make sure you have backed up the files on these volumes before you delete them.
 - Use the Krunch Gaps command to remove empty space between volumes.
 - Use the List command to see if this created enough contiguous space. If there is still not enough space for the new volume, repeat the previous two steps until you do have enough space to create the new volume.

When There Is Enough Free Space

When there is enough unused, contiguous space to create a volume of the size you want, follow these steps:

- 1) Return to the HDMGR main menu and select the Create command to define a name (for example, SALARY INFO) and size (in kilobytes) for the new volume.
- 2) Use the Mount command to activate the new volume. Do not dismount the source volume.
- 3) Delete the source volume using the Delete command from the HDMGR main menu.
- 4) You have now copied the files from one volume to another of a different size. You can stop now or proceed to one or both of the following steps:
 - Use the Alter command from the HDMGR menu to rename the new volume.
 - Use the Krunch Gaps command listed in the HDMGR menu to remove the empty space created when you deleted the source volume.

Chapter 3 Setting Up Printtalk

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GENERAL

This chapter shows you how to set up the Printtalk system on your LAN Personal Computer Network. Printtalk allows PC users to share printers with other PC users.

Before you set up Printtalk, you should have already installed the Disktalk/Printtalk software onto the hard disk of at least one Network Server. Refer to Chapter 1 of this Guide for instructions on how to do so.

DEFINING PRINTERS

Although you may have one or more printers physically connected to PCs on your network, the network is unaware that the printers exist until you define them. For each printer connected to the network, you must use the PRNMGR (Print Manager) program to specify a printer name, a queue path, a queue size, the number of banner lines, the printer speed, and the printer type. These terms are defined below.

- **Banner line** is an identification line listing the print date and time, the printer name, the user's name, and the file name on a single line. You specify the number of banner lines to be printed on the banner page when you define the printer. The banner page is the cover page or pages preceding the printed file.
- **Cps** stands for characters per second, which specifies the printer speed. Printtalk uses this figure to estimate the length of time to print a job.
- **Queue** is a list of files waiting to be printed on a particular device.
- **Pipevol** is a hard-disk pipe volume that temporarily stores the files that are sent to the printer. You create this volume when you define a printer. This is also referred to as the print queue.
- **Queue path** is the full pathname that you specify to define a printer. This includes the server name, any subdirectories created, and the pipevol (volume).

To define a printer, perform the following steps:

- 1) To invoke the PRNMGR program, type PRNMGR, then press Enter. The program displays the PRNMGR main menu shown below.

Enter Command (? for Help): —

PRNMGR MAIN MENU

- A** — Assign default printer
- C** — Create printer/printer queue path
- D** — Delete a printer
- F** — Free reserved printer
- L** — List all printers
- P** — Pause/Continue/Restart printer
- Q** — Quit
- R** — Reserve printer for exclusive use
- S** — Show printer configuration
- U** — List user default printers

Use the arrow keys on the numeric keypad to move the cursor.
<BackSpace> to erase the character to the left of the cursor
 to erase the character under the cursor
<Ctrl><End> to erase all characters from cursor to end of the field.

- 2) Type C to define a printer. A screen displays similar to the one shown below.

Command: Define Printer, Printer-Queue Path

Define printer and printer-queue path

Files to be printed are queued to a hard disk pipe volume associated with the designated printer and printed one by one. This command lets you create the volume and the type of printer you are using.

Printer name..... XYZ
Printer queue path..... \ ROOT\ XYZ Q
Queue size in K bytes..... 1000
Number of banner lines..... 6
Printer speed (cps) 50

Press To select
 P a parallel printer
 S a serial printer

Printer type: S

Press <End> when all necessary information has been entered.
Press <Esc> to abort the screen and return to HDMGR Options Menu.

- 3) Next to Printer Name, type the name you will use to access the printer. You can choose any character string from 1 to 16 characters long.
- 4) Type the printer queue path, then press Enter. You must start with a backslash and the server name (any server name on the network can be used); add any subdirectories, preceded by backslashes; and then a volume name, preceded by a backslash. The entire queue path can be a maximum of 53 characters. When the volume that you specify for the print queue does not exist, PRNMGR creates the volume for you. ■ **Note:** You can enter in the printer queue path the server name of any hard disk in the Disktalk network. This choice does not depend on whether the stations with printers use the server name as their Working Directory; any server name will do in the queue path.
- 5) Type the number of 1 kbytes you wish to reserve for the print queue, then press Enter.

Setting Up Printtalk

- 6) Type the number of banner lines that will print before each print job. Press Enter.
- 7) Type the printer speed, then press Enter.
- 8) Type the printer type. Type P when you are defining a parallel printer; type S when you are defining a serial printer. Press Enter.
- 9) Press End when all the necessary information has been entered.

The screen above displays a sample serial printer definition. In this example, the name of the printer is XYZ. The path to the printer is through drive \ROOT, and the name of the volume used for the print queue is XYZQ. This example defines a 1000 kbyte queue (1 Megabyte) that will hold the data destined for this printer. The banner line will be printed six times.

After you select the printer type, PRNMGR asks you to supply additional information about the printer. If you are defining a serial printer, read and follow the instructions in the next section, Defining a Serial Printer. If you are defining a parallel printer, read and follow the instructions in the section entitled Defining a Parallel Printer. Before you start, use the Resources command from the HDMGR main menu (described in Chapter 1) to determine the hexadecimal Network Node ID of the stations whose printers you are defining. Once you supply the serial or parallel printer information, you have completed the task of printer definition.

Defining a Serial Printer

When you define a printer as a serial printer, PRNMGR displays the questions that are shown in the menu below. The answers displayed in this menu are equivalent to the DOS command `MODE COM1:1200,N,000D11,1,P`. Refer to the section on the Mode command in the *IBM Disk Operating System (DOS) Reference Guide* for additional information.

Command: Define Serial

Serial Printer Definition

Use this command to enter information about the serial printer attached to your network. Use the arrow keys to move the cursor from field to field.

```
Printer attached to node number... 000D11
I/O base address [hex] ..... 3F3
Parity [1, 0, O, E or N] ..... N
Word length [5 through 8] ..... 8
Stop bits [1 or 2] ..... 1
Baud rate [110 to 19200] ..... 1200
```

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to HDMGR Options Menu.

To define a serial printer, follow the steps below. The answers given match the sample serial printer definition in the screen above.

- 1) Type the station number to which the printer is physically connected, then press Enter. The station number is the station's hexadecimal Network Node ID. In the example, the station number is 000D11.
- 2) Type the input/output base address in hexadecimal, then press Enter. The example uses the IBM COM1: default I/O base address of 3F8. When you want to use the COM2: default, type 2F8.
- 3) Enter the type of parity the printer employs. The choices are one (1), zero (0), odd (O), even (E), or none (N).

- 4) Type the number of data bits the printer employs, press Enter.
- 5) Type the number of Stop bits, press Enter. When the printer uses only one Stop bit, the default, just press Enter.
- 6) Type the printer's baud rate, then press Enter.
- 7) Press End after you enter all the information required.

Defining a Parallel Printer

When you define a parallel printer, you answer the questions shown in the menu illustrated below. The screen example shows sample answers to the menu questions.

Command: Define Parallel

Parallel Printer Definition

Use this command to enter information about the parallel printer attached to your network. Use the arrow keys to move the cursor from field to field.

```
Printer attached to node number... 000D01
I/O base address [hex] ..... 3BC
Auto linefeed? (Y/N) ..... N
```

Press <End> when all necessary information has been entered.
Press <Esc> to abort the screen and return to HDMGR Options Menu.

To define a parallel printer, follow the steps below:

- 1) Type the station's hexadecimal Network Node ID, then press Enter.

- 2) Type the hexadecimal number for the input/output base address, then press Enter. If you are connecting a printer to the PC Parallel Adapter Card, the address would be 378. If you are connecting a printer to the PC Monochrome Display Adapter Card, the address would be 3BC. If you are connecting a printer to AST Research's SixPakPlus memory expansion card, refer to the *AST SixPakPlus User's Manual* for a discussion of parallel port addresses.
- 3) When you want automatic linefeed, type Y, then press Enter. When you do not want automatic linefeed, type N, then press Enter.

THE PRINT SUPERVISOR

The Print Supervisor (PRNSUPER) must be active on the Disktalk/Printtalk network in order for printing to occur. The Print command, invoked when the PRNSUPER is inactive, will route files into the print queue. No actual printing will take place, however, until the PRNSUPER is activated. It can be invoked by any workstation (server or user) on the network. To invoke it, the operator would enter at the system prompt: PRNSUPER and then press Enter. The PRNSUPER resides in memory until the station that invoked it is rebooted or powered down.

If you are not sure whether the PRNSUPER is active on your network, use the Resources command from the HDMGR main menu. The PRNSUPER will be listed there as an application resource.

Chapter 4

Using the PRNMGR Program

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GENERAL

The PRNMGR (Print Manager) program lets you manage the printing resources connected to your LAN Personal Computer Network. This chapter explains how to use the PRNMGR commands.

Before network users can use the Printtalk software, you, the Network Administrator, have to define the shared printers on the network. Defining printers was explained in Chapter 3 of this manual, Setting Up Printtalk. If you have not already defined the printers on your network, go back to Chapter 3 and do so now.

To invoke the PRNMGR program, type the PRNMGR command and then press Enter. The PRNMGR main menu displays.

To select a PRNMGR command, type the letter associated with the task. For example, to list all printers, you would type L.

Notice that a command line at the top of the screen prompts you to type the question mark (?) to display a Help screen. The Help screen explains the cursor keys and the screen divisions.

Pressing Enter moves you from field to field on the screen. When you press Enter at the last field, the command executes and you are returned to the PRNMGR main menu. You can also press End when you have entered all the information required by the screen. This also returns you to the PRNMGR main menu.

DEFINING DEFAULT PRINTERS

As the Network Administrator, you can define a default printer for either an entire network or for individual users. Files automatically print on the default printer when the user issues the Print command without specifying a specific printer.

To assign a default printer, type A to select the Assign Default Printer command from the PRNMGR main menu. The following screen displays:

Command: Assign Default Printer

Assign default printer

This command lets you assign default printers for your network and for individual users on your network.

Type	To assign
N	Network default printer
U	User default printer

Default printer type:

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to Main Menu.

When you want to assign a network default printer, read and follow the instructions in the next section, Defining a Network Default Printer. When you want to assign a default printer to a user, read and follow the instructions in the section entitled Defining a User's Default Printer.

Defining a Network Default Printer

Follow the steps below to define a default printer for the network.

- 1) With the Assign Default Printer screen displayed, type N and then press Enter. PRNMGR displays a new screen similar to the one shown below.

Command: Assign Network Default Printer

Assign network default printer

To assign a default printer for a network, enter the printer name.

Network default printer name —

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to Main Menu.

- 2) Type the name of the printer, then press Enter to invoke the command.

Unless a user specifies a different printer in a Print command or has a user default printer assigned, the file named in the Print command is sent to the default network printer. Once you have defined a network default printer, you cannot remove it. You can substitute a different printer for it, but there must always be one printer assigned as the network default printer.

Defining a User's Default Printer

Follow the steps below to define a default printer for a user.

- 1) With the Assign Default Printer screen displayed, type U and then press Enter.

Command: Assign User Default Printer

Assign user default printer

To assign a default printer for an individual, enter both the user name and the printer name. This does not reserve a printer for an individual user.

User name -
User default printer name.....

Press <End> when all necessary information has been entered.
Press <Esc> to abort the screen and return to HDMGR Options Menu.

- 2) Type the user's name, then press Enter.
- 3) Type the name of the printer, then press Enter to invoke the command.

That is all there is to assign a specific printer as an individual's default printer. You can assign the same printer as a default for more than one network user.

CONTROLLING A PRINTER

There may be times when you need to take control of a specific printer. For instance, the top of form may be out of alignment and you may want to correct it. The Control Printer command allows you to stop the printer, fix the problem, and then continue printing from where you stopped the printer or reset the printer.

When you want to use this feature of the PRNMGR program, type P to select the Control Printer command from the PRNMGR main menu. The following screen displays:

Command: Control Printer

Control printer

This command lets you pause a printer, restart it after pausing, or abort a print request and reset the printer.

Name of printer you wish to control: —

Use this command to:

- P — Pause a printer
- R — Reset a printer
- C — Continue a paused printer

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to Main Menu.

Stopping and Restarting a Printer

To stop a printer, follow the steps below:

- 1) Type the name of the printer on the prompt line labeled Name of printer you wish to control.
- 2) Press Enter.
- 3) Type P to pause the printer.

PRNMGR will stop the named printer. When your printer has a buffer, it may not stop printing immediately. Once the printer stops printing, you can make any necessary adjustments.

To resume the printing of a file that you stopped with the Pause command, follow the instructions below.

- 1) Choose P from the PRNMGR main menu. The Control Printer screen displays.
- 2) Type the name of the printer you stopped, then press Enter.
- 3) Type R to resume the print job.

The printer will resume printing the file at the same point that it stopped printing.

Restarting a Print Request

You can also use the Control Printer command to restart a file from the beginning. This command is useful when you discover that the printer is jammed or the paper is misaligned and you want to restart the print request after fixing the problem. Follow the instructions below to restart a print request.

- 1) Stop the printer by taking it offline.
- 2) Return to the PRNMGR main menu and type P and then press Enter. The Control Printer menu displays.
- 3) Type the name of the printer that you stopped, then press Enter.
- 4) Type P, then press Enter to pause the printer.
- 5) Fix the printer, then set up for the start of a print job.
- 6) Return to the PRNMGR main menu and type P to select Control Printer.
- 7) Type the name of the printer, then press Enter.
- 8) Type R, then press Enter to restart the print job from the beginning.

LISTING PRINTERS

The PRNMGR main menu includes two commands for listing printers. When you choose L from the main menu, PRNMGR lists all printers defined for the network. When you choose U from the main menu, PRNMGR lists the user default printer assignments. This section explains how to use these two commands.

Listing Network Printers

To list network printers, return to the PRNMGR main menu and select L. A screen similar to the one below displays.

Enter Command (? for Help): —

List all printers

Use this command to list the network default printer and all the printers installed on the system.

Network default printer: XYZ

Printer Name	Node No.	Type	Rsvd.	Queue Pathname
XYZ	1E7500	Serial	N	\ ROOT\ XYZ Q
COLOR	1BF450	Parallel	N	\ ROOT\ COLOR Q

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to Main Menu.

The Node No. is the hexadecimal Network Node ID of the computer workstation to which the printer is physically connected. The Rsvd. column lists whether the printer is reserved for a specific individual. In the sample screen, neither printer is reserved. Reserving a printer is explained in a later section.

Listing User Default Printers

To list the printers assigned to individuals, return to the PRNMGR main menu and select U. A screen similar to the one below displays.

Enter Command: (? for Help): -

List user default printers

Use this command to list the default printer assigned to each user.

Network default printer: MAINPR

User Name	Default Printer
BOB WINTHROP	PRODPR
KIM SHEEHAN	PRODPR
CHARLES FELTMAN	MKTPR

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to Main Menu.

When you list user default printers, you can have as many entries on the screen as there are network users. When the number of entries exceeds the space available on your screen, you are prompted to press the spacebar to display more of the list.

Notice that individuals can share the same user default printer. However, when one of these printers is reserved (see the next section), the others who share that default printer are temporarily locked out.

Listing the Network Default Printer

When you want to list the network default printer, choose the Assign command from the PRNMGR main menu. When the program displays the printer assignment screen, type N. The program then displays the network default printer screen, which lists the current network default printer, if one exists.

RESERVING A PRINTER

You can use the Reserve Printer command to exclude all other network users from access to a particular printer. When you want to reserve a printer, return to the PRMNGR main menu and select R. The screen below illustrates the type of entries PRNMGR displays.

Command: Reserve Printer

Reserve printer

Use this command to reserve a printer for personal use.

Printer to be reserved: PRODPR

Printer is reserved for: KIM SHEEHAN

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to Main Menu.

To reserve a printer, follow the steps below. The sample screen above reserves the PRODPR printer for Kim Sheehan.

- 1) Type the name of the printer that you want to reserve, then press Enter.
- 2) Type the name of the network user requesting the printer, then press Enter.

When you attempt to reserve a printer that is in use, the program displays a message on the bottom line of the screen informing you that the printer is busy. When the printer is busy, try again later to reserve it. Use the Print options explained in the section entitled Using the Print Options to find out who is printing and how much longer the file will be printing.

FREEING A RESERVED PRINTER

When you want to free a printer you previously reserved, return to the PRNMGR main menu. Select **F** for the Free Printer option. The following screen displays:

Command: Free Printer

Free printer

Use this command to free a printer previously reserved for the user.

Printer to be freed: —

Was reserved for user:—

Press **<End>** when all necessary information has been entered.

Press **<Esc>** to abort the screen and return to Main Menu.

Once the program displays the Free Printer screen on your terminal, type the name of the printer that you want to free, press **Enter**, type the user name of the user for whom the printer was reserved, and then press **Enter**. The printer is now available for general use.

LISTING PRINTER CHARACTERISTICS

When you need to refresh your memory about a certain printer on your network, you can use the Show option from the PRNMGR main menu. This option displays all the information you have given PRNMGR about a specific printer.

To display printer information, return to the PRNMGR main menu, then select S. A screen similar to the one below displays.

Enter Command: (? for Help): —

Show printer configuration

This command lets you obtain information about a printer.

Printer name: XYZ

Node number	1EF350	Reserved for	
Printer type (P/S).....	Serial	Parity.....	NONE
Word length.....	7	Stop bits	1
Baud rate	1200	I/O base address	3F8
Printer spread (cps)	50	Auto linefeed	No
Queue pathname.....	\ ROOT\ XYZ Q		

Press <End> when all necessary information has been entered.

Press <Esc> to abort the screen and return to HDMGR Options Menu.

You can use this command to obtain information about any defined printer in the network. When you have finished, press Esc to return to the PRNMGR main menu.

DELETING A PRINTER

When you remove a printer physically from the network, or wish to change its characteristics, use the Delete Printer command from the PRNMGR main menu. After you delete a printer, all stations using the printer as a default printer revert to using the network default printer. ■ **Note:** Once you have defined a network default printer, you cannot delete it. You can substitute a different printer as the network default, but you must retain a network default printer.

When you want to add the printer to the network again, you must redefine the printer as though it had never been attached to the network. Refer to Chapter 3 for printer definition instructions. ■ **Note:** Once you delete a printer, you erase all the information about that printer from the network. You also erase any data queued for the printer. Make sure no files are in the printer's queue when you delete it. To check a printer's queue, use the command PRINT /@PRINTERNAME /\$* . Any file left in the queue will not be printed.

When you want to delete a printer, select the Delete Printer command from the PRNMGR main menu. A screen similar to the one below displays.

Command: Delete Printer

Delete printer

Use this command to remove a printer from the print spooler system. **USE THIS COMMAND WITH CAUTION.** It erases the information your network needs to use the printer and deletes any files queued to the printer.

Printer name to be deleted: COLOR

Are you sure? (Y/N): Y

Press <End> when all necessary information has been entered

Press <Esc> to abort the screen and return to Main Menu.

In the screen shown above, the printer named COLOR is being deleted. Notice that after you enter the name of the printer to be deleted and press Enter, you are prompted with the message "Are you sure?" When you are sure that you want to delete the named printer, type Y, then press End.

When the printer is deleted, the top line will prompt you to enter another command. You can then leave the PRNMGR program by typing Q, or return to the main menu by pressing Esc.

USING THE PRINT OPTIONS

The Print command prints one or more files to a printer. The format is shown below.

```
PRINT !/?/T/C/M/A/@/!*/$ FILENAME
```

The options for the Print command let you print multiple files, cancel a file to be printed, terminate all files to be printed, or print a file in its absolute binary image. Table 4-1 describes all the options you can use with the Print command. Refer to the *4000 Series LAN User's Guide* for more detailed information about each of these options.

Table 4-1.
Print Options

Option	Function
/?	Displays the Print Help screen. Example: PRINT /?
/A	Prints the file in its absolute binary image. Use this option when you want to print data to a plotter or graphics printer, or to print a file that contains printer control characters. Example: PRINT /A A:BETS.DAT
/C	Removes one or more files from a user's Print queue. Example: PRINT B:MYFILE /C
/M	Compresses the printing to 132 columns on an 8 1/2-inch sheet. You need to supply two files named PRINT.PRE and PRINT.SUF on your current drive that contain the escape sequence to turn the compressed printing on and off. If you do not have these two files for your printer, the default escape sequence may work only with an Epson printer. Example: PRINT /M B:DOCLIST.OUT
/R	Halts the printing on your default printer and reprints the interrupted file from its beginning. Example: PRINT /R B:DOCLIST.OUT
/S	Prints the data in a PRNSAVE file (see next section). This Print option also clears the PRNSAVE file. Example: PRINT /S xxx
/T	Terminates all user's files in the print queue. This command ignores any Print options that follow it. Example: PRINT /T
/@PRINTERNAME	Prints a file to a specified printer. Example: PRINT /@VICE B:DOCLIST.OUT. If there are spaces in the printer name, the name should be enclosed within parentheses, for example, /@(PRINTER 2).

(continued on next page)

Table 4-1 (continued).
Print Options

<i>Option</i>	<i>Function</i>
\$USERNAME	Displays the queued files for the specified user on the default printer. The user name must be enclosed in parentheses if a space is included. Example: PRINT /\$(BOB WINTHROP)
/@*	Displays your queued files on all printers in the network. This command will not work if you do not have a default printer. Example: PRINT /@*
/\$*	Displays all queued files for all users on the network default printer. Example: PRINT /\$*
/@*/\$*	Displays all queued files for all users on all printers in the network. Example: PRINT /@*/\$*

THE PRNSAVE COMMAND

The PRNSAVE (Print Save) command sets up a file on your hard disk that looks like a local printer. PRNSAVE traps anything that would normally have gone directly to the printer (LPT1:), then stores it in the disk file.

The PRNSAVE command is useful when you want to print application programs or print directly from the screen. The command is also useful when you want to issue Print commands while you are using an application program such as a word processing program. When you use PRNSAVE while using an application, the files that you send to PRNSAVE will not be printed until the PRNSAVE file is closed.

To open a PRNSAVE file, you must enter the PRNSAVE command followed by a filename. For example, the following command opens a file named PRINT.DTA.

```
PRNSAVE PRINT.DTA
```

Press Enter after you enter the command line.

If you attempt to open an already-existing PRNSAVE file, you will see the following screen prompt: "Empty and Revise current output file (Y/N)?" When you answer yes to this command, the existing data will be deleted and the filename can be reused.

To place data into a PRNSAVE file, you would type Shift-PrtSc, which copies the current screen of information into the PRNSAVE file. When you press Ctrl-PrtSc, each line on the screen is sent to the PRNSAVE file, one line at a time. Press Ctrl-PrtSc a second time to stop the process.

To copy an existing file to a PRNSAVE file, you must use the Copy command. For example, to copy a file named MYFILE to the existing PRNSAVE file, enter COPY MYFILE LPT1: and then press Enter.

Although the Copy command writes the information in MYFILE into the PRNSAVE file, it does not overwrite any information currently in the PRNSAVE file.

When you are ready to print the PRNSAVE file, you need to use the /S option with the Print command. For example, the following command prints the current PRNSAVE file, PRINT.DTA, and clears it by closing and reopening it.

```
PRINT /S PRINT.DTA [CR]
```

To close a PRNSAVE file, you would just enter PRNSAVE and press Enter.

If you neglect to close a PRNSAVE file, you will not be able to dismount the volume containing it. You must close the file before dismounting the volume.

An open PRNSAVE file will appear as at least one lost cluster in one chain if you run the CHKDSK (Check Disk) program. To clear this anomaly, simply close the PRNSAVE file and rerun CHKDSK. The lost cluster message will not reappear if the open file was the only reason for it.

Chapter 5

Error Messages

This chapter lists the error messages displayed by the Disktalk and Printtalk system. Some messages display during the command entry process and indicate a console error, such as a misspelling or entering a command with the wrong format. Other messages display during system operation. Each message is followed by an explanation of the condition and a recommended way to recover from the error.

A Directory was expected, but not found.

The program expected to see a directory name but did not find it in the pathname. Enter a directory name.

Attempt to create an existing volume.

You tried to create a volume that already exists. Use the List command from the HDMGR menu to check the volume name. If you do not want to retain the existing volume, use the Delete command to remove it from the hard disk.

Bad acknowledge was received.

A packet was not sent over the network, yet an acknowledge was sent to your station. This is a diagnostic message.

Bad delimiter in volume pathname.

You used a character other than a backslash between fields in a pathname. Retype the volume pathname correctly.

Bad drive number in pathname.

You entered a drive number not found in the system. This probably was a typo. Enter a number from \1 to \4. You will see this message if you are working in HDMGR.

Bad status from Entryway card.

The Entryway (EWY) card has failed. It should be replaced or repaired.

Bad unit number in pathname.

This is the same message as "Bad drive number in pathname."

Both copies of directory are bad.

When the system tried to boot, it read the first Master Directory and found it bad. It then read the second one and found that it was not readable either. This is a serious problem. You might need to reinitialize the system and restore your disk from your backup copies on diskette or tape.

Both copies of space map are bad.

The Volume Allocation Tables on the hard disk have become corrupted, and the system cannot locate any volumes. Turn off the drive and check your cable connections. You also need to reseat your network or disk-interface card. Then, reboot your system. If this error message is repeated, you will have to have the disk drive repaired.

Cannot delete network default printer.

You tried to delete the network default printer. The PRNMGR program does not allow this.

Cannot delete non-empty directory.

The directory in the pathname you want to delete contains other volumes. You can only delete empty directories.

Cannot delete ROOT volume.

You may not delete a ROOT volume.

Consistency check.

If this error occurs, make a note of the exact text and the conditions that lead to the error, then contact your Codex representative. If you have a Davong internal disk drive, the screen displays this message if you turn off your disk drive power supply before you turn off your computer. In this context, it is not a serious error.

Currently reserved printer can't be changed to network default printer.

When a printer is reserved by a user, you cannot redefine it as the network default printer until the printer is freed.

Destination node not present.

A packet was sent to a station on the network that is not responding. The destination station could be turned off.

Disk I/O error.

You need to check all your connections and your disk controller board. Retry the operation. If you get the same error, you might check to make sure your disk is turned on.

drive:filename: Invalid drive specifier.

You specified an invalid drive label.

Drive not found.

Disktalk does not recognize the drive name that you entered in the pathname. Check to see that you spelled the drive name correctly.

Drive not ready.

The disk drive you specified is not ready. If you specified a floppy disk, this error might mean that you do not have a diskette inserted into the drive. If you specified a hard disk, it might mean that you did not allow enough time for the drive to warm up before you turned on the computer. It could also mean that either your disk controller card or your disk drive has a problem.

Duplicate resources found on network.

You have two drives with the same name on the network. You must rename one of them.

End of pathname is a directory.

The pathname you entered specifies a directory when you should have specified a volume. Retype the pathname correctly.

End of volume.

You have attempted to Read or Write beyond the end of a volume.

Error creating/accessing setup volume.

The \ROOT drive is probably offline or not responding.

Error opening setup volume.

The \ROOT drive is probably offline or not responding. It is also possible that PRNMGR has never been run or that someone has deleted the \ROOT \SETUP volume.

Error reading setup volume.

The \ROOT drive is probably offline or not responding.

filename: File not found.

You tried to print a nonexistent file.

File header area full (over 200 entries), retry ...

Either the printer has failed or the PRNSUPER program is not running. Press Ctrl-Break to terminate queuing and retry.

Flaw table full.

During mapping, the program found too many flawed areas on the disk. Call your Codex representative and report this problem.

Illegal command.

The program cannot recognize the command you entered. Reenter the command or press Esc to return to the Main Menu. You may also have specified \1, \2, \3, \4 as a station without any local hard disk.

Illegal drive number.

Utilities other than HDMGR print this message if you use a number other than \1 through \4 to identify your drive. Retype your request.

Illegal lock name.

You have either used illegal characters or too many characters in your lock name.

Illegal printer/user name field.

You have used an illegal character in defining your user name or a printer name.

Lock already set. (or) Lock is in use.

Another station has already placed a lock on the file or record you are attempting to lock.

Lock is in exclusive use.

A lock is currently held by a station that disallows all other access. Abort and retry your request at a later time.

Lock name in use.

You tried to set a lock on a resource using a name that is already in use.

Lock not held by your system.

You tried to release a lock placed by another station on a resource, or you tried to release a lock that had not been placed at all.

Multi-record pipe write in progress.

The pipe is locked for any other access. Retry your request at a later time.

Name or password too big.

You used too many characters in your name or password (more than 16 characters).

Name parameter required.

You entered a pathname that either contained two adjacent delimiters or that began with a null character.

Need private password for rename.

To rename a volume, you must enter the private password. Whenever the volume has a private password, you must specify it regardless of the access rights currently assigned to the volume.

Network card power-on failure.

The Entryway card in your computer did not respond to a Reset command. Check your switch settings. If this does not clear the problem, contact your Codex representative.

Network is down.

Your station cannot "talk" to any other station on the network. This is probably a hardware problem. Check your network connections and your Entryway card. You might have to reseat your Entryway card.

Network is not installed.

You probably booted up with the wrong boot diskette.

Network timeout.

A packet was sent to a station and the station did not respond in the specified time. This could result if a station is powered off.

No access for Read.

You have been denied Read access to the volume specified by the pathname or to a directory that is contained in the path. This means that the password you are using does not entitle you to read the volume.

No access for Write.

You have been denied Write access to the volume specified by the pathname. This means the password you are using does not entitle you to write to the volume.

No active PRNSAVE output file for printer 1.

When you requested a PRNSAVE file to be printed with the PRINT /S command, it could not find an active, open output file.

No default printer defined for the user.

You have not defined a network default printer. Use the PRNMGR menu options to do so, or specify the desired printer using the /@PRINTER option.

No more space available on the disk.

This is an obvious error. You have no more room left on the disk.

No network card in slot.

The Disktalk program cannot access any file server on the network because you do not have PC Entryway in your computer.

No next lock.

You have reached the end of the lock list.

No Write access to parent volume.

You cannot create/delete a volume unless you have Write access to the directory containing it.

Non-directory found in pathname.

Your pathname includes a directory or subdirectory that does not exist. All entries in the pathname, other than the last one, are interpreted as directories.

Packet is too big.

The length of the network packet was larger than the legal maximum.

Pipe full.

You cannot write any more requests to the pipe until a read has transpired.

Pipe Write out of sequence.

This means that a packet was probably delayed during transmission.

Printer queue full, retry ...

You tried to print a file that is larger than the queue pipe size, or the printer malfunctioned, or the PRNSUPER program is not running. You can press Ctrl-Break terminate queuing and retry.

PRT1: Printer is reserved by other user.

Another user locked the printer using the Reserve option in PRNMGR.

PRT1: Printer not installed.

The system cannot find the destination printer you specified. You may have taken it offline.

Read/Write not allowed on directories.

You cannot mount a directory volume for Read or Write access.

Resource not found.

The resource you are trying to find is not currently on the network.

Syntax error in volume pathname.

Check to see if you have entered the correct delimiters or if the first parameter in the command is a null pathname. You also might have entered more than 16 characters for a volume name or password, or used illegal characters. Remember that you cannot use Ctrl characters, commas, hyphens, backslashes, colons, semicolons, or an equals sign.

Unable to read space map.

The program attempted to read both space maps and could not read either one. This is a serious problem. You will have to reinstall and reformat the entire disk. Then you must restore the backed-up floppies you made. The other possibility is a hardware problem.

Unable to write space map copy 1.

This error means a probable hardware failure. You may have to have your drive repaired.

Unable to write space map copy 2.

This has the same meaning as the previous message.

Unrecognized network response.

A response came over the network for which there was no outstanding request.

Volume is in exclusive use.

Some other station has reserved the volume you are trying to access. You must wait until the volume has been freed again.

Volume is not currently mounted.

The program looked for this volume in your mount table and did not find it. You must either mount it using the Mount command or reboot your system and add it to the Mount Table using the Assign command in the Boot Options menu.

Volume is not a directory.

You tried to use a volume name as a directory name (for example, in creating a new volume).

Error Messages

Volume name already exists.

You cannot name two volumes with the same name. Select another name.

Volume not found.

The program could not find the volume name that you specified. Check your spelling.

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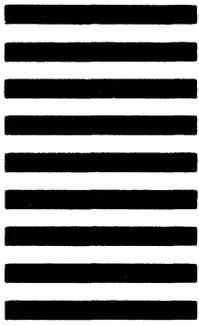
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