Mount Locations

erating System:

ame of lividual Group	Private Account or Shared?	Account Name	Password	Volume	Access	Volume	Access	Volu

Constellation III
for the Apple II

Tools for Network Users

Contents

Chapter 1

Introduction

Contents

About This Guide

This guide explains how to use the Constellation III utility programs. These programs are tools to help you manage your application programs and files in DOS 3.3, ProDOS, and Pascal. The programs differ somewhat from operating system to operating system but cover essentially the same ground.

The guide contains a separate chapter describing the utility programs for each of the three operating systems--DOS 3.3, ProDOS, and Pascal--that Constellation III fully supports. The guide has been written with the network manager principally in mind, but the utility programs, or tools, may be used by anyone on the network, at the network manager's discretion.

About the Tools

The Constellation III utilities fall into three main categories:

- volume and file utilities
- a mounting utility
- printing utilities

The volume and file utilities are designed to make it easier to perform many of the functions of the standard operating system utilities.

The mounting utility, the Mount Manager Program, is available in DOS 3.3, ProDOS, and Pascal versions. It enables users to change the arrangement of volumes that the network manager has specified are available to them.

The printing utilities include the File Spooler and File Despooler Programs, which make it possible for users to send files to the Transfer Area on the hard disk, to be printed on a network printer or shared with other users on the network. Users whose network stations don't have a Corvus Print Spooler Card can still print on a network printer by using the File Spooler Program. The File Despooler Program is used to fetch files from the Transfer Area.

Another printing utility, the Spooler Card Setup Program, is just for users whose workstations do have Corvus Print Spooler Cards. It allows them to set up their stations for printing on a network printer.

Installation

The Constellation III utilities are supplied on diskettes when you purchase the Constellation III Network System. They are installed on the hard disk during the installation of Constellation III, which is covered in the *Setup Guide*. Refer to that guide for questions about installation.

During installation, certain accounts are created that permit you access to the programs immediately. The names of these accounts and other information you need to use them is given in the table below. You may also want to copy some of the utilities into other volumes for some or all of your users.

To gain access to the volume containing the utilities for a particular operating system, use the appropriate log-on name, password, and so forth, given below.

Operating System	Log-On Name	Password	Volume	Mount
DOS 3.3	A2DOS33	NOS	A2DOS	S7,D1
ProDOS	A2PRODOS	NOS	A2PRO	S7,D1
Pascal	A2PASCAL	NOS	A2PAS	Unit#4
Backup to Floppy	A2BACKUP	(none)	A2BACK	Unit#

Giving Users Access to Utility Programs

There are two ways you can give an account access to the utility programs:

1. Give the user's account read-only access to the volume named in the chart above

2. Copy the individual utility programs that the user will need into volumes to which the user's account has access.

One reason to copy individual utility programs into different volumes is for convenience. For example, you might want to put the Spooler Card Setup Program or the File Spooler Program in the volume that contains the word processing program.

When you copy utility programs into different volumes, you will probably run them from BASIC. Or you could run them from programmed volume menus that you have prepared. The sections that follow give instructions on running the utilities either from BASIC or from the main utilities menu that appears when you log on using one of the accounts listed on the preceding page.

Some Basic Terms

The following terms are used in describing the utility programs for network users and in giving instructions in how to use them.

Backup — A spare copy of the contents of a volume, stored on a floppy diskette: used to restore information in the event of a hard disk failure or accident.

Block — A unit of measure of storage space on a hard disk or floppy. One block equals 512 bytes.

Boot	To start a computer by loading a program into memory from an external storage device. Often accomplished by first loading a small program whose purpose is to read the larger program into memory. The program is said to "pull itself up by its own bootstraps."
Catalog or Directory	A list of the files stored on a particular diskette or in a volume. The catalog includes the file type, the length of the program or file, and the name of the file.
Console	The computer screen of a network station.
Constellation volume	A segment of space on the Omidrive formatted for DOS 3.3, ProDOS, Pascal, or CP/M and intended to hold volumes belonging to the respective operating system. A Constellation volume of the right size can hold as many as 117 DOS 3.3 volumes, for instance.
Despool	To despool a file is to retrieve it from the Transfer Area to save, print, or display on the computer screen.
Destination volume	The volume or floppy disk onto which you want to copy files.
DOS 3.3 volume	A floppy diskette or space within a Constellation volume equal to 284 blocks (which is equivalent to space on a 5-1/4" floppy diskette).
File	Any named, ordered collection of data. Apple computer files are normally stored on disks.
File type	The various operating systems have files of various types. For instance, there are two types of text files--Apple files and ASCII files--and three types of Apple program files--Applesoft BASIC, Integer BASIC, and Binary.

Greeting program Commonly called a "HELLO" program in DOS 3.3 and a "STARTUP" program in ProDOS, this is the program that first runs when you boot into a volume. It is responsible for running larger programs so that they will automatically boot without keyboard commands.

Home volume The Constellation volume into which a user is placed when he logs onto the network. The home volume for DOS 3.3 and ProDOS accounts is the volume mounted on the lowest-numbered drive on the highest-numbered slot. For Pascal accounts the home volume is the volume mounted in unit 4. For CP/M accounts the home volume is the volume mounted in unit C.

Local printer A printer that is connected directly to the printer card or port of a computer.

Mount To mount a volume is to assign it a location--in ProDOS, slot and drive numbers, for instance--that makes the volume accessible. Mounting a volume is analogous to inserting a floppy diskette in a diskette drive: all the information on the diskette exists before you insert the diskette, but you can't get at it.

Network printer A printer that anyone on the network can send files to via the Transfer Area.

Operating system The program that provides the environment in which other programs run on the computer. Application programs are always written for a specific operating system and won't work under the wrong one. This is why programs for different operating systems must be segregated in different Constellation volumes formatted for the operating system required.

Slot and drive numbers

The slot and drive numbers describe the operating system reference or mount location of a volume. A physical slot number refers to an actual expansion slot in the computer. Each slot has two drive numbers associated with it, drive 1 and drive 2. In Constellation III, we use logical slot and drive numbers to refer the operating system to a volume on the hard disk. The software creates the logical slot and drive numbers to mimic physical slot and drive numbers so the operating system can find the volume.

Source volume

The volume or floppy disk that contains files you want to copy to a destination volume or disk.

Spool

To spool a file is to send it to the Transfer Area on the Omnidrive for subsequent despooling to a printer or to a network user's computer.

Volume initialization

The process of preparing and formatting a volume for a particular operating system so it can receive information.

Chapter 2

Constellation III Utilities for DOS 3.3

Contents

Introduction

There are nine Constellation III utility programs for the DOS 3.3 operating system. These programs are briefly described below.

- **Catalog Command**

  This program shows you the directories of all DOS 3.3 volumes within each mounted Constellation volume. This is the fastest way to see what files are in which volumes. This program also shows the amount of space available in each DOS 3.3 volume.

- **DOS Volume Copy Program**

  This program copies floppy diskettes that are not copy-protected into volumes on the hard disk. It also copies volumes to floppy diskettes. The program is fast--one diskette takes only 30 seconds--and it's semi-automated: subsequent volumes can be copied with just two keystrokes.

- **Hard Disk Filer Program**

  This program, a modified version of the Apple FID (File Developer) program, allows you to catalog, copy, delete, lock, and unlock files. The program lets you move several files at the same time from volume to volume on the hard disk, from diskettes to the hard disk, or from the hard disk to diskettes.

- **File Finder Program**

  If you know the name of a file but can't remember what volume it's in, this program will find the file for you. It will give you the slot, drive, and volume location of all files with a particular name.

- **Volume Initializer Program**

  Several contiguous DOS 3.3 volumes or a series of floppy diskettes can be initialized at the same time using this program. It's particularly useful for formatting floppies, but also for initializing any volume that you did not initialize when you created it.

- **Mount Manager Program**

  The Mount Manager Program is for users who need access to more than the six Constellation volumes that can be mounted at any one time. Because a Constellation volume on the hard disk can contain up to 117 individual DOS 3.3 volumes, not many ordinary users will need to use this program. But it is useful for the network manager, who can use the program to mount different sets of six volumes and generally mount and unmount volumes as need arises.

- **File Spooler Program**

  This program makes it possible for users whose network stations do not have a Corvus Print Spooler Card to print using a network printer. It also makes it possible for users on the network to send files to each other. The File Spooler Program sends files to the Transfer Area on the hard disk. From the Transfer Area, files can be printed on a network printer, or other users can retrieve them using the File Despooler Program.

- **File Despooler Program**

  This program allows users to retrieve files from the Transfer Area. It also enables an Apple to act as a printer server. Files can be despooled from the Transfer Area to the screen, a files or a local printer.

- **Spooler Card Setup Program**

  This program is used to set up the Corvus Print Spooler Card for printing on a network printer. With a Print Spooler Card installed, it is possible to print directly from application programs without first having to spool files to the Transfer Area with the File Spooler Program.

Putting Software on the OmniDrive

After you have created volumes, user accounts, and access tables, you'll want to copy your application programs into the volumes you've created.

To copy a program, you need to know several things about it and about the volume where you want to put it. The information you need is outlined by the questions below. You can use the Catalog command described in the section that follows to find the answers to some of the questions. For answers to the others, check the program's documentation or, if necessary, ask the program's publisher.

When you know the answers to the questions, you are ready to copy programs onto the hard disk using the Volume Copy Program of the DOS 3.3 Utilities. Make sure to log on using an account that has access both to the appropriate utilities volume and to the Constellation volumes into which you want the programs copied.

QUESTIONS ABOUT THE DISKETTE YOU WANT TO COPY

1. **Is the program compatible with the DOS 3.3 operating system?**

   Only programs that run in DOS 3.3 can be copied into DOS 3.3 volumes using these utilities. If you can catalog the diskette using the DOS 3.3 Catalog command, it is compatible with the DOS 3.3 operating system.

2. **Is the program copy-protected?**

   Check the packaging and documentation that came with the program or try to copy the program. Programs that are copy-protected cannot be copied onto the hard disk using the DOS Volume Copy Program.

3. **What is the name of the application's greeting program?**

   The greeting program is the file that runs first to load the program into memory. To identify the application's greeting program, use the Catalog command to catalog the diskette. When you catalog the diskette, you will often find that the first file on the diskette is the greeting program. It is usually named HELLO.

QUESTIONS ABOUT THE VOLUME INTO WHICH YOU WANT TO COPY

Use the Catalog command to catalog the Constellation volumes on the OmniDrive for the answers to the following questions.

1. **What is the name of the Constellation volume into which you want to copy the program?**

   The name of the Constellation volume is determined by the network manager when creating the Constellation volume.

2. **What is the mount location for that Constellation volume?**

   The mount location is designated by a slot number and drive number in the access table for the account that will be using the utilities to copy the programs. Record the slot and drive numbers of the Constellation volumes into which you want to copy programs.

3. **What DOS 3.3 volumes within the Constellation volume are free?**

   The hard disk catalog will show the number of sectors available in each DOS 3.3 volume. An empty DOS 3.3 volume has 739 free sectors.

   Make a record of DOS 3.3 volumes you want to use in a particular Constellation volume by writing their numbers next to the slot and drive number for the Constellation volume on the appropriate volumes worksheet. How to use the worksheets is discussed in the *Network Manager's Guide.*

The Catalog Command

Use the Catalog command to learn the contents of diskettes or volumes on the OmniDrive.

TO CATALOG A DISKETTE

1. **Place the diskette in drive 1 of your computer.**

2. **At the BASIC prompt, type**

   Catalog, S4,D1

   and press RETURN.

   This instruction assumes that the diskette drive containing the diskette is drive 1 in slot 4. If it's not, substitute the actual slot and drive numbers when typing the command.

If a valid catalog appears, chances are good that you will be successful in copying the diskette onto the hard disk. Make a note of the diskette's volume number, greeting program name, and file type on your worksheet.

If no catalog appears, the diskette is probably copy-protected. You will need a special copy program to copy the diskette to your OmniDrive.

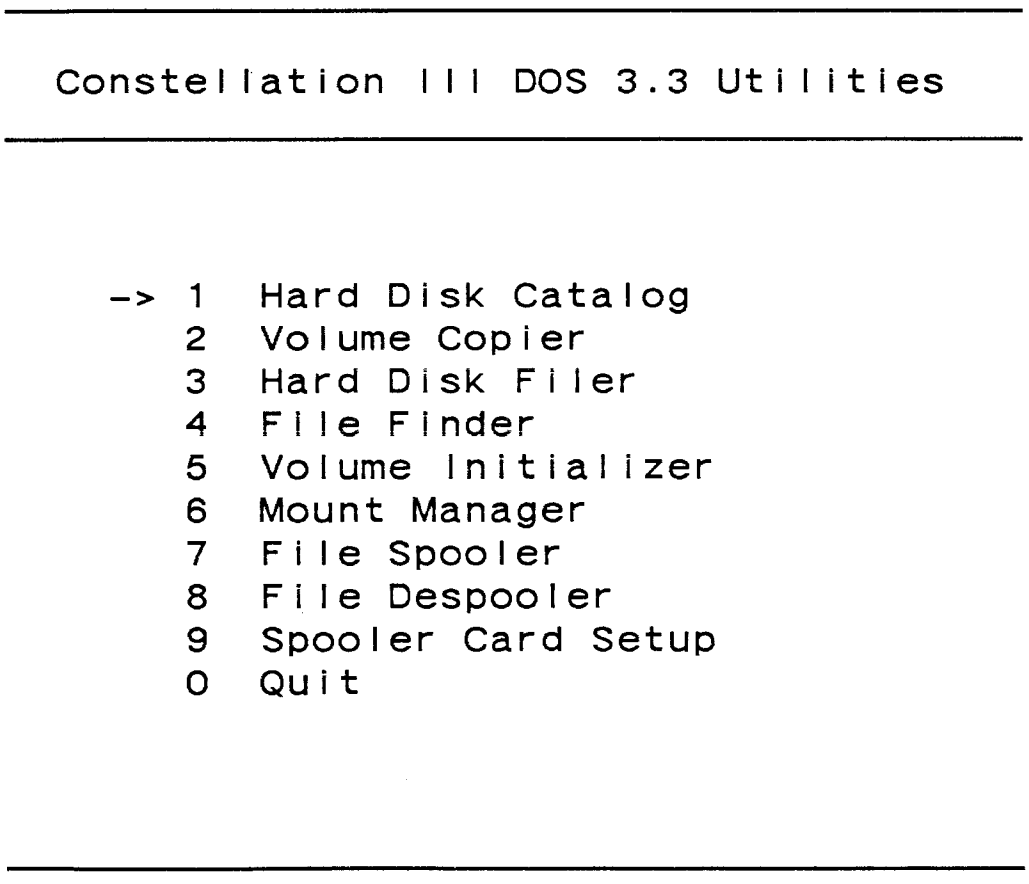
If you receive an I/O ERROR message, check to make sure there is a diskette in the disk drive and that the drive door is closed properly. Repeat Step 3 a couple of times. If you continue to get the I/O ERROR message, chances are that the program is in a different operating system, the program is copy-protected, or the diskette isn't formatted.

The BASIC prompt appears at the end of the catalog. If you have a Print Spooler Card in your computer or a local printer connected, you might find it useful to print out the catalog.

If you have other diskettes to copy, catalog the rest by repeating Steps 1 and 2.

TO CATALOG THE HARD DISK

1. **Select the Hard Disk Catalog command from the Constellation III DOS 3.3 Utilities menu, or run from BASIC by typing RUN HD CAT and pressing** RETURN.



A list of all the Constellation volumes that are mounted is presented. For each Constellation volume you see the first seven characters of the volume's name, the mount location indicated by slot and drive numbers, and the number of DOS 3.3 volumes the Constellation volume contains.

```
                HARD DISK CATALOG
                  VERSION 1.00
          COPYRIGHT (C) 1985 CNS, INC.

Super Volume      # of Vols   S   D   Server
------------      ---------   -   -   ------

-> A2DOS              4       7   1     14
   VOLUME1            4       6   1     14
   VOLUME2            4       6   2     14
   VOLUME3            2       5   1     14

   QUIT


USE ARROWS AND RETURN TO SELECT
```

2. **Use the arrow keys to move the pointer to the Constellation volume you want to catalog and press** RETURN.

   A message appears asking if you want to print out the volume catalog(s) you select for viewing. If you have a Corvus Print Spooler Card in your computer or a local printer connected, you may want to print the catalog.

3. **Type Y if you wish to print the volume catalogs. Press** RETURN when the **highlight is on N if you do not wish to print the volume catalogs.**

   A prompt appears asking you to supply the beginning DOS 3.3 volume number and the ending DOS 3.3 volume number of the volume(s) you wish to view.

4. **Type the beginning DOS volume number and press** RETURN; **then type the ending DOS volume number and press** RETURN.

   The catalog of the beginning DOS volume appears.

5. **To continue displaying catalogs, press** RETURN.

   When you have viewed all the selected catalogs, press ESC to return to the Catalog command menu or to BASIC. To return to the Constellation III DOS Utilities menu or to BASIC from the Catalog command menu, use the arrow keys to move the pointer to Quit and press RETURN.

The Volume Copy Program

Use this program to copy floppy diskettes that are not copy-protected onto the hard disk. The program also copies DOS 3.3 volumes from the OmniDrive onto a floppy diskette.

TO COPY DISKETTES OR VOLUMES

1. **Select the Volume Copier Program from the DOS 3.3 Utilities Menu, or run from BASIC by typing BRUN COPY VOLUME and pressing** RETURN.

   You will see a dialog screen that asks you to supply the slot, drive, and volume numbers for the diskette or volume you want to copy from. This is called the source diskette or volume.

2. **If you're copying a diskette, insert the diskette into drive 1 of your computer.**

3. **Enter the slot, drive, and volume number for the source diskette or volume, pressing [RETURN] after each number.**

   If you make a mistake, press [ESC]. You are prompted to enter slot, drive, and volume number again, or slot and drive only, if the source is a diskette.

   If you enter a number that is not used to identify slot and drive locations (e.g., a slot number greater than 7 or a drive number greater than 2), a message appears that the number is "invalid." Type the correct number and press [RETURN].

   If you supply numbers within the allowable range but for which there are no drives hooked up, you will see an error message. Enter the new slot and drive locations and press [RETURN].

4. **Enter the slot, drive, and volume number for the destination volume, as prompted. Press [RETURN] after each number.**

   The destination volume will usually be a DOS 3.3 volume on the hard disk. It can also be another diskette.

   A message appears asking if it is OK to begin copying.

5. **Type N if you need to correct a number for a slot or drive location. You are asked if you want to quit. Type N to begin entering source parameters again or type Y to quit.**

   OR

   If the information is OK, type Y to begin copying.

   The program will notify you of the status of the copying procedure. When the copying is complete, the dialog screen is restored and you are given the opportunity to copy again.

TO QUIT THE VOLUME COPY PROGRAM

Press ESC to return to the Constellation III DOS 3.3 Utilities menu or to BASIC.

The Hard Disk Filer Program

PROGRAM OVERVIEW

This program, a modified version of the Apple II File Developer (FID) program, allows you to catalog, copy, delete, lock, and unlock files. You can move several files at the same time from volume to volume on the hard disk, from diskettes to the hard disk, or from the hard disk to diskettes. Also, files are packed more tightly with this program than with the Apple FID program, so disk space is used more efficiently.

Using a Pattern to Select Files

When selecting a number of files to be copied, unlocked, locked, deleted, or verified, you may find it convenient to use a pattern. A pattern is a filename with one or more equal signs (=) in it. The equal sign is a special wildcard character that will match any number of characters in the catalog as long as the rest of the filename matches. For example, the pattern "AB=" will match the files "AB", "ABCDE", and "ABRAHAM". The pattern "=H=" will match the files "H", "OHIO", or any other filename containing the letter H. The pattern "=" will match anything and can be used when you want to copy, delete, lock, or unlock every file on the diskette or in the volume.

In addition, patterns can specify what file types to match. If you want a pattern to match only certain file types, finish the pattern by typing a comma, followed by a file type used in the catalog.

After selecting more than one file to be copied, unlocked, locked, deleted, or verified, you may request prompting. Prompting will allow you the opportunity to apply the command to files within a volume on an individual, case-by-case basis.

For instance, when copying several files, if you request prompting, the name of the first file to be copied will appear along with a flashing cursor. If you wish to copy this file, type Y and press RETURN. If you do not wish to copy this particular file, type N to deselect it and the program will skip it and move ahead to the next file. If you do not request prompting, the program simply performs the operation on all the files identified within the volume without waiting for individual confirmation.

TO RUN THE HARD DISK FILER PROGRAM

- **Select the Hard Disk Filer Program from the DOS 3.3 Utilities Menu, or run from BASIC by typing BRUN FID3 and pressing RETURN.**

  The Apple II FID menu appears.

```
****************************************
*         APPLE ][ FILE DEVELOPER      *
*                                      *
*              FID VERSION M           *
*                                      *
*  COPYRIGHT 1979 APPLE COMPUTER INC.  *
****************************************

CHOOSE ONE OF THE FOLLOWING OPTIONS


          <1>   COPY FILES
          <2>   CATALOG
          <3>   SPACE ON DISK
          <4>   UNLOCK FILES
          <5>   LOCK FILES
          <6>   DELETE FILES
          <7>   RESET SLOT & DRIVE
          <8>   VERIFY FILES
          <9>   QUIT

WHICH WOULD YOU LIKE?
```

TO COPY FILES

1. **From the Apple II FID menu, type 1 and press** RETURN.

   A prompt appears asking you to supply the slot, drive, and volume numbers for the source file. These are the slot, drive, and volume numbers for the volume containing the file that you want to copy.

2. **Enter the source slot, drive, and volume numbers and press** RETURN.

   If the file is on a floppy diskette, you don't need to enter its volume number. Just enter the slot and drive numbers for the floppy and press RETURN.

   A prompt appears asking for the destination slot, drive, and volume numbers. These are the slot, drive, and volume numbers for the volume into which you want to copy the source file.

3. **Enter the destination slot, drive, and volume numbers and press** RETURN.

   Again, if the destination of the file is a floppy diskette, you don't need to enter a volume number. Just enter the slot and drive numbers for the floppy and press RETURN.

   A prompt appears asking you to supply the filename for the file you want to copy.

4. **Enter the filename and press** RETURN.

   OR

   Enter a pattern using the = key in combination with other characters, or press only the = key to copy all the files on the diskette.

A prompt appears asking if you want prompting. Type Y for yes or N for no.

A prompt appears asking you to insert the appropriate diskettes.

5. **Insert the appropriate diskettes and press** [SPACE].

   OR

   Press [ESC] **to cancel copying.**

   - If the destination volume already contains a file with the name you used, you will get a message saying that the file already exists. If this happens, there are three things you can do:

     1) Enter a new filename for the copy.

     2) Press [RETURN] to replace the existing file of that name.

     3) Press [CTRL] -C and [RETURN] to cancel copying.

   - If the existing file in the destination volume is locked, a prompt will appear saying that the file is locked. If you get this message, type Y to replace the locked file; type N to go back to the previous step.

   - If you supply a filename for which a file cannot be found in the source volume you specified, the message NO FILES SELECTED will appear and you may press [SPACE] to continue.

   - If the file was found, the message DONE appears and requests you to press [SPACE] to continue.

Note: If you are copying files from one diskette to another on a single drive system and you specify the same slot and drive numbers for the source and the destination diskettes, the program will tell you when to put the source diskette in the drive and when to put the destination diskette in the drive.

The volume number for a diskette is usually 0 or 254 unless noted otherwise on the catalog for the diskette.

TO CATALOG A DISKETTE

1. **From the Apple II FID menu, type 2 and press** RETURN.

   If you have not set the default slot and drive numbers, a prompt appears asking you to supply them.

   The last slot, drive, and volume specified becomes the default. Once these numbers have been entered, all commands in the Apple II FID menu will automatically refer to them unless you reset the defaults using the Reset Slot and Drive function in the Apple II FID menu.

2. **Enter the slot, drive, and volume numbers and press** RETURN.

   A catalog appears of the diskette in the last slot, drive, and volume specified.

TO CHECK SPACE ON A DISKETTE

1. **From the Apple II FID menu, type 3 and press** RETURN.

   If you have not set the default slot and drive numbers, a prompt appears asking you to supply them.

   The last slot, drive, and volume specified becomes the default. Once these numbers have been entered, all commands in the Apple II FID menu will automatically refer to them unless you reset the defaults using the Reset Slot and Drive function in the Apple II FID menu.

2. **Enter the slot, drive, and volume numbers and press** RETURN.

   The screen displays information for the diskette in the default slot and drive, showing how many sectors are used and how many sectors are still free.

TO UNLOCK FILES

1. **From the Apple II FID menu, type 4 and press** RETURN.

   If you have not set the default slot and drive numbers, a prompt appears asking you to supply them.

   The last slot, drive, and volume specified becomes the default. Once these numbers have been entered, all commands in the Apple II FID menu will automatically refer to them unless you reset the defaults using the Reset Slot and Drive function in the Apple II FID menu.

2. **Enter the slot, drive, and volume numbers and press** RETURN.

   A prompt appears asking you to supply the filename.

3. **Enter the filename or a pattern and press** RETURN.

   OR

   Enter a pattern using the = key in combination with other characters, or press only the = key to unlock all the files on the diskette.

   If the filename you entered is invalid, the prompt to enter the filename continues to appear until a valid filename is entered.

   A prompt appears asking you to insert the diskette containing the file.

4. **Insert the diskette and press [SPACE] to proceed with unlocking the file.**

   When you catalog the diskette, you will see that the unlocked file does not have an asterisk before the filename.

   If the file is not on the diskette, you will get the message NO FILES SELECTED and you may press [SPACE] to return to the Apple II FID menu.

   OR

   Press [ESC] to cancel.

   OR

   Press [CTRL] - [RESET] to return to the Constellation III DOS 3.3 Utilities Menu c if you are running the program from BASIC, to return to BASIC.

TO LOCK FILES

1. **From the Apple II FID menu, type 5 and press [RETURN].**

   If you have not set the default slot and drive numbers, a prompt appears asking you to supply slot, drive, and volume numbers.

   The last slot, drive, and volume specified becomes the default. Once these numbers have been entered, all commands in the Apple II FID menu will automatically refer to them unless you reset the defaults using the Reset Slot and Drive function in the Apple II FID menu.

2. **Enter the slot, drive, and volume numbers and press [RETURN].**

   A prompt appears asking you to supply the filename.

3. **Enter the filename or a pattern and press** [RETURN].

   OR

   Enter a pattern using the = key in combination with other characters, or press only the = key to lock all the files on the diskette.

   If the filename you entered is invalid, the prompt to enter the filename continues to appear until a valid filename is entered.

   A prompt appears asking you to insert the diskette containing the file.

4. **Insert the diskette and press** [SPACE] **to proceed with locking the file.**

   When you catalog the diskette, you will see that the locked file has an asterisk before the filename.

   If the file is not on the diskette, you will get the message NO FILES SELECTED and you may press [SPACE] to return to the Apple II FID menu.

   OR

   Press [ESC] to cancel.

   OR

   Press [SPACE]-[RESET] to return to the Constellation III DOS 3.3 Utilities Mer **if you are running the program from BASIC, to return to BASIC.**

TO DELETE FILES

1. **From the Apple II FID menu, type 6 and press** RETURN.

   If you have not set the default slot and drive numbers, a prompt appears asking you to supply slot, drive, and volume numbers.

   The last slot, drive, and volume specified becomes the default. Once these numbers have been entered, all commands in the Apple II FID menu will automatically refer to them unless you reset the defaults using the Reset Slot and Drive function in the Apple II FID menu.

2. **Enter the slot, drive, and volume numbers and press** RETURN.

   A prompt appears asking you to supply the filename of the file you want to delete.

3. **Enter the filename and press** RETURN.

   OR

   Enter a pattern using the = key in combination with other characters, or press only the = key to delete all the files on the diskette.

   - If the filename you entered is invalid, the prompt to enter the filename continues to appear until a valid filename is entered.
   - If the file is not on the diskette, you will get the message NO FILES SELECTED. Press SPACE to return to the menu.
   - If the file is locked you will get the message FILE LOCKED. Press SPACE to return to the menu.

TO RESET THE DEFAULT SLOT AND DRIVE

- **From the Apple II FID menu, type 7 and press** RETURN.

  This cancels the current default slot and drive numbers. The next time you give a command that requires slot and drive numbers, you will be prompted for them.

TO VERIFY FILES

1. **From the Apple II FID menu, type 8 and press** RETURN.

   If you have not set the default slot and drive numbers, a prompt appears asking you to supply slot, drive, and volume numbers.

   The last slot, drive, and volume specified becomes the default. Once these numbers have been entered, all commands in the Apple II FID menu will automatically refer to them unless you reset the defaults using the Reset Slot and Drive function in the Apple II FID menu.

2. **Enter the slot, drive, and volume numbers and press** RETURN.

   A prompt appears asking you to supply the filename of the file you want to verify.

3. **Enter the filename or a pattern and press** RETURN.

   OR

Enter a pattern using the =, or press the = key to verify all the files on the diskette.

- If the file is valid, you will see the message DONE.
- If a file cannot be read, the program considers it invalid and presents the message: I/O ERROR. Press the SPACE to return to the menu.

TO QUIT THE HARD DISK FILER PROGRAM

From the Apple II FID program menu, type 9 and press RETURN to return to the Constellation III DOS 3.3 Utilities menu or to BASIC, if you are running the program from BASIC. Alternatively, you may at any time press CTRL - RESET, which does the same thing.

The File Finder Program

The File Finder Program is useful when you know the name of a file but don't know its location on the hard disk. The program is simple to use: you type a filename, and the program searches all mounted volumes to find the file. It then displays the slot, drive, and volume numbers for all files with that name.

To find a file

1. **Select the File Finder Program from the Constellation III DOS 3.3 Utilities Menu, or run from BASIC by typing RUN FILE FINDER and pressing RETURN.**

A screen appears with a prompt asking you to enter a filename.

```
                    FILE FINDER
                    VERSION 1.0
COPYRIGHT (C) 1984 CORVUS SYSTEMS, INC.

FIND THE VOLUME FOR A GIVEN FILE

FILE NAME?
```

2. **Type the filename and press** RETURN.

   Make sure that you type all characters and spaces exactly.

3. **If the file is found, a message appears telling the first slot, drive, and volume number it has found for the file.**

   If a file with the name you entered cannot be found, the screen displays the message ALL VOLUMES SEARCHED.

   In either case, a prompt appears asking if you want to continue.

4. **Continue typing Y at the prompt if you want to find other files of the same name.**

   When all files of the given name have been found, a message appears telling you that all volumes have been searched.

5. **Type Y to find another file.**

   OR

   Type N if you want to return to the Constellation III DOS 3.3 Utilities Menu or, if you are running the program from BASIC, to BASIC.

The Volume Initializer Program

The Volume Initializer Program can be used to:

- erase the entire contents of a DOS 3.3 volume
- format volumes or floppy diskettes.

Only rarely will you need to use this program to format volumes, since you will ordinarily choose to format or initialize volumes automatically when you create them.

You must be careful not to run this program on the wrong volume by mistake. Initialization erases all information on a volume or diskette, and once it's gone, you cannot recover it. For this reason, the Volume Initializer Program repeatedly asks that you confirm your responses before proceeding. When the program prompts you to confirm your response, check before proceeding.

TO INITIALIZE DOS 3.3 VOLUMES OR DISKETTES

1. **Select the Volume Initializer Program from the Constellation III DOS 3.3 Utilities Menu, or run from BASIC by typing RUN INIT VOL and pressing** RETURN.

   The program issues a warning that it initializes volumes and asks if you want to continue.

```
VOLUME INITIALIZER
VERSION 1.00
COPYRIGHT (C) 1985 CNS, INC.

WARNING

THIS PROGRAM INITIALIZES DOS 3.3 VOLUMES

DO YOU WISH TO CONTINUE? N
```

2. **Type Y to continue or type N to return to the Constellation III DOS 3.3 Utilities Menu.**

3. **Enter the slot, drive, and first volume and last volume numbers, as prompted, for the volume you want to initialize. After entering each number, press** RETURN.

If you are initializing a diskette, insert the diskette and enter the slot and drive numbers, as prompted. You are not prompted for first and last volume numbers with a diskette.

```
VOLUME INITIALIZER
VERSION 1.00
COPYRIGHT (C) 1985 CNS, INC.


INITIALIZE VOLUME(S) IN SLOT:    6
                     DRIVE:      1
       BEGINNING WITH VOLUME:    1
          ENDING WITH VOLUME:    4


OK TO INITIALIZE?
```

A prompt appears asking if initialization should begin.

If the slot, drive, and volume numbers are not correct, type N. The program will present the slot, drive, and volume prompts again.

OR

Type Y to confirm the slot, drive, and volume numbers and to begin initialization.

If there are files already in the volume you want to initialize, a message appears telling you that the files will be destroyed. If you wish to continue with initialization anyway, type Y, or type N to return to the Constellation III DOS 3.3 Utilities Menu or to BASIC.

TO QUIT THE VOLUME INITIALIZER PROGRAM

- **Press [CTRL] - [RESET] or [ESC] to return to the Constellation III DOS 3.3 Utilities Menu.**

The Mount Manager Program

PROGRAM OVERVIEW

DOS 3.3 users will usually find that access to six Constellation volumes is more than enough to cover all their needs. Because of the large capacity of Constellation volumes, the Mount Manager Program should rarely have to be used by ordinary network users. On the other hand, the Mount Manager Program is an essential tool for the network manager. You can use the Mount Manager Program to give yourself access to multiple sets of six Constellation volumes so you can copy programs, organize the volumes, and mount volumes for any account.

The Mount Manager Program is used to:

- mount Constellation volumes
- unmount Constellation volumes
- change the slot and drive number of a Constellation volume
- change a user's read-write access to a Constellation volume
- change the mount status of Constellation volumes stored on different disk drives.

HELPFUL HINTS

Here are some rules and advice you should keep in mind when using the Mount Manager Program.

- We recommend that the mount location for the Constellation volume containing the Mount Manager Program be S7,D1,V1. The instructions that follow use that location. If you have assigned a different mount location to the Constellation volume containing the program, substitute that location for the one supplied in the instructions.

- Changing the read-write status of a Constellation volume automatically changes the status of all DOS 3.3 volumes within it. For example, if you assign an account read-write access to a Constellation volume, then users of that account will have read-write access to every DOS 3.3 volume contained within that Constellation volume.

- You cannot change the mount status for individual DOS 3.3 volumes within a Constellation volume.

- Do not mount a Constellation volume on the same slot and drive as a diskette drive or another peripheral. If you do, the slot and drive designations for Constellation volumes will take precedence over any peripheral you have installed in the same slot. The diskette drive or peripheral will be unusable until you assign the Constellation volume to a different slot and drive number.

TO RUN THE MOUNT MANAGER PROGRAM

- **Select the Mount Manager Program from the DOS 3.3 Utilities Menu, or run from BASIC by typing BRUN MOUNT MANAGER,S7,D1,V1 and pressing** RETURN.

You see the main menu of the Mount Manager Program.

```
DOS 3.3: Mount Manager [1.8]

(C) 1984 Corvus Systems, Inc.

            - M A I N   M E N U -

Please Select:

L - List Mounted Volume Status

M - Mount a Volume

U - Unmount a Volume

S - Select Network Disk Server

I - Search Drive Image [No ]

Q - Quit

Current Server Name : SERVER0
      Server Number :  0
```

At the bottom of the screen, directly under the main menu options, the screen displays the current server name and number. (This is relevant information to users of networks with multiple servers.)

TO SEE A LIST OF MOUNTED CONSTELLATION VOLUMES

1. **From the Mount Manager menu, type L to see a list of mounted Constellation volumes.**

   A screen appears showing the following information for each mounted volume:

   - a letter used to identify the Constellation volume
   - the Constellation volume name
   - the length of the Constellation volume in blocks
   - the number of DOS 3.3 volumes it contains
   - the slot, drive, and current volume
   - the server number
   - whether or not the user has read-write access to the Constellation volume.

```
DOS 3.3: Mount Manager [1.8]

(C) 1984 Corvus Systems, Inc.

Volumes Currently Mounted

   Name      Length  VOLS  S D V  Loc. R/W

A  A2DOS       1124     4  7,1,1     0  Y
B  VOLUME1     1124     4  6,1,1     0  Y
C  VOLUME2     1124     4  6,2,1     0
D  VOLUME3      564     2  5,1,1     0  Y
E  *******
F  *******

4 Volumes Mounted

Press any key to continue
```

2. **To return to the Mount Manager Program menu, press** SPACE.

TO UNMOUNT A CONSTELLATION VOLUME

A maximum of six Constellation volumes can be mounted for an account at any one time. Sometimes you have to unmount a volume in order to free a slot and drive location for another volume you want mounted.

1. **From the Mount Manager menu, type U to unmount a Constellation volume.**

   A screen similar to the List Volumes screen shows information about each volume.

   To return to the Mount Manager menu without unmounting any Constellation volumes, press [ESC].

2. **Type the letter next to the Constellation volume that you want to unmount.**

   WARNING: Do not unmount the account home volume or the volume containing the Mount Manager Program.

   The Constellation volume is unmounted and the Mount Manager menu is displayed.

3. **To verify that the correct Constellation volume is unmounted, type L to see a list of Constellation volumes currently mounted.**

4. **To return to the Mount Manager menu, press [SPACE].**

TO MOUNT A CONSTELLATION VOLUME

The Mount function of the Mount Manager Program is used to:

- mount Constellation volumes that are not currently mounted
- remount Constellation volumes to change their slot and drive numbers
- change read-write access to a Constellation volume.

When using the Mount function, a list is presented that includes all unmounted volumes eligible for mounting in the current account. When establishing the access table for the account, the network manager determines which volumes an account will have eligible for mounting.

1. **From the Mount Manager menu, type M.**

   The screen displays volumes that the network manager has made eligible for mounting in the account access table. Next to each volume is a letter that the Mount Manager Program uses to identify the volume. A volume in this list cannot be used by the account until it has been mounted and assigned slot and drive numbers.

```
DOS 3.3: Mount Manager [1.8]

(C) 1984 Corvus Systems, Inc.


A-VOLUME4 B-VOLUME5
Mount Which Volume ?
```

If the volume you want to mount isn't on this list, the network manager must first make the volume eligible for mounting on the access table for the account. Press [ESC] to return to the main menu of the Mount Manager Program and then type Q to exit the program.

If no volumes are available for mounting, a message appears saying so, Press [SPACE] to continue.

2. **Type the letter for the volume you want to mount.**

   A dialog screen is presented asking you to supply a slot number from 1 to 7.

3. **Type the number of the slot location you want for the volume.**

   Remember, if you assign a slot and drive location that is already taken by another volume, the volume you mount last is the only one the account will be able to access. Also, if you assign a slot and drive number that has been assigned to a diskette drive, the diskette drive will no longer be usable.

   A warning message will appear if you enter a slot number that has already been assigned to a diskette drive. If this happens, press [CTRL] - [RESET] to return to the Dos 3.3 Utilities main menu, unmount the volume, and mount it again using a different slot number.

   A dialog screen is presented asking you to supply a drive number: 1 or 2.

4. **Type the number of the drive location you want for the volume.**

   A dialog screen is presented asking you if you want the account to have read-only access to the volume.

   Read-only access prevents the user from changing information stored in the volume.

5. **If you want the account to have read-only access to the volume, type Y.**

   OR

   If you want the account to have read and write access to the volume, type N.

   Read-write access allows the user to review, use, and make changes to information in the volume. Only a single user should have read-write access to a volume at one time.

6. **To verify that the correct volume is mounted, type L to see a list of volumes currently mounted.**

7. **To return to the Mount Manager menu, press** SPACE.

MOUNTING CONSTELLATION VOLUMES ON MULTIPLE SERVERS

Servers enable network devices other than computers to communicate with each other. Each of these devices--printers, The Bank, an OmniDrive--has its own server. Sometimes the server is built into the device, as with OmniDrives and The Bank. In any case, each server has a unique name and number used to identify it. The current server name and number are displayed at the bottom of the menu screen of the Mount Manager Program.

To mount or unmount Constellation volumes that are stored on a hard disk associated with a server other than the current server, you must first select the server you want in order to make it the current server. For example, if the current server is SERVER0 and you would like to mount a volume on SERVER1, you must first change the current server to SERVER1.

To Select a Network Disk Server

1. **From the Mount Manager menu, type S.**

   The screen displays the names of all available servers on the network and asks you which server to select.

```
DOS 3.3: Mount Manager [1.8]

(C) 1984 Corvus Systems, Inc.


A-SERVERO
Select Which Server ?
```

2. **Type the letter displayed before the server name of the server that you want to make the current server.**

   The current server changes to the server you specified. You can now mount and unmount volumes from this server. The Mount Manager menu is displayed.

Mounting Volumes from Images

The Select Drive Image function of the Mount Manager Program menu allows you to access Constellation III volumes contained within an image on a Bank Tape and is one of the programs that make it possible to restore damaged volumes using the image.

An image contains all the data on a mass storage system transferred onto a Bank Tape. An image may contain many volumes. Once you have access to an image, you can mount any of its Constellation III volumes to which you have access. A Constellation III volume mounted from an image can be used as if it were located on a disk drive.

The Select Drive Image function does not itself mount any volumes, it only selects them. To mount the volumes selected, use the Mount a Volume function of the Mount Manager.

Before using this option, make sure The Bank contains the tape you want and is on line and accessible on your network. Also make sure that your account has access to the volumes that are contained in the image.

To mount a volume from an image

1. **Use the Select Server function of the Mount Manager Program to change the current server to the server name for The Bank.**

2. **From the Mount Manager Program menu, press I to select the Select Drive Image function.**

   A message appears showing all the images contained on the Bank Tape.

```
DOS 3.3: Mount Manager [1.8]

(C) 1984 Corvus Systems, Inc.

A-APPLEDE B-WORK1
Select Image for Mount Searches
```

3. **Select an image by pressing the letter displayed before the image name.**

   The Mount Manager Program menu appears with *YES* next to the Select Drive Image function.

4. **Mount the volumes you want using the Mount a Volume function of the Mount Manager Program.**

The File Spooler Program

PROGRAM OVERVIEW

The File Spooler Program is used to:

- print on a network printer when the network station doesn't have a Print Spooler Card in slot 1
- send files to another user via the Transfer Area.

From the Transfer Area, files can be automatically despooled to a printer, or another user can retrieve them using the File Despooler Program. To understand how the File Spooler Program works, you need to know about the Transfer Area and pipes.

The Transfer Area is actually a volume called PIPES on the hard disk. Each time you send a file to this volume, either by printing directly or by spooling, a pipe is created to hold the file. Many pipes can exist within the Transfer Area at one time. A pipe exists, i.e., is active, only as long as a file resides in it. Once the file is despooled, the pipe disappears.

When a file is sent to the Transfer Area, it is assigned a job number by which it can be identified.

Each active pipe has a name. The name of the pipe determines where the file goes when it leaves the Transfer Area. All files in pipes with the pipe name assigned to a certain printer go that printer; the sender must give files bound for another network user a pipe name that is not already assigned to a printer. The intended receiver of the file uses that pipe name to despool the file.

There are two main steps in printing with the File Spooler Program:

1. Save your work as a DOS 3.3 text file located in the current DOS 3.3 volume.

2. Run the File Spooler Program to send the file to the Transfer Area.

Refer to the documentation that came with your word processing program or text editing program for information on how to save your work in a DOS 3.3 ASCII text file.

TO RUN THE FILE SPOOLER PROGRAM

- **Select the File Spooler Program from the Constellation III DOS 3.3 Utilities Menu or run from BASIC by typing BRUN SPOOL,S7,D1,V1 and pressing RETURN.**

  The File Spooler settings screen appears.

```
DOS 3.3: Spool [2.7]

(C) 1984 Corvus Systems, Inc.

            - M A I N   M E N U -

Please Select:

S - Start Spooling
N - New Page String .PG
P - Pipe Name          PRINTER
H - Text High Bit      [Off]
M - Message
---------------------------------------
Route to Station #24

---------------------------------------
C - Current Pipe Status
A - Alternate Slot     SERVER0
L - List Catalog
D - DOS Commands       S7, D1, V001
Q - QUIT
?
```

TO CHANGE THE NEW-PAGE STRING

The new-page string must match the symbol or characters used by your application or text editing program to indicate a new page. The default is shown next to this option on the menu screen: the default is .PG. This symbol, placed in the first column of your work with no characters following it, is never printed. Look in the documentation for your application to find which characters indicate a new page.

1. **From the File Spooler settings screen, type N to change the new-page string.**

   A prompt appears asking for the new-page string.

2. **Enter the new-page string and press** RETURN.

   Be sure the new-page string exactly matches the symbol or characters used by your application.

   The File Spooler settings screen appears with your change in position.

TO SPECIFY THE PIPE NAME

Choose this option to specify the destination of your file after it leaves the Transfer Area. The default name, shown next to this option, is PRINTER. To print a file on another network printer, enter the name of that printer.

To send a file to another user, create a unique pipe name of up to eight letters, enter that name, and be sure to tell the user receiving the file the correct pipe name. For example, if you are sending a file to Harry Smith, you might name the pipe HARRYS. If you supply a pipe name not used for a printer, your file remains in the Transfer Area until it is retrieved by the File Despooler Program.

1. **From the File Spooler settings screen, type P to enter a pipe name.**

   A prompt appears asking for the pipe name.

2. **Enter the pipe name and press** RETURN.

   Be sure the pipe name exactly matches the printer name assigned to it by the network manager.

   The File Spooler settings screen appears with your change in position.

TO SPECIFY HIGH BIT ON OR OFF

The typical setting for this option is Off. Some printers allow you to print special fonts only when this setting is On. If your text prints in a strange way or if your printer allows you to print special fonts, try turning this setting to On.

- **From the File Spooler Program settings screen, type H to change the setting from Off to On or from On to Off.**

TO SPECIFY A MESSAGE

You can include an identifying line on the first page of your printed file. The default message, "Route to Station XX," automatically gives the address of your network station.

1. **From the File Spooler settings screen, type M to specify a message.**

   A prompt appears asking for the message.

2. **Enter the message and press** RETURN.

   The message can be up to 80 characters long.

   The main menu appears with your change in position.

TO START SPOOLING

1. **Confirm that the settings shown on the settings screen are correct.**

   Check the pipe name on the File Spooler Program settings screen. If you are spooling to a printer, make sure you have the correct printer name. How to change the various settings is discussed in the preceding sections.

2. **From the File Spooler settings screen, type S to start spooling.**

   A prompt appears asking the name of the file that will be spooled.

3. **Enter the name of the file and press** RETURN.

   Be sure to enter the name precisely: punctuation and spaces must be exact. If the file you are spooling is in another volume, you may need to specify the slot, drive, and volume number of the volume; for example: JOB,S6,D2,V200 for a file named JOB located on slot 6, drive 2, in volume number 200.

   The screen displays the spooling information along with a prompt requesting the name of another file to spool. Spooling information includes the pipe name, the job number, and the number of blocks spooled. This information is important because it allows you to check on the status of the spooling of your file using the current pipe status option.

4. **Enter the name of another file you want to spool and press [RETURN].**

   OR

   Press [ESC] to return to the File Spooler settings screen.

TO CHECK THE CURRENT PIPE STATUS

Choose this option to check on the status of your file in the Transfer Area. You can see at a glance which pipes are waiting in the Transfer Area with the name shown on the menu screen. The jobs are identified by pipe numbers and the printers are identified by pipe names.

- **From the File Spooler program menu, type C to check the current pipe status.**

  The screen displays the status of the pipe named on the menu screen. Status information includes a list of jobs by pipe number, whether the pipe is open or closed, and whether or not each pipe contains data. A pipe that is open may be in the process of being spooled, or it could be stuck in the open position. Refer to Chapter 4 of the *Network Manager's Guide* for instructions on removing files.

SPOOLING ON MULTIPLE SERVER NETWORKS

You can spool a file to a Transfer Area that is on a server other than the default server by using the Alternate Slot option on the File Spooler settings screen. When you select a different server using this option, you are changing the current server. All files will be spooled to this server until you select a different server or run the File Spooler Program again.

To change the current server

1. **From the File Spooler settings screen, type A to select the Alternate Slot option.**

   The program displays names of all servers on the network that have Transfer Areas. Next to each name is a letter that is used to select that server.

2. **Type the letter that appears next to the server you want to select.**

   The current server is changed to the server you specified, and the File Spooler settings screen appears with the new server name displayed near the top of the menu.

TO SEE THE CURRENT CATALOG

1. **From the File Spooler settings screen, press L to see the current catalog.**

2. **Press [SPACE] to continue viewing the catalog and to return to the File Spooler settings screen.**

TO EXECUTE DOS COMMANDS

1. **From the File Spooler settings screen, press D to enter DOS3.3.**

2. **Press Q to return to the File Spooler settings screen.**

TO QUIT THE FILE SPOOLER PROGRAM

- **From the File Spooler settings screen screen, press Q to return to the Constellation III DOS 3.3 Utilities Menu or, if you are running the program from BASIC, to return to BASIC.**

The File Despooler Program

PROGRAM OVERVIEW

The File Despooler Program allows users to:

- retrieve files from the Transfer Area
- make a network station function as a printer server so a local printer can be shared as a network printer.

When another user spools a file to you, the pipe containing the file remains in the Transfer Area until you retrieve it. Once the file is despooled, the pipe and its contents disappear from the Transfer Area.

A pipe can be despooled to a file, the computer screen, or a local printer that is directly connected to a network station.

TO RUN THE FILE DESPOOLER PROGRAM

- **Select the File Despooler Program from the DOS 3.3 Utilities main menu or run from BASIC by typing BRUN DESPOOL,S7,D1,V1 and pressing** RETURN.

The File Despooler settings screen appears.

```
DOS 3.3: DeSpool [2.7]

(C) 1984 Corvus Systems, Inc.

            - M A I N   M E N U -

Please Select:

S - Start DeSpooling
O - Output Device    CONSOLE
E - Expand Tabs       08
P - Pipe Name        PRINTER
F - Line Feeds       [Off]
H - Header Page      [Yes]

C - Current Pipe Status
A - Alternate Slot   SERVER0
L - List Catalog
D - DOS Commands     S7, D1, V001
Q - QUIT
?
```

TO SELECT THE OUTPUT DEVICE

Use this option to specify the destination of the despooled file. The File Despooler Program can output to Console (the computer screen), File (a file), or Printer (a local printer, one that is attached to a computer).

1. **From the File Despooler settings screen, type O to select the Output Device option.**

   A prompt appears requesting you to select the output device.

2. **Type the letter that represents the output device you want.**

   The File Despooler Program menu is displayed, and the output device you chose is shown.

   If you want to output to a file in a volume that is not the current volume, you will need to indicate the mount location for that volume following the name of the file. For example, type EXAMPLE,S4,D2,V5 to put a file named EXAMPLE in volume 5 of the Constellation volume mounted on slot 4, drive 2.

CHANGING THE PRINTING OPTIONS

If you are despooling a file to a local printer, you should check the default settings for the three printing options.

- The default setting for Expand Tabs is 08, meaning that for each tab in the file being spooled the File Despooler Program will insert 8 character spaces.
- The default for Line Feeds is Off, meaning that the File Despooler Program will not insert a line feed after each carriage return.
- The default for Header Page is YES, meaning that the first page that prints will be a header page containing the name of the file and the destination network station.

To Specify Tab Settings

1. **From the File Despooler settings screen, type E to select the Expand Tabs option.**

   A prompt appears requesting you to indicate the amount of space for each tab.

2. **Enter the number of spaces you want for each tab and press** RETURN.

   The File Despooler settings screen is displayed showing the tab spaces you entered.

To Set Line Feeds

If you are despooling a file to a printer directly connected to your computer, you can set this option to add a line feed after each carriage return in the file. Set line feeds to On if lines of text are printing on top of one another. Refer to the user's manual for your printer to see if you must insert line feeds.

- **From the File Despooler Program menu, type F to change the Line Feeds option from On to Off, or from Off to On.**

  The File Despooler Program menu continues to be displayed with the line feeds option changed.

- **From the File Despooler program menu, type H to change the Header Page option from YES to NO, or from NO to YES.**

TO SPECIFY THE PIPE NAME

Use this option to specify the pipe name you want to despool.

1. **From the File Despooler settings screen, type P to select the pipe name option.**

   A prompt appears requesting you to enter the pipe name.

2. **Type the pipe name used for the files you want to despool.**

   The File Despooler settings screen is displayed showing the pipe name you typed.

TO START DESPOOLING

After you have confirmed that the settings shown on the menu screen are correct, choose this option to retrieve a file from the Transfer Area. How to change the various settings is discussed in the preceding sections.

1. **When all settings on the File Despooler settings screen are okay, type S to start despooling.**

   If you have chosen to output to a file, a prompt appears requesting the name of the file.

2. **Enter the name of the file and press** RETURN.

   Be sure to enter the name precisely: punctuation and spaces must be exact. If the destination file is in a DOS 3.3 volume other than the current one, enter the slot, drive, and volume numbers for the DOS 3.3 volume after the filename. If you do not enter a volume name, the file will be despooled to the current volume.

   If you are despooling a program, not a text file, the screen displays a prompt requesting you to select the file type.

3. **Select the file type, if requested.**

   If you don't know the file type, you will have to ask the person who spooled the file.

   The screen displays a message indicating the pipe name that is being despooled.

If there is more than one pipe with the same name, the File Despooler Program repeats the prompts for each pipe remaining to be despooled. If the pipes are being despooled to files, a prompt requests the name of the next destination file. The despool message continues to display until you return to the File Despooler settings screen.

4. **To return to the File Despooler settings screen, press** [ESC].

TO CHECK THE CURRENT PIPE STATUS

Choose this option to check on the status of your file in the Transfer Area. You can see at a glance which pipes are waiting for which printers.

1. **From the File Despooler settings screen, type C to select the current pipe status option.**

The program lists by number all the pipes in the Transfer Area with the same pipe name that you specified. The current pipe status screen shows the open or closed status of each pipe and whether or not the pipe contains data.

```
DOS 3.3: DeSpool [2.7]

(C) 1984 Corvus Systems, Inc.

Pipe Name is: PRINTER1
# 1     Closed              Contains Data
# 2     Closed              Contains Data
# 3     Closed              Contains Data


Press any key to continue ?
```

Pipes are open during spooling and despooling; otherwise they are closed. Only pipes that contain data and are closed (indicating that spooling is complete) can be despooled.

2. **To continue, press** SPACE.

   The File Despooler menu is displayed.

DESPOOLING ON MULTIPLE SERVER NETWORKS

You can despool a file from a Transfer Area that is on a server other than the default server by using the Alternate Slot option on the File Despooler settings screen. The default server is the server with a Transfer Area and the lowest network address. The server that is set to address 0 and that contains a pipes area will always be the default server. When you select a different server using this option, you are actually changing the current server. Files will be despooled only from this server until you select a different server or run the File Despooler Program again.

To change the current server

1. **From the File Despooler settings screen, type A to select the Alternate Slot option.**

   The program displays names of all servers on the network that have Transfer Areas. Next to each name is a letter that is used to select that server.

2. **Type the letter that appears next to the server you want to select.**

   The current server is changed to the server you specified, and the File Despooler settings screen appears with the new server name displayed near the top of the menu.

TO SEE THE CURRENT CATALOG

1. **From the File Despooler settings screen, press L to see the current catalog.**

   The volume name, filename, file type, file length, and the date each file was last modified are shown.

2. **Press the** [SPACE] to view more of the catalog or to return to the File **Despooler settings screen when the entire catalog has been displayed.**

TO EXECUTE DOS COMMANDS

1. **From the File Despooler settings screen, press D to enter DOS3.3.**

2. **Press Q to return to the File Despooler settings screen.**

TO MAKE A NETWORK STATION INTO A PRINTER SERVER

1. **Change the default options on the File Despooler settings screen.**

   Read the sections on selecting output device, changing the printer options, and specifying the pipe name, above. Output device should be *Printer*. You may have to experiment with the printer options to get the results you want. The pipe name is whatever pipe name you want people to use for files they send to your printer.

2. **Choose Start Despooling on the File Despooler Program settings screen.**

   If a file hasn't yet been spooled to this destination, the File Despooler Program will wait for it. The File Despooler Program will continue despooling files until you quit the File Despooler Program or turn off the network station.

TO QUIT THE FILE DESPOOLER PROGRAM

- **From the File Despooler settings screen, press Q to return to the Constellation III DOS 3.3 Utilities Menu or, if you are running the program from BASIC, to return to BASIC.**

The Spooler Card Setup Program

PRINTING WITH THE SPOOLER CARD

There are two ways to print on a shared printer when using Corvus Omninet. One way is to save your information in a file and spool it to the Transfer Area (the PIPES volume) with the File Spooler Program. An easier way is to equip your Apple IIe network stations with Corvus Print Spooler Cards, which enable network stations to print directly from DOS 3.3 and ProDOS applications. Printing on a network printer with a Print Spooler Card is as easy as using a local printer. The Print Spooler Card functions like a standard serial printer interface card and does the work of spooling your information to the Transfer Area.

What You'll Need

To print directly from an application on a network printer, you need a Corvus Print Spooler Card and the Print Spooler Card software, consisting of the SPOOLCARD program and the file NETPROBJ.

Settings for the Print Spooler Card are established in the SPOOLCARD program. When the computer is turned on, the Print Spooler Card will automatically boot and be configured with the default settings. The SPOOLCARD program must be run to change these default settings.

Before entering an application from which you might want to print, you should confirm or change the Print Spooler Card settings with this program. This section describes how and when to change the settings and gives some hints for troubleshooting should a problem arise during printing.

Coordinating Printing

When you're printing on a network printer, settings that control page length, margins, spacing, etc., can be adjusted in as many as four different places. Many printers have dip switches that can be set to determine these variables. The printer server, the Print Spooler Card, and the application you are working with will all have settings too. If you specify settings on the printer or printer server, everyone who prints with that printer will have to use those settings. If you specify settings in several places, you risk causing conflicts.

It is best to make all settings only in the application program itself. If you want extra line spacing, don't specify extra line spacing when setting the printer switches; specify extra line spacing within the application program.

Each program has its own set of printing parameters and ways of selecting them. Many application programs allow you to specify the type of printer and interface card you have. Check the manual that came with the program you are using for more details regarding setting printing parameters in the application you are using. The Corvus Print Spooler Card functions just like an Apple Super Serial Card and uses the same settings.

PROGRAM OVERVIEW

When you want to confirm or change the settings for the Print Spooler Card, you need to run the SPOOLCARD program. SPOOLCARD will present a screen listing the settings you can adjust. Next to each setting is a suggested response that represents the most common setting. You can accept the suggestions or change them. Changing a setting determines the configuration of the Print Spooler Card until you change it again or turn off your computer.

You can reboot the computer by pressing [CTRL] - [OPEN-APPLE]- [RESET] without changing the configuration of the Print Spooler Card. Likewise, you can change applications, operating systems, and volumes without affecting the configuration.

When the computer is turned off and turned on again, the Print Spooler Card is configured to the default settings. You may change the settings from within the SPOOLCARD program, but any changes you make will not be permanently incorporated. Each time you restart the computer, the SPOOLCARD program will revert to default settings.

TO RUN THE SPOOLCARD PROGRAM

1. **Select the program from the DOS 3.3 Utilities menu, or run from BASIC by typing RUN SPOOLCARD and pressing** RETURN.

   The Spooler Card Settings screen appears. If you do not have a Corvus Print Spooler Card in slot 1, a message appears: NO PRINTER CARD IN SLOT 1.

```
                Select Network Printer

        Use Arrows and Return to Select Option:

        ->First String:          @END
          Second String:         /OC
          Printer Name:          PRINTER
          Server:                0
          Echo To Screen?        NO
          Insert LF After CR?    YES
          Omninet Card Slot:     7
          Quit Program
```

2. **Review the settings. If the suggested settings are okay, use the arrow keys to move the pointer to Quit Program and press** RETURN.

   The Print Spooler Card is configured with the settings indicated on the screen and the BASIC prompt appears.

   If the suggested settings are not what you want, change them.

CHANGING THE SPOOLER CARD SETTINGS

There are seven settings for the Print Spooler Card.

If you want to accept all the settings just as they are on the Spooler Card Settings screen, select Quit at the bottom of the screen.

You can use the arrow keys to move the pointer to the setting you want and press RETURN. A prompt appears describing how to change the setting.

If you decide you don't want to change the setting after selecting it, just press RETURN before typing anything and the screen will display the suggested settings unchanged.

About Termination Strings

Each time information is sent to a pipe in the Transfer Area, there needs to be a signal to the computer that indicates the end of the print job so the computer will close the pipe. Some application programs close the pipe automatically. If the application you are using doesn't close pipes automatically, you can cause the pipes to close by including termination strings in your print job.

A termination string can be any of the following:

- characters that you include at the end of your print job
- characters or instructions that the application program sends to the printer
- characters that you include at the end of your print job that are also printed by the printer.

Usually, termination strings have two parts. The first string acts as a signal telling the computer when to start looking for the end of the print job. This string doesn't get sent to the printer and doesn't print. The second string indicates the end of the job.

If there is no second string, the first string indicates the end of the print job. Some word processors require you to type the first string at the end of your document. The application program will automatically supply the second string. Be sure to type the termination string exactly the same in both places--at the end of your document and on the Spooler Card Settings dialog screen. Capitalization, spaces, and punctuation must be identical.

Termination strings are determined by the application program. Look in the table below for the termination strings to use for a particular application. Look in the appendix for procedures to follow when including termination strings in some of the most common application programs. For instance, when printing from Terrapin Logo you will need to type in several lines of instruction.

Termination Strings in Applications

Most Word Processors

First String: @END
Second String: /0C
Within the application: Type @END at the end of the document.

Most Spreadsheets

First String: @END
Second String: /0C
Within the application: Enter @END as a label in a cell in the row below your last row of data.

Be sure to include the row that contains @END when you specify which cells of the spreadsheet are to print.

BASIC

First String: PR#0
Second String: <NO STRING>
Within Basic: If you want to print a catalog or listing, type PR#1 to direct output to the printer card. Type PR#0 to stop the output.

Terrapin Logo

First String: PR#0
Second String: <NO STRING>
Within Logo: Create a procedure called ENDPRINT by typing:

```
TO ENDPRINT
PRINT "PR#0
OUTDEV 0
```

If none of the termination strings presented in the table works for your application, you can create suitable termination strings yourself.

Tips for Creating Termination Strings

- Create a first string that you type at the end of your document to indicate the end of the print job.
- Make sure that what you create as a first string is unique. If the same combination of characters appears elsewhere in the document, the pipe will close prematurely and your job will not finish printing.
- Make sure that you type the first string exactly the same in both places--in the application and on the Spooler Card Settings screen.
- If you know the last thing that the program will send to the printer, use that as the second string. For example, most word processors will send a form feed at the end of a page. The hexadecimal code for a form feed is /0C.
- If while you are experimenting with different termination strings your print job doesn't print, rerun SPOOLCARD. A useful additional function of running the SPOOLCARD program is that it causes the pipe to close automatically without any action on your part. Once the pipe is closed, the job will print.

To Specify the First and Second Termination Strings

1. **Use the arrow keys to move the pointer to First String or Second String and press** RETURN.

   A dialog screen will appear.

2. **Type the string.**

   Both the first string and the second string together must not exceed 9 characters in length. You will not be allowed to type more than 9 characters.

Special characters, such as escape, carriage return, line feed, and form feed, can be represented by their hexadecimal codes following a slash. For example, to enter a form feed, type /0C.

If you want to include a slash in your termination string, use two slashes to represent a single slash. The screen will show both slashes, but the computer will interpret them as a single slash.

As you type, the characters appear near the bottom of the dialog screen. Make sure that what you type here exactly matches the termination string for your application.

You can edit what you type by using the left arrow key to erase the previous character. However, if you type a slash, you won't be able to backspace until you type a hex value or another slash.

If you want nothing for the string, press the SPACE for <NO STRING>.

3. **To accept the change, press** RETURN.

   The Spooler Card Settings screen will appear with the new string you typed.

To Change the Printer Name

The printer name is established by the network manager in the print service configuration program or in the File Despooler Program if a workstation is being used as a printer server. We have recommended that the printer be named PRINTER and have provided PRINTER as the default setting. If you have more than one printer on your network, however, each will have a different name and you must specify the name of the printer you want to use.

1. **Use the arrow keys to move the pointer to Printer Name.**

   A prompt will appear.

2. **Type the name of the printer you want to use.**

   The printer name can be a maximum of 8 characters.

   Be sure to type the name exactly, with no extra spaces or punctuation.

   To edit what you type, use the left arrow key to erase the previous character.

3. **To accept the change, press** RETURN.

   The Spooler Card Settings screen will appear with your change in position.

To Change the Server Number

The file you want to print will be sent to the Transfer Area of the hard disk, the PIPES volume, on its way to the printer. You need to specify the location of the disk server that contains the PIPES volume. This location is defined by its Omninet network address (a number from 0 to 63). Usually the network manager puts the PIPES volume on SERVER0.

1. **Use the arrow keys to move the pointer to Server and press** RETURN.

   A prompt will appear.

2. **Type the number of the Omninet node address.**

   The number is usually 0. It can be a number from 0 to 63.

   You can edit the number you type using the left arrow key.

3. **To accept the change, press** RETURN.

   The Spooler Card Settings screen will appear with your change in position.

To Echo to Screen

Sometimes you will want to see your information on the screen as it is being spooled. Typing Y in answer to the question "Echo to screen?" will cause the information to appear on the screen. Typing N will suppress it.

- **Move the pointer to Echo to Screen? and press** RETURN.

  The Spooler Card Settings screen reappears with the preset option changed.

  You can press RETURN again to change it back.

To Insert Line Feeds after Carriage Returns

This item on the Spooler Card Settings screen reads, "Insert LF after CR?" The LF stands for line feed and the CR stands for carriage return. This is one of the settings that must be coordinated with settings on the printer and printer server you are using. Trial and error is one way to find out if you have chosen the right setting.

If you select NO and find that your text is overprinting onto itself when you print, then change the setting to YES. If the setting is at YES and you are getting unwanted double line spacing when you print, then change the setting to NO to eliminate the extra line space.

- **Use the arrow keys to move the pointer to option Insert LF After CR? and press [RETURN].**

  The Spooler Card Settings screen reappears with the preset option changed.

  You can press [RETURN] again to change it back.

To Change the Omninet Card Slot

You shouldn't have to change this setting since we recommend that all Omninet cards be placed in slot 7. However, if change is required, perform the following steps:

1. **Use the arrow keys to move the pointer to Omninet Card Slot and press [RETURN].**

   A dialog screen will appear.

2. **Enter the Omninet card slot by typing a number from 4 to 7.**

You can edit the number you type using the left arrow key.

3. **To confirm the change, press [RETURN].**

   The Spooler Card Settings screen will appear with your change in position unless there is no card in the selected slot. However, the Omninet card slot number won't change if a card doesn't exist in the selected slot.

Chapter 3

Constellation III Utilities for ProDOS

Contents

Introduction

Constellation III utilities for the ProDOS operating system include five different programs. The thirteen functions of the Copy II Plus program are listed first, followed by descriptions of the other four programs.

This chapter presumes a working familiarity with the ProDOS operating system. If you need more information about the basics of ProDOS than this chapter provides, refer to the ProDOS User's Manual provided by Apple.

■ Volume and File Utilities (Copy II Plus)

The thirteen functions described below are options of the Copy II Plus program. They appear on the Volume and File Utilities menu and provide the basic functions of the Apple ProDOS Utilities.

These functions have been modified to make them faster and easier to use. For instance, now you are spared one of the major nuisances of ProDOS: the functions present directories without your having to type pathnames.

Some of the functions included in the Copy II Plus program work only for DOS 3.3 and will not work for ProDOS volumes.

Copy

Use this function to copy files, volumes, and DOS. When copying diskettes to a Constellation volume, use the Copy Files option of this function. Use the Copy Disk option to copy one diskette to another, or one Constellation III volume to another. This function can also be used to convert files between DOS and ProDOS formats.

Catalog Disk

Using this function you can see the directories of all ProDOS volumes and diskettes. This is the fastest way to see what files are in which volumes. This function gives you the option of showing a normal catalog, or a catalog with file lengths, deleted files, or hidden characters displayed.

Delete

This function is the equivalent of the standard ProDOS DELETE command, except that it allows a number of files to be deleted at once. The Delete function includes three options: Delete Files, Delete Disk (i.e., diskette or volume), Delete DOS. Deleting the disk and deleting DOS both have the effect of unformatting the diskette or volume.

Lock/Unlock Files

Use this function to lock and unlock files. Any number of files can be locked or unlocked at once.

Rename

This function allows you to rename files, diskettes/volumes, and directories.

Alphabetize Catalog

Use this function to have the files in a catalog presented in alphabetical order.

Format Disk

This function allows you to format diskettes and ProDOS volumes so files can be stored on them.

Verify

This function is used to verify that a diskette is readable. The program checks if sectors on diskettes are bad, checks that files are intact, and checks the drive speed of external diskette drives. Use it if you're having trouble using a diskette.

View Files

Use this function to look at the data in a file. You may choose to see the data either in ASCII characters or in hexadecimal numbers.

Disk Map

The disk map is a graphic display of which sectors on a diskette/volume are used for which files and which sectors are free for use.

Change Boot Program

This function is used only on DOS 3.3 diskettes. It allows you to change the boot program to boot a different BASIC program, or BRUN a binary file, or EXEC a text file on boot-up.

Undelete Files

This function allows you to recover files that you previously deleted using the Constellation III ProDOS Volume and File Utilities. The function can recover only files that you have not written over since deleting them.

Create Subdirectory

Use this function to create a new subdirectory in a ProDOS file.

- **The Set Printer Slot**

  If you have a local printer or a Corvus Print Spooler Card in slot 1 of your computer, you can use this function to turn on a printing option that lets you print screens from the Volume and File Utilities.

- **The Mount Manager Program**

  The Mount Manager Program can be used by accounts that need to have access to more than the six Constellation volumes that can be mounted at any one time. It is also used to move Constellation volumes from one mount location to another.

- **The File Spooler Program**

  This program makes it possible for users whose network stations do not have a Corvus Print Spooler Card to print on a network printer. It also makes it possible for users on the network to send files to each other. The File Spooler Program sends files to the Transfer Area on the hard disk. From the Transfer Area, files can be printed on a network printer, or other users can retrieve them using the File Despooler Program.

- **The File Despooler Program**

  This program enables users to retrieve files from the Transfer Area. It also enables an Apple to act as a printer server. Files can be despooled from the Transfer Area to the screen, a file, or a local printer.

- **The Spooler Card Setup Program**

  This program is used to set up the Corvus Print Spooler Card for printing on a network printer. With a Print Spooler Card installed, it is possible to print from application programs without having to spool files to the Transfer Area manually with the File Spooler Program.

Putting Software on the OmniDrive

After you have created volumes, accounts, and access tables, you'll want to copy your application programs into the volumes you've created.

To copy a program, you need to know several things about it and about the volume where you want to put it. The information you need is outlined by the questions below.

You can use the ProDOS Catalog command, described in the section "To Catalog a Diskette," below, or the Catalog Disk function of the Volume and File Utilities Program to find the answers to some of the questions. For answers to the others, check the program's documentation or, if necessary, ask the program's publisher.

When you know the answers to the questions, you are ready to copy programs onto the hard disk using the Copy function of the Volume and File Utilities Program. Make sure to log on using an account with access both to the appropriate utilities volume and to the Constellation volumes into which you want the programs copied.

QUESTIONS ABOUT THE DISKETTES YOU WANT TO COPY

1. **Is the program compatible with the ProDOS operating system?**

   Only programs that run in ProDOS can be copied into ProDOS volumes. If you can catalog a diskette using the Catalog Disk function of the Volume and File Utilities, it is compatible with the ProDOS operating system.

2. **Is the program copy-protected?**

   Check the packaging and documentation that came with the program or try to copy the program. Programs that are copy-protected cannot be copied onto the hard disk using the Copy function of the Volume and File Utilities Program.

3. **What is the volume name of the diskette?**

   The volume name appears at the top of the screen when you catalog the diskette. Volume names are generally preceded by a slash.

4. **What is the name of the program's greeting program?**

   The greeting program is the file that runs first to load the program into memory. It is often the first file on the diskette and is usually named STARTUP.

TO CATALOG A DISKETTE

To catalog a diskette, insert the diskette in a drive and type

CAT, S(slot number),D(drive number).

The slot and drive numbers required are those of the drive you're using.

For example, suppose the diskette drive containing the diskette is drive 1 in slot 4.

- **At the BASIC prompt, type**

  CAT, S4,D1

  and press RETURN.

  If a valid catalog appears, chances are good that you will be successful in copying the diskette onto the hard disk.

  If no catalog appears, the diskette is probably copy-protected. You will need a special copy program to copy this diskette to your OmniDrive.

  If you receive an I/O ERROR message, check to make sure there is a diskette in the disk drive and that the drive door is closed properly. Try the CAT command several times. If you continue to get the I/O ERROR message, chances are that the program is in a different operating system, the program is copy-protected, or the diskette isn't formatted.

  The BASIC prompt appears at the end of the catalog. If you have the Print Spooler Card in your computer or a local printer connected to it, you might find it useful to print out the catalog.

  If you are going to copy several diskettes at the same time, catalog all of them before copying.

QUESTIONS ABOUT THE VOLUME INTO WHICH YOU WANT TO COPY

1. **What is the name of the Constellation volume into which you want to copy the program?**

   The name of the volume is determined by the network manager when creating the volume record.

2. **What is the mount location for the volume?**

   The mount location is designated by a slot number and drive number in the access table for the account that will be using the utilities to copy the programs.

3. **How many blocks in the volume are free?**

   Be sure there are enough to contain the program.

4. **Into what directory or directories will the program be placed?**

   We recommend that you create a directory for each application or similar set of programs or files. When you fill out the planning worksheets, organize your programs into the appropriate directories.

The Volume and File Utilities

A few functions of the Volume and File Utilities menu work only when you are working with DOS 3.3 diskettes. A note flags these functions. They cannot be used with Constellation DOS 3.3 volumes.

HOW TO RUN THE VOLUME AND FILE UTILITIES

The Volume and File Utilities Programs are provided in the volume /A2PRO. This volume is automatically mounted in S7, D1 for the account A2PRODOS. The account A2MGR has the volume /A2PRO mounted on slot 7, drive 2. We recommend that the mount location for the volume containing the ProDOS utilities be S7,D1 for other accounts. The instructions that follow use that location. If you have assigned a different mount location to the volume containing a particular program, substitute that location for the one supplied in the instructions.

1. **Press 1 on the Constellation III ProDOS Utilities Menu, or use the arrow keys to move the pointer to Volume and File Utilities and press** RETURN.

   OR

   From BASIC, type

   -/A2PRO/UTIL

   and press RETURN for the file labeled UTIL in the volume A2PRO.

   If your computer doesn't have a clock that is compatible with Thunderclock, the program prompts you to enter today's date.

2. **Enter the date by typing the day, month, and year and pressing** [RETURN].

   Type the day as a two-digit number, the month as a three-letter abbreviation, and the year as the last 2 digits of the year in the format shown on the screen.

   OR

   Press [ESC] **to have no date recorded.**

   The program records the date you enter and displays it with other information about the file in the catalog so you always know which copy of a file is the latest version. If you press [ESC] the program will show <NO DATE> as the date.

   If you do not have an Apple II computer with an 80-column card, the main menu appears.

   If you do have an Apple II computer with an 80-column card installed in the auxiliary slot, a prompt appears asking if you want 80-column catalog displays.

Type N for 40-column catalog display; type Y or press [ESC] or [RETURN] for an 80-column catalog display and the Volume and File Utilities menu appears.

```
              COPY ][ PLUS  6.1
(C) 1982-6 CENTRAL POINT SOFTWARE, INC.
----------------------------------------

ENTER DATE OR PRESS [ESC] TO SKIP

07-MAY-87

DO YOU WANT 80-COLUMN CATALOG
DISPLAYS (Y/N) ?
```

To Select an Option

Use the arrow keys to move the highlight bar to your choice and press [RETURN].

To Abort an Operation Without Making a Change

Press [ESC].

To Make a Correction While Typing

Use the left arrow key.

To Select Disks/Volumes

When the program needs to know which diskette drive or volume you want to work with, you will see a prompt asking you to SELECT DEVICE.

```
SELECT DEVICE:

SLOT 6  DRIVE 1
SLOT 5  DRIVE 1
SLOT 5  DRIVE 2
SLOT 3  DRIVE 2: /RAM DISCONNECTED
SLOT 7  DRIVE 1
SLOT 7  DRIVE 2
SLOT 4  DRIVE 1
SLOT 4  DRIVE 2

PRESS [?] TO DISPLAY VOLUME NAMES
```

1. **Use the arrow keys to move the pointer to the drive of your choice and press** RETURN.

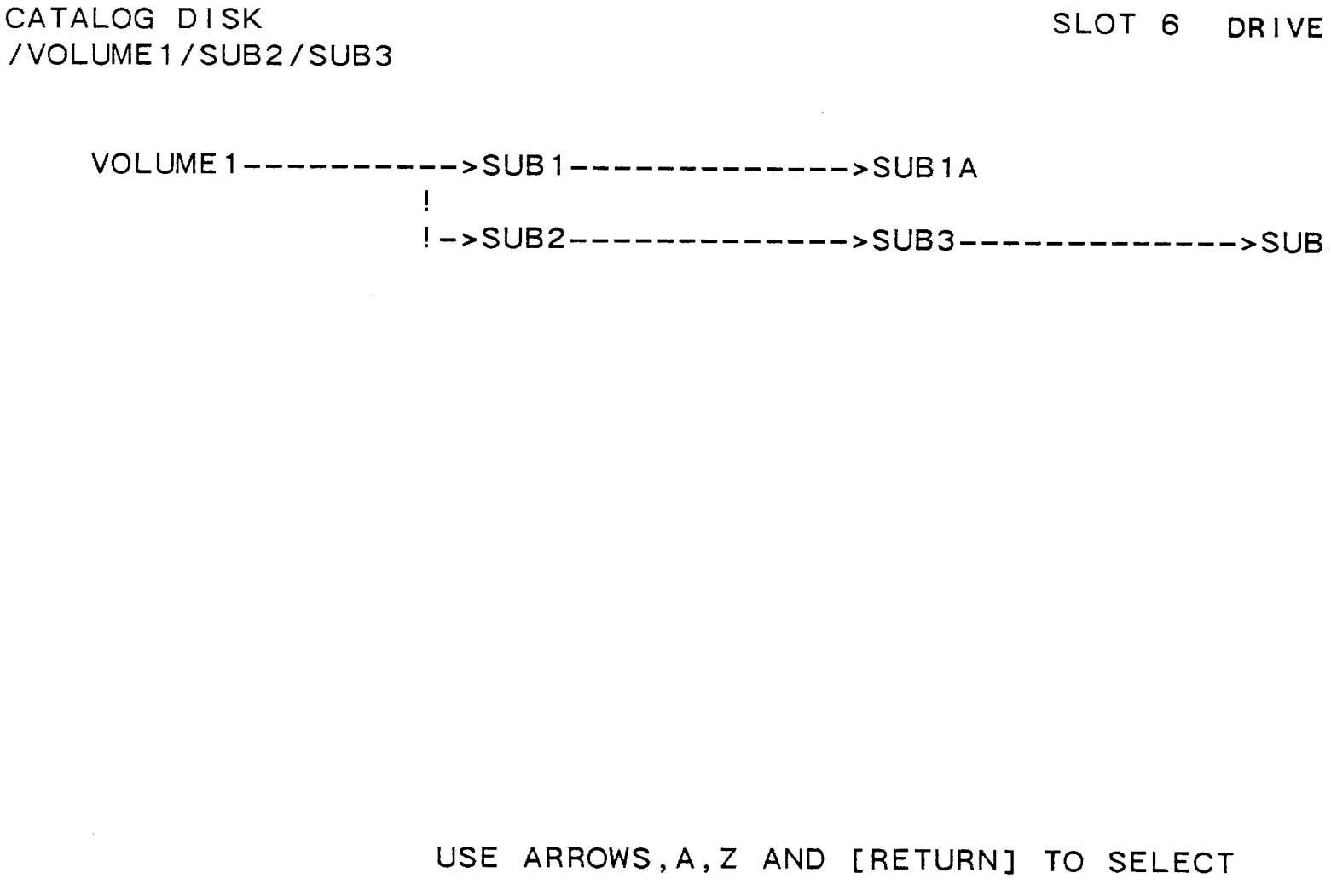
   The internal drive of an Apple IIc is slot 6, drive 1; an external drive is slot 6, drive 2. In an Apple IIGS, a unidisk 3.5 is slot 5, drive 1.

2. **To see the volume name associated with each device and mount location, press the ?/ key.**

```
SELECT DEVICE:

SLOT 6  DRIVE 2:  /VOLUME1
SLOT 5  DRIVE 1:  /VOLUME2
SLOT 5  DRIVE 2:  /VOLUME3
SLOT 3  DRIVE 2:  /RAM DISCONNECTED
SLOT 7  DRIVE 1:  /A2PRO
SLOT 7  DRIVE 2:
SLOT 4  DRIVE 1:
SLOT 4  DRIVE 2:


PRESS [?] TO DISPLAY VOLUME NAMES
```

Note: The /RAM DISCONNECTED message refers to the special RAMdisk that ProDOS installs in any Apple II with 128K of memory when you boot a ProDOS disk. /RAM is a special area of memory ProDOS sets aside to act like a small, very fast disk drive. If /RAM doesn't contain any files when you boot the program, the program disconnects it so that it can use the extra memory itself. You can reconnect /RAM with the FORMAT function.

To Select a Subdirectory



- **Use the arrow keys to move the pointer to the subdirectory of your choice on the subdirectory tree display and press** RETURN.

You will see a list of files in the selected subdirectory.

```
CATALOG DISK                                    SLOT 6  DRIVE 2
/VOLUME1/SUB1

  NAME                TYPE   BLKS   MODIFIED

 *SUB1A               DIR       1   <NO DATE>
 *BASIC.SYSTEM        SYS      21   18-JUN-84
  UTIL                SYS      54   06-FEB-86
  NETPRINT            BAS      15   06-MAY-86
  NETPROBJ            BIN       6   24-JUN-86
  DESPOOL             BIN      22   23-JUN-86
  SPOOL               BIN      20   23-JUN-86
  MOUNT.MANAGER       BIN      25   23-JUN-86
  SPOOLCARD           BAS      16   20-APR-87
  STARTUP             BAS       4   20-APR-87

BLOCKS FREE:925    USED:195    TOTAL:1120

PRESS [RETURN]
```

You can move up, down, right, or left, following the branches between directories. If you have an Apple II or Apple II Plus, press A to move up and Z to move down. If the diagram is too large to fit on the screen, it will scroll automatically as you move around on the tree.

The program contains a few empty subdirectories so you can see an example of the tree display when you catalog it.

SELECTING AND DESELECTING FILES

To Select a File

If you are working with a ProDOS volume or diskette that contains subdirectories, you select files in just one subdirectory at a time using the arrow keys.

- **Use the arrow keys to move the highlight bar to the file you want to work with and press RETURN.**

  The program marks the file with a number, a check, or an asterisk, depending on the function being performed. Continue doing this until all files you want are marked. Then type the appropriate letter key to perform the desired operation on the marked files.

To Deselect a File

- **Use the arrow keys to move the highlight bar to the file you want to deselect and press D.**

  OR

  Move the highlight bar to the selected file and press RETURN. The RETURN acts as a toggle, selecting and deselecting in turn.

SELECTING MULTIPLE FILES

If you are working with a ProDOS volume or diskette that contains subdirectories, then instead of selecting files from each subdirectory, you can select files from all subdirectories at once by typing a pattern. A pattern is a filename with one or more equal signs (=) in it. The equal sign is a special wildcard character that will match any number of characters in the catalog, as long as the rest of the filename matches. For example, the pattern AB= will match the files AB, ABCDE, and ABRAHAM. The pattern =N= will match the files N, OHNO, or any filename containing the letter N. The pattern "=" will match anything, and can be used when you want to copy, delete, lock, unlock, or verify every file on the disk.

In addition, patterns can specify what file types to match. If you want a pattern to match only certain file types, finish the pattern by typing a comma, followed by the file types used in the catalog. ProDOS file types are expressed as three-letter abbreviations. For example, the pattern "=XYZ,BIN,TXT" will match any file whose name ends in "XYZ" and is a Binary or Text file. The pattern "=,BAS" will match any Applesoft BASIC file.

BAS	Applesoft BASIC
INT	Integer
BIN	Binary
TXT	Text

To Select Multiple Files by Typing a Pattern

1. **Press E to enter a single filename or a pattern.**

2. **Enter the pattern and press** RETURN.

   After you enter the pattern and press RETURN, the program will scan through the display, marking all matching files. The highlight bar will then jump to the last file matched. If no files match, the highlight bar will return to the file that was highlighted before you pressed E.

   A prompt appears asking if you want to be prompted for each selection.

3. **If you want to perform the operation on all the files selected, type N in response to the prompt. If you would like to confirm each file individually, type Y in response to the prompt.**

   Prompting allows you the opportunity to apply the command to files within a volume on an individual, case-by-case basis.

For instance, when copying several files, if you request prompting, the name of the first source file to be copied will appear along with a flashing cursor. If you wish to copy this file, type Y and press [RETURN]. If you do not wish to copy this particular file, type N to deselect it and the program will skip it and move ahead to the next file. If you do not request prompting, the program simply copies all the files identified within the volume without waiting for individual confirmation.

To Enter and Exit Subdirectories

To enter a subdirectory, use the arrow keys to move the highlight bar to the subdirectory of your choice and press the > key. To exit a subdirectory, press the < key (you don't have to hold down the [SHIFT] key).

CATALOGING A VOLUME OR DISKETTE

The Catalog function of the Volume and File Utilities allows you to display three varieties of catalogs.

- The NORMAL CATALOG is similar to the standard ProDOS CAT command. The volume name, filename, file type, file length, and the date the file was last modified are shown.

```
CATALOG DISK                                  SLOT 7  DRIVE 1
/A2PRO

   NAME              TYPE   BLKS   MODIFIED

  *BASIC.SYSTEM       SYS     21   18-JUN-84
   UTIL               SYS     54   06-FEB-86
   NETPRINT           BAS     15   06-MAY-86
   NETPROBJ           BIN      6   24-JUN-86
   DESPOOL            BIN     22   23-JUN-86
   SPOOL              BIN     20   23-JUN-86
   MOUNT.MANAGER      BIN     25   23-JUN-86
   SPOOLCARD          BAS     16   20-APR-87
   STARTUP            BAS      4   20-APR-87

BLOCKS FREE:930    USED:190    TOTAL:1120

PRESS [RETURN]
```

- The CATALOG WITH FILE LENGTHS shows all the same information as the NORMAL CATALOG. It is similar to the ProDOS 80-column catalog command and includes the date a file was created, the length of the file in bytes, and any subtype when appropriate. For BASIC files it shows the actual length of the program in bytes. For binary files, it shows both the starting memory address of the file and its length.

- The CATALOG WITH DELETED FILES includes the files on the disk that have been marked as deleted but have not yet been overwritten by a new file entry. Any deleted files are marked with the letter D to the left of the entry. In some cases, deleted files can safely be recovered and made active again using the Undelete Files function of the Volume and File Utilities.

Since ProDOS does not normally allow hidden control characters in filenames, the fourth option shown on the screen prints a normal catalog.

After selecting a catalog, you can use the Alphabetize Catalog function to alphabetize the file entries stored on the disk so that when you do a catalog in the future, the files will appear in alphabetical order.

WARNING: Do not save an alphabetized catalog of the *root directory of your home volume.* This directory contains certain system files, and the order in which the system files appear in a ProDOS volume is important. If you alphabetize the directory containing these files, you may change their order and make it impossible for yourself to boot. Once you save an alphabetized catalog, you cannot reconstruct the previous order of files.

Save only alphabetized catalogs of subdirectories or diskettes that contain no volumes with the suffix *.SYSTEM.*

To Catalog a Volume or Diskette

1. **From the Volume and File Utilities main menu, move the highlight bar to Catalog Disk and press** RETURN.

   Four options appear at the right of the screen.

```
            COPY ][ PLUS  6.1
(C) 1982-6 CENTRAL POINT SOFTWARE, INC.
-----------------------------------------

COPY
CATALOG DISK
DELETE                    SELECT OPTION:
LOCK/UNLOCK FILES
RENAME                    NORMAL
ALPHABETIZE CATALOG       W/ FILE LENGTHS
FORMAT DISK               W/ DELETED FILES
VERIFY                    W/ HIDDEN CHARS
VIEW FILES
DISK MAP
CHANGE BOOT PROGRAM
UNDELETE FILES
CREATE SUBDIRECTORY
SET PRINTER SLOT
QUIT


                                    PRINTER
<NO DATE>                            OFF
```

2. **Move the highlight bar to your choice and press** RETURN.

   You can choose normal, with file lengths, with deleted files, or with hidden characters.

   A prompt appears asking you to select the device (slot and drive) that you want.

3. **Move the highlight bar to the slot and drive you want. If you are cataloging a diskette, insert the diskette you want to catalog in that drive and then press** RETURN.

   You can press ? to see volume names next to each slot and drive. A slash / appears in front of each ProDOS volume name.

   If there are no subdirectories, the catalog appears.

   If the volume contains any subdirectories, the subdirectory tree display appears.

4. **Use the arrow keys to move the highlight bar to the subdirectory you want to catalog and press** RETURN.

   The catalog appears.

   If the printer is selected with the Printer Slot function and turned on, you'll be asked whether or not you want a printout of the catalog. Type Y for yes; type N for no.

   The catalog pauses after every 20 files. You can continue by pressing any key except ESC. (ESC will stop the catalog and return you to the main menu.) If the catalog is being sent to the printer, it will not pause.

To Alphabetize a Catalog

1. **From the Volume and File Utilities main menu, move the highlight bar to Alphabetize Catalog and press** RETURN.

   A prompt appears asking you to select the slot and drive that you want.

2. **Move the highlight bar to the slot and drive you want, insert the diskette you want to catalog in that drive, and press** RETURN.

   You can press ? to see volume names next to each slot and drive. A slash / appears in front of each ProDOS volume name.

   If there are no subdirectories, the program reads the current catalog, alphabetizes it in the computer's memory, and shows you what the alphabetized catalog will look like.

   If the volume contains any subdirectories, the subdirectory tree display appears.

4. **Use the arrow keys to move the highlight bar to the subdirectory you want to catalog and press** RETURN.

   The program reads the current catalog, alphabetizes it in the computer's memory, and shows you what the alphabetized catalog for the subdirectory will look like.

5. **Type G if you want the alphabetized catalog saved on disk.**

   WARNING: Do not save an alphabetized catalog of the root directory of your home volume.

   If you do not want to save the alphabetized catalog on disk, press ESC to return to the Volume and File Utilities main menu without changing the disk.

COPYING FILES AND DISKETTES

TThe program lists four copy options:

Bit Copy
Copy Files
Copy Disk
Copy DOS

One of these, Bit Copy, is not supported in the Corvus version of the program and does not work. Another, Copy DOS, you can use only with DOS 3.3 diskettes. The two useful options, Copy Files and Copy Disk, are described below.

Copy Files

1. **From the Volume and File Utilities main menu, move the highlight bar to Copy and press** RETURN.

   Four options appear on the right of the screen.

2. **Move the highlight bar to Files and press** RETURN.

   A prompt appears asking you to select the source drive.

3. **Move the highlight bar to the source drive and press** RETURN. **If you are copying from a diskette, place the Source diskette in the drive before pressing** RETURN.

   If the source diskette or volume contains subdirectories, then the subdirectory tree display appears for you to select the subdirectory that contains the files you want to copy.

4. **Select entire subdirectories or individual files you want to copy.**

   To copy a number of files automatically, type E. A prompt appears asking you to enter a filename. Enter a filename or a pattern and press RETURN.

   A number appears as you mark a file indicating the order in which the files will be copied.

5. **Type G to begin copying.**

   If you are copying from one diskette to another on a single drive system, a prompt appears asking you to insert the proper disk.

   As the files are being copied, they are shown in the file display with the highlight bar on the file currently being copied. At the bottom of the screen, the name of the file being copied appears after the word TARGET. The program will automatically alter DOS filenames to fit the ProDOS conventions if you are copying a DOS file into a ProDOS volume.

   If you try to copy a file into a directory already containing a file with the same filename, a prompt appears asking you what you want to do about it. Your choices are to copy anyway, rename the file, not copy the file, or exit the copy function.

Copy Disk

Use this option to make a duplicate of one diskette onto another. Do not use this function to copy diskettes to Constellation volumes; use Copy Files instead.

1. **From the Volume and File Utilities main menu, move the highlight bar to Copy and press** [RETURN].

   Four options appear on the right of the screen. Use the Copy Files option when copying programs onto the OmniDrive: do not use the Copy Disk option for this purpose.

2. **Move the highlight bar to Disk and press** [RETURN].

   A prompt appears asking you to select the source drive.

3. **Move the highlight bar to the source drive, place the source diskette in the drive, and press** [RETURN].

   A prompt appears asking you to select the target drive.

4. **Move the highlight bar to the target drive, place the target diskette in the drive and press** [RETURN].

   If you are copying with a single drive system, the program prompts you to insert each diskette.

   There are 35 tracks on a 5-1/4 inch disk, numbered in hexadecimal from $00 to $22. As the Copy Disk option makes the copy, it first reads a number of tracks from the source disk into memory; then it writes those tracks to the target disk. It repeats this process until all the tracks are copied. As it reads or writes each track, the program displays the track number at the bottom of the screen.

A Note About Read and Write Errors

The program checks for errors as it copies. If an error occurs, a message will be displayed showing what kind of error it is (read error or write error) and on what track it occurred. The program will continue copying the rest of the disk. A read error means that one or more sectors on the source disk are unreadable. The disk medium itself may be damaged. If a write error occurs, then the medium on the target disk is most likely damaged. Double-check everything, then try again.

Even if the program reads a bad sector on the source disk, it will still write a good sector to the target disk. That is, some of the data in that source disk sector may be inaccurate, but an I/O error will usually not occur when that sector on the target disk is read.

If a disk is getting old and begins to create I/O errors, the data should be copied to a new disk using the Copy Disk option.

DELETING FILES AND ERASING DISKETTES

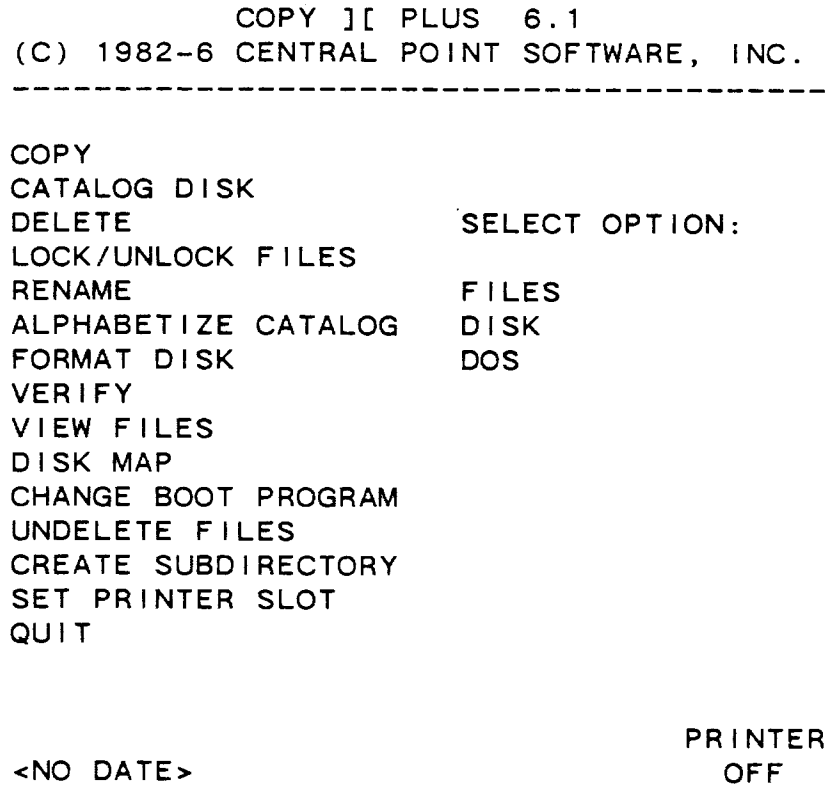
The Delete Files option of the Delete function marks files for overwriting. At any time before a file is overwritten with new information, it can be recovered using the Undelete Files option.

The Delete Disk option of the Delete function unformats or erases a volume on the OmniDrive or a diskette. This option is unrecoverable. Once you use the Delete Disk option all the information in the volume or on the diskette is destroyed forever. Once you have used this function on a volume or diskette, you will need to format the volume or diskette again before you can reuse it.

To Delete Files

1. **From the Volume and File Utilities main menu, move the highlight bar to Delete and press** RETURN.

   Three options appear on the right of the screen.



2. **Move the highlight bar to Files and press** RETURN.

   A prompt appears asking you to select the drive that contains the files you want to delete.

3. **Move the highlight bar to the appropriate drive and press** RETURN. **If deleting files from a diskette, make sure the diskette is in the drive before you press** RETURN.

   If the diskette or volume contains subdirectories, then the subdirectory tree display appears for you to select which subdirectory contains the files you want to delete.

4. **Select entire subdirectories or individual files you want to delete.**

   To delete a number of files automatically, type E. A prompt appears asking you to enter a filename. Enter a filename or a pattern and press RETURN.

   For more information on selecting subdirectories from the subdirectory tree display and entering a pattern, see the Volume and File Utilities Overview section in this chapter.

   An arrow appears as you mark a file, indicating that the file is eligible for deletion.

   To deselect a file, move the highlight bar to the selected file and press RETURN. RETURN acts as a toggle, selecting and deselecting in turn.

5. **Type G to begin deletion.**

   As the files are being deleted, they are shown in the file display with the highlight bar on the file currently being deleted.

To Erase a Volume or Diskette

1. **From the Volume and File Utilities main menu, move the highlight bar to Delete and press RETURN.**

   Three options appear on the right of the screen.

2. **Move the highlight bar to Disk and press RETURN.**

   A prompt appears asking you to select the drive that contains the disk you want to delete.

3. **Move the highlight bar to the appropriate drive, place the diskette in the drive, and press** RETURN.

   A prompt appears asking you to confirm that you want to delete the contents of the disk.

4. **Type Y to proceed with deletion.**

   OR

   Type N to return to the Volume and File Utilities main menu without deleting anything.

TO LOCK/UNLOCK FILES

1. **From the Volume and File Utilities main menu, move the highlight bar to Lock/Unlock Files and press** RETURN.

   A prompt appears asking you to select the drive that contains the files you want to lock or unlock.

2. **Move the highlight bar to the appropriate drive and press** RETURN.

   If you are locking or unlocking files on a diskette, make sure the diskette is in the drive before you press RETURN.

   If the diskette or volume contains subdirectories, then the subdirectory tree display appears for you to select which subdirectory contains the files you want to lock or unlock.

3. **Use the highlight bar to select entire subdirectories or individual files you want to lock or unlock.**

   An asterisk appears to the left of the file type on files that are locked. RETURN acts as a toggle, locking and unlocking files in turn.

To delete a number of files automatically, type E. A prompt appears asking you to enter a filename. Enter a filename or a pattern and press RETURN.

For more information on selecting subdirectories from the subdirectory tree display and entering a pattern, see the Volume and File Utilities Overview section in this chapter.

A prompt appears asking you to select Lock or Unlock.

5. **Type L to place an asterisk next to (lock) all the files that match the filename or pattern.**

   OR

   Type U to remove the asterisk next to (unlock) all the files that match the filename or pattern.

6. **Type G to lock or unlock the specified files.**

   The catalog is written back to the disk, with the proper files locked and unlocked.

   OR

   Press ESC to exit without making any changes.

RENAMING FILES, VOLUMES, AND DIRECTORIES

This function can be used to rename volumes on the OmniDrive, but the Network Management Program will not be aware of the change. You do not want a volume to have two different names, depending what function you use to list it, so be sure to use the Change option in the Volumes submenu of the Network Management Program menu to rename any volumes you have renamed here with this function of the Volume and File Utilities. See Chapter 4 of the *Network Manager's Guide* for how to rename a volume in the Network Management Program.

Files, volumes, and directories can only be renamed one at a time.

To Rename Files or Subdirectories

1. **From the Volume and File Utilities main menu, move the highlight bar to Rename Files and press** RETURN.

   A prompt appears asking you to select the drive that contains the file or directory you want to rename.

2. **Move the highlight bar to the appropriate drive and press** RETURN.

   If you are renaming files or directories on a diskette, make sure the diskette is in the drive before you press RETURN.

   If the volume or diskette has subdirectories, then the subdirectory tree display appears for you to select which subdirectory contains the file you want to rename.

3. **Select the subdirectory and press** RETURN.

   A list of the files contained in the selected subdirectory appears.

4. **Use the highlight bar to select the file or subdirectory you want to rename and press** [RETURN].

   A prompt appears asking for the new filename.

5. **Enter the filename and press** [RETURN].

   ProDOS filenames must begin with a letter and can contain only letters, numbers, and periods. If you enter a filename that does not comply with the rules for ProDOS filenames, the warning beep will sound and the program will wait for you to enter a valid filename.

   An arrow appears to the left of the file to remind you that the file has been renamed.

6. **Repeat Steps 4 and 5 until all the filenames you wish to alter have been changed.**

7. **Type G to write the filename change(s) to the disk.**

   The new filename or directory name is written to the disk and the program returns to the Volume and File Utilities main menu.

To Rename a Volume

1. **From the Volume and File Utilities main menu, move the highlight bar to Rename and press** [RETURN].

   Two options appear on the right of the screen.

2. **Move the highlight bar to Volume and press** [RETURN].

   A prompt appears asking you to select the drive that contains the volume you want to rename.

3. **Move the highlight bar to the appropriate drive, place the diskette in the drive, and press** RETURN.

   A prompt appears asking you for the new volume name.

4. **Enter the new volume name and press** RETURN.

   ProDOS volume names must be no more than 15 characters long, begin with a letter, and contain only letters, numbers, and periods. If you enter a volume name that does not comply with the rules for ProDOS volume names, the warning beep will sound and the program will wait for you to enter a valid volume name.

5. **Type G to write the volume change to the diskette.**

   The new volume name is written to the diskette and the program returns to the Volume and File Utilities main menu.

FORMATTING A VOLUME OR DISKETTE

The Format Disk function lays down sector boundaries and writes volume and directory headers and boot blocks to prepare a volume or diskette for storing files there.

A blank disk must be formatted before it can be used. Ordinarily, Constellation III volumes are formatted automatically when they are created; you don't have to use this function on a volume unless you know it is not formatted.

You can use the Format Disk function to make a bootable disk by first formatting a diskette and then using the Copy function to copy to the diskette the file PRODOS and whatever .SYSTEM file you want the disk to start up.

In the prompts, *disk* is used to refer to either a volume or a diskette.

1. **From the Volume and File Utilities main menu, move the highlight bar to Format Disk and press** [RETURN].

   Two options appear on the right of the screen.

2. **Move the highlight bar to PRODOS and press** [RETURN].

   A prompt appears asking you to select the drive that contains the volume or diskette you want to format.

3. **Move the highlight bar to the appropriate drive. If you're formatting a diskette, place the diskette in the drive. Press** [RETURN].

   A prompt appears asking you to confirm that you want to format that volume or disk.

4. **Type Y to proceed with formatting.**

   If the volume or diskette to be formatted does not already contain data, a prompt will appear asking for a new volume name.

   Enter a new volume name and press [RETURN] to proceed with formatting.

   If the volume or diskette does already contain data, a prompt will appear asking you to reconfirm your decision to destroy this data.

   Type Y and a prompt will appear asking for a new volume name.

   Enter a new volume name and press [RETURN] to proceed with formatting.

   OR

   Type N to return to the Volume and File Utilities main menu.

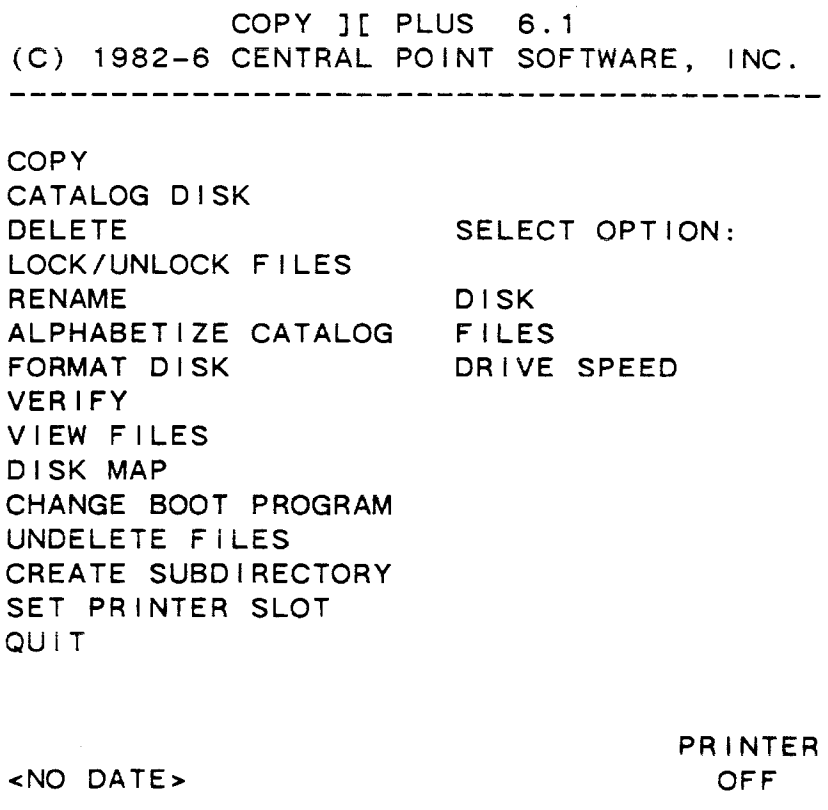
VERIFYING DISKETTES, FILES, AND DRIVE SPEED

If a diskette you are using has bad data, has bad sectors, or is physically damaged, you will receive an I/O error message when you try to use it. Bad data means the catalog or file information is wrong. A bad sector is one that can't be read. Bad sectors can be caused by power fluctuations, or by opening the drive door or pressing [RESET] while the drive was writing to the diskette. A diskette can also be damaged by improper handling, fingerprints, heat, etc..

If you are getting an I/O error when you use a diskette, it is a good idea to verify the diskette to discover where the error is. If the Verify Disk function displays errors, then you have either bad sectors or a damaged diskette. You should use the Copy function to save as much of the information as you can, then try to reformat the diskette. If the formatting fails, then the diskette is most likely permanently damaged and should be thrown away.

1. **From the Volume and File Utilities main menu, move the highlight bar to Verify and press** RETURN.

   Three options appear on the right of the screen.



2. **Move the highlight bar to Disk and press** RETURN.

   A prompt appears asking you to select the drive that contains the diskette you want to verify.

3. **Move the highlight bar to the appropriate drive, place the diskette in the drive, and press** RETURN.

   The program quickly reads each of the 35 tracks on the diskette in turn. As it reads them, the current track number is displayed near the bottom of the screen.

   If bad sectors are found on any track, their track and sector numbers are displayed in hexadecimal in the middle of the screen.

When verification is complete, the program displays the total number of errors.

To exit out of the verify function, press [ESC] to return to the Volume and File Utilities main menu.

To Verify Files

1. **From the Volume and File Utilities main menu, move the highlight bar to Verify and press [RETURN].**

   Three options appear on the right of the screen.

2. **Move the highlight bar to Files and press [RETURN].**

   A prompt appears asking you to select the drive that contains the files you want to verify.

2. **Move the highlight bar to the appropriate drive, place the diskette in the drive, and press [RETURN].**

   The selected drive will whir. If it contains a ProDOS disk with subdirectories, then the subdirectory tree display appears for you to select which subdirectory contains the file you want to verify.

3. **Select the subdirectory and press [RETURN].**

   For more information on selecting subdirectories from the subdirectory tree display, see the Volume and File Utilities Overview section in this chapter.

   A list of the files contained in the selected subdirectory appears.

4. **Use the highlight bar to select the files you want to verify and press** RETURN.

   OR

   Type E to enter a filename or pattern.

5. **Enter the filename or pattern and press** RETURN.

   An arrow appears to the left of the selected files.

6. **Type G to to verify the files.**

   The file display will show each file in inverse as it is verified. If an error occurs, the track and sector numbers for the error appears.

   To continue verification of a file after an error has been identified, press RETURN.

   OR

   To return to the Volume and File Utilities main menu, press ESC.

To Verify Drive Speed

This option should be used only by technically sophisticated users.

VIEWING FILES

The View Files function allows you to look quickly and easily at the data in any file. This is useful for double-checking exactly what is in a file before copying it, deleting it, etc.

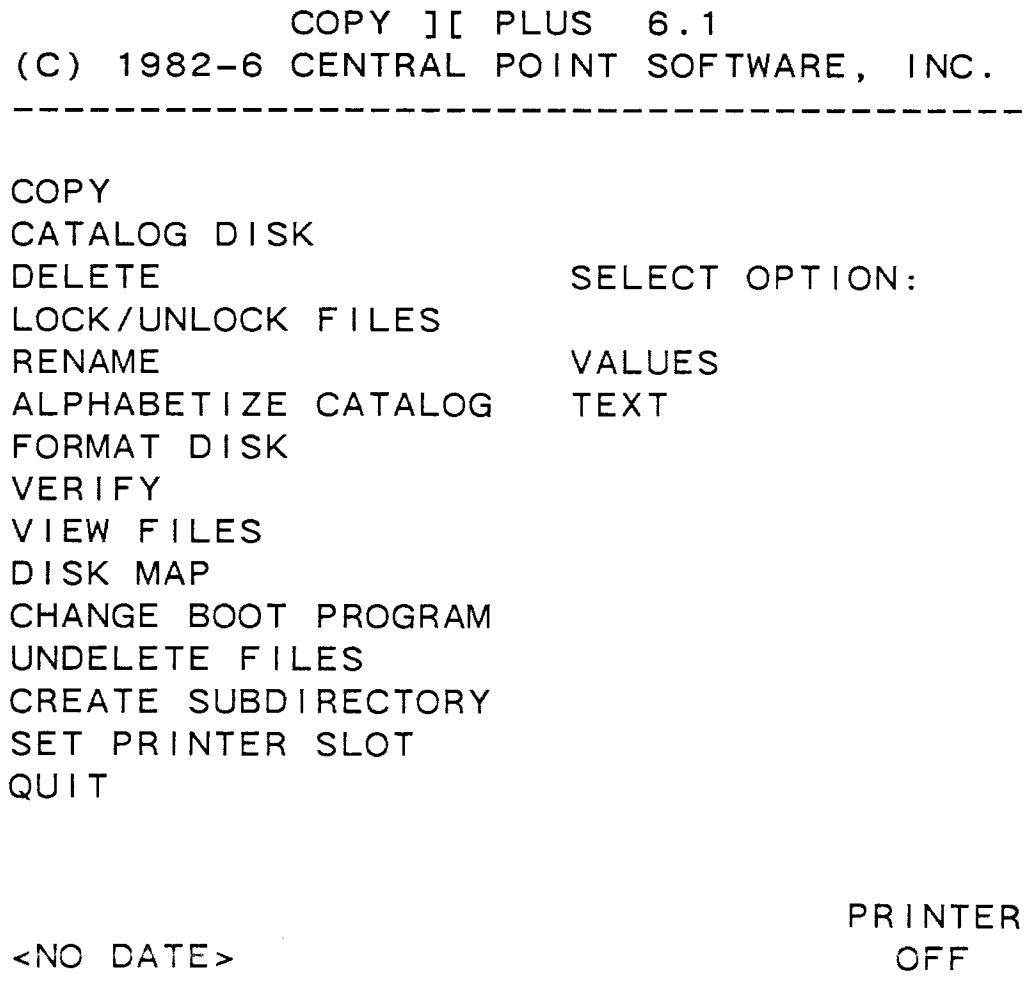
View Files allows you to view files as hexadecimal numbers (values) or as text. When viewing files as hexadecimal numbers, equivalent ASCII characters appear to the right of the numbers. Control characters are replaced with periods.

When files are viewed as ASCII text, the characters are printed out in standard 40-character lines. Control characters are not printed, except for carriage returns.

To View Files as Hexadecimal Numbers (Values)

1. **From the Volume and File Utilities main menu, move the highlight bar to View Files and press** RETURN.

   Two options appear on the right of the screen.



2. **Move the highlight bar to Values and press** [RETURN].

   A prompt appears asking you to select the drive that contains the files you want to view.

3. **Move the highlight bar to the appropriate drive, place the diskette in the drive, and press** [RETURN].

   The selected drive will whir. If it contains a ProDOS disk with subdirectories, then the subdirectory tree display appears for you to select which subdirectory contains the file you want to view.

4. **Select the subdirectory and press** [RETURN].

   For more information on selecting subdirectories from the subdirectory tree display, see the Volume and File Utilities Overview section in this chapter.

   A list of the files contained in the selected subdirectory appears.

5. **Use the highlight bar to select the file you want to view.**

6. **Type G to view the file.**

   If the printer has been selected using the Printer Slot function from the Volume and File Utilities main menu, a prompt appears asking whether or not you want a printout of the file. Type Y for yes; type N for no.

7. **To advance to the next page, press** [RETURN].

   The file is displayed a page at a time.

   OR

   Press [ESC] **to return to the Volume and File Utilities main menu.**

To View Files as Text

1. **From the Volume and File Utilities main menu, move the highlight bar to View Files and press** RETURN.

   Two options appear on the right of the screen.

2. **Move the highlight bar to Text and press** RETURN.

   A prompt appears asking you to select the drive that contains the files you want to view.

3. **Move the highlight bar to the appropriate drive, place the diskette in the drive, and press** RETURN.

   The selected drive will whir. If it contains a ProDOS disk with subdirectories, then the subdirectory tree display appears for you to select which subdirectory contains the file you want to view.

4. **Select the subdirectory and press** RETURN.

   For more information on selecting subdirectories from the subdirectory tree display, see the Volume and File Utilities Overview section in this chapter.

   A list of the files contained in the selected subdirectory appears.

5. **Use the highlight bar to select the file you want to view.**

6. **Type G to to view the file.**

   If the printer has been selected using the Printer Slot function from the Volume and File Utilities main menu, a prompt appears asking whether or not you want a printout of the file. Type Y for yes; type N for no.

7. **To advance to the next page, press** RETURN.

   The file is displayed a page at a time.

   OR

   Press ESC **to return to the Volume and File Utilities main menu.**

THE DISK MAP

The Disk Map function presents a display showing which sectors on a diskette are used by what files and which sectors are free for use.

The disk map is displayed as a grid showing all the sectors on the disk, with the track numbers ($0 to $22) across the top row and the sector numbers ($4 to $F) along the left edge. The sector numbers on the left are slightly out of order to reflect the way ProDOS groups pairs of sectors together.

Every sector marked as in use on the disk is shown as an asterisk in a white box. Unused sectors are marked with a dot. If the disk is mostly full, large areas of the grid will be filled in with inverse asterisks. You can see whether or not any given sector is in use by following the track number down and the sector number across and noting whether or not an inverse space is there.

If you are mapping a diskette with subdirectories, any subdirectory you view will appear as letter D's rather than asterisks.

If you have selected a printer slot on the main menu, you can print the Disk Map.

1. **From the Volume and File Utilities main menu, move the highlight bar to Disk Map and press** RETURN.

   A prompt appears asking you to select the drive that contains the diskette you want to map.

3. **Move the highlight bar to the appropriate drive, place the diskette in the drive, and press** RETURN.

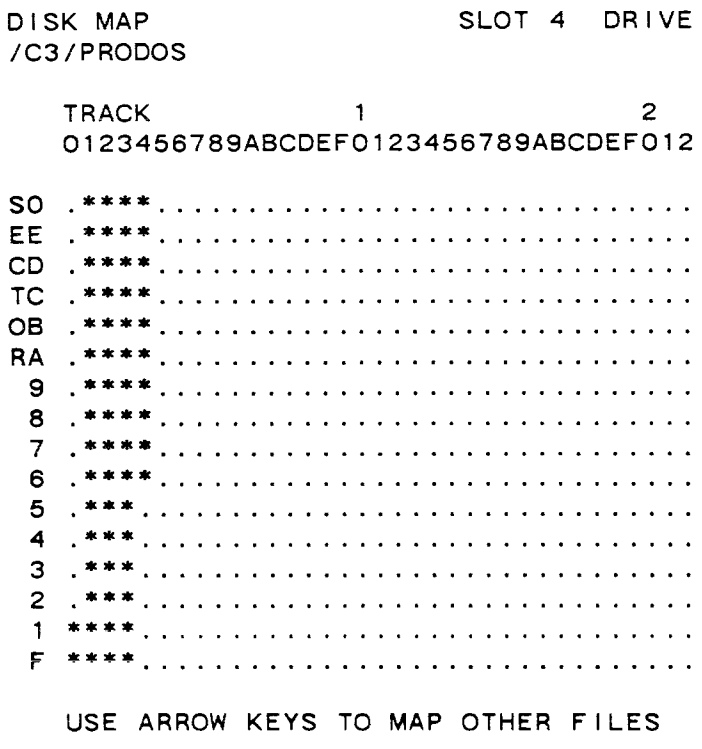
   The disk map for the entire disk appears.

```
DISK MAP                        SLOT 4  DRIVE 1
/C3

   TRACK            1                   2
   0123456789ABCDEF0123456789ABCDEF012

SO ********.**********.......*******..
EE ********.**********.......*******..
CD ********************......*********.
TC ********************......*********.
OB ********************......*********.
RA ********************......*********.
 9 ********************......*******.*.
 8 ********************......*******.*.
 7 ********************.......*******...
 6 ********************.......*******...
 5 ********************.......*******...
 4 ********************.......*******...
 3 ********************.......*******...
 2 ********************.......*******...
 1 ********************.......*******...
 F ********************.......*******...

   [RETURN]-CONTINUE, [ESC]-EXIT
```

   If you have selected a printer slot from the main menu, a prompt appears asking if you want to print the map. Type Y for yes; type N for no.

4. **To see a map for the first file on the disk, press RETURN.**

   The map for the first file displays. The filename is shown at the top of the screen. The map shows only the sectors used by the file.



   To see a map of the next file, press the right-arrow key.

   To see a map of the previous file, press the left-arrow key.

   To print individual file maps, bring the map you want onto the screen and type P.

5. **To map files within subdirectories, use the < and > keys instead of the arrow keys.**

   To see a map of the next subdirectory file, press the > key.

   To see a map of the previous subdirectory file, press the < key.

   Press ESC to return to the Volume and File Utilities main menu.

CHANGING THE BOOT PROGRAM

This function of the program is used only on DOS 3.3 diskettes. It allows you to change the boot program to boot a different BASIC program, or BRUN a binary file, or EXEC a text file on boot-up.

UNDELETING FILES

When a file is deleted using the Delete function of the Volume and File Utilities, the program marks the file internally as deleted, but it also keeps all of the file information intact. If you accidentally delete a file but no other information has been written over it yet, the file can be recovered using the Undelete Files function.

1. **From the Volume and File Utilities main menu, move the highlight bar to Undelete Files and press** RETURN.

   A prompt appears asking you to select the drive that contains the file you want to undelete.

2. **Be sure the diskette containing the file to be undeleted is in the drive, then move the highlight bar to the appropriate drive and press** RETURN.

   If the volume or diskette contains subdirectories, then the subdirectory tree display appears for you to select which subdirectory contains the file you want to undelete.

3. **Select the subdirectory and press** RETURN.

   For more information on selecting subdirectories from the subdirectory tree display, see the Volume and File Utilities Overview section in this chapter.

A list of the deleted files contained in the selected subdirectory appears. If there are no deleted files, the message NO FILES appears.

4. **Place the highlight bar on the file to be undeleted and press** RETURN. **Repeat this action for each file you wish to undelete.**

   An arrow appears to the left of the selected files.

5. **Type G to undelete the selected files.**

   The program displays the filename at the bottom of the screen as the program attempts to undelete them.

   If a deleted file has already been partly or completely overwritten with other data, the file cannot be undeleted. The program marks the file LOST FILES.

6. **To return to the Volume and File Utilities main menu, press** RETURN.

   After the undelete is completed, use the Catalog function to look at the undeleted files on the disk. If there was a problem in undeleting a file, the undeleted file will be marked with a question mark. Test the suspect file. If you find that the file is good, use the Lock/Unlock function to remove the question mark.

CREATING SUBDIRECTORIES

1. **From the Volume and File Utilities main menu, move the highlight bar to Create Subdirectory and press** RETURN.

   A prompt appears asking you to select the appropriate drive.

2. **Move the highlight bar to the appropriate drive, place the diskette in the drive, and press** RETURN.

The selected drive will whir. If it contains a ProDOS disk with subdirectories, then the subdirectory tree display appears for you to select the subdirectory to which you want to append a new subdirectory. If there are no subdirectories, go to Step 4.

3. **Select the subdirectory and press** RETURN.

   Use the arrow keys to position the highlight bar on the subdirectory to which you want to append a new subdirectory and press RETURN.

   A prompt appears asking you to supply the name for the new subdirectory you want to create.

4. **Enter the name of the new subdirectory and press** RETURN.

   The subdirectory name must begin with a letter and contain only letters, numbers, and periods. If you enter a subdirectory name that does not comply with the rules for ProDOS subdirectory names, the warning beep will sound and the program will wait for you to enter a valid subdirectory name.

   The program adds this new subdirectory to your diskette.

5. **To return to the Volume and File Utilities main menu, press** ESC.

SETTING THE PRINTER SLOT

If you have a local printer or a network station that is equipped with the Corvus Print Spooler Card in slot 1 of the computer, you can print the screen displays from Catalog, View Files, and Disk Map. If you want to have the printing option available to you as you use the Volume and File Utilities, you must first set the printer slot using the Set Printer Slot function.

1. **From the Volume and File Utilities main menu, move the highlight bar to Set Printer Slot and press** RETURN.

   The word OFF that appears under the word PRINTER in the lower right corner of the screen will change to Slot 0.

2. **Type 1 and press** RETURN.

   Slot 1 indicates that you have a printer interface card in slot 1. Slot 0 indicates that you want the printing option turned off.

   The Volume and File Utilities main menu appears with the printer set to ON.

TO QUIT THE VOLUME AND FILE UTILITIES

- **To return to BASIC, move the highlight bar on the Volume and File Utilities menu to Quit and press** RETURN.

The Mount Manager Program

PROGRAM OVERVIEW

ProDOS users will usually find that access to six Constellation volumes is enough. Because of the large capacity of Constellation volumes, the Mount Manager Program should rarely have to be used by ordinary network users. On the other hand, the Mount Manager Program can be very useful for the network manager in managing the network. You can use the Mount Manager Program to give yourself read-write access to multiple sets of six Constellation volumes to let you copy programs, organize the volumes, and mount volumes for any account.

The Mount Manager Program is used to:

- mount volumes
- unmount volumes
- change the slot and drive number of a volume
- change the user's read-write access to the volume
- change the mount status of volumes stored on different disk drives.

The Mount Manager Program is provided in the volume /A2PRO and is automatically mounted in S7, D1 for the account A2PRODOS. The account A2MGR has the volume /A2PRO mounted on slot 7, drive 2. We recommend that the mount location for the volume containing the Mount Manager Program be S7, D1 for other accounts. The instructions that follow use that location. If you have assigned a different mount location to the volume containing the program, substitute that location for the one supplied in the instructions.

Do not mount a volume on the same slot and drive as a diskette drive or another peripheral. If you do, the slot and drive designations for volumes will take precedence over any peripheral you have installed in the same slot. The diskette drive or peripheral will be unusable until you assign the volume to a different slot and drive number.

TO RUN THE MOUNT MANAGER PROGRAM

1. **Log on to the network using the log-on name of the account for which you want to mount or unmount volumes.**

2. **On the Constellation III ProDOS Utilities main menu, press 2 to select Mount Manager.**

   OR

   From BASIC type -/A2PRO/MOUNT.MANAGER and press RETURN.

   If the Mount Manager Program is not in A2PRO, substitute for *A2PRO* the appropriate volume name.

   You see the main menu of the Mount Manager Program.

```
ProDOS: Mount Manager [1.7]

(C) 1984 Corvus Systems, Inc.

          - M A I N   M E N U -

Please Select:

L - List Mounted Volume Status

M - Mount a Volume

U - Unmount a Volume

S - Select Network Disk Server

I - Search Drive Image [No ]

Q - Quit

Current Server Name : SERVER0
      Server Number :  0
```

   At the bottom of the screen, directly under the main menu options, the screen displays the current server name and number. (This is relevant information to users of networks with multiple servers.)

TO SEE A LIST OF MOUNTED CORVUS VOLUMES

- **From the Mount Manager menu, type L to see a list of mounted volumes.**

A screen appears showing the following information for each mounted volume:

- a letter used to identify the volume
- the volume name
- the length of the volume in blocks
- the slot and drive numbers
- the server number
- whether or not the user has read-write access to the volume.

```
ProDOS: Mount Manager [1.7]

(C) 1984 Corvus Systems, Inc.


Volumes Currently Mounted

   Name      Length  SLOT  DRIVE  Loc.  R/W

A  A2PRO       1124     7      1     0    Y
B  VOLUME1     1124     6      2     0    Y
C  VOLUME2     1124     5      1     0    Y
D  VOLUME3     1124     5      2     0    Y
E  *******
F  *******
G  *******
H  *******

4 Volumes Mounted


Press any key to continue
```

TO UNMOUNT A CONSTELLATION VOLUME

A maximum of six volumes can be mounted for an account at any one time. Sometimes you have to unmount a volume in order to free a slot and drive location for another volume you want to mount.

1. **From the Mount Manager menu, type U to unmount a volume.**

   A list of mounted volumes appears.

   To return to the Mount Manager menu without unmounting any volumes, press [ESC].

2. **Type the letter next to the volume that you want to unmount.**

   WARNING: Do not unmount the account's home volume for the account or the volume containing the Mount Manager Program.

   The volume is unmounted and the Mount Manager menu is displayed.

3. **To verify that the correct volume is unmounted, type L to see a list of volumes currently mounted.**

4. **Press [SPACE] to return to the Mount Manager menu.**

TO MOUNT A VOLUME

The Mount function of the Mount Manager Program is used to:

- mount volumes that are not currently mounted
- remount volumes to change their slot and drive numbers
- change read-write access to a volume.

The function displays a list of all unmounted volumes that the current account has eligible for mounting. When establishing the access table for the account, the network manager determines which volumes an account will have eligible for mounting.

1. **From the Mount Manager menu, type M.**

   The screen displays volumes that the network manager has made eligible for mounting in the account access table. Next to each volume is a letter that the Mount Manager Program uses to identify the volume. A volume in this list cannot be used by the account until it has been mounted and assigned slot and drive numbers.

   If the volume you want to mount isn't on this list, the network manager must first make the volume eligible for mounting on the access table for the account. Press [ESC] to return to the main menu of the Mount Manager Program and then type Q to exit the program.

2. **Type the letter for the volume you want to mount.**

   A dialog screen is presented asking you to supply a slot number from 1 to 7.

3. **Type the number of the slot location you want for the volume.**

   Remember, if you assign a slot and drive location that is already taken by another volume, the volume you mount last is the only one the account will be able to access. Also, if you assign a slot and drive number that has been assigned to a diskette drive, the diskette drive will no longer be usable.

   A warning message will appear if you enter a slot number that has already been assigned to a diskette drive. If this happens, press [ESC] to return to the Mount Manager menu to mount the volume again using a different slot number.

A dialog screen is presented asking you to supply a drive number: 1 or 2.

4. **Type the number of the drive location you want for the volume.**

   A dialog screen is presented asking you if you want the account to have read-only access to the volume. Refer to the section entitled "Fundamental Concepts" in the *Network Manager's Guide* for more information regarding volume access.

5. **If you want the account to have read-only access to the volume, type Y.**

   Read-only access prevents the user from changing information stored in the volume.

   OR

   If you want the account to have read-write access to the volume, type N.

   Read-write access allows the user to review, use, and make changes to information in the volume. Only a single user should have read-write access to a volume at one time. If a Constellation volume is a public volume, only the owner account of that volume will be permitted to have read-write access to it. The Mount Manager Program prevents all other accounts from having read-write access to public volumes.

6. **To verify that the correct volume is unmounted, type L to see a list of volumes currently mounted.**

7. **To return to the Mount Manager menu, press** SPACE.

MOUNTING CONSTELLATION VOLUMES ON MULTIPLE SERVERS

Servers enable network devices other than computers to communicate with each other. Each of these devices--printers, The Bank, an OmniDrive--has its own server. Sometimes the server is built into the device, as with OmniDrives and The Bank. In any case, each server has a unique name and number that identify it. The current server name and number are displayed at the bottom of the menu screen of the Mount Manager Program.

To mount or unmount volumes that are stored on a hard disk associated with a server other than the current server, you must first select the server you want in order to make it the current server. For example, if the current server is SERVER0 and you would like to mount a volume on SERVER1, you must first change the current server to SERVER1.

To Select a Network Disk Server

1. **From the Mount Manager menu, type S.**

   The screen displays the names of all available servers on the network and asks you which server to select.

2. **Type the letter displayed before the server name of the server that you want to make the current server.**

   The current server changes to the server you specified. You can now mount and unmount volumes from this server. The Mount Manager menu is displayed.

Mounting Volumes from Images

The Select Drive Image function of the Mount Manager Program menu allows you to access Constellation III volumes contained within an image on a Bank Tape and is one of the programs that make it possible to restore damaged volumes using the image.

An image contains all the data on a mass storage system transferred onto a Bank Tape. An image may contain many volumes. Once you have access to an image, you can mount any of its Constellation III volumes to which you have access. A Constellation III volume mounted from an image can be used as if it were located on a disk drive.

The Select Drive Image function does not itself mount any volumes, it only selects them. To mount the volumes selected, use the Mount a Volume function of the Mount Manager.

Before using this option, make sure The Bank contains the correct tape and is on-line and accessible on your network. Also make sure that your account has access to the volumes that are contained in the image.

To mount a volume from an image

1. **Use the Select Server function of the Mount Manager Program to change the current server to the server name for The Bank.**

2. **From the Mount Manager Program menu, press I to select the Select Drive Image function.**

   A message appears showing all the images contained on the Bank Tape.

3. **Select an image by pressing the letter displayed before the image name.**

   The Mount Manager Program menu appears with *YES* next to the Select Drive Image function.

4. **Mount the volumes you want using the Mount a Volume function of the Mount Manager Program.**

TO QUIT THE MOUNT MANAGER PROGRAM

- **From the Mount Manager Program menu, press Q to return to ProDOS.**

The File Spooler Program

PROGRAM OVERVIEW

The File Spooler Program is used to:

- print on a network printer when the network station doesn't have a Print Spooler Card in slot 1
- send files to another user via the Transfer Area.

From the Transfer Area, files can be automatically despooled to a printer, or another user can retrieve them using the File Despooler Program. To understand how the File Spooler Program works, you need to know about the Transfer Area and pipes. These are described in Chapter 5 of the *Network Manager's Guide.* A brief description follows.

The Transfer Area is actually a volume on the hard disk, called the PIPES volume. Each time you send a file to this volume, either by printing directly or by spooling, a pipe is created to hold the file. Many pipes can exist within the Transfer Area at one time. A pipe exists, i.e., is active, only as long as a file resides in it. Once the file is despooled, the pipe disappears.

When a file is sent to the Transfer Area, it is assigned a job number by which it can be identified.

Each active pipe has a name. The name of the pipe determines where the file goes when it leaves the Transfer Area. All files in pipes with the pipe name assigned to a certain printer go that printer; the sender must give files bound for another network user a pipe name that is not already assigned to a printer. The intended receiver of the file uses that pipe name to despool the file.

There are two main steps in printing with the File Spooler Program:

1. Save your work in a text file located in the current ProDOS volume.

2. Run the File Spooler Program to send the file to the Transfer Area.

Refer to the documentation that came with your word processing program or text editing program for information regarding how to save your work in a ProDOS ASCII text file.

TO RUN THE FILE SPOOLER PROGRAM

■ **Select the File Spooler Program from the ProDOS Utilities menu, or, to run from BASIC, type**

/A2PRO/SPOOL and press RETURN.

The File Spooler settings screen appears.

```
ProDOS: Spool [1.6]

(C) 1984 Corvus Systems, Inc.

          - M A I N   M E N U -

Please Select:

S - Start Spooling
N - New Page String .PG
P - Pipe Name        PRINTER
M - Message
---------------------------------------
Route to Station #24

---------------------------------------
C - Current Pipe Status
A - Alternate Slot  SERVER0
Q - QUIT
```

TO CHANGE THE NEW-PAGE STRING

The new-page string must match the symbol or characters used by your application or text editing program to indicate a new page. The default is shown next to this option on the menu screen: the default is .PG. This string, placed in the first column of your work with no characters following it, is never printed. Look in the documentation for your application to find which characters indicate a new page.

1. **From the File Spooler settings screen, type N to change the new-page string.**

   A prompt appears asking for the new-page string.

2. **Enter the new-page string and press** RETURN.

   Be sure the new-page string exactly matches the symbol or characters used by your application.

   The File Spooler settings screen appears with your change in position.

TO SPECIFY THE PIPE NAME

Choose this option to specify the destination of your file after it leaves the Transfer Area. The default name, shown next to this option, is PRINTER. To print a file on another network printer, enter the name of that printer. Check with your network manager for the names of printers on your network.

To send a file to another user, create a pipe name not already assigned to a printer, enter the name, and be sure to tell the user receiving the file what name you have used. For example, if you are sending a file to Harry Smith, you might name the pipe HARRY. As long you don't use a pipe name already assigned to a printer, your file remains in the Transfer Area until the person to receive it despools it with the File Despooler Program.

To send a file to another user, create a pipe name not already assigned to a printer, enter the name, and be sure to tell the user receiving the file what name you have used. For example, if you are sending a file to Harry Smith, you might name the pipe HARRY. As long you don't use a pipe name already assigned to a printer, your file remains in the Transfer Area until the person to receive it despools it with the File Despooler Program.

Pipe names may be a maximum of eight letters.

1. **From the File Spooler settings screen, type P to enter a pipe name.**

   A prompt appears asking for the pipe name.

2. **Enter the pipe name and press** RETURN.

   The File Spooler settings screen appears with your change in position.

TO SPECIFY A MESSAGE

You can include an identifying line on the first page of your printed file. The default message, "Route to Station XX," automatically gives the address of your network station.

1. **From the File Spooler settings screen, type M to specify a message.**

   A prompt appears asking for the message.

2. **Enter the message and press** RETURN.

   The message can be up to 80 characters long.

TO START SPOOLING

1. **Run the File Spooler Program.**

The File Spooler Program settings screen appears.

2. **Confirm that the settings shown are correct.**

   Check the pipe name on the File Spooler Program settings screen. If you are spooling to a printer, make sure you have the correct printer name. How to change the various settings is discussed in the preceding sections.

3. **From the File Spooler settings screen, type S to start spooling.**

   A prompt appears asking the name of the file that will be spooled.

4. **Enter the name of the file and press** [RETURN].

   Be sure to enter the name precisely: punctuation and spaces must be exact. To spool a file not on the current volume, type the full pathname (for example, /VOL2/DEBIT1.TXT) and press [RETURN].

   The screen displays the spooling information along with a prompt requesting the name of another file to spool. Spooling information includes the pipe name, the pipe number, and the number of blocks spooled. This information is important because it allows you to check on the status of the spooling of your file using the current pipe status option.

   Enter the name of another file you want to spool and press [RETURN].

   OR

   Press [ESC] to return to the File Spooler settings screen.

TO CHECK THE CURRENT PIPE STATUS

Choose this option to check on the status of your file in the Transfer Area. You can see at a glance which pipes are waiting in the Transfer Area with the name shown on the menu screen.

1. **From the File Spooler program menu, type C to check the current pipe status.**

   The screen displays the status of the pipe named on the menu screen. Status information includes a list of jobs by pipe number, whether the pipe is open or closed, and whether or not each pipe contains data. A pipe that is open may be in the process of being spooled, or it could be stuck in the open position. Refer to Chapter 4 in the *Network Manager's Guide* for instructions on clearing pipes.

2. **To return to the File Spooler Program, press any key.**

SPOOLING ON MULTIPLE SERVER NETWORKS

You can spool a file to a Transfer Area that is on a server other than the default server by using the Alternate Slot option on the File Spooler settings screen. When you select a different server using this option, you are changing the current server. All files will be spooled to this server until you select a different server or run the File Spooler Program again.

To change the current server

1. **From the File Spooler settings screen, type A to select the Alternate Slot option.**

   The program displays names of all servers on the network that have Transfer Areas. Next to each name is a letter that is used to select that server.

2. **Type the letter that appears next to the server you want to select.**

   The current server is changed to the server you specified, and the File Spooler settings screen appears with the new server name displayed near the top of the menu.

TO QUIT THE FILE SPOOLER PROGRAM

- **From the File Spooler Program menu, press Q to return to BASIC.**

The File Despooler Program

PROGRAM OVERVIEW

The File Despooler Program enables users to:

- retrieve files from the Transfer Area
- make a network station function as a printer server so a local printer can be shared as a network printer.

When another user spools a file to you, the pipe containing the file remains in the Transfer Area until you retrieve it. Once the file is despooled, the pipe and its contents disappear from the Transfer Area.

A pipe can be despooled to a file, the computer screen, or a local printer that is directly connected to a network station.

TO RUN THE FILE DESPOOLER PROGRAM

- **Select the File Despooler Program from the ProDOS Utilities main menu or, to run from BASIC, type**

  -/A2PRO/DESPOOL

  and press RETURN.

  The File Despooler settings screen appears.

```
ProDOS DeSpool [1.7]

(C) 1984 Corvus Systems, Inc.

          - M A I N   M E N U -

Please Select:

S - Start DeSpooling
O - Output Device    CONSOLE
E - Expand Tabs       08
P - Pipe Name        PRINTER
F - Line Feeds       [Off]
H - Header Page      [Yes]

C - Current Pipe Status
A - Alternate Slot   SERVER0
Q - QUIT
```

TO SELECT THE OUTPUT DEVICE

Use this option to specify the destination of the despooled file. The File Despooler Program can output to Console (the computer screen), File (a file), or Printer (a local printer, one that is attached to a computer).

1. **From the File Despooler settings screen, type O to select the Output Device option.**

A prompt appears requesting you to select the output device.

2. **Type the letter that represents the output device you want.**

   The File Despooler program menu is displayed, and the output device you chose is shown.

CHANGING THE PRINTING OPTIONS

If you are despooling a file to a local printer, you should check the default settings for the three printing options.

1. The default setting for Expand Tabs is 08, meaning that for each tab in the file being spooled, the File Despooler Program will insert 8 character spaces.

2. The default for Line Feeds is Off, meaning that the File Despooler Program will not insert a line feed after each carriage return.

3. The default for Header Page is YES, meaning that the first page that prints will be a header page containing the name of the file and the destination network station.

To Specify Tab Settings

1. **From the File Despooler settings screen, type E to select the Expand Tabs option.**

   A prompt appears requesting you to indicate the amount of space for each tab.

2. **Enter the number of spaces you want for each tab and press** RETURN.

   The File Despooler settings screen is displayed with the tab spaces you entered shown.

To Set Line Feeds

If you are despooling a file to a printer directly connected to your computer, you can set this option to add a line feed after each carriage return in the file. Set line feeds to On if when you print lines of text are printing on top of one another. Refer to the user's manual for your printer to see if you must insert line feeds.

- **From the File Despooler program menu, type F to change the Line Feeds option from On to Off, or from Off to On.**

  The File Despooler program menu continues to be displayed, with the line feeds option changed.

TO SPECIFY THE PIPE NAME

Use this option to specify the pipe name to which the file you want was spooled.

1. **From the File Despooler settings screen, type P to select the pipe name option.**

   A prompt appears requesting you to enter the pipe name.

2. **Type the pipe name used for the files you want to despool.**

   The File Despooler settings screen is displayed with the pipe name you typed shown.

TO START DESPOOLING

After you have confirmed that the settings shown on the menu screen are correct, choose this option to retrieve a file from the Transfer Area. How to change the various settings is discussed in the preceding sections.

1. **When all settings are okay, type S from the File Despooler settings screen to start despooling.**

   If you have chosen to output to a file, a prompt appears requesting the name of the file.

2. **Enter the name of the file and press** RETURN.

   Be sure to enter the name precisely: punctuation and spaces must be exact. If the destination file is in a ProDOS volume other than the current one, enter the full pathname for the file following the filename.

   If you are despooling a program, not a text file, the screen displays a prompt requesting you to select the file type.

3. **Select the file type, if requested.**

   If you don't know the file type, you will have to ask the person who spooled the file.

   The screen displays a message indicating the pipe name that is being despooled.

   If there is more than one pipe with the same name, the File Despooler Program repeats the prompts for despooling the remaining pipes. If the pipes are being despooled to a file, a prompt appears requesting the name of the next destination file. The despool message continues to display until you return to the File Despooler settings screen.

4. **To return to the File Despooler settings screen, press** ESC.

TO CHECK THE CURRENT PIPE STATUS

Choose this option to check on the status of your file in the Transfer Area. You can see at a glance which pipes are waiting for which printers.

1. **From the File Despooler settings screen, type C to select the Current Pipe Status option.**

   The program lists by number all the pipes in the Transfer Area with the same pipe name that you specified. The Current Pipe Status screen shows the open or closed status of each pipe and whether or not the pipe contains data.

```
ProDOS DeSpool [1.7]

(C) 1984 Corvus Systems, Inc.

Pipe Name is: PRINTER1
# 1     Closed              Contains Data
# 2     Closed              Contains Data
# 3     Closed              Contains Data
# 4     Closed              Contains Data
# 5     Closed              Contains Data
# 6     Closed              Contains Data


Press any key to continue
```

Pipes are open during spooling and despooling: otherwise they are closed. Only pipes that contain data and are closed (indicating that spooling is complete) can be despooled.

2. **To continue, press** SPACE.

   The File Despooler program menu is displayed.

DESPOOLING ON MULTIPLE SERVER NETWORKS

You can despool a file from a Transfer Area that is on a server other than the default server by using the Alternate Slot option on the File Despooler settings screen. The default server is the server with a Transfer Area and the lowest network address. The server that is set to address 0 and that contains a pipes area will always be the default server. When you select a different server using this option, you are actually changing the current server. Files will be despooled only from this server until you select a different server or run the File Despooler Program again.

To change the current server

1. **From the File Despooler settings screen, type A to select the Alternate Slot option.**

   The program displays names of all servers on the network that have Transfer Areas. Next to each name is a letter that is used to select that server.

2. **Type the letter that appears next to the server you want to select.**

   The current server is changed to the server you specified, and the File Despooler settings screen appears with the new server name displayed near the top of the menu.

TO MAKE A NETWORK STATION INTO A PRINTER SERVER

1. **Change the default options on the File Despooler settings screen.**

   Read the sections on selecting output device, changing the printer options, and specifying the pipe name, above. Output device should be *Printer*. You may have to experiment with the printer options to get the results you want. The pipe name is whatever pipe name you want people to use for files they send to your printer.

2. **Choose Start Despooling on the File Despooler Program settings screen.**

   If a file hasn't yet been spooled to this destination, the File Despooler Program will wait for it. The File Despooler Program will continue despooling files until you quit the File Despooler Program or turn off the network station.

TO QUIT THE FILE DESPOOLER PROGRAM

- **From the File Despooler Program menu, press Q to return to BASIC.**

The Spooler Card Setup Program

PRINTING WITH THE SPOOLER CARD

There are two ways to print on a shared printer when using Corvus Omninet. One way is to save your information in a file and spool it to the Transfer Area (the PIPES volume) with the File Spooler Program. An easier way is to equip your Apple IIe network stations with Corvus Print Spooler Cards, which enable network stations to print directly from DOS 3.3 and ProDOS applications. Printing on a network printer with a Print Spooler Card is as easy as using a local printer. The Print Spooler Card functions like a standard serial printer interface card and does the work of spooling your information to the Transfer Area.

What You'll Need

To print directly from an application on a network printer, you need a Corvus Print Spooler Card and the Print Spooler Card software, consisting of the SPOOLCARD program and the file NETPROBJ.

Settings for the Print Spooler Card are established in the SPOOLCARD program. When the computer is turned on, the Print Spooler Card will automatically boot and be configured with the default settings. The SPOOLCARD program must be run to change these default settings.

Before entering an application from which you might want to print, you should confirm or change the Print Spooler Card settings with this program. This section describes how and when to change the settings and gives some hints for troubleshooting should a problem arise during printing.

Coordinating Printing

When you're printing on a network printer, settings that control page length, margins, spacing, etc., can be adjusted in as many as four different places. Many printers have dip switches that can be set to determine these variables. The printer server, the Print Spooler Card, and the application you are working with will all have settings too. If you specify settings on the printer or printer server, everyone who prints with that printer will have to use those settings. If you specify settings in several places, you risk causing conflicts.

It is best to make all settings only in the application program itself. If you want extra line spacing, don't specify extra line spacing when setting the printer switches; specify extra line spacing within the application program.

Each program has its own set of printing parameters and ways of selecting them. Many application programs allow you to specify the type of printer and interface card you have. Check the manual that came with the program you are using for more details regarding setting printing parameters in the application you are using. The Corvus Print Spooler Card functions just like an Apple Super Serial Card and uses the same settings.

PROGRAM OVERVIEW

When you want to confirm or change the settings for the Print Spooler Card, you need to run the SPOOLCARD program. SPOOLCARD presents a screen listing the settings you can adjust. Next to each setting is a suggested response that represents the most common setting. You can accept the suggestions or change them. Changing a setting determines the configuration of the Print Spooler Card until you change it again or turn off your computer.

You can reboot the computer by pressing CTRL - OPEN-APPLE - RESET without changing the configuration of the Print Spooler Card. Likewise, you can change applications, operating systems, and volumes without affecting the configuration.

When the computer is turned off and turned on again, the Print Spooler Card will be configured with the default settings. You may change the settings from within the SPOOLCARD program, but your changes will not be permanently incorporated. Each time you restart the computer, the Print Spooler Card will revert to the default settings.

TO RUN THE SPOOLCARD PROGRAM

1. **Select the Spooler Card Setup program from the ProDOS Utilities menu, or, to run from BASIC, type**

   /A2PRO/SPOOLCARD

   and press RETURN.

   The Spooler Card Settings screen appears.

2. **Review the settings. If the suggested settings are okay, use the arrow keys to move the pointer to Quit Program and press** RETURN.

   The Print Spooler Card is configured with the settings indicated on the screen and the BASIC prompt appears.

CHANGING THE SPOOLER CARD SETTINGS

There are seven settings for the Print Spooler Card.

If you want to accept all the settings just as they are on the Spooler Card Settings screen, select Quit at the bottom of the screen.

You can use the arrow keys to move the pointer to the setting you want and press RETURN. A prompt appears describing how to change the setting.

If you decide you don't want to change the setting after selecting it, just press RETURN before typing anything and the screen will display the suggested settings unchanged.

About Termination Strings

Each time information is sent to a pipe in the Transfer Area, there needs to be a signal to the computer that indicates the end of the print job so the computer will close the pipe. Some application programs close the pipe automatically. If the application you are using doesn't close the pipe automatically, you can cause the pipes to close by including termination strings in your print job.

A termination string can be any of the following:

- characters that you include at the end of your print job
- characters or instructions that the application program sends to the printer
- characters that you include at the end of your print job that are also printed by the printer.

Usually, termination strings have two parts. The first string acts as a signal telling the computer when to start looking for the end of the print job. This string doesn't get sent to the printer and doesn't print. The second string indicates the end of the job.

If there is no second string, the first string indicates the end of the print job. Some word processors require you to type the first string at the end of your document. The application program will automatically supply the second string. Be sure to type the termination string exactly the same in both places--at the end of your document and on the Spooler Card Settings dialog screen. Capitalization, spaces, and punctuation must be identical.

Termination strings are determined by the application program. Look in the table below for the termination strings to use for a particular application. Look in the appendix for procedures to follow when including termination strings in some of the most common application programs. For instance, when printing from Terrapin Logo you will need to type in several lines of instruction.

If none of the termination strings presented in the table works for your application, you can create suitable termination strings yourself.

Termination Strings in Applications

Most Word Processors

First String:	@ END
Second String:	/0C
Within the application:	Type @ END at the end of the document.

Most Spreadsheets

First String:	@ END
Second String:	/0C
Within the application:	Enter @ END as a label in a cell in the row below your last row of data. Be sure to include the row that contains @ END when you specify which cells of the spreadsheet are to print.

BASIC

First String:	PR#0
Second String:	<NO STRING>
Within Basic:	If you want to print a catalog or listing, type PR#1 to direct output to the printer card. Type PR#0 to stop the output.

Terrapin Logo

First String:	PR#0
Second String:	<NO STRING>
Within Logo:	Create a procedure called ENDPRINT by typing: TO ENDPRINT PRINT "PR#0 OUTDEV 0

Tips for Creating Termination Strings

- Create a first string that you type at the end of your document to indicate the end of the print job.
- Make sure that what you create as a first string is unique. If the same combination of characters appears elsewhere in the document, the pipe will close prematurely and your job will not print completely.
- Make sure that you type the first string exactly the same in both places in the application and on the Spooler Card Settings screen.
- If you know the last thing that the program will send to the printer, use that as the second string. For example, most word processors will send a form feed at the end of a page. The hexadecimal code for a form feed is /0C.
- If while you are experimenting with different termination strings your print job doesn't print, rerun SPOOLCARD. A useful additional function of running the SPOOLCARD program is that it causes the pipe to close automatically without any action on your part. Once the pipe is closed, the job will print.

To Specify the First and Second Termination Strings

1. **Use the arrow keys to move the pointer to First String or Second String and press** [RETURN].

   A dialog screen appears.

2. **Type the string.**

   Both the first string and the second string together must not exceed 9 characters in length. You will not be allowed to type more than 9 characters.

Special characters, such as escape, carriage return, line feed, and form feed, can be represented by their hexadecimal codes following a slash. For example, to enter a form feed, type /0C.

If you want to include a slash in your termination string, use two slashes to represent a single slash. The screen will show both slashes, but the computer will interpret them as a single slash.

As you type, the characters appear near the bottom of the dialog screen. Make sure that what you type here exactly matches the termination string for your application.

You can edit what you type by using the left arrow key to erase the previous character. However, if you type a slash, you won't be able to backspace until you type a hex value or another slash.

If you want nothing for the string, press [SPACE] for <NO STRING> or [ESC] to return to the Spooler Card Settings screen.

3. **To accept the change, press [RETURN].**

   The Spooler Card Settings screen will appear with the new string you typed.

To Change the Printer Name

The printer name is established by the network manager in the print service configuration program or in the File Despooler Program if a workstation is being used as a printer server. We have recommended that the printer be named PRINTER and have provided PRINTER as the default setting. If you have more than one printer on your network, however, each will have a different name and you must specify the name of the printer you want to use.

1. **Use the arrow keys to move the pointer to Printer Name.**

   A prompt appears.

2. **Type the name of the printer you want to use.**

   The printer name can be a maximum of 8 characters.

   Be sure to type the name exactly, with no extra spaces or punctuation.

   To edit what you type, use the left arrow key to erase the previous character.

3. **To accept the change, press** RETURN.

   The Spooler Card Settings screen will appear with your change in position.

To Change the Server Number

The file you want to print will be sent to the Transfer Area of the hard disk, the PIPES volume, on its way to the printer. You need to specify the location of the disk server that contains the PIPES volume. This location is defined by its Omninet network address (a number from 0 to 63). Usually the network manager puts the PIPES volume on SERVER0.

1. **Use the arrow keys to move the pointer to Server and press** RETURN.

   A prompt appears.

2. **Type the number of the Omninet node address.**

   The number is usually 0. It can be a number from 0 to 63.

   You can edit the number you type using the left arrow key.

3. **To accept the change, press** RETURN.

   The Spooler Card Settings screen will appear with your change in position.

To Echo to Screen

Sometimes you will want to see your information on the screen as it is being spooled. For example, when you print catalogs or BASIC program listings you might want to see them on screen as they are sent to the PIPES volume. YES in answer to the question "Echo to screen?" means the information will appear on the screen. NO means it won't.

- **Move the pointer to Echo to Screen? and press** RETURN.

  The Spooler Card Settings screen reappears with the preset option changed.

  You can press RETURN again to change it back.

To Insert Line Feeds after Carriage Returns

This item on the Spooler Card Settings screen reads, "Insert LF after CR?" The LF stands for line feed and the CR stands for carriage return. This is one of the settings that must be coordinated with settings on the printer and printer server you are using. Trial and error is one way to find out if you have chosen the right setting.

If you select NO and find that your text is overprinting onto itself when you print, then change the setting to YES. If the setting is at YES and you are getting unwanted double line spacing when you print, then change the setting to NO to eliminate the extra line space.

- **Use the arrow keys to move the pointer to Insert LF after CR? and press** RETURN.

  The Spooler Card Settings screen reappears with the preset option changed.

  You can press RETURN again to change it back.

To Change the Omninet Card Slot

You shouldn't have to change this setting since we recommend that all Omninet cards be placed in slot 7. However, if change is required, perform the following steps:

1. **Use the arrow keys to move the pointer to Omninet Card Slot and press** RETURN.

   A dialog screen appears.

2. **Enter the Omninet card slot by typing a number from 4 to 7.**

   You can edit the number you type using the left arrow key.

3. **To confirm the change, press** RETURN.

   The Spooler Card Settings screen will appear showing the changed setting.

TO QUIT THE SPOOLER CARD SETUP PROGRAM

- **From the Spooler Card Setup menu, use the arrow keys to move the pointer to Quit and press** RETURN **to return to BASIC.**

Chapter 4

Constellation III Utilities for Pascal

Contents

Introduction

Constellation III Utilities for the Pascal operating system include three different programs. These programs are described briefly below.

- **Mount Manager Program**

  The Mount Manager Program is for users who need access to more than the six Constellation volumes that can be mounted at any one time. Because a Constellation volume on the hard disk can contain up to 117 individual Pascal volumes, not many ordinary users will need to use this program. But it is useful for the network manager, who can use the program to mount different sets of six volumes, change users' access to volumes, and generally mount and unmount volumes as need arises.

- **File Spooler Program**

  This program makes it possible for users whose network stations do not have a Print Spooler Card in slot 1 to print using a network printer. It also makes it possible for users on the network to send files to each other. The File Spooler Program sends files to the Transfer Area on the hard disk. From the Transfer Area, files can be printed on a network printer, or other users can retrieve them using the File Despooler Program.

- **File Despooler Program**

  This program enables users to retrieve files from the Transfer Area. It also enables an Apple to act as a printer server so users can use a printer that does not have a printer server. Files can be despooled from the Transfer Area to the screen, a file, or a local printer.

The Mount Manager Program

PROGRAM OVERVIEW

Pascal users will usually find that access to six volumes is enough. Because of the large capacity of Constellation volumes, the Mount Manager Program should rarely have to be used by ordinary network users. On the other hand, the Mount Manager Program is an essential tool for the network manager. You can use the Mount Manager Program to give yourself access to multiple sets of six Constellation volumes so you can copy programs, organize the volumes, and mount volumes for any account.

The Mount Manager Program is used to

- mount volumes
- unmount volumes
- change the unit number of a volume
- change the user's read-write access to the volume
- change the mount status of volumes stored on different disk drives.

The Pascal Mount Manager Program is provided in volume A2PAS. We recommend that the mount location for the volume containing the Mount Manager Program be unit 4. The instructions that follow use that location. If you have assigned a different mount location to the volume containing the program, substitute that location for the one supplied in the instructions.

Do not mount a volume on the same unit as a diskette drive or another peripheral. If you do, the unit designations for volumes will take precedence over any peripheral you have installed in the same slot. The diskette drive or peripheral will be unusable until you assign the volume to a different unit number.

TO RUN THE MOUNT MANAGER PROGRAM

1. **Log on to the network using the log-on name of the account for which you want to mount or unmount volumes.**

   The Pascal command line appears.

2. **Type X.**

   A prompt appears asking which file you want to execute.

3. **Type A2PAS:MNTMGR and press RETURN.**

   You see the main menu of the Mount Manager Program.

```
APPLE PASCAL: Mount Manager [1.6]

(C) 1984 Corvus Systems, Inc.

            - M A I N   M E N U -

Please Select:

L - List Mounted Volume Status

M - Mount a Volume

U - Unmount a Volume

S - Select Network Disk Server

I - Search Drive Image [No ]

Q - Quit

Current Server Name : SERVER0
      Server Number :  0
```

   At the bottom of the screen, directly under the main menu options, the screen displays the current server name and number. (This is relevant information to users of networks with multiple servers.)

TO SEE A LIST OF MOUNTED VOLUMES

- **From the Mount Manager menu, type L to see a list of mounted volumes.**

  A screen appears showing the following information for each mounted volume

  - a letter used to identify the volume
  - the volume name
  - the length of the volume in blocks
  - the unit number for current volume
  - the server number
  - whether or not the user has read-write access to the volume.

```
APPLE PASCAL: Mount Manager [1.6]

(C) 1984 Corvus Systems, Inc.


Volumes Currently Mounted

  Name     Length  UNIT  Loc. R/W

A A2PAS      1124     4     0  Y
B VOLUME1    1124     5     0  Y
C VOLUME2    1124    11     0  Y
D *******
E *******
F *******

3 Volumes Mounted


Press any key to continue
```

TO UNMOUNT A VOLUME

A maximum of six volumes can be mounted for an account at any one time. Sometimes you have to unmount a volume in order to free a unit location for another volume you want mounted.

1. **From the Mount Manager menu, type U to unmount a volume.**

   A list of mounted volumes appears.

   To return to the Mount Manager menu without unmounting any volumes, press [ESC].

2. **Type the letter next to the volume that you want to unmount.**

   WARNING: Do not unmount the account's home volume or the volume from which the Mount Manager Program was run.

   The volume is unmounted and the Mount Manager menu is displayed.

3. **To verify that the correct volume is unmounted, type L to see a list of volumes currently mounted.**

4. **Press any key to return to the Mount Manager menu.**

TO MOUNT A VOLUME

The Mount function of the Mount Manager Program is used to

- mount volumes that are not currently mounted
- remount volumes to change their unit numbers
- change read-write access to a volume.

The function displays a list of all unmounted volumes that the current account has eligible for mounting. When establishing the access table for the account, the network manager determines which volumes an account will have eligible for mounting.

1. **From the Mount Manager menu, type M.**

   The screen displays volumes that the system manager has made eligible for mounting in the account access table. Next to each volume is a letter that the Mount Manager Program uses to identify the volume. A volume in this list cannot be used by the account until it has been mounted and assigned a unit number.

```
APPLE PASCAL: Mount Manager [1.6]

(C) 1984 Corvus Systems, Inc.


A-A2BOOT   B-VOLUME4 C-VOLUME5

Mount Which Volume ?
```

   If the volume you want to mount isn't on this list, the network manager must first make the volume eligible for mounting on the access table for the account. Press [ESC] to return to the Mount Manger menu and then type Q to exit to the Pascal Utilities main menu.

   If no volumes are available for mounting, a message to that effect appears. Press [SPACE] to continue.

2. **Type the letter for the volume you want to mount.**

   A dialog screen is presented asking you to supply a unit number (valid unit numbers include the number 5 and the numbers 9 to 12).

3. **Type the unit number for the volume.**

   Remember, if you assign a unit location that is already taken by another volume, the volume you mount last is the only one the account will be able to access. Also, if you assign a unit number that has been assigned to a diskette drive, the diskette drive will no longer be usable.

   A warning message will appear if you enter a unit number that has already been assigned to a diskette drive. If this happens, press CTRL - RESET to return to the Constellation III entry screen. You will have to unmount the volume and mount it again using a different unit number.

   A dialog screen is presented asking you if you want the account to have read-only access to the volume. Refer to the section entitled "Fundamental Concepts" in the *Network Manager's Guide* for more information regarding volume access.

4. **If you want the account to have read-only access to the volume, type Y.**

   Read-only access prevents the user from changing information stored in the volume.

   OR

   If you want the account to have read and write access to the volume, type N.

Read-write access allows the user to review, use, and make changes to information in the volume. Only a single user should have read-write access to a volume at one time. If a volume is a public volume, only the owner of the volume is permitted to have read-write access to it. The Mount Manager Program prevents all other accounts from having read-write access to public volumes.

7. **Press any key to return to the Mount Manager menu.**

MOUNTING VOLUMES ON MULTIPLE SERVERS

Servers enable network devices other than computers to communicate with each other. Each of these devices--printers, The Bank, an OmniDrive--has its own server. Sometimes the server is built into the device, as with OmniDrives and The Bank. In any case, each server has a unique name and number that identify it. The current server name and number are displayed at the bottom of the menu screen of the Mount Manager Program.

To mount or unmount Constellation volumes that are stored on a hard disk associated with a server other than the current server, you must first select the server you want in order to make it the current server. For example, if the current server is SERVER0 and you would like to mount a volume on SERVER1, you must first change the current server to SERVER1.

To select a network disk server

1. **From the Mount Manager menu, type S.**

   The screen displays the names of all available servers on the network and asks you which server to select.

2. **Type the letter displayed before the server name of the server that you want to make the current server.**

   The current server changes to the server you specified. You can now mount and unmount volumes from this server. The Mount Manager menu is displayed.

MOUNTING VOLUMES FROM IMAGES

The Select Drive Image function of the Mount Manager Program menu allows you to access Constellation III volumes contained within an image on a Bank Tape and is one of the programs that make it possible to restore damaged volumes using the image.

An image contains all the data on a mass storage system transferred onto a Bank Tape. An image may contain many volumes. Once you have access to an image, you can mount any of its Constellation III volumes to which you have access. A Constellation III volume mounted from an image can be used as if it were located on a disk drive.

The Select Drive Image function does not itself mount any volumes, it only selects them. To mount the volumes selected, use the Mount a Volume function of the Mount Manager.

Before using this option, make sure The Bank contains the tape you want and is on-line and accessible on your network. Also make sure that your account has access to the volumes that are contained in the image.

To mount a volume from an image

1. **Use the Select Server function of the Mount Manager Program to change the current server to the server name for The Bank.**

2. **From the Mount Manager Program menu, press I to select the Select Drive Image function.**

   A message appears showing all the images contained on the Bank Tape.

3. **Select an image by pressing the letter displayed before the image name.**

   The Mount Manager Program menu appears with *YES* next to the Select Drive Image function.

4. **Mount the volumes you want using the Mount a Volume function of the Mount Manager Program.**

The File Spooler Program

PROGRAM OVERVIEW

The File Spooler Program is used to

- print on a network printer when the network station doesn't have a Print Spooler Card in slot 1
- send files to another user via the Transfer Area.

From the Transfer Area files can be automatically despooled to a printer, or another user can retrieve them using the File Despooler Program. To understand how the File Spooler Program works, you need to know about the Transfer Area and pipes. The Transfer Area and pipes are described fully in the *Network Manager's Guide*. A brief description follows.

The Transfer Area is actually a volume named PIPES on the hard disk. Each time you send a file to this volume, either by printing directly or by spooling, a pipe is created to hold the file. Many pipes can exist within the Transfer Area at one time. A pipe exists, i.e., is active, only as long as a file resides in it. Once the file is despooled, the pipe disappears.

When a file is sent to the Transfer Area, it is assigned a job number by which it can be identified.

Each active pipe has a name. The name of the pipe determines where the file goes when it leaves the Transfer Area. All files in pipes with the pipe name assigned to a certain printer go that printer; files bound for another network user must be given a pipe name by the sender that is not already assigned to a printer. The intended receiver of the file uses that pipe name to despool the file.

There are two main steps in printing with the File Spooler Program:

1. Save your work in a text file located in the current Pascal volume.

2. Run the File Spooler Program to send the file to the Transfer Area.

Refer to the documentation that came with your word processing program or text editing program for information regarding how to save your work in an ASCII text file.

TO RUN THE FILE SPOOLER PROGRAM

1. **At the Pascal command line, type X.**

   A prompt appears asking you which file to execute.

2. **Type A2PAS:SPOOL and press RETURN.**

The File Spooler menu appears.

```
SPOOL [4.0f]: Corvus Spool Program
(c) Copyright 1984 Corvus Systems, Inc.

Spooling to slot 7, server SERVER0

Valid options are:

   S - Start spooling
   T - Text file ........... YES
   I - Include file ........ {$I
   N - New page ............ {$P
   P - Spool pipe name ..... PRINTER

   M - File message ........
   E - Strip enhancements .. YES
   Q - Quit

   C - Current pipe status

Select option:
```

TO CHANGE THE TEXT FILE SETTING

This option indicates whether a text or data file is being spooled. The default setting is YES, indicating that files spooled are text files. The Include File, New Page, and Strip Enhancements options are only available for text files.

NO for this setting indicates a data file. Data files do not require formatting and can be spooled as is. The options that are only available for text files disappear from the settings screen when the Text File setting is at NO.

- **From the File Despooler Program menu, type T to change the Line Feeds option from YES to NO, or from NO to YES.**

The File Spooler settings screen appears with your change.

TO INCLUDE FILES

The Include File setting allows you to include the contents of additional files when the original text file is printed.

In the original text file, place the Include File symbol at the location where the additional file should be inserted. Enter the name of the file to be inserted after the Include File symbol. For example, using the default Include File symbol [$I, the following line inserts the file named STATS.TEXT:

[$I STATS.TEXT

When the original file is spooled, the contents of the file STATS.TEXT will be inserted beginning where the line is placed.

Do not place any other text or commands on the same line in the original file as the symbol and the Include File filename. If an Include File symbol is not followed by a filename, an error message displays, and the file continues printing.

TO CHANGE THE NEW-PAGE SYMBOL

The new-page symbol causes the printer to begin printing on a new page. Wherever the printer finds the new-page symbol in the text, the printer skips to the top of the next page and resumes printing. The default new-page symbol is [$P.

The new-page symbol should match the symbol or characters used by your word processing or text editing system to begin printing on a new page. The symbol itself is not printed.

1. **From the File Spooler settings screen, type N.**

   A prompt appears asking for the new-page string.

2. **Enter the new-page string and press** [RETURN].

   Be sure the new-page string exactly matches the symbol or characters used by your application.

   The File Spooler settings screen appears with your change in position.

TO SPECIFY THE PIPE NAME

Choose this option to specify the destination of your file after it leaves the Transfer Area. The default name, shown next to this option, is PRINTER. To print a file on a different network printer or to send it to another network user, enter the appropriate pipe name. The network manager should have a record of the names of printers on the network.

To send a file to another user, create a pipe name not already in use by a printer, enter the name, and tell the name to the user to receive the file.

For example, if you are sending a file to Harry Smith, you might name the pipe HARRY. Because you are using a pipe name not assigned to a printer, your file will remain in the Transfer Area until the person you sent it to retrieves it with the File Despooler Program.

Pipe names may be a maximum of eight characters.

1. **From the File Spooler settings screen, type P to enter a pipe name.**

   A prompt appears asking for the pipe name.

2. **Enter the pipe name and press** RETURN.

   If the pipe is destined for a printer, be sure the pipe name exactly matches the printer name assigned to it by the network manager.

   The File Spooler settings screen appears with your change in position.

TO SPECIFY A FILE MESSAGE

You can include an identifying line on the first page of your printed file. The default message, "Route to Station XX," automatically gives the address of your network station.

1. **From the File Spooler settings screen, type M to specify a message.**

   A prompt appears asking for the message.

2. **Enter the message and press** RETURN.

   The message can be up to 80 characters long.

   The File Spooler settings screen appears with your change.

TO CHANGE THE STRIP ENHANCEMENTS SETTING

The Strip Enhancements option set at YES removes all existing enhancements, such as boldface or underlines, from the text and prints the text file without them.

The Strip Enhancements option set at NO prints the file with text enhancements. The printer you use must be able to print enhanced characters in order for text enhancements to be printed.

- **From the File Despooler Program menu, type E to change the Strip Enhancements option from YES to NO, or from NO to YES.**

  The File Spooler settings screen appears with your change.

TO START SPOOLING

1. **Run the File Spooler Program.**

   The File Spooler Program settings screen appears.

2. **Confirm that the settings shown are correct.**

   Check the pipe name on the File Spooler Program settings screen. If you are spooling to a printer, make sure you have the correct printer name. How to change the various settings is discussed in the preceding sections.

3. **From the File Spooler settings screen, type S to start spooling.**

   A prompt appears asking the name of the file that will be spooled.

4. **Enter the name of the file and press** RETURN.

   Be sure to enter the name precisely: punctuation and spaces must be exact. If the file is in a volume other than the current volume, type the volume name followed by a colon and the filename.

   The screen displays the spooling information along with a prompt requesting the name of another file to spool. Spooling information includes the pipe name, the pipe number, and the number of blocks spooled. This information is important because it allows you to check on the status of the spooling of your file using the Current Pipe Status option.

Enter the name of another file you want to spool and press [RETURN].

OR

Press [ESC] to return to the File Spooler settings screen.

TO CHECK THE CURRENT PIPE STATUS

Choose this option to check on the status of your file in the Transfer Area. You can see at a glance which pipes are waiting in the Transfer Area with the name on the menu screen. The jobs are identified by pipe numbers and the printers are identified by pipe names.

1. **From the File Spooler settings screen, type C to check the current pipe status.**

   The screen displays the status of the pipe named on the menu screen. Status information includes a list of jobs by pipe number, whether the pipe is open or closed, and whether or not each pipe contains data. A pipe that is open may be in the process of being spooled, or it could be stuck in the open position. Refer to Chapter 4 in the *Network Manager's Guide* for instructions on clearing pipes.

2. **To return to the Constellation III entry screen, press [CTRL] - [RESET].**

SPOOLING ON MULTIPLE SERVER NETWORKS

You can spool a file to a Transfer Area that is on a server other than the default server by using the Set Alternate Slot option on the File Spooler menu. The option changes the current server to the server with the Transfer Area you want to use.

The Set Alternate Slot option only appears on the File Spooler settings screen when there is more than one Transfer Area on the network.

To change the current server

1. **From the File Spooler settings screen, type A to select the Alternate Slot option.**

   The program displays names of all servers on the network that have Transfer Areas. Next to each name is a letter that is used to select that server.

2. **Type the letter that appears next to the server you want to select.**

   The current server is changed to the server you specified, and the File Spooler settings screen appears with the new server name displayed near the top of the menu. All files will be spooled to this server until you select a different server or run the File Spooler Program again.

TO QUIT THE FILE SPOOLER PROGRAM

- **From the File Spooler settings screen, type Q to return to Pascal.**

  OR

  Press CTRL - RESET to return to the Constellation III entry screen.

The File Despooler Program

PROGRAM OVERVIEW

The File Despooler Program enables users to

- retrieve files from the Transfer Area
- make a network station function as a printer server so a local printer can be shared as a network printer.

When another user spools a file to you, the pipe containing the file remains in the Transfer Area until you retrieve it. Once the file is despooled, the pipe and its contents disappear from the Transfer Area.

A pipe can be despooled to a file, the computer screen, or a local printer directly connected to the computer running the File Despooler Program. .

TO RUN THE FILE DESPOOLER PROGRAM

1. **At the Pascal command line, type X.**

   A prompt appears asking you which file you want to execute.

2. **Type A2PAS:DESPOOL and press RETURN.**

   The File Despooler settings screen appears.

```
DESPOOL [4.0f]: Corvus Despool Program
(c) Copyright 1984 Corvus Systems, Inc.

Despooling from slot 7, server SERVER0
Valid options are:

   S - Start despooling
   D - Despool device ..... Printer
   E - Expand tabs ........ 8
   M - Max lines/page ..... 58
   P - Despool pipe name ... PRINTER

   L - Insert line feeds ... YES
   H - Print header page ... YES
   T - Print trailer page .. YES
   Q - Quit

   C - Current pipe status
Select option:
```

TO SELECT THE DESPOOL DEVICE

Use this option to specify the destination of the despooled file. The File Despooler Program can output to Console (the computer screen), File (a file), or Printer (a local printer, one attached directly to your computer).

1. **From the File Despooler settings screen, type D to select the Despool Device option.**

   A prompt appears requesting you to select the despool device.

2. **Type the letter that represents the despool device you want.**

   The File Despooler settings screen is displayed, with the despool device you chose shown.

CHANGING THE PRINTING OPTIONS

If you are despooling a file to a local printer, you should check the default settings for the four printing options.

1. The default setting for Expand Tabs is 08, meaning that for each tab in the file being spooled, the File Despooler Program will insert 8 character spaces.

2. The default setting for Maximum Lines per Page is 58.

3. The default for Line Feeds is YES, meaning that the File Despooler Program will insert a line feed after each carriage return.

4. The default for Header Page is YES, meaning that the first page that prints will be a header page containing the name of the file and the destination network station. Alternately, you could choose to print a trailer page.

To Specify Tab Settings

1. **From the File Despooler settings screen, type E to select the Expand Tabs option.**

   A prompt appears requesting you to indicate the amount of space for each tab.

2. **Enter the number of spaces you want for each tab and press** RETURN.

   The File Despooler settings screen is displayed showing the tab spaces you entered.

To Set Line Feeds

If you are despooling a file to a printer directly connected to your computer, you can set this option to add a line feed after each carriage return in the file. Set line feeds to YES if lines of text are printing on top of one another. Refer to the user's manual for your printer to see if you must insert line feeds.

- **From the File Despooler Program menu, type L to change the Line Feeds option from YES to NO, or from NO to YES.**

  The File Despooler Program menu continues to be displayed with the line feeds option changed.

To Include a Header Page

You can choose to print a header page that includes the name of the file and the message specified in the File Spooler Program. The default message, "Route to Station XX," automatically gives the address of your network station.

- **From the File Despooler Program menu, type H to select the Header Page option and change the option from YES to NO, or from NO to YES.**

  The File Despooler settings screen continues to be displayed with the header page option changed.

TO SPECIFY THE PIPE NAME

Use this option to specify the pipe name you want to despool.

1. **From the File Despooler settings screen, type P to select the Pipe Name option.**

   A prompt appears requesting you to enter the pipe name.

2. **Type the pipe name used for the files you want to despool.**

   The File Despooler settings screen is displayed with the pipe name you typed shown.

TO START DESPOOLING

After you have confirmed that the settings shown on the menu screen are correct, choose this option to despool a file from the Transfer Area. How to change the various settings is discussed in the preceding sections.

1. **When all settings are okay, type S from the File Despooler settings screen to start despooling.**

   If you have chosen to output to a file, a prompt appears requesting the name of the file.

2. **Enter the name of the file and press** RETURN.

Be sure to enter the name precisely: punctuation and spaces must be exact. If the destination file is in a Pascal volume other than the current one, enter the name of the other volume followed by a colon and the filename. For example, HIST:PRES indicates the volume named HIST and the file named PRES. If you do not enter a volume name, the file will be despooled to the current volume.

If you are despooling a program, not a text file, the screen displays a prompt requesting you to select the file type.

3. **Select the file type, if requested.**

   If you don't know the file type, you will have to ask the person who spooled the file.

   The screen displays a message indicating the pipe name being despooled.

   If there is more than one pipe with the same name, the File Despooler Program repeats the prompts for each pipe remaining to be despooled. If the pipes are being despooled to files, a prompt requests the name of the next destination file. The despool message continues to display until you return to the File Despooler settings screen.

4. **To return to the File Despooler settings screen, press** ESC.

TO CHECK THE CURRENT PIPE STATUS

Choose this option to check on the status of your file in the Transfer Area. You can see at a glance how many pipes are waiting.

1. **From the File Despooler settings screen, type C to select the Current Pipe Status option.**

   The program lists by number all the pipes in the Transfer Area with the same pipe name that you specified. The current pipe status screen shows the open/closed status of each pipe and whether or not the pipe contains data.

```
DESPOOL [4.0f]: Corvus Despool Program
(c) Copyright 1984 Corvus Systems, Inc.

Despooling from slot 7, server SERVER0

 Server: SERVER0

     1.  PRINTER1  Closed  ----   Contains data    13 blocks
     2.  PRINTER1  Closed  ----   Contains data    15 blocks
     3.  PRINTER1  Closed  ----   Contains data     6 blocks
     4.  PRINTER1  Closed  ----   Contains data    25 blocks
     5.  PRINTER1  Closed  ----   Contains data     4 blocks
     6.  PRINTER1  Closed  ----   Contains data    43 blocks

 Press <space> to continue
```

Pipes are open during spooling and despooling; otherwise they are closed. Only pipes that contain data and are closed (indicating that spooling is complete) can be despooled.

2. **Press any key to continue.**

   The File Despooler settings screen is displayed.

DESPOOLING ON MULTIPLE SERVER NETWORKS

You can despool a file from a Transfer Area that is on a server other than the default server by using the Alternate Slot option on the File Despooler settings screen. The default server is the server with a Transfer Area and the lowest network address. The server that is set to address 0 and that contains a pipes area will always be the default server. When you select a different server using this option, you are actually changing the current server. Files will be despooled only from this server until you select a different server or run the File Despooler Program again.

To change the current server

1. **From the File Despooler settings screen, type A to select the Alternate Slot option.**

   The program displays names of all servers on the network that have Transfer Areas. Next to each name is a letter that is used to select that server.

2. **Type the letter that appears next to the server you want to select.**

   The current server is changed to the server you specified, and the File Despooler settings screen appears with the new server name displayed near the top of the menu.

TO MAKE A NETWORK STATION INTO A PRINTER SERVER

1. **Change the default options on the File Despooler settings screen.**

   Read the sections on selecting output device, changing the printer options, and specifying the pipe name, above. Output device should be *Printer*. You may have to experiment with the the printer options to get the results you want. The pipe name is whatever pipe name you want people to use for files they send to your printer.

2. **Choose Start Despooling on the File Despooler Program settings screen.**

   If a file hasn't yet been spooled to this destination, the File Despooler Program will wait for one. The File Despooler Program will continue despooling files until you quit the File Despooler Program or turn off the network station.

TO QUIT THE FILE DESPOOLER PROGRAM

- **From the File Despooler settings screen, type Q to return to Pascal.**

  OR

  Press CTRL - RESET to return to the Constellation III entry screen.

Chapter 5

The Backup To Floppy Program

Contents

Introduction

The Backup To Floppy Program can be used to back up OmniDrive volumes for any operating system onto diskettes. After you use the Backup function to create backup diskettes with this program, you can then use the Restore function to copy your backup diskettes onto the OmniDrive to restore volumes in which information has been lost or damaged. Other functions of the program allow you to get information about the backup diskettes, verify that the backup diskette can be read, and require a password before a volume can be restored from the diskette.

This program requires an Apple IIe computer with 128 kilobytes of memory and an extended 80-column card installed. The program cannot be used with an Apple II that has less memory.

Before you begin to back up volumes, make sure you have enough diskettes on hand to hold the backups. The number of diskettes you need depends on the size of the volumes you are backing up and on whether your floppy drive uses 140k or 800k disks.

The Network Manager Program expresses the size of Constellation volumes in diskette equivalents when creating DOS 3.3 volumes. The Backup To Floppy Program, however, expresses the size of volumes in blocks. To work with the Backup To Floppy program, you need to convert diskette equivalents to blocks.

One 140k diskette holds 280 blocks, but it can back up only 277 blocks of a volume, at most. This is because three blocks of each diskette used in a backup must be allowed to hold information that maintains volume structure and keeps the backup organized. Similarly, an 800k diskette holds 1600 blocks, but at most 1597 blocks can be used for the backup: three blocks of each diskette are required to keep track of how the stored information fits together.

To find how many diskettes you need to back up a given volume, divide the size of the volume in blocks by the available space on one of your diskettes --either 277 or 1597 blocks. This figure makes allowance for the three blocks of head room each diskette requires. Round any fractions up. The answer is the number of diskettes you need.

For instance, a volume of 1024 blocks requires four 140k diskettes or one 800k diskette. A volume of 5000 blocks requires eighteen 140k diskettes or four 800k diskettes.

The Backup To Floppy Program has an option to format diskettes. If all the diskettes you have collected are not formatted already, use the program's Format Floppy option on any unformatted diskettes before performing the backup. All the diskettes must be formatted before they can be used to receive a backup.

When you do perform the backup, be sure to label each diskette carefully with the name of the volume it backs up and with its number in the sequence if the backup required more than one diskette. When you restore a volume, you must use the diskettes in the same order you used them in to do the backup.

Program Instructions

TO RUN THE BACKUP TO FLOPPY PROGRAM

1. **With your computer off, place the floppy card in slot 4. Turn on the computer and log on to the network by typing A2BACKUP and pressing** RETURN.

   A prompt appears asking you to enter a user name and password. Enter the name of an account that has access to the volumes you want to back up.

2. **Type the account name and press** RETURN.

3. **Type the account password and press RETURN, or if there is no password just press RETURN.**

   The Backup To Floppy menu appears.

```
CORVUS BACKUP-TO-FLOPPY UTILITY [1.9a]                    Server:
(c) Copyright 1983..1987 Corvus Systems, Inc.             Drive:
-------------------------------------------------------------------------

    B  -  Backup a Volume

    R  -  Restore a Volume

    I  -  Identify a Diskette

    L  -  List Volumes

    S  -  Set Options

    C  -  Choose Server

    F  -  Format Floppy Diskette

    E  -  Exit

-------------------------------------------------------------------------
```

TO CHOOSE A SERVER

If the volume you want to back up is on a different drive, this option lets you specify the server/drive containing the volume.

1. **From the Backup To Floppy menu, press C to select the Choose Server function.**

   A list of network servers appears.

2. **Type the name of the server you want and press RETURN.**

   If the server has a password, you are prompted to enter that as well.

TO FORMAT A FLOPPY

Use this function to format any unformatted diskettes before using the diskettes to receive a backup.

1. **From the Backup To Floppy menu, press F to select Format Floppy Diskette.**

2. **Insert the diskette to be formatted in slot 4, drive 1, and press** SPACE.

   The program announces when it is done formatting the diskette and returns you to the Backup To Floppy menu.

TO IDENTIFY A DISKETTE

Use this function before doing a restoration to confirm that backup diskettes contain the volumes you want. The function displays volume name and date, account name and password, volume size, total number of diskettes used to back up the volume, and the number of the current diskette.

This function is especially useful in identifying diskettes that have been mislabeled. We suggest that you check the contents of all backup diskettes before using them to restore a volume.

1. **From the Backup To Floppy menu, press I to select the Identify A Diskette function.**

   A prompt appears asking you to insert a diskette into the drive.

2. **Insert the first diskette into drive 1 and press** [SPACE].

   The Identify A Diskette screen appears.

```
CORVUS BACKUP-TO-FLOPPY UTILITY [1.9a]                          Server:
Identify a Diskette                                             Drive:
-------------------------------------------------------------------------------

          Volume Backed Up: A2NET
            Date of Backup:
                 User Name: A2MGR (protected)
   Size of Volume (blocks): 1124
 Total number of diskettes: 5
   Number of this Diskette: 1

-------------------------------------------------------------------------------

Press <space> to continue
```

3. **When you are finished viewing the screen, press** [SPACE] **to return to the Backup To Floppy menu.**

TO LIST VOLUMES

This function lists all the volumes accessible to the account currently using the Backup To Floppy Program. You might want to check this list before attempting to back up or restore a volume in order to confirm the volume name and to make sure the volume you want to back up or restore is available to you. You can back up or restore a volume only if it is on the list; you can restore a volume only if the account you are using has write access to it.

1. **From the Backup To Floppy menu, press L to select the List Volumes function.**

   The List Volumes screen appears.

```
CORVUS BACKUP-TO-FLOPPY UTILITY [1.9a]                    Server:
List Volumes                                              Drive:
-------------------------------------------------------------------------------

  volume          length       unit       write access

  A2BOOT             300         -
  VOLUME1           1124         5             YES
  VOLUME2           1124        11             YES
  VOLUME4           1124         -             YES
  VOLUME5           1124         -             YES
  A2PAS             1124         4             YES
-------------------------------------------------------------------------------

Press <space> to continue
```

2. **When you are finished viewing the screen, press SPACE to return to the Backup To Floppy menu.**

TO USE SET OPTIONS

There are two options you can set using this function:

- verification
- password protection

When the Verification option is Y, the program checks the data as it is being written to make sure it can be read. Although verification helps ensure accuracy, it doubles the amount of time needed for backup or restoration. The setting for this option is usually N.

When you set Password Protection to Y, the program writes a password on the backup diskette. This password must be entered before the volume can be restored from the diskette. The setting for this option is usually Y for yes. Be sure to record any passwords you assign.

To set the options

1. **From the Backup To Floppy menu, press S to select the Set Options function.**

   The Set Options screen appears.

```
CORVUS BACKUP-TO-FLOPPY UTILITY [1.9a]                    Server:
Set Options                                               Drive:
-------------------------------------------------------------------------------

       Verification? [Y/N]: N
Password Protection? [Y/N]: Y

Ok to set option(s)? [Y/N]: Y
```

2. **To change an option, press Y or N as required, then press** RETURN.

   After values for both options are entered, a prompt appears asking you to confirm that the option settings are correct.

3. **To set the options, press** RETURN.

   A prompt appears indicating that the options have been set.

4. **To return to the Backup To Floppy menu, press** SPACE.

TO BACK UP A VOLUME

1. **Prepare to back up the volume by using the Set Options function to check the Verification and Protection Options and by using the List Volumes function to check the volume name.**

   How to use these functions is described above.

2. **From the Backup To Floppy menu, press B to select the Backup function.**

   A prompt appears asking you to supply the volume name and date.

3. **Type the volume name and press** RETURN**; then type the date and press** RETURN.

   Type the volume name exactly as it appears in the volume record, and type the date as numbers with hyphens after the day and month. For example, type 1-04-87 for January 4, 1987.

   A message appears asking you to insert a diskette.

4. **Insert the diskette into the drive and press** SPACE.

   Label all diskettes with the appropriate volume name and a number representing the sequence in which you used them to make the backup. For example, a diskette labeled *Administration - 3* might represent the third diskette used to back up a volume named *Administration.*

A message appears telling you how many diskettes are required to make the backup. Use this information to prepare the labels for all the diskettes you'll need. As each block of data is copied, a dot appears on the screen. When the disktte is full, a prompt appears asking you to insert the next diskette.

Repeat Step 4 until a message appears saying that the volume backup is complete.

5. **When the backup is complete, remove the diskette from the drive and press** SPACE.

   The screen displays the Backup To Floppy menu.

TO RESTORE A VOLUME

1. **From Set Options, confirm that the Verification option is set the way you want, use Identify A Diskette to make sure you are restoring from the right diskettes, and use List Volumes to check that the volume you want to restore is listed as available to you.**

   How to use these options is described above.

   Remember, you need read-write access to any volume you want to restore.

2. **From the Backup To Floppy menu, press R to select the Restore function.**

   A prompt appears asking you to supply the volume name and date for the volume to be restored and for the floppy diskette.

3. **Type the volume name for the volume to be restored and press** RETURN; **then enter the name of the floppy (e.g.,** *Administration - 3***) and press** RETURN.

   If the backup diskettes are protected, the current account name and password must be identical to the name and password assigned during the backup.

   If all security checks are passed, a message appears asking you to insert a diskette.

4. **Insert the diskette into the drive and press** SPACE.

   As each block of data is copied, a dot appears on the screen. When the diskette is full, a prompt appears asking you to insert the next diskette.

   Repeat Step 4 until the message appears saying that the volume restoration is complete.

5. **When the restoration is complete, remove the diskette from the drive and press** SPACE.

   The screen displays the Backup To Floppy menu.

TO QUIT THE BACKUP TO FLOPPY PROGRAM

- **From the Backup To Floppy menu, press E to exit.**

Network Diagnostics Guide

for Apple II

Contents

About This Guide

This guide explains the mass storage diagnostic program for Omnidrives.

The mass storage diagnostic program is used to detect and correct certain types of hardware and software problems that may develop in the Omnidrive.

CHAPTER OVERVIEW

Chapter 1 describes how to determine what a problem with the Omnidrive may be. This chapter also explains entering the diagnostics program.

Chapter 2 explains checking and updating the firmware.

Chapter 3 outlines how to exercise the drive, find media defects on the drive, and prepare the drive for transportation.

Chapter 4 details how to change drive parameters, including the interleave factor, spare tracks, and how to use the read after write option.

Chapter 5 discusses formatting the drive.

Chapter 6 highlights the application of advanced options in the diagnostics program.

Appendix A is a chart of drive error codes.

Appendix B is a table to be used by the network manager as a record of all diagnostic tests run on Omnidrives.

Conventions

Throughout this guide, *type* means to enter characters from the computer keyboard. Type all words, symbols, spaces and punctuation to the right of *type* exactly as shown. Do not add or leave out punctuation marks at the end of the statement.

Examples:

Type CATALOG,S6,D1,S2

Type C

Do not type the spaces between *type* and the first character to its right.

Throughout this guide, *press* means to press the keytop symbol to which it refers. Do not type out each letter of the word in the keytop symbol.

Examples:

Press SPACE

Press RETURN

When the command *type* or *press* appears in boldface in a sentence or paragraph, enter the information indicated.

Example:

Type your user name and password **press** RETURN

The variables **x.xx** in the screen displays stand for software revision numbers.

The variable **NN** in the log-on displays stands for the number of the server that is providing the boot information.

The terms **boot** and **reboot** refer to loading and reloading the operating system into a computer.

The term **server** refers to the combination of a disk server and a disk drive. The term server also refers to an Omnidrive. Disk drives need an external disk server to communicate on the network while the Omnidrive has a built-in server.

The term **mass storage system** refers to an OmniDrive, a disk drive with a disk server, or a Corvus Bank.

The term **Omninet** refers to a Corvus network system. **Network** refers to one or more computers that use Constellation II software and are attached by Omninet to one or more Omnidrives.

The term **default** refers to the value or option that is assigned by Constellation III when another has not been specified by the user.

Before You Begin

Back up the Omnidrive on a regular basis to avoid loss of valuable data. It is recommended that at least one backup be made prior to using the diagnostic program.

The diagnostic program should be administered only by the person responsible for maintaining the Omnidrive and the network. To prevent data loss, all other users should avoid working on the network while the diagnostic program is in operation.

To format the drive, update firmware, or to spare tracks, a backup is required to preserve the data on the drive. For these programs, you *must* run the diagnostic program from the diagnostic diskette A2C3.1 instead of from Constellation III on the Omnidrive. It is recommended that you run all diagnostic programs from the A2C3.1 diskette.

When possible use the diagnostic program with the drive attached to a computer by convenience connector.

Contact an authorized Corvus Service Center for problems beyond the scope of this guide.

Chapter 1

Overview of Drive Diagnostics

Contents

To Orient You

The diagnostic program is a tool, or several tools, really, that you can use to fix certain problems on a hard disk drive. It also offers you some ways to customize your drive for special situations.

This opening section describes the diagnostic functions discussed in this guide, and the remaining sections of the chapter explain how to start using the program.

Drive Indicator Lights

Notice that the drive has three lights, labeled Fault, Busy, and Ready on the front panel. These indicator lights can provide useful clues to the state of the drive.

The drive takes a minute or so after it's turned on to come ready. During this time the Fault and Ready lights will flash. Then the Ready light will come on by itself, signifying that the drive is ready to respond to a command.

If the Ready light *doesn't* come on after a minute, reset the drive by turning it off; wait a minute, and then turn it on again.

If the drive has been given a command and is in the process of responding to it, the Busy light will come on and flicker with the Ready light as data is transferred to and from the drive.