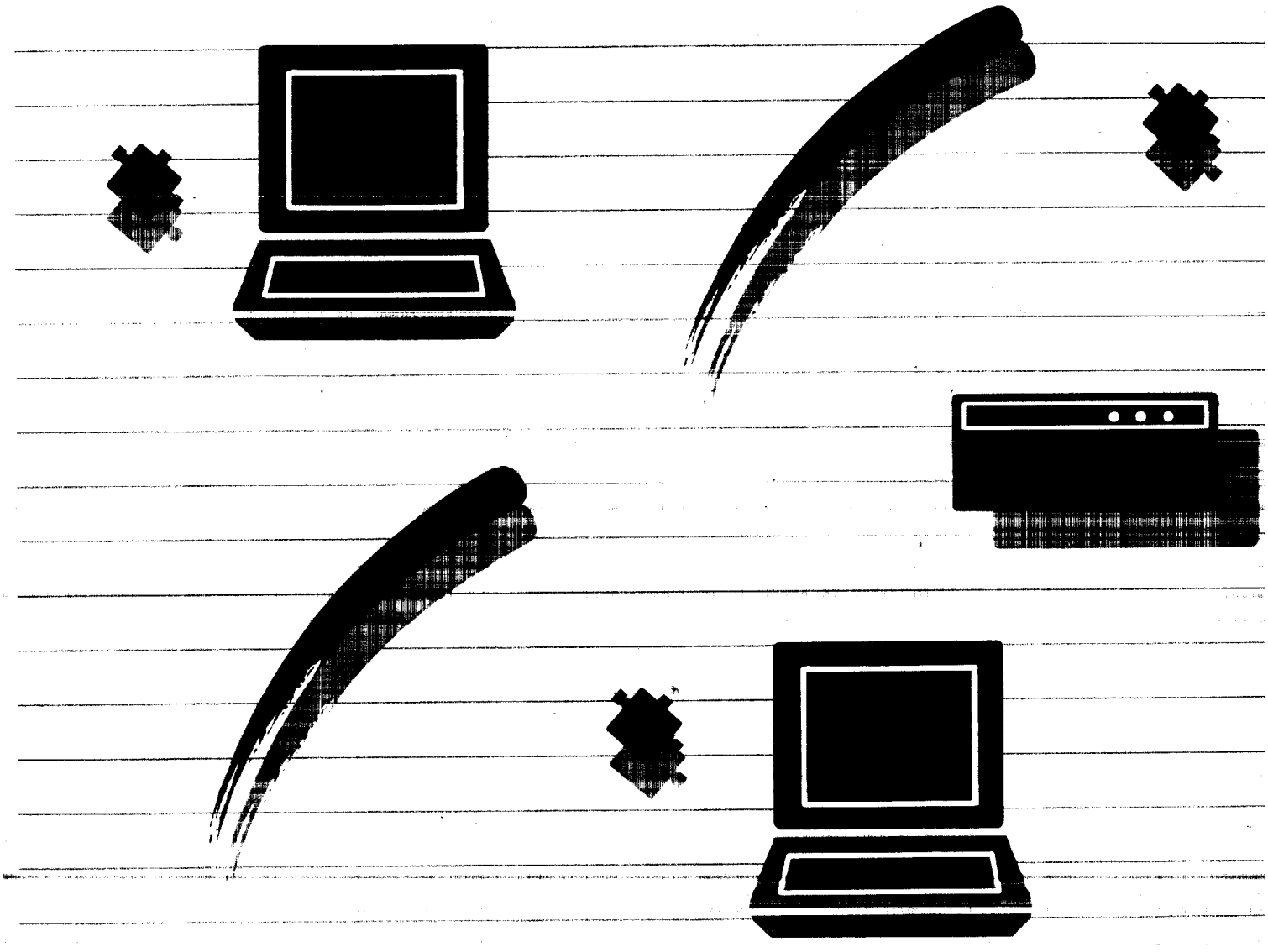
Constellation III™

Apple II Series



CORVUS

FCC Warning

This equipment has been tested with a Class A computing device and has been found to comply with Part 15 of FCC rules. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference.

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Constellation III
for the Apple II

Introduction

Contents

Hello!

Welcome to Constellation III for the Apple II!

Constellation III is the newest refinement of Corvus's versatile Constellation management system for the Corvus Omninet local area network. Like its predecessor Constellation II, Constellation III for the Apple II lets you use any of the Apple II family of computers on an Omninet network with a variety of other types of computers. But now the Constellation system is faster, more powerful, and easier to use than ever.

The guides in this set explain how to install Constellation III for the Apple II on your network and how to use the system to manage the network from an Apple II. The guides are addressed both to people who are already using an Omninet network and are upgrading from an earlier version of Constellation software, and to people who are setting up an Omninet network for the first time. The guides cover every aspect of upgrading, installation, and network management, from setting up hard disk drives and Apple II computers for use on the network to troubleshooting problems.

The guides are written primarily for the *network manager*. This is the person--the teacher, presumably--who will be responsible for the principal tasks of maintaining the network, namely, creating and maintaining user accounts for students, allocating work space for these user accounts on the hard disk drives, and generally keeping track of things.

A special user account is created automatically for the network manager when Constellation III is installed on the network. This account is protected by a password and gives the manager access to programs that enable him or her to manage the network. Students, with ordinary user accounts, have access only to their own work spaces and the programs stored there.

Constellation III lets you install three Apple operating systems--ProDOS, DOS 3.3, and Apple Pascal--and set up user accounts in each. You can also manage network user accounts for CP/M, Apple Macintosh, and MS-DOS with Constellation III for the Apple II if these operating systems have already been put on the network with Constellation II.

To use these guides you need to have the network cabling already in place and at least one Corvus Omnidrive. In addition, to install Constellation III you need one Apple IIe or IIGS computer with two floppy drives and 128K of memory. Once Constellation III is installed, the network can be used by ordinary Apple II's and II+'s.

The Guides in This Set

This set contains four guides besides the one you're reading. The four are described below in the order in which you should refer to them.

- **Setup Guide**

  This is the guide that explains how to install Constellation III on your network. It describes both how to put Constellation III on a new network and how to upgrade to Constellation III from earlier Constellation software. It also tells how to physically set up an Omnidrive or Apple II computer that you want to add to the network.

  Read this guide first, and refer to it again if ever you want to add another Omnidrive or Apple II.

- **Network Manager's Guide**

  This guide explains how to use the Constellation III Network Management Program, the main tool of the network manager for running the network. The guide describes how to log on to the network as the network manager, how to create areas of work space called *volumes* on an Omnidrive, how to set up user accounts for students, how to give these user accounts access to the volumes you've created for them, and so on. It's the network manager's handbook for overseeing daily operations on the network.

The network manager should turn next to this guide after setting up the network according to the instructions in the *Setup Guide*.

■ Tools for Network Users

The *Tools* guide describes how to use a variety of utility programs that do such things as let you see what files are on a diskette or in a particular volume on the Omnidrive; copy files from diskette to volume, from volume to diskette, and so forth; mount and unmount volumes (an operation that selects the volumes a user can work in); and choose among various options for printing.

These utility programs are installed as part of the procedure covered in the *Setup Guide*. There are three comparable sets of these programs, one for each of the operating systems fully supported by Constellation III: ProDOS, DOS 3.3, and Pascal. You use the set appropriate to the operating system you want to work with. The guide also contains a chapter on the Backup To Floppy Program, a program for making backup copies of volumes and saving the copies to diskette. The backup program may be used with all operating systems.

It's likely that you will want to let students use some of these utility programs, in which case the students may need to use the *Tools* guide. The *Tools* guide is the only guide in the set that students may have occasion to use.

■ Diagnostics Guide

If you have trouble with an Omnidrive, you may be able to track down the problem with the *Diagnostics Guide*. The guide contains information on interpreting the three drive indicator lights on the front panel of the drive, checking and updating firmware, checking for bad tracks on the drive, etc. It also explains how to park the drive heads to protect them when transporting the drive.

When you're done with the other guides, glance through this guide so that you know what's in it in the event that you need to refer to it later.

Observing Copyrights

A major benefit of linking computers on an Omninet network is that users of the various computers can then share resources over the network. Instead of everyone needing his own hard disk drive or printer, people on a network can share one. They can share software the same way. One copy of a program can be put in a public volume to which everyone has access, and everyone on the network can use that one copy.

In the case of sharing software, however, you have to be careful that you do not violate the licensing rules that govern use of the software. Commonly, these rules do not, for instance, permit copies of single-user software to be made for use by several people simultaneously. Although the 1976 U.S. Copyright Act and the 1980 Amendments to it are not entirely clear on how software may be used in education, software licenses applying to particular programs tend to be quite specific.

On the question of putting single-user software on a local area network, Corvus supports the position of the International Council of Computers in Education (ICCE). The ICCE has come out with a set of guidelines for educators ("Suggested Software Use Guidelines," August 1, 1986). These guidelines state, first, that "It is imperative that educators first read the software's copyright page containing licensing restrictions." The guidelines go on to say this:

> It is suggested that before placing a software program on a local area network or disk-sharing system for use by multiple users at the same time, you obtain a written license agreement from the copyright holder giving you permission to do so. The fact that you are able to physically load the program on the network is . . . irrelevant. You should obtain a license permitting you to do so before you act.

A sample of the sort of license Corvus recommends that you obtain from a program's publisher is provided in the booklet *Copyright: Practical Guide to Licenses*, published by the International Communications Industries Association (ICIA). You may purchase this booklet by writing the ICIA at 3150 Spring Street, Fairfax, VA 22031-2399, or by calling 703/273-7200.

Let's Go

Turn now to the *Setup Guide* to install Constellation III for the Apple II on your network.

Constellation III
for the Apple II

Setup Guide

Contents

About This Guide

This guide explains how to set up network drives and Apple II computers for the Constellation III network management system.

The guide contains two chapters and three appendixes. Chapter 1 covers setting up hardware to put an Omnidrive or Apple II on the network, and Chapter 2 covers installing the Constellation III software, creating user accounts for the network manager, and putting system volumes on the drive for operating systems ProDOS, DOS 3.3, and Pascal.

Appendix A supplements Chapter 2. It tells how to add to the network a drive that contains information you want to save, as opposed to a new drive containing none or a drive containing information you don't mind erasing.

Appendixes B and C contain information supplementary to Chapter 2 and a list of error messages, respectively.

You may not need to read every part of this guide. If you're only adding an Apple II to your network, you don't need to read in Chapter 1 about setting up the hardware for an Omnidrive. If you're not adding any devices at all to your network but are only upgrading earlier Constellation software, you may skip Chapter 1 entirely and begin with Chapter 2. And in Chapter 2, those who are upgrading are steered to different sections from those who are setting up a new network.

To set up your network and install Constellation III according to the instructions in this guide, you need at least one Omnidrive hard disk drive and an Apple IIe or IIGS computer with two floppy drives. You need an Apple IIe or IIGS only because the installation requires 128K of memory. Once Constellation III is installed, the network can be used by ordinary Apple II's and II+'s as well as by IIe's and IIGS's.

The guide assumes that the cabling and so forth for the network is already in place.

Chapter 1

Setting Up the Hardware

Contents

Introduction

This chapter tells you how to set up a new Omnidrive or Apple II on the network and how to install a Print Spooler Card in an Apple II. The Print Spooler Card is an optional component that enables an Apple II to print directly to a network printer from inside an application.

Only hardware setup is covered in this chapter. Software is dealt with in Chapters 2 and 3. If you are merely upgrading an existing network to Constellation III from Constellation II and are not starting a new network or adding any new Omnidrives or Apple II's, you do not need to read this chapter. Go to Chapter 2.

If you do need to read sections of this chapter, read only the sections that apply to you:

- If you're setting up an Omnidrive either to be part of a new network or to add to a network that's already functioning, read the section "Setting Up an Omnidrive."
- If you're setting up an Apple II, read "Setting Up an Apple II."
- If you're installing a Print Spooler Card in an Apple II, read "Installing a Spooler Card."

Sometimes in this chapter you will see *OCS I* or *OCS II* in parentheses after mention of tap cables or drop cables. Tap cables or drop cables are used to attach an Omnidrive or computer to the network. The labels stand for *Omninet Cabling System I* and *II*, respectively. The type of cable you use depends on which Omninet cabling system your network uses.

Use only the instructions in this guide to set up your hardware and install the software. Ignore any installation instructions packaged with the Omnidrive that are not specifically addressed to Apple II users.

Setting Up an Omnidrive

You need this hardware to set up an Omnidrive:

- Power cord
- Tap cable (OCS I) or drop cable (OCS II)

Be careful with the Omnidrive when you're unpacking it. Don't bang it or drop it. Set it up on its base on a flat surface and make sure the air vent on the back panel isn't blocked.

Set up the Omnidrive and connect it to the Apple IIe as follows:

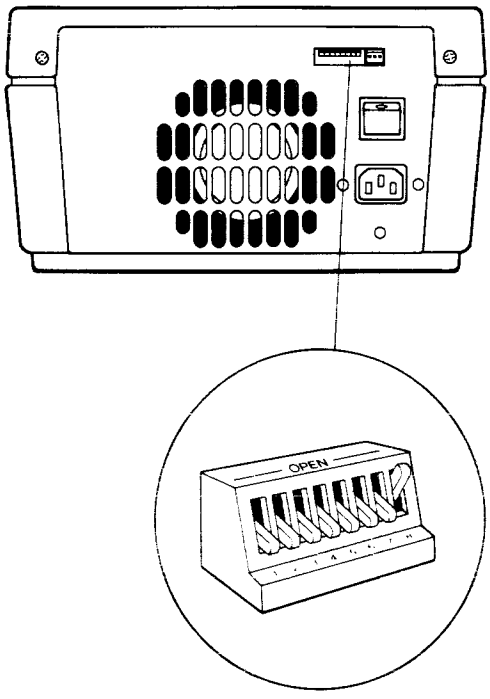
1. **Unpack the Omnidrive.**

   Save the packing materials so they can be reused when transporting the drive.

2. **Put the Omnidrive on a flat surface.**

3. Set the Omnidrive switches.

Find the switches marked *ADDRESS* on the back of your Omnidrive.



Use a ballpoint pen to set the switches for one of the addresses listed in the table *Network Device Addresses* below. Set them for address 0 if this is the first or only Omnidrive on your network. One Omnidrive should always be set to address 0.

Whatever address you pick should be unique, assigned only to this Omnidrive. In other words, if you are adding the Omnidrive to a network that already has other devices with network addresses of their own, be careful not to give the Omnidrive an address already in use. No two devices on the network are permitted to have the same address.

Switch 7 is not used for setting the address. For all Omnidrives, make sure switch 7 is pushed on, i.e., toward the numbers.

Switch 8 is the bias switch. Only one Omnidrive on a network should have the bias switch on. If this is your first Omnidrive, set switch 8 toward the numbers. If you are adding an Omnidrive to a network that already has Omnidrives, push switch 8 away from the numbers.

Address	Switch Setting						Address	Switch Setting					
	1	2	3	4	5	6		1	2	3	4	5	6
0	■	■	■	■	■	■	32	■	■	■	■	■	□
1	□	■	■	■	■	■	33	□	■	■	■	■	□
2	■	□	■	■	■	■	34	■	□	■	■	■	□
3	□	□	■	■	■	■	35	□	□	■	■	■	□
4	■	■	□	■	■	■	36	■	■	□	■	■	□
5	□	■	□	■	■	■	37	□	■	□	■	■	□
6	■	□	□	■	■	■	38	■	□	□	■	■	□
7	□	□	□	■	■	■	39	□	□	□	■	■	□
8	■	■	■	□	■	■	40	■	■	■	□	■	□
9	□	■	■	□	■	■	41	□	■	■	□	■	□
10	■	□	■	□	■	■	42	■	□	■	□	■	□
11	□	□	■	□	■	■	43	□	□	■	□	■	□
12	■	■	□	□	■	■	44	■	■	□	□	■	□
13	□	■	□	□	■	■	45	□	■	□	□	■	□
14	■	□	□	□	■	■	46	■	□	□	□	■	□
15	□	□	□	□	■	■	47	□	□	□	□	■	□
16	■	■	■	■	□	■	48	■	■	■	■	□	□
17	□	■	■	■	□	■	49	□	■	■	■	□	□
18	■	□	■	■	□	■	50	■	□	■	■	□	□
19	□	□	■	■	□	■	51	□	□	■	■	□	□
20	■	■	□	■	□	■	52	■	■	□	■	□	□
21	□	■	□	■	□	■	53	□	■	□	■	□	□
22	■	□	□	■	□	■	54	■	□	□	■	□	□
23	□	□	□	■	□	■	55	□	□	□	■	□	□
24	■	■	■	□	□	■	56	■	■	■	□	□	□
25	□	■	■	□	□	■	57	□	■	■	□	□	□
26	■	□	■	□	□	■	58	■	□	■	□	□	□
27	□	□	■	□	□	■	59	□	□	■	□	□	□
28	■	■	□	□	□	■	60	■	■	□	□	□	□
29	□	■	□	□	□	■	61	□	■	□	□	□	□
30	■	□	□	□	□	■	62	■	□	□	□	□	□
31	□	□	□	□	□	■	63	□	□	□	□	□	□
Address	1	2	3	4	5	6	Address	1	2	3	4	5	6
	Switch Setting							Switch Setting					

■ ON
□ OFF

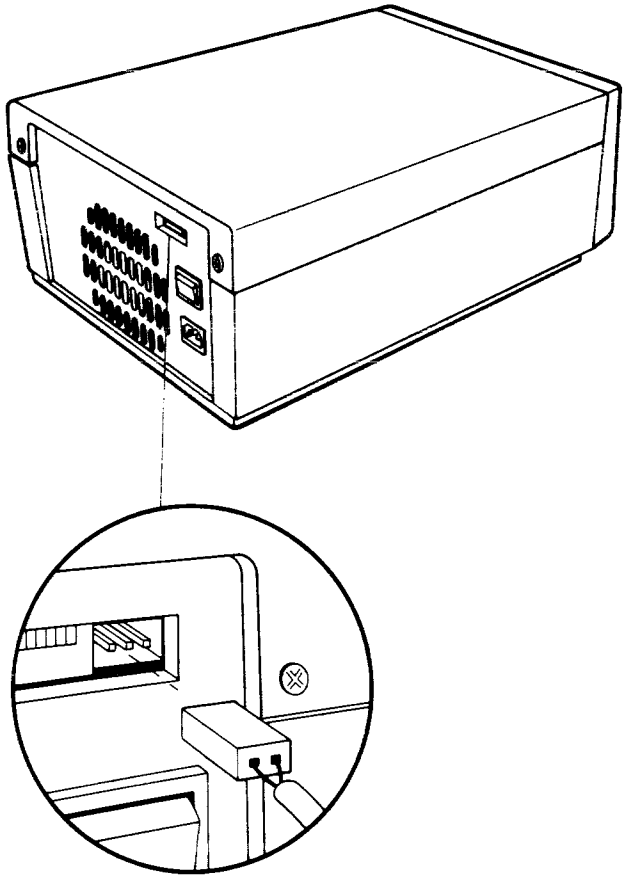
Addresses and Switch Settings

It's a good idea to write the Omnidrive's address on a piece of paper and to tape this paper to the outside of your drive. You will need the address when you initialize the drive (see Chapter 2, page 35).

For now, record it here: _____

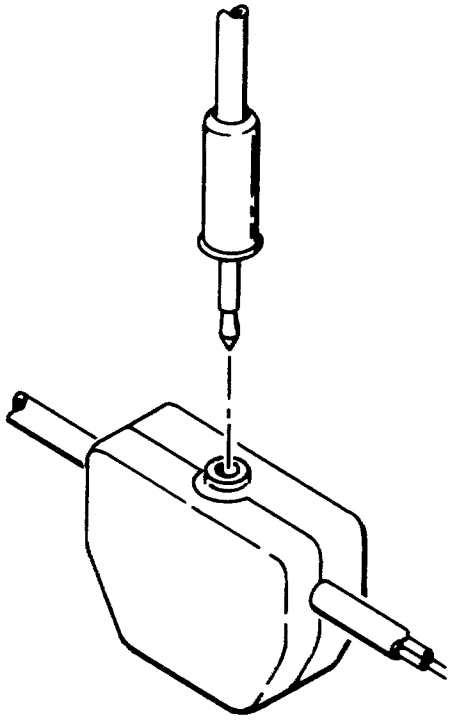
4. Attach the tap cable (OCS I) or drop cable (OCS II) to the Omnidrive.

Plug the three-slot connector at the end of the cable into the three-pronged connector marked *TAP* on the back of the Omnidrive.

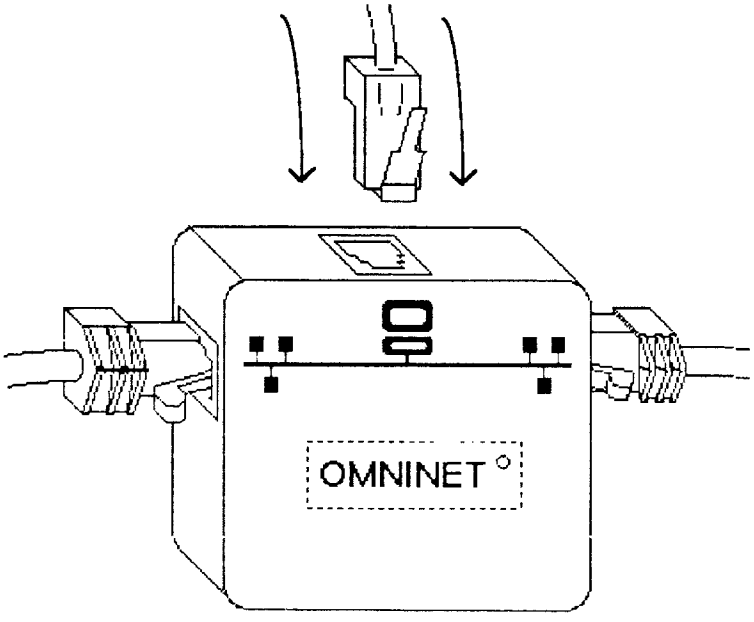


5. Connect the other end of the cable to the network.

OCS I: Plug the other end of the tap cable into a tap box.



OCS II: Plug the other end of the drop cable into a trunk adapter.



6. **Plug the power cord into the Omnidrive and into a power outlet.**

7. **Turn on the Omnidrive.**

   The Omnidrive power switch is on the back panel above the power cord connector.

   Once the drive is turned on, the three lights on the front panel light up. After about twenty seconds, only the READY light should remain on, indicating the drive is ready for use.

   If after one minute the READY light is not the only light on, reset the Omnidrive by turning it off, then back on. If the READY light still does not come on correctly, recheck all connections. If the drive still does not respond correctly, call your Corvus dealer for help.

This completes the hardware setup for an Omnidrive. How to install software on the drive so that you can begin using the drive on the network is explained in Chapter 2.

Setting Up an Apple II

This section shows how to connect an Apple II to an Omnidrive with a Corvus network interface card and tap cable (OCS I) or drop cable (OCS II).

You need:

- An Omninet network interface card
- A tap cable (OCS I) or drop cable 64C(OCS II)

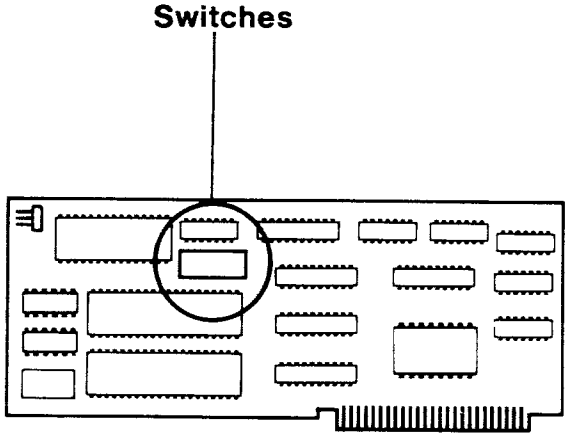
A Corvus Print Spooler Card, which simplifies printing to a network printer, is also useful, though not required.

1. **Set up the Apple II.**

   Set up the computer according to the manufacturer's instructions. Set it up close to the Omnidrive so you can observe the indicator lights during software installation. After the computer is set up, make sure the power is turned off.

2. **Set the interface card switches.**

   Find the switches on the interface card.

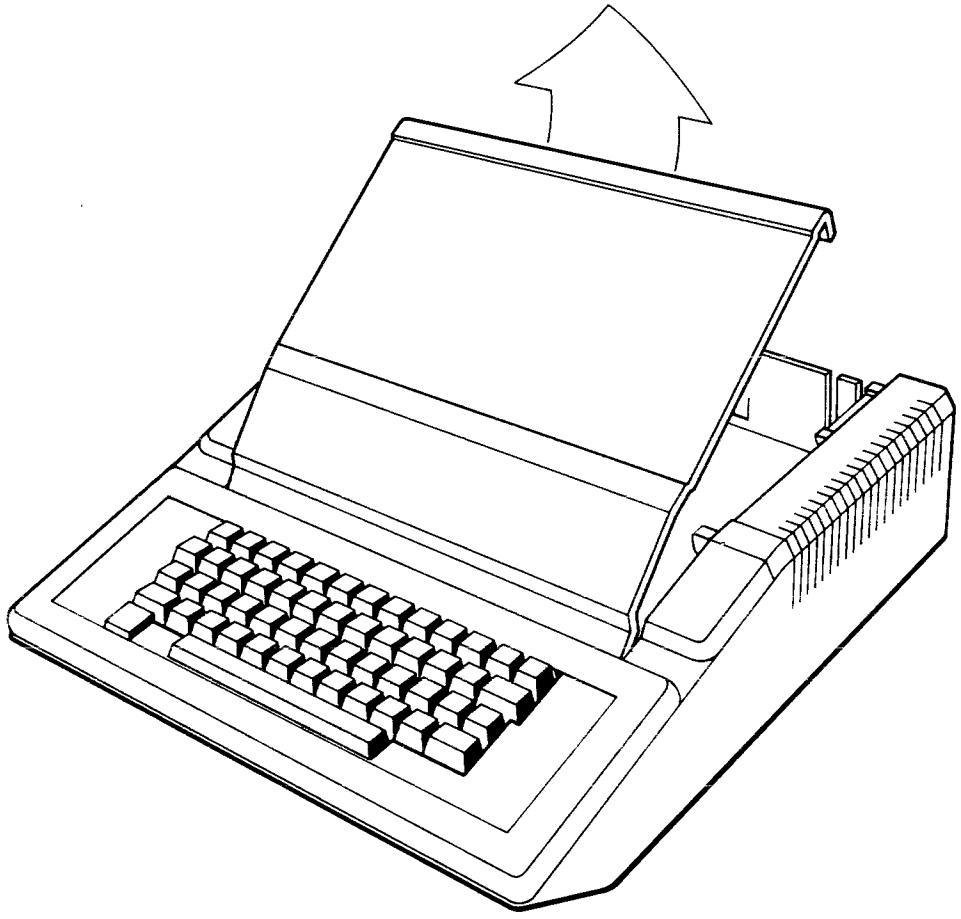


   Set the switches to an address not already in use. Use the table on page 8.

   Switches 7 and 8 have no effect. It doesn't matter whether these switches are set toward or away from the numbers.

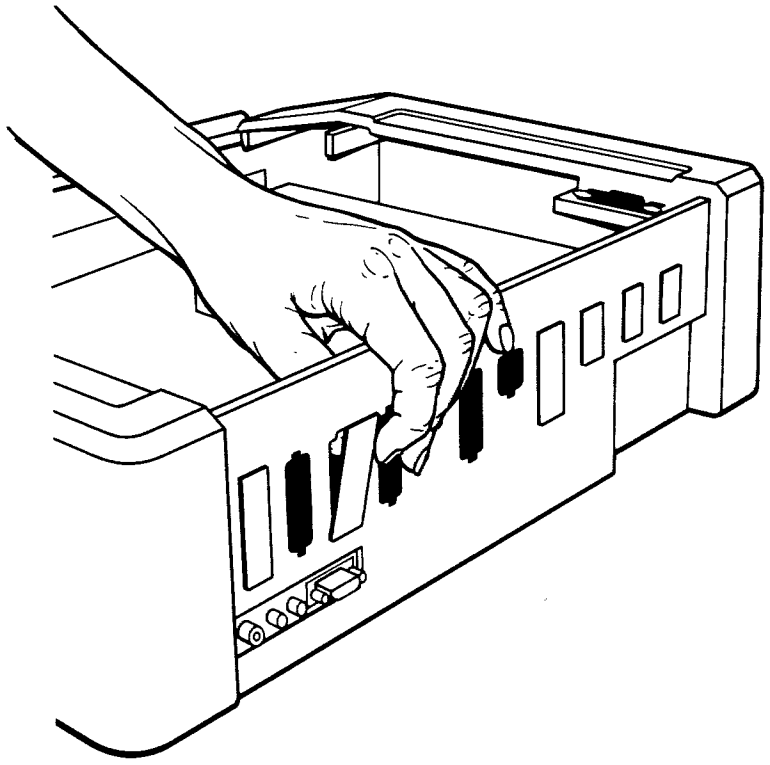
3. **Remove the Apple II cover.**

Pull up on both sides of the computer cover's back end to release the right and left clasps. Lift the cover and pull back and out.

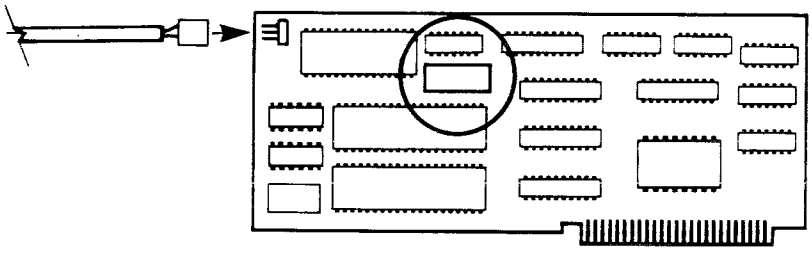


4. **Remove an access plate.**

An Apple IIe computer has seven access windows, covered by plates, next to the seven slots on the computer's main circuit board. Find the window closest to slot 7. From the inside of the computer, push the top edge of the access plate down and out. The plate should pop out easily. Keep the plate for later use. Now pass the three-slot connector end of the tap cable through the window.

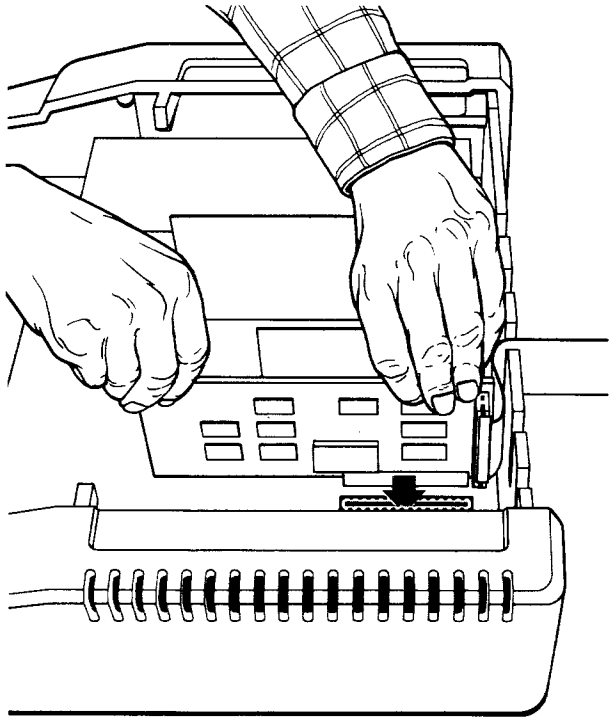


5. **Plug the tap cable (OCS I) or drop cable (OCS II) into the interface card.**



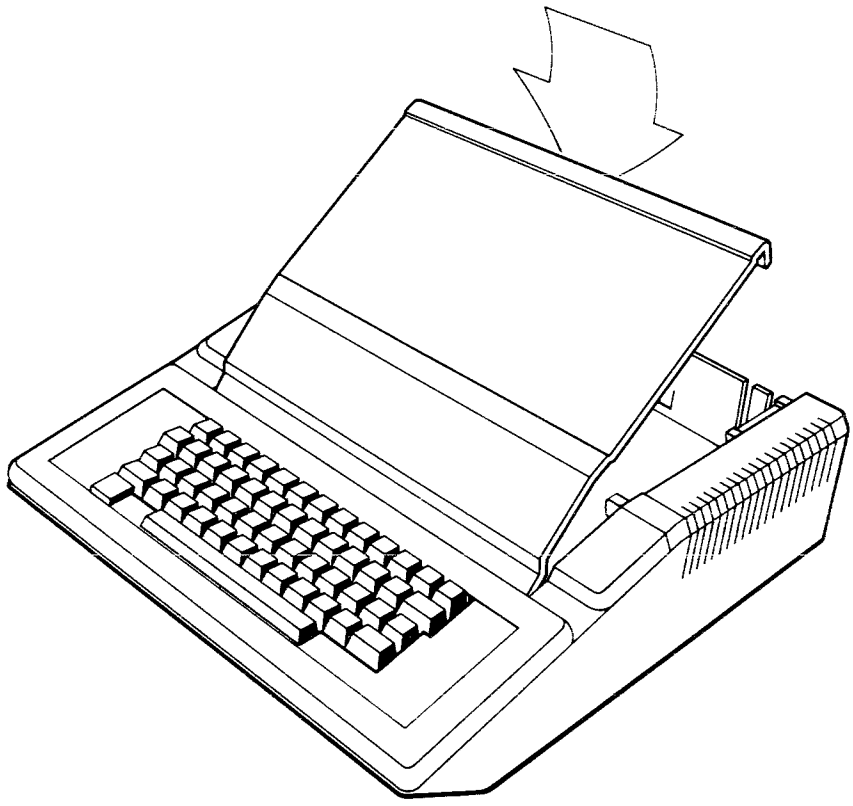
6. **Plug the card into the computer.**

Press the interface card firmly into slot 7 on the computer's circuit board.



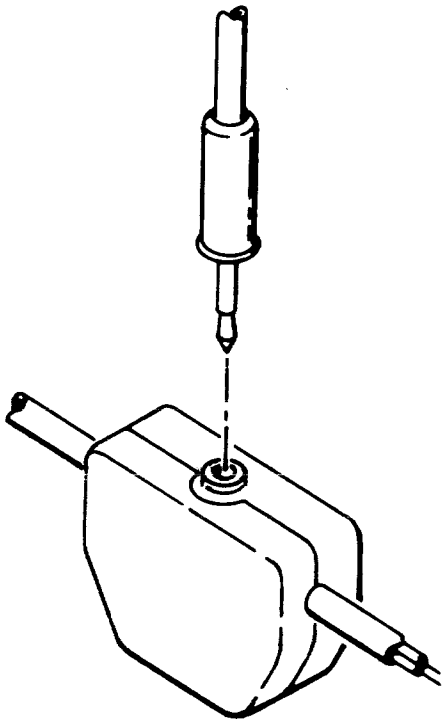
Install the floppy card in any slot according to the instructions that came with the computer.

7. **Replace the Apple II cover.**

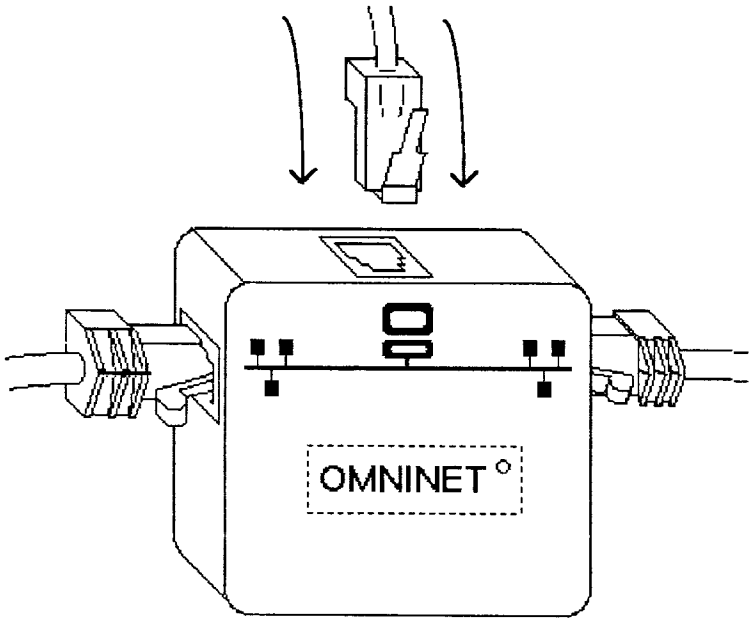


8. **Connect the Apple II to the network.**

OCS I: Plug the free end of the tap cable into a tap box.



OCS II: Plug the free end of the drop cable into a trunk adapter.



If your network already has other Apple II's and Constellation III software installed, you're done setting up the new Apple II on the network. Unless you need to read the instructions in the next section on installing the Corvus Print Spooler Card, you do not need to read any more in this guide.

If the Apple II you have just set up is the first Apple II on your network, then you still need to install Constellation III. Read the next section if you have a Print Spooler Card to install and then go on to Chapter 2.

Installing a Print Spooler Card

This section shows how to put a Print Spooler Card in an Apple II. If you don't have a Print Spooler Card to install, you don't need to read this section. Go to the next chapter.

1. **Remove the Apple II cover.**

   Pull up on both sides of the computer cover's back end to release the right and left clasps. Lift the cover of the computer and pull back and out.

2. **Press the spooler card into slot 1.**

3. **Replace the Apple II cover.**

Chapter 2

Setting Up the Software

Contents

Introduction

This chapter explains how to install Constellation III software on a network containing Apple II computers.

You need the Corvus floppy diskettes containing the Constellation III software, an Apple II computer, and at least one Omnidrive for the procedures covered in this chapter. Both the drive and the computer must be set up and attached to the network as described in Chapter 1.

It's recommended that no one use the network while you perform the operations described in this chapter.

The chapter has four main sections. The first, "Copying the Diskettes," explains how to make copies of the Corvus floppy diskettes so that you can store the originals for safekeeping.

The remaining sections describe the two stages of installing Constellation III software. The first stage is covered by the two sections "Updating Existing Drives" and "Setting Up a New Drive." You may not need to read both of these sections.

The last section of this chapter, "Adding Users, PIPES, and Utilities," covers the second stage of installing Constellation III software. In this stage, you can create a volume called PIPES for use in network printing; you can also add user accounts and utility programs for the Apple operating systems you plan to use.

Find the indented paragraph below that describes your situation and read just the sections it tells you to:

- **If you have a working Omninet network already** and want to upgrade to Constellation III software without adding any drives or computers, read "Updating Existing Drives" but not "Setting Up a New Drive." Then go on to "Adding Users, PIPES, and Utilities."

If you want to upgrade to Constellation III and add an Apple II, read "Updating Existing Drives" and "Adding Users, PIPES, and Utilities" but skip "Setting Up a New Drive." You may add subsequent Apple II's to the network just by setting them up as described in Chapter 1.

If you want to upgrade to Constellation III and add an Omnidrive that you've set up according to Chapter 1, first read "Updating Existing Drives" to upgrade, and then read "Setting Up a New Drive" for how to add the Omnidrive. *It's important that you read the sections in just this order.* Finally, read "Adding Users, PIPES, and Utilities."

- **If you're starting a brand new network,** read "Setting Up a New Drive" but not "Updating Existing Drives." You do not need to read "Updating Existing Drives" because you have no drives operating with older software that need to be updated. Finally, read "Adding Users, PIPES, and Utilities."

- **Once you have Constellation III on the network** you may add more Apple II's just by setting them up as described in Chapter 1. You do not need to read any of Chapter 2.

  To add another Omnidrive to a network that already has Constellation III, read only "Setting Up a New Drive." You do not need to read the other sections of Chapter 2.

Before reading anything else, though, read the section below, "Copying the Diskettes."

Copying the Diskettes

This section explains how to use the diskette copy function found on the diagnostic floppy diskette to copy the various other Corvus diskettes. Use only the *copies* with the instructions in this guide. Store the originals where they'll be available if you ever need to make new copies.

The network interface card should be in slot 7, as described in Chapter 1. The floppy controller card may be in any slot. Turn on the Apple II.

1. **Insert the diagnostic diskette.**

   Insert the diskette labeled A2C3.1 in the boot drive.

2. **Hold down [CTRL] and press [RESET] to boot the computer.**

   The screen displays the BASIC prompt.

3. **Type PR#(slot number of floppy card) and press [RETURN].**

   For example, if your floppy card is in slot 6, type PR#6 and press [RETURN].

   The screen displays the Constellation III Maintenance Utilities menu:

```
Constellation III Maintenance Utilities
(c) Copyright 1984..1987 Corvus Systems, Inc.
--------------------------------------------------------------------------------

   C - Copy Diskette
   D - Mass Storage Diagnostic
   M - Mirror Server Manager
   X - Transfer Manager

--------------------------------------------------------------------------------

Please select an option:
```

Use the Copy Disk option to copy each of your diskettes.

If you are going on to the section "Setting Up a New Drive" when you are finished making copies, do not exit the maintenance utilities program. You will use the Mass Storage option to update firmware on the new drive.

Updating Existing Drives

This section describes how to put Constellation III software on Omnidrives that are already in place on a functioning Omninet network. To add a drive to the network, whether a new drive or one with information already on it, see "Setting Up a New Drive."

When you complete the steps in this section, you will be able to use Apple II's on the network whether or not the network supported them before.

If you have more than one Omnidrive on the network, they will all be updated with the new software when you perform the steps in this section. You do not have to repeat the steps for each Omnidrive.

1. **Insert the Corvus installation diskette.**

   Put the /INSTALL.SYSGEN diskette in floppy drive 1.

2. **Press [CTRL] - [RESET] to boot from the installation disk.**

   At the BASIC prompt, type PR#(slot number of floppy card) and press [RETURN]. For example, type PR#6 and press [RETURN].

   The following menu appears:

```
──────────────────────────────────────────

      Constellation III Initialization

──────────────────────────────────────────

1. Set Up A New Drive
2. Upgrade Existing Drive(s)

──────────────────────────────────────────

Use Arrow Keys or Numbers to Select Choice...
Hit [Esc] key to exit.....
```

3. **Type 2 or use arrow keys to choose to upgrade an existing drive.**

   The screen displays the prompt *Continue (Y/N)?*. Press Y.

4. **Follow the screen's instructions to insert diskette C3DATA1 in slot 4, drive 2, and then press [SPACE].**

   The screen tells what the program is doing and then after a short time directs you to insert another diskette and press [SPACE]. Follow the screen's instructions.

As a part of the update procedure, the program enlarges and relocates the CORVUS volume. This volume contains the various drive tables that keep track of volumes and so forth on the drive.

Shortly, if all goes well, the screen announces that installation of Constellation III is completed.

NOTE: If the program can't find room enough on the drive for the newly expanded CORVUS volume, an error message announces that the program is UNABLE TO RELOCATE AND EXPAND CORVUS VOLUME.

If this message appears, you need to make space for the larger CORVUS volume manually. You must create a space of 760 blocks at a block address less than 65535 by removing some other volume and relocating it on the Omnidrive.

To do this, log on to the Network Management Program and select the server whose CORVUS volume you're trying to relocate. Use the List Volumes function from the Network Management Program menu to list the volumes on that Omnidrive. Pick a volume to move to make room for the CORVUS volume. Choose any volume of 760 blocks or more at an address smaller than 65535.

When you've chosen one, note its exact size and use the Add Volumes function to create a new volume of that size but with a different name elsewhere on the Omnidrive. Now use the copy utility appropriate to the operating system of the volume you're moving and copy the contents of the original volume into the new volume you've just added.

Use the Remove Volumes function to delete the original volume. You may now change the name of the new volume to what the original volume was called.

Now return to the beginning of this section and start again with the steps for updating an existing drive.

5. **Reset all Omnidrives.**

   Turn off all the Omnidrives on the network, wait approximately 10 seconds, then turn them on again.

Setting Up a New Drive

Putting a new drive on the network involves two operations: updating the firmware and initializing the drive.

If the drive you're adding contains information that you want saved, do not initialize the drive. Update the drive firmware as described in the section below and skip the section "Initializing the Drive." Instead of initializing the drive, follow the instructions in Appendix A for merging user tables.

UPDATING THE FIRMWARE

Before a computer can communicate with a new Omnidrive, a controller code file called firmware must be copied onto the drive. The firmware acts as an interpreter for commands addressed to the drive. Copying firmware onto a drive is called updating the firmware.

Firmware is put on new drives at the factory. Even so, to be sure you have the latest version, you should update the firmware before initializing the drive. This section explains how to do that.

The network interface card should be in slot 7, as described in Chapter 1. The floppy controller card may be in any slot. Turn on the Apple IIe.

1. **Insert the diagnostic diskette.**

   Insert the diskette labeled A2C3.1 in the boot drive.

2. **Press [CTRL] - [RESET] to boot the computer.**

   At the BASIC prompt, type PR#(slot number of floppy card) and press [RETURN]. For example, type PR#6 and press [RETURN].

   The screen displays the Constellation III Maintenance Utilities menu:

```
Constellation III Maintenance Utilities
(c) Copyright 1984..1987 Corvus Systems, Inc.
--------------------------------------------------------------------------------

   C - Copy Diskette
   D - Mass Storage Diagnostic
   M - Mirror Server Manager
   X - Transfer Manager

--------------------------------------------------------------------------------

Please select an option:
```

3. **Insert the copy you've made of the A2C3.4 diskette in the second drive and type D to select the Mass Storage program.**

   The screen displays a list of slot numbers and asks you to select one, suggesting slot 7. This slot contains the computer's Omninet interface card. Press [RETURN] to accept the screen's suggestion of the slot with the Omninet interface card.

The screen displays a chart of active network nodes (i.e., devices) listing each by its network address, and asks you to select a server.

```
------------------------------------------------------------------------------
Select server number [0..63]: 0


MDIAG [1.5d]: Corvus Mass Storage Diagnostic
Select Drive                                                  Slt: 7  Srv: 0
------------------------------------------------------------------------------
Slot 1: ....
Slot 2: ....
Slot 3: ....
Slot 4: ....
Slot 5: ....
Slot 6: ....
Slot 7: Corvus Omninet interface
------------------------------------------------------------------------------

Select slot number [7]: 7
------------------------------------------------------------------------------
Active network nodes:  ("*" indicates this node)

   0   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
   .   .   .   .   .   .   .   .  24*  .   .   .   .   .   .   .   .
   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
------------------------------------------------------------------------------
Select server number [0..63]: 0
```

4. Select the server number.

Enter the Omninet address of the Omnidrive whose firmware you want to update. This address was set in Chapter 1 of this guide. After entering the address, press RETURN.

The screen displays the Mass Storage menu:

```
MDIAG [1.5d]: Corvus Mass Storage Diagnostic
(c) Copyright 1986 Corvus Systems, Inc.  OmniDrive          Slt: 7  Srv: 0
--------------------------------------------------------------------------------
    D - Select Drive
    V - Version Check
    P - Park Heads for Shipment
    X - Exercise Drive
    C - Check for Bad Tracks
    S - Show Results

    F - Format Drive
    U - Update Firmware
    M - Modify Parameters

    N - Set Diag Data File Name
    A - Advanced Options

    E - Exit
--------------------------------------------------------------------------------

Select diagnostic option:
```

5. Type U to select Update Firmware.

The screen displays a warning that the option selected may destroy data on the drive and asks you to confirm that you want to continue.

By itself, updating firmware will *not* destroy any data on an Omnidrive. However, changing drive tables will. The caution on screen relates to changing drive tables. This option is offered when you continue with updating firmware.

Make sure that the slot and server numbers are correct, then type **Y**.

At this point the screen asks if you want to change drive tables. The screen suggests *N*, for No. Press RETURN to accept this response.

6. **Enter the firmware filename.**

   The screen asks you to enter the firmware filename. It proposes the file name ODRV.FIRMWARE. Press [RETURN] to accept this filename.

   The screen displays a version message. Press [RETURN].

   The screen announces that the firmware is updated. It instructs you to reset the Omnidrive and press the [SPACE] when you've done so.

   To reset the Omnidrive whose firmware you've just updated, turn it off, wait approximately 10 seconds, and then turn it on again.

   When you've done this, press [SPACE].

   The screen returns you to the Mass Storage diagnostic program main menu.

7. **Exit the Mass Storage program.**

   Type E to exit back to the Constellation III Maintenance Utilities menu.

INITIALIZING THE DRIVE

Initializing an Omnidrive creates a CORVUS volume on the drive. The drive cannot be used on the network until it has a CORVUS volume.

The CORVUS volume contains tables that keep track of the volumes stored on the drive and of the users having access to these volumes. Initializing a drive erases anything already in the tables and starts fresh with new tables. If the drive is not a new one, the result is that the whereabouts of all information on the drive is lost: in effect, the information is destroyed. If the drive you want to add has information you want to keep, do not initialize the drive. Instead, follow the instructions in Appendix A for merging user tables.

Because initializing in effect destroys information, it is *very important* that you enter the correct server and drive numbers when initializing a new drive on the network. If you select the wrong drive, you will in effect erase it.

1. **Insert the Corvus installation diskette /INSTALL.SYSGEN in floppy drive 1. Put the C3DATA1 diskette in floppy drive 2.**

2. **Press [CTRL] - [RESET] to boot from the installation diskette.**

   At the BASIC prompt, type PR#(slot number of floppy card) and press [RETURN]. For example, type PR#6 and press [RETURN].

   The initialization menu displays:

```
Constellation III Initialization

1. Set Up A New Drive
2. Upgrade Existing Drive(s)

Use Arrow Keys or Numbers to Select Choice...
Hit [Esc] key to exit.....
```

3. **Type 1 or use arrow keys to select Set Up A New Drive.**

   A warning appears that you are about to destroy all information on the drive, and the screen displays the prompt *Continue (Y/N)?*. Press Y.

   The screen directs you to press the space bar to proceed. Press [SPACE].

4. **Select an Omnidrive.**

   The screen tells you to enter the server address.

   The Omnidrive has a built-in diskette server. You assigned the network address of this server in Chapter 1 when you set the switches on the back of the Omnidrive. You were told to record the address on page 9 of the guide and on the Omnidrive. This is the address you need now.

   > **Caution:** Be sure you have the correct address. If you initialize the wrong drive, all information on that drive will be lost.

   If you're in any doubt about the address, you may want to read it directly from the switch settings on the back panel of the Omnidrive. Use the table on page 8 to interpret the settings.

   Type the address of the server and press [RETURN].

   The screen asks you to enter the drive number and proposes drive number *1*. Press [RETURN] to accept this number.

5. **Build the user table.**

   The screen asks if you want to build the user table on the Omnidrive from another server.

   A drive's user table lists the network users that the drive recognizes. Unless a user's name and password are listed in its user table, a drive will not grant the user access to anything. All drives on the network must have identical user tables.

If there is another drive on the network, press Y and then RETURN. This instructs the program to duplicate the user table of the other drive on the drive you're initializing.

If there is no other drive on the network, press N and then RETURN.

6. **Enter the Omnidrive name information.**

The screen requests a new server name.

You need to assign a name to the Omnidrive's built-in diskette server. You may also give it a password, although this is optional. Similarly, the drive must have a name and can have an optional password. The names used in the examples in this guide are SERVER1, for both the server name and password, and DRIVE1, for both the drive name and password.

You may use these same names as long as they aren't already assigned to another server and drive, or you may create new ones. In either case, before going any further, write the server and drive names and passwords you will use below.

Server Name _____

Server Password _____

Drive Name _____

Drive Password _____

Type the server name (for instance, *SERVER1*) and press RETURN.

When the screen prompts for a server password, either enter a password (for instance, *SERVER1*) and press RETURN, or simply press RETURN without entering a password if you don't want a password.

The screen prompts for a drive name. Enter a drive name (for instance, *DRIVE1*) and press [RETURN].

The screen prompts for a drive password. Either enter a password and press [RETURN] or just press [RETURN] without entering a password.

7. **Enter CORVUS volume information.**

The screen prompts for a starting block address for the CORVUS volume and suggests *9*. Press [RETURN].

The screen prompts for the CORVUS volume size in blocks and suggests *760*. Press [RETURN].

The screen generates rows of dots as it initializes the CORVUS volume. When it finishes this, follow the screen's instructions to insert diskette C3DATA2 and press [SPACE].

The screen displays more dots, then asks for diskette C3DATA3. Insert diskette C3DATA3 and press [SPACE].

More dots appear. The screen announces that the drive is initialized and instructs you to turn the drive off and then on again.

Turn off the Omnidrive, wait about 10 seconds, and then turn it on again. This resets the drive and registers the changes you have made. Press [SPACE] to continue.

Adding Users, PIPES, and Utilities

This section describes how to set up a PIPES volume or Transfer Area, create a user account for the network manager, and add user accounts and utility programs for Apple operating systems ProDOS, DOS 3.3, and Pascal.

The commands that do all this are in batch files. These are files that contain nothing but a batch of commands. All you have to do to execute the commands is to run the files. This section tells you how.

There are four batch files in all. One of them, ADDA2MGR, you are required to run. This file sets up the network manager user account and the ProDOS operating system. Corvus recommends that you also run ADDPIPES to set up a Transfer Area. The other files you may run or not, depending on whether you want to work in the operating systems they set up.

You should run the files in this order:

ADDA2MGR
ADDDOS33
ADDPAS
ADDPIPES

Running all four of these batch files sets up the following six user accounts:

A2MGR
A2MAINT
A2PRODOS
A2DOS33
A2PASCAL
A2BACKUP

The batch files also create certain system volumes. These volumes and their operating system type, size, owner, and contents are listed in Appendix B. There you will also find a table showing the password, volume access, mount unit, and operating system of each of the user accounts.

Here are general synopses of these accounts:

- A2MGR has read-write access to volume A2NET, which contains the Network Management Program. This program is for the system manager's use only. Its name and password should be kept confidential. How to use the program is discussed in the *Network Manager's Guide.*

- A2MAINT has read-only access to volume A2SYS, which contains the diagnostics program for network Omnidrives. How to use this program is covered in the *Network Diagnostics Guide.*

- A2PRODOS has read-only access to volume A2PRO, containing ProDOS utilities. How to use these utilities is explained in the guide *Tools for Network Users.*

- A2DOS33 has read-only access to volume A2DOS, containing DOS 3.3 utilities. How to use these utilities is explained in *Tools for Network Users.*

- A2PASCAL has read-only access to volume A2PAS, containing Pascal utilities. How to use these utilities is explained in *Tools for Network Users.*

- A2BACKUP has read-only access to volume A2BACK, which contains a program for backing up volumes to floppy. This program is described in *Tools for Network Users.*

Note that if any of these accounts or volumes already exists on your network, the originals will be replaced by the new. Do not save the contents of the older versions of these volumes. Use the utilities in the new volumes instead.

HOW TO RUN THE BATCH FILES

In order to have access to the network and an operating system to work in, you have to run the batch file that sets up the network manager user account and the ProDOS operating system. This file is ADDA2MGR. Running the other batch files is optional. If you plan to work only in the ProDOS operating system, ADDA2MGR is the only batch file you need to run. You do not need to run the batch files setting up user accounts and putting utilities on the drive for DOS 3.3 and Pascal unless you want to use those operating systems.

If you want all users to be able send files to one another and to share a printer on the network, you must also run the batch file ADDPIPES to create a Transfer Area. The Transfer Area is a volume called PIPES where files sent by users to each other or to a network printer go first in order to be forwarded to their proper destination. Without a Transfer Area, users cannot share a printer or send files to each other over the network.

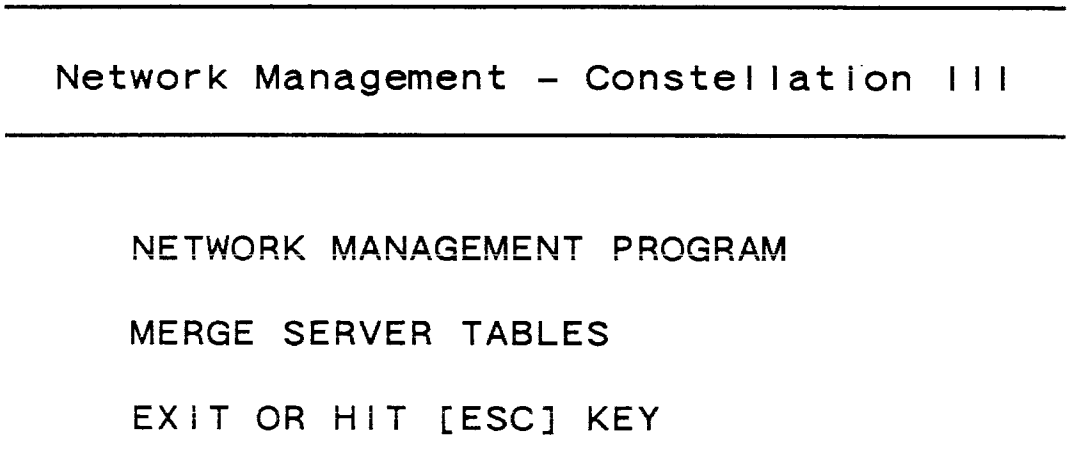
All the batch files are run the same way. When you run the file, the file is executed on the server you have selected. You need to run the batch files only once no matter how many servers you have.

For one of the batch files, you need certain diskettes in addition to the Corvus diskettes: ADDPAS requires the Apple diskettes APPLE1: and APPLE2:.

To run batch files, proceed as follows:

1. **Insert the diskette labeled /C3 and press CTRL - RESET to boot the Apple IIe.**

   The screen displays the Constellation III Network Management menu:



2. **Use arrow keys to select the Network Management Program.**

   The Select Server screen appears, with *Server0* proposed.

3. **Select the server.**

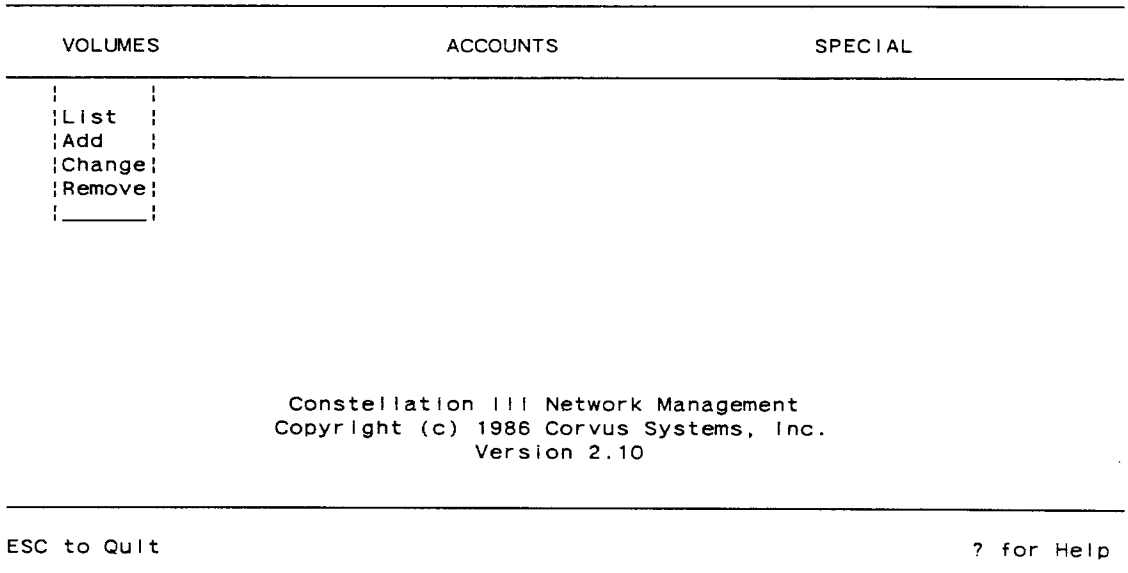
   If you have a special reason for wanting to run the batch file on a different server, move the cursor to the name of that server and press RETURN. Otherwise, just press RETURN to select Server0.

   The file ADDPIPES should be run only on Server0.

4. **Enter the drive password.**

   Enter the drive password, if any, and press RETURN. The password does not display as you enter it.

   The main menu of the Network Management Program appears:



5. **Select Execute Batch Files from the Special Functions menu.**

   Use the left- or right-arrow key to move the highlight to the Special Functions menu, and use the up- or down-arrow key to place the highlight bar on Execute Batch Files. Press RETURN to select that option.

6. **Run the batch file.**

   The screen prompts for the name of the batch file. Type the name and press RETURN.

   For instance, type *ADDA2MGR*. Press RETURN.

The screen prompts you for a diskette. Insert the diskette as requested and press [SPACE]. The screen will prompt for additional diskettes when the program finishes with the first. Insert each diskette when requested and press [SPACE].

When the batch file is finished executing, the screen prompts for another batch file. To run another batch file, enter its name and press [RETURN].

To return instead to the Network Management Program menu--e.g., to select a different server--press [ESC].

If any batch file does not execute properly and the screen displays an error message, record the message and the steps you took leading up to the error and contact your distributor for help.

When you are done running the batch files, you are finished installing the system.

Now you're ready to learn about creating ordinary volumes and user accounts so that you can actually begin using the network. Turn to the *Network Manager's Guide* in this set.

Appendixes

Contents

Appendix A: Merging User Tables

For a new drive to recognize names and passwords of network users, it must have the same user table as all other network drives. The tables are made the same by *merging* them, i.e., by copying into the new drive's user table the information from the table of a drive already on the network.

With a new drive, you can choose to merge user tables as part of the initialization. But sometime you may want to merge user tables on a drive that you do not want to initialize, e.g., a drive with data on it that you are transferring from a different network. Initializing the drive would erase all its information.

To merge user tables without initializing the drive, use the Merge Server Account Tables option of the Network Management menu.

1. **Insert diskette /C3 in floppy drive 1 and press - to boot the Apple IIe.**

   The screen displays the Network Management menu:

```
Network Management - Constellation III

NETWORK MANAGEMENT PROGRAM

MERGE SERVER TABLES

EXIT OR HIT [ESC] KEY
```

2. **Use arrow keys to select Merge Server Account Tables.**

   When the screen displays the prompt *Continue (Y/N)?*, press Y to continue.

3. **Enter server and drive numbers.**

   The screen requests the server host number. Type the Omninet address of the server you're adding to the network and press .

   The screen asks for the drive number and proposes number *1*. Press to accept this.

   The program merges the user tables. The screen announces when the operation is done.

Appendix B: System Volumes and Accounts

Volume	Format	Length	Owner	Type	Contents
A2BACK	UCSD	300	A2BACKUP	Public	Floppy Backup program
A2NET	UCSD	1124	A2MGR	Private	Network Management Program Sample Batch Files
A2SYS	UCSD	1200	A2MAINT	Private	Network Diagnostics and Maintenance Utilities
A2PRO	PRODOS	1124	A2PRODOS	Public	ProDOS file utilities
A2DOS	DOS3.3	1124	A2DOS33	Public	DOS 3.3 file utilities
A2PAS	UCSD	1124	A2PASCAL	Public	Pascal file utilities

User	Password	O.S.	Access	To Volumes	Mount Unit
A2BACKUP	none	PASCAL	RO	A2BACK	4
A2MGR	NOS	PRODOS	RW	A2NET	S7, D1
			RO	A2PRO	S7, D2
A2MAINT	NOS	PASCAL	RO	A2SYS	4
A2PRODOS	NOS	PRODOS	RO	A2PRO	S7, D1
A2DOS33	NOS	DOS3.3	RO	A2DOS	S7, D1
A2PASCAL	NOS	PASCAL	RO	A2PAS	4

Appendix C: Error Messages

This appendix contains a listing of the error messages that can be generated when you put Constellation III on a new drive or update a drive that contains earlier Constellation software.

Each error message is presented in **BOLDFACE** and then explained.

Errors When Updating a Drive

DISK I/O ERROR

A read or write operation failed on the disk or Omnidrive being updated by the program. This means that the drive possibly has bad tracks that should be spared. See the Diagnostics guide for how to check for and, if necessary, spare bad tracks. If a bad track appears in the middle of Constellation data tables in the CORVUS volume, however, you may be unable to recover information on the drive. In that event, you must back up what information you can and reinitialize the drive according to the instructions in Chapter 2, "Setting Up a New Drive," as if the drive were a new one.

DRIVE/DISK UNAVAILABLE FOR ACCESS

Receiving this message probably means that semaphore CRVSEMA4 is set. Go to the Special Functions submenu of the Network Management Program menu and select the Unlock Semaphores function. Use the Clear A Flag option of Unlock Semaphores to clear semaphore CRVSEMA4.

DRIVE.VOLUME SEQUENCE ERROR

This is a serious error. The message means that the contents of the DRIVE.VOLUME table are corrupted and probably, though not necessarily, unusable. Back up the contents of the drive if you can and reinitialize the drive according to the instructions in Chapter 2, "Setting Up a New Drive." You must initialize the drive as a new drive.

ERROR LOADING THE FILE C3INSTALL.CODE

An I/O or other floppy diskette error occurred while trying to load the program file data. Either the file is corrupted or there is a media error on the floppy. Make a new copy of the Corvus original of the diskette and try again.

ERROR LOADING THE FILE C3UTILITY.DATA

An I/O or other floppy diskette error occurred while trying to load the utility file data. Either the file is corrupted or there is a media error on the floppy. Make a new copy of the Corvus original of the diskette and try again.

NO DISK SERVERS FOUND ON THE NETWORK

There are no disk servers or Omnidrives on the network attached to the computer. More likely, the computer itself is not on the network. Check your network connections.

THE FILE C3.DATA WAS NOT FOUND

The data file C3.DATA was not on the diskette C3DATA in slot 4, drive 2.

THE FILE C3.XXXX WAS NOT FOUND

The data file C3.XXXX was not on the diskette C3DATA in slot 4, drive 2.

THE FILE C3INSTALL.CODE WAS NOT FOUND

The program file C3INSTALL.CODE must be on the same ProDOS volume as the installation program C3INSTALL.

THE FILE C3UTILITY.DATA WAS NOT FOUND

A utility program file called C3UTILITY.DATA must be on the same ProDOS volume as the installation program C3INSTALL.

THE OMNINET INTERFACE CARD IS MISSING

An Omninet interface card must be installed in the computer. Place an interface card in slot 6 or 7.

THE VOLUME 'NEWCORVUS' WAS NOT FOUND

This is a program error that occurs only if the DRIVE.VOLUME table on a given drive is corrupted. Back up the contents of the drive if you can and reinitialize the drive according to the instructions in Chapter 2, "Setting Up a New Drive," as if the drive were a new one.

THE VOLUME XXXXX WAS NOT FOUND

This is a program error that occurs only if the DRIVE.VOLUME table on a given drive is corrupted. Back up the contents of the drive if you can and reinitialize the drive according to the instructions in Chapter 2, "Setting Up a New Drive," as if the drive were a new one.

UNABLE TO RELOCATE AND EXPAND CORVUS VOLUME. nnnn BLOCKS NEEDED AT AN ADDRESS LESS THAN 65535. PLEASE REFER TO THE CONSTELLATION III SYSTEM SETUP GUIDE.

There is insufficient space on the given server/drive for the relocation/resizing of the CORVUS volume. A space of at least nnnn blocks must be made available. Other possibilities are that the maximum 511 volumes have already been allocated on the server/drive or that the CORVUS volume could not be relocated to a block address less than 65535.

UPDATE ERROR

This is a program error that occurs only if the DRIVE.VOLUME table on a given drive is corrupted. Back up the contents of the drive if you can and reinitialize the drive according to the instructions in Chapter 2, "Setting Up a New Drive," as if the drive were a new one.

Errors When Setting Up a New Drive

ERROR LOADING THE FILE C3SYSGEN.CODE

An I/O or other floppy diskette error occurred while trying to load the program file data. Either the file is corrupted or there is a media error on the floppy. Make a new copy of the Corvus original of the diskette and try again.

ERROR LOADING THE FILE C3UTILITY.DATA

An I/O or other floppy diskette error occurred while trying to load the utility file data. Either the file is corrupted or there is a media error on the floppy. Make a new copy of the Corvus original of the diskette and try again.

INVALID BLOCK ADDRESS

The starting block address given for the CORVUS volume is invalid or out of range.

INVALID CORVUS VOLUME ADDRESS OR LENGTH

The block address or size given for the volume is invalid.

INVALID DRIVE

The drive number chosen is invalid or out of range.

INVALID ADDRESS

The disk server address number chosen is invalid or out of range.

INVALID NAME

The disk server or drive name given for an initialization is invalid. Server and drive names may be no more than 10 characters in length and can contain no spaces.

INVALID PASSWORD

The disk server or drive password given for an initialization is invalid. Server and drive passwords may be no more than 8 characters in length and can contain no spaces.

INVALID SIZE

The size given for a CORVUS volume is invalid or out of range. The volume's size must be 232-32767 blocks.

MERGE MUST BE ON DRIVE 1

The server/drive chosen for a merge must be drive 1.

NETWORK.USER TABLE SIZE MISMATCH

The size of the network user tables on drive 1 of all servers on the network must be of equal size for a merge.

NO DISK SERVERS FOUND ON THE NETWORK

There are no disk servers or Omnidrives on the network attached to the computer. Check to be sure the computer is connected to the network.

NO OTHER SERVERS ON-LINE TO MERGE

No other servers or Omnidrives were found on the network for the merge to take place.

OMNINET INTERFACE CARD IS MISSING

An Omninet interface card must be installed in the computer. Place an interface card in slot 6 or 7.

THE CORVUS VOLUME IS TOO SMALL FOR A MERGE

There is insufficient space on the CORVUS volume of the server/drive chosen for a merge. The program needs space available on the CORVUS volume that is at least the size of the NETWORK.USER table (usually 32 blocks). The combined number of users must not exceed the capacity of the user table, namely, 511 user entries.

THE CORVUS VOLUME SIZE IS TOO SMALL

The size chosen for the new CORVUS volume is too small to accommodate the necessary tables and files.

THE FILE C3.DATA WAS NOT FOUND

The data file C3.DATA was not on the diskette C3DATA in slot 4, drive 2.

THE FILE C3.XXXXX WAS NOT FOUND

The data file C3.XXXXX was not on the diskette C3DATA in slot 4, drive 2.

THE FILE C3SYSGEN.CODE WAS NOT FOUND

The program file C3SYSGEN.CODE must be on the same ProDOS volume as C3SYSGEN.

THE FILE C3UTILITY.DATA WAS NOT FOUND

A utility program file called C3UTILITY.DATA must be on the same ProDOS volume as the installation program. This file is used by both the installation and sysgen/merge programs.

THE SERVER/DRIVE IS NOT FORMATTED

The server/drive chosen for a merge is not formatted, i.e., initialized.

THE VOLUME 'C3DATA:' IS NOT IN S4,D2

The utility data volume C3DATA: is not in slot 4, drive 2.

THERE IS NO DISK DEVICE AT THAT ADDRESS

The disk server host number chosen is invalid or out of range.

UNEXPECTED I/O ERROR

A read or write operation failed on the disk or Omnidrive being updated by the program. This means that the drive possibly has bad tracks that should be spared. See the Diagnostics Guide for how to check for and, if necessary, spare bad tracks. If a bad track appears in the middle of Constellation data tables in the CORVUS volume, however, you may be unable to recover information on the drive. In that event, you must back up what information you can and reinitialize the drive according to the instructions in Chapter 2, "Setting Up a New Drive," as if the drive were a new one.

Another possible cause is an error on the floppy disk in slot 4, drive 2. Follow instructions in Chapter 2, "Copying the Disks," to make another copy of the original of the floppy you're using and try that one.

Constellation III
for the Apple II

Network Manager's Guide

Contents

About This Guide

This guide is intended for the network manager, the person who will oversee daily operations on the Corvus Omninet network.

The guide explains the Constellation III Network Management Program. The Network Management Program is the network manager's main resource for keeping track of users, allocating storage space on the disk drives, coordinating communications between network stations, and generally maintaining the network.

Chapters 1, 2, and 3 of the guide are mainly intended for newcomers to the Constellation network management system. They introduce the reader to basic network concepts, provide a structure for planning how to use the network, and explain conventions used by the Network Management Program. People who already have experience with the Constellation system may find that they can skip the bulk of these three chapters and go straight to Chapter 4, which covers actually using the program.

A brief description of each chapter follows.

Chapter 1: Introduction

This chapter tells what's involved in managing a network, gives some particulars about hardware and software, and provides an introduction to some basic network concepts.

Chapter 2: Planning the Network

Anyone setting up a network for the first time should read this chapter, and even people who have set up a network before might find it helpful. The chapter is written around three planning worksheets that organize what you need to know to use Chapter 4.

Chapter 3: The Basics

This chapter is an introduction to the Network Management Program. It covers the basic how-to's of logging on, selecting from menus, moving around on the screen, entering text and responses, using the on-line help, and handling error messages and also describes some special features of the program.

Chapter 4: Using the Network Management Program

Chapter 4 gives step-by-step instructions for using the Network Management Program. This chapter is the heart of the guide.

Chapter 5: Printing and Transferring Files

Here you learn the difference between a network printer and a local printer and how to print files on either one. You also learn how to send a file to another network user.

Chapter 6: Using Batch Files

This chapter describes how to create a *batch file*. Batch files, which let you execute a number of commands at once, can make larger administrative tasks, such as setting up the network for a new incoming class, much less time-consuming.

Appendixes

There are three appendixes. One lists the commands you may use in batch files; one lists error messages; and one contains worksheets.

This guide assumes that the physical network--i.e., the network cabling, with computers and other network devices attached--is already in place and that the Constellation III software has been installed according to the instructions in the *Setup Guide*.

Chapter 1

Introduction

Contents

Role of the Network Manager

In some ways managing a network is like being a homemaker. Just as the homemaker has to provide for the family's needs, the network manager has to supply the needs of his or her "family" of people using the network. In the one case, the issue is food and clothes. In the other, people using the network need volumes to work in, access to the printer, and so forth. In either case, if the housework is let slide, there will be clutter and things will be hard to find. And in both cases, people will always come to you if they need something.

It's the aim of this guide to tell you how to do both the routine tidying up and all the other things you need to be able to do so that your "family" can use the network successfully. Naturally, things will come easier if you have some experience with computers already; but previous experience isn't necessary. Every step of everything you have to do is fully explained in this guide.

Here's what this guide will teach you to do:

- plan how to organize the network
- create *volumes* on the OmniDrive to hold programs and data
- create *accounts* to give users access to the network
- give accounts access to volumes
- send files from your computer to a printer or to the computer of another user
- do routine tidying up to keep the network organized

The next section tells you some things you need to know about hardware and software for the network.

Required Hardware and Software

HARDWARE

To use the Network Management Program you need:

- an Apple IIe with at least 128 kilobytes of memory and an 80-column display
- a monochrome monitor

It's also helpful to have access to a printer from your network station. The printer must be connected to slot 1 of your Apple IIe computer, either directly or by means of a Corvus Print Spooler Card.

SOFTWARE

The Network Management Program

The Constellation III Network Management Program is primarily concerned with managing the use of the OmniDrive. With this software the network manager allocates space on the hard disk for programs and files, gives users access to the network by creating accounts for them, and gives the accounts access to the space on the hard disk. You'll also learn about other functions of the program that enable the network manager to select servers, view a network map, manage the Transfer Area, unlock semaphores, execute batch files, list device records, and change the preset options in the program.

Operating Systems Software

The Constellation III software fully supports three different operating systems. You can install and manage programs and files for

- DOS 3.3
- ProDOS
- Apple Pascal

In addition, though you cannot *install* Macintosh, MS-DOS, or CP/M accounts and volumes using the Constellation III Network Management Program, you can *manage* them if their operating system support software and utilities have been installed already on your network.

In fact, you can install CP/M operating system support on the network with the earlier Constellation II Network Management Program. However, if you want to do this, you must do it *before* installing the Constellation III Network Management Program.

When you format a volume on the hard disk for a particular operating system, that part of the OmniDrive becomes governed by the rules and conventions for that operating system. Each operating system has its own rules and conventions. For example, setting up directories, naming files, and designating "units" on which to "mount" Corvus volumes are done differently in different operating systems.

You need to know which operating system an application program runs under before you can install the program in a volume on an OmniDrive. If the operating system isn't noted on the program or in its documentation, call the publisher. If the operating system of the program is not the same operating system as the volume, you can't copy the program into it.

Each operating system has programs--called utilities--that are used to copy programs and name files. These are separate from the Network Management Program and are described in the *Tools for Network Users* guide that follows in this set.

All this will become clearer as you read on. Begin with the section below, which explains some important terms used in this guide.

Fundamental Concepts

This section introduces you to important concepts relating to working with computers on a network. The two that are most important are *volumes* and *user accounts.* All the others relate to one or the other of these.

Volumes

An OmniDrive hard disk drive is a storage device that can hold as much information as tens to hundreds of floppy disks, depending on what size OmniDrive you have. All that storage area has to be divided into manageable units so that users can organize their files. These units are called *volumes.*

You can create volumes equal in size to anything from about half a floppy to tens of floppies in size. You use them something like floppies. For instance, you might want to put all your files on one subject in one volume. Files relating to a different subject would go in a different volume.

Volume Size

You specify a volume's size when you create the volume. How large you want to make a volume depends on what you want to use it for. For instance, you would probably want a fairly large volume for a database or spreadsheet application, but you might want to create a smaller volume to hold a lot of small text files.

The Network Management Program measures a volume's size in *blocks* when you create a volume. A block contains 512 bytes--in other words, half a kilobyte (1,024 bytes).

One of the floppy disks you are using contains about 280 blocks. This will give you some idea how much storage space a block contains. In fact, volumes initialized for the DOS 3.3 operating system are created in increments of floppy diskette equivalents (280 blocks). You'll learn more about this in Chapter 4.

Volume Address

The volume address is the location of the volume on the hard disk. The network management program will automatically place the volume in the first available space that's large enough for it. Or you can specify a particular location when you create the volume. Sometimes this can help you recover information in a volume you inadvertently deleted. You'll read more about this in Chapter 4 too.

Volume Type

There are three types of volumes. A volume's type determines who can use the volume and what the user can do with it.

Public volumes are available on a read-only basis to anyone on the network; the *owner* of the volume (ownership is assigned when the volume is created) has read-write access to the volume. (Read-write and read-only access are explained below under "Types of Access.") Public volumes are usually used for application programs that a number of users share.

Private volumes are available only to the user who owns them. The owner can choose whether to have read-write or read-only access, although usually there is no reason not to have read-write access. Private volumes are used to store data files and a user's own work.

Uncontrolled volumes are volumes to which many people can be given read-write access. Care must be taken in giving users access to uncontrolled volumes because if several users write to the same volume at the same time, information in the volume could be destroyed. For this reason, uncontrolled volumes should be used only for software programs that have been written especially for multiple users. Such programs have their own controls to keep users from writing to them at the same time. *Put only multiuser software in uncontrolled volumes.*

Volume Operating System

Just as a floppy diskette must be initialized for a particular operating system before it can be used to store a program or data, a volume must be initialized for the appropriate operating system, too. When you create a volume, the Network Management Program automatically formats that portion of the hard disk with the operating system you specify.

Mounting

Before you can work with a volume, it needs to be *mounted*. Mounting a volume is analogous to inserting a diskette into a disk drive. You can't work with a volume that isn't mounted any more than you can work with a diskette that's just lying on your desk.

Volumes are mounted by assigning them mount locations. These mount locations correspond to the physical slots in the computer where cards from peripheral devices such as floppy drives and printers are attached.

If a volume is mounted in a slot already in use to connect a peripheral, the volume will take precedence over the peripheral and the peripheral won't work. So, for example, someone needing to use a certain volume mounted in slot 2 must have slot 2 vacant.

In DOS 3.3 and ProDOS, mount locations are designated by slot and drive numbers; in Pascal they are designated by unit numbers; and in CP/M they are designated by drive letters alone.

You can set things up for a volume to be mounted automatically when a user logs on by assigning the volume a mount location in the access table for that user. Users can also mount and unmount volumes using the Mount Manager Program described in the *Tools for Network Users* guide.

User Accounts

Each user of the network must have an account established for him before he can log on to the network. When the Constellation III software was installed, an account was established automatically for the network manager. However, as network manager, you will have to create accounts for all other users of the network. Account information includes the user's log-on name, password, and the operating system for the account. You can arrange for several people to share one account, and also for one person to have several accounts--one for each operating system, for instance.

Log-On Name

Each account is identified by a log-on name. A user must enter a log-on name in order to gain access to the network.

Passwords

The Constellation III software allows you to assign user passwords to provide security against unauthorized access to the network. Care should be taken to keep these passwords confidential.

The network manager's password is especially important because it controls access to the whole system. You might tell one other user the password in case it should be needed sometime when you're unavailable, but you should not let it become generally known. If you ever suspect that the password is no longer secret, be sure to change it. In fact, it's not a bad idea to change it routinely from time to time.

Types of Access

Read-only access means that information can be read or copied from the volume, but no information can be saved in it. In other words, you can see what's there, but you cannot add to, delete, or change it. This sort of access can be assigned to any type of volume.

Read-write access means that a user can change a volume's information or even erase it. With read-write access, you can both read from the volume and save your own information there. Users can have read-write access to any uncontrolled volume but only to private and public volumes that they themselves own.

Access Table

Every account has an access table associated with it. The access table lists the volumes available to users of the account and what kind of access they can have. An account can have access to up to six different volumes at one time. The access table for an account includes the names of the volumes available and the type of access and mount location for each.

Now that you know a little about volumes and user accounts, it's time to begin planning how you'll set them up. That's what Chapter 2 is designed to help you do. Go on now to Chapter 2.

Chapter 2

Planning the Network

Contents

Using the Planning Worksheets

Your most important responsibilities as network manager are to create and maintain volumes, user accounts, and access records. You'll learn how to do these things in Chapter 4. This chapter helps you get ready by telling you how to use the three planning worksheets in Appendix C of this guide. When the worksheets are filled out, they'll not only contain all the information you need for Chapter 4, they'll also be a useful record of how you've organized the network.

The three worksheets are the programs worksheet, the volumes worksheet, and the accounts and access worksheet. They essentially divide the preparation for Chapter 4 into four steps:

- Deciding what programs you want to make available on the network and how you want to organize them into volumes
- Specifying the owner, type, and size of each volume
- Planning how many people are to use the network and how many user accounts to create
- Allocating volumes to users and assigning the volumes mount locations

We suggest that you don't write on the worksheets in this guide. Use them as masters and make copies to write on.

How Much Space Do You Have?

Before beginning to plan your volumes with the worksheets, you need to determine the storage capacity of your hard disk. You can't allocate more space to volumes than your hard disk has.

Hard disks come in different sizes. Look for yours on this chart for a rough estimate of its storage space expressed in both blocks (512 kilobytes) and floppy disk equivalents.

If you have more than one hard disk, total their capacities. You're unlikely to run out of space, but it's good to know how much you have.

Now write this figure down. When you finish with the volumes worksheet, you can compare this figure with the total space you need for the volumes you've planned to be sure you have enough.

Hard Disk		**Floppy Disk Equivalents**		
No. Megabytes	Approx. No. Blocks	Apple II 5.25" Single-Sided	Mac 3.5" Double-Sided	MS-DOS 5.25" Double-Sided
10	20,480	73	13	28
20	40,960	146	26	57
45	92,160	329	58	128
75	153,600	549	96	213
125	256,000	914	160	356

Worksheet 1: Programs

1. **Group the programs by operating system.**

   A volume can contain programs of only one operating system. For example, a word processing program that runs under the ProDOS operating system can't be in the same volume with DOS 3.3 programs.

   This means that you must use a different programs worksheet (or set of worksheets) for each different operating system you use. So, as a first step, sort your programs by operating system.

   If you aren't sure of a program's operating system format, check the documentation for the program.

   Now take the programs in one particular operating system to work with and set the rest aside for the time being. Do Step 2 just for the programs you've selected. You'll work with the other programs later.

2. **Group the programs that you want in the same volume.**

   You will need to fill out a separate programs worksheet for each group of programs that you want to place together in the same volume.

   As for how to go about grouping them, there are various ways. Here are some guidelines:

   - List the programs that a group of users needs only read-only access to and put them all in one public volume. As long as no one needs read-write access to any of the programs, they can all go in one public volume. That way they're easy for users to share.

     For instance, you might put in one public volume the Corvus File Spooler Program, which lets users who don't have a Print Spooler Card transfer files and print on a network printer; the Mount Manager Program; and any other programs everyone in a class may want to use.

- Put a copy of any program to which a user account needs read-write access in a private volume assigned to that account.

  Some programs, such as games that keep track of record scores and certain word processing programs, create temporary work files. Users need read-write access to the volumes containing these programs to be able to write to these files.

  Each user account that you want to let use such programs will need its own copy in its own private volume, unless the program is a multiuser program designed for use on a network.

- Put programs that need to be backed up separately in their own volumes, one to a volume.

- Put all multiuser programs in a single uncontrolled volume.

  Multiuser programs can be put in a single uncontrolled volume to which everyone who needs to use the programs has read-write access. Be sure a program's documentation says that the program is multiuser, though.

3. Fill out the top of the programs worksheet.

After you've grouped the programs that you want in the same volume, you're ready to fill out a programs worksheet for each group. The first step is to fill out the top part of the worksheet with information about the sort of volume you need.

■ **Volume name**

These are the basic rules for naming volumes:

Rules for Naming Volumes

- Names may be a maximum of 10 characters
- Names must begin with a letter
- Names may not contain spaces between characters
- Names may contain any letters, any digits, and any of these additional characters: _ - . # $ ' ( ) ^

Choose volume names that will help you keep things organized.

One approach is to name volumes with a prefix for the operating system, plus a number to identify particular volumes: DOS1, DOS2, DOS3, DOS4, for instance. This method doesn't indicate what a volume contains, though.

Another possibility is to label the volume with a prefix that defines the class period and follow with the subject: P1History, P2English, P3French, etc.

You might also reverse the order and give each name a prefix defining a subject followed by an abbreviation for the class period: HistP1, HistP2, HistP3, etc.

Or you could devote different volumes to different applications and name the volumes for the programs they contain: Wordproc, Sprdsheet, Accountng, BasicProg, etc.

Decide on a name for the volume and write it in the appropriate space on the top part of the programs worksheet.

- **Operating system format**

  All the programs you want to go in this volume must use the same operating system. Write the name of that operating system in the blank provided.

- **Owner's log-on name**

  What account do you want the volume to belong to? All volumes except other users' private volumes, if any, should belong to the network manager.

  Write down on the worksheet the name of the user account the volume will belong to. Your account as network manager is A2MGR.

  As network manager, you already have a user account in each operating system that you have installed. The account was created automatically during installation of that operating system and is intended for your use. You don't have to create one.

These are the names of the accounts that are created automatically for the network manager when an operating system is installed. If the volume is to belong to you, enter on the worksheet the name of the account appropriate to the operating system you're presently working with:

Corvus Network Manager **Planning Worksheet 1**

PROGRAMS

Vol. Name: DOSTUFF
Format: DOS 3.3
Owner: GRADE 8
Type: PUBLIC
Size: 30 FLOPPIES

Program Name	Special Requirements	Own Installer?	Size in Blocks or No. Floppies	Greeting Program Name	Directory (Pathname) or DOS Vol. No.
BANK ST. WRITER		N	1F	HELLO	1
BANK ST. SPELLER		N	1F	BSS	2

■ **Volume type**

The three types of volume are public, private, and uncontrolled. The chart below gives a summary of how they differ. See Chapter 1 for more information.

Volume Availability and Access

Volume Availability	# Accounts	Access by Owner Account	Access by All Other Accounts
Public	1 or More	Read-Write	Read-Only
Private	1 Only	Read-Write	No Access
Uncontrolled	1 or More	Read-Write	Read-Write

■ **Volume size**

Wait to fill this in until you've completed the rest of the programs worksheet. Then total the space requirements of the programs you've listed on the worksheet. For any operating system but DOS 3.3, add 5% extra to the total to make sure you've allowed enough, and write the total here. (To add a safety margin in DOS 3.3, you'd have to allow an entire floppy disk equivalent, so don't bother.)

Enter the volume size in blocks for ProDOS, Pascal, and CP/M volumes; enter it in floppy disk equivalents for DOS 3.3 volumes.

4. Fill out the bottom part of the programs worksheet.

Now you're ready to start listing the programs that will go in the volume. The entry for each program becomes a row on the bottom part of the worksheet. For each program you want to put in the volume, fill out the information below.

■ **Program name**

Write the name of the program in the space.

■ **Special requirements**

Does the program require a certain mount location in order to run or for users to print from it? Do you want to reserve the program for one user's exclusive use? Write any such notes here.

■ **Does the program have its own installer?**

How does the documentation for the program say to install it? If it has its own install utility, plan to use that and make a note to that effect here. If it does not, you can use a Corvus install utility for programs in ProDOS, DOS 3.3, or Pascal. The *Tools for Network Users* guide explains how to use these utilities.

■ **Space requirements**

The program's documentation will tell you how much space the program requires. Write that amount here, expressed in blocks if the program runs under any operating system but DOS 3.3. If it runs under DOS 3.3, write the space requirement in single-sided floppy diskette equivalents.

Volume Minimums and Maximums by Operating System

Operating System	Unit of Measure	Minimum Size of Volume	Maximum Size of Volume
DOS 3.3	Floppy disk	1 floppy disk or 284 blocks	117 floppy disks or 32,767 blocks
ProDOS	Blocks	284 blocks	32,767 blocks
CP/M	Blocks	284 blocks	16,388 blocks
Pascal	Blocks	284 Blocks	32,767 blocks

Hard Disk		Floppy Disk Equivalents		
No. Megabytes	Approx. No. Blocks	Apple II 5.25" Single-Sided	Mac 3.5" Double-Sided	MS-DOS 5.25" Double-Sided
10	20,480	73	13	28
20	40,960	146	26	57
45	92,160	329	58	128
75	153,600	549	96	213
125	256,000	914	160	356

Eventually you'll use the figures in this column to determine how large a volume you need to hold the programs listed on this worksheet.

Volumes for all operating systems except DOS 3.3 are measured in blocks. A block, you'll recall, is 512 bytes, or half a kilobyte (k).

Volumes for DOS 3.3. programs are measured in single-sided floppy diskette equivalents instead of blocks. A program using both sides of the floppy diskette will require a space equivalent to two diskettes. Any partially filled side of a diskette requires space equivalent to a full diskette.

- **Greeting program name**

  ProDOS, DOS 3.3, and Pascal each have different conventions for the greeting program. See the *Tools for Network Users* guide.

- **ProDOS directory (pathname) or DOS 3.3 volume number**

  Write here how you intend to store the programs listed on this worksheet.

  For ProDOS programs, give the path to the subdirectory that will list the program.

  For DOS 3.3 programs, assign consecutive volume numbers, beginning with 2. Assign volume number 2 to the first DOS 3.3 program, number 3 to the next, and so on. Volume number 1 should be reserved for the main menu program for the entire set of programs to be stored in the Constellation volume.

  For Pascal volumes, leave this space blank.

When you've listed all the programs to go in the volume, total the Space Requirements column and follow the instructions above in Step 3, "Volume Size," for entering the volume size at the top of the programs worksheet.

That completes one programs worksheet. Do another for each group of programs you have from Step 2, above. Then fill out programs worksheets for any programs you have in other operating systems.

When all your programs are accounted for on programs worksheets, you're ready to move on to the volumes worksheet.

Corvus Network Manager **Planning Worksheet 1**

PROGRAMS

Vol. Name: DOSTUFF
Format: DOS 3.3
Owner: GRADE 8
Type: PUBLIC
Size: 30 FLOPPIES

Program Name	Special Requirements	Own Installer?	Size in Blocks or No. Floppies	Greeting Program Name	Directory (Pathname) or DOS Vol. No.
BANK ST. WRITER		N	1F	HELLO	1
BANK ST. SPELLER		N	1F	BSS	2
BANK ST. FILER		N	1F	BSF	3
BANK ST. MAILER		N	1F	BSM	4
SUPERBASE		Y	2F	HELLO	5+6
MULTIPLAN		N	1F	MP	7
BACK TO BASICS					
PAYROLL		N	1F	PAY	8
A/R		N	1F	AR	9
A/P		N	1F	AP	10
G/L		N	1F	GL	11
PFS WRITE		N	1F	HELLO	12
PFS REPORT		N	1F	HELLO	13
PFS FILE		N	1F	HELLO	14
			14 FLOPPIES		

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Worksheet 2: Volumes

After you've filled out your programs worksheets, filling out the volumes worksheet is easy.

Recall that each programs worksheet lists the contents of one volume. For the volumes worksheet, you basically just copy the top part of each programs worksheet to a row on the volumes worksheet. Add any other volumes you want and when you're done you have a list of all the volumes on the network.

Here's how to fill out a volumes worksheet:

1. **Copy the top part of each programs worksheet into a row on the volumes worksheet.**

   The top part of the programs worksheet lists information about the volume to contain the programs on the sheet. There you'll find the volume name, operating system format, owner's log-on name, volume type, and volume size. Copy this information into a row on the volumes worksheet.

2. **Add any other volumes you want.**

   Not all the volumes you create need to contain programs. You may want to create private volumes for some users to save their files in or public volumes to contain data.

   For any such additional volumes you want to create, fill in a row on the volumes worksheet.

   Now it's a good idea to total the volume size column and to compare this figure with the total storage capacity of your hard disks. You were advised to make a note of this figure at the beginning of this chapter. You can't create volumes whose combined size exceeds the space you have available.

3. **Fill out the contents summary for each volume.**

   This is a place for you to give a general description of what is in a volume. For instance, you might summarize the contents of one volume by jotting *MATH* in this space.

   You should also note here whether the volume has any special requirements. It does if any of its programs do. For example, if some program in the volume requires a special mount location, then that is also a special requirement of the volume because the program will have the mount location it needs only if its volume does.

Now you're done, and you have a record of every volume on the network and its vital characteristics. You will work from this record in Chapter 4 to create volumes matching the specifications you've written down.

Go on now to the final worksheet, for accounts and access.

Corvus Network Manager **Planning Worksheet 2**

VOLUMES

Volume Name	Format	Owner	Volume Type	Volume Size	Contents Summary	Special Requirements
DOSTUFF	DOS3.3	GRADE 8	PUBLIC	30 FLOPPIES		
MORGAN	DOS3.3	MR. MORGAN	PRIVATE	15 FLOPPIES		
KLIEN	DOS3.3	MS. KLIEN	PRIVATE	15 FLOPPIES		
C1 DATA	DOS3.3	CLASS 1	PUBLIC	10 FLOPPIES		
C2 DATA	DOS3.3	CLASS 2	PUBLIC	10 FLOPPIES		

Worksheet 3: Accounts and Access

PEOPLE AND USERS

To give someone access to volumes on the network, you must give that person a user account. The Constellation III Network Management Program doesn't keep track of *people* on the network, only of *accounts*. For example, if users Pat and Chris share a user account named TEAM1, the Network Management Program won't know anything about Pat and Chris but only about the volumes and access for TEAM1.

To give a person or group a user account, you must assign them an account name to use when logging on and specify the operating system for their account. User accounts are like volumes in that they belong to a particular operating system. A user account can have access only to volumes formatted for that operating system.

This is important, because it means that if a user needs access to volumes belonging to two different operating systems, that user needs two different user accounts, one for each system. For example, someone who is (a) taking a computer programming course in Pascal and (b) also using programs that have been written in the DOS 3.3 operating system will need two separate accounts--an account for Pascal volumes and an account for DOS 3.3 volumes. Make out separate accounts and access worksheets for each operating system you use.

Sometimes you may want only one person to have access to a certain volume. In that case the volume has to be made a private volume belonging to that person's user account. If no one else is to have access to the volume, the user account cannot be shared with another person.

If you have a number of users whose accounts will be essentially the same, create their accounts at the same time. The responses you make when you create one account become the responses the program suggests when you create the next account. You can just change these selectively--assigning a new account name, for instance--instead of typing everything all over again.

SHARING ACCOUNTS

If you have a group of people who will be using the same programs and each person can save his work on his own floppy disk, these people can all share one account. If they all save their work on floppies, they do not each need their own private volume. They can share the volume containing the program they all use because they only need to read what's in that volume; they don't need to write to or change the volume in any way.

If, instead of using floppies, users are to save their work in a volume on the hard disk, they each need a private volume for their work and cannot share an account.

If you do choose to assign more than one person to an account,

- be sure that everyone sharing the account has available the slots on which that account's volumes are to be mounted; and
- to protect their contents, assign read-only access to all the volumes owned by the account.

These cautions will become clearer to you as you read on.

Now you're ready to begin filling out the accounts and access worksheet. The worksheet is divided into two parts, the accounts part and the access part. We begin with accounts.

FILLING OUT THE ACCOUNTS PORTION

To fill out the accounts portion of the accounts and access worksheet, write down the following information for each account you want to create. Remember, you need a separate worksheet for the list of accounts in each operating system you use.

1. Operating system

Write on the worksheet what operating system all the accounts listed on that sheet are to use.

2. **Name of individual or group**

   This item is for your own information. It is not the log-on name of the account but only an identification of the *people* to use a particular account.

   If the account is to belong to one person, write that person's name. If it is to belong to a group, identify the group somehow, e.g., by time period (9:00--10:00), class (World History), teacher (Ed Smith's students), or common activity (creative writing).

3. **Private account or shared**

   Note here whether the account belongs to just one person or to more than one. This is to help you remember not to assign private volumes to an account that's shared by several persons.

4. **Account name**

   Give a name to the account. This is the name that the owner of the account will use to log on.

   These are the rules for assigning log-on names to user accounts:

   Rules for Naming Accounts

   - Names may be a maximum of 10 characters
   - Names must begin with a letter
   - Names may not contain spaces between characters
   - Names may contain any letters, any digits, and any of these additional characters: _ - . # $ ' ( ) ^

   It's a good idea to assign account names that are not person-specific so that you can reuse the same accounts from year to year for different individuals and groups. You can just change the password each year to maintain security.

5. Password

Passwords are usually assigned for individual accounts but not for accounts that are shared.

These are the rules for creating passwords:

Rules for Creating Account Passwords

- Passwords may be a maximum of 8 characters
- All other rules for naming accounts apply

Corvus Network Manager **Planning Worksheet 3**

ACCOUNTS & ACCESS

Operating System:

Name of Individual or Group	Private Account or Shared?	Account Name	Password	Mount Locations: Volume	Access	Volume	Access	Volume	Access	Volume	Access	Volume	Access	Volume	Access
CLASS1	S	CLS1													
MR. MORGAN	PA	PS140	140												
CLASS2	S	CLS2													
MS KLIEN	PA	SPORT	MAY												
CLASS1															
MARK N.	PA	C1MN	SOCCER												
JOE B.	PA	C1JB	CLICK												
SUE S	PA	C1SS	MEAT												
MARCIA B.	PA	C1MB	WRONG												
KEVIN R.	PA	C1KR	TREE												
FRANK L.	PA	C1FL	CRAZY												
CLASS2															
TONY L	PA	C2TL	BORED												
TOM G	PA	C2TG	MIND												
HENRY R	PA	C2HR	LOOSE												
WESS Y	PA	C2WY	MILE												
MARY L.	PA	C2ML	MOTORS												
KAREN W.	PA	C2KW	FISH												

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FILLING OUT THE ACCESS PORTION

For every account you create, there will be at least one volume on the Omnidrive that you want the account to be able to use. The access portion of the worksheet is where you allocate these volumes to the accounts you are listing and specify mount locations.

Be sure when you assign mount locations to a user's volumes that the user's workstation has those mount locations free, i.e., not occupied by a peripheral. If you do assign a volume to a mount location that is used for a peripheral on someone's computer, the volume will take the slot away from the peripheral and the peripheral won't work. See "Mounting" in "Fundamental Concepts," Chapter 1, for more on this.

So, for instance, do not mount volumes on slot 1, which is used for a printer, or in slot 3 or the auxiliary slot, which is linked to slot 3. Slot 3 is commonly used for an 80-column card, which configures the monitor display in 80 columns (i.e., makes it 80 characters across) and adds memory.

The tables below show how mount locations are identified in each operating system and tell what slot assignments are conventionally reserved for various peripherals.

Mount Location Equivalents

The Apple II		Mount Locations			
Physical Slot	Physical Drive	DOS 3.3	ProDOS	Pascal	CP/M
7	1	Slot 7, Drive 1	Slot 7, Drive 1	—	—
7	2	Slot 7, Drive 2	Slot 7, Drive 2	—	—
6	1	Slot 6, Drive 1	Slot 6, Drive 1	4	A (Floppy)
6	2	Slot 6, Drive 2	Slot 6, Drive 2	5	B (Floppy)
5	1	Slot 5, Drive 1	Slot 5, Drive 1	9	C
5	2	Slot 5, Drive 2	Slot 5, Drive 2	10	D
4	1	Slot 4, Drive 1	Slot 4, Drive 1	11	E
4	2	Slot 4, Drive 2	Slot 4, Drive 2	12	F

Suggested Apple II Slot Assignments

Apple Physical Slot	Suggested Use
1	Printer Card
2	Modem Card
3	Memory Slot—Leave Open
4	Leave Open for Mounted Constellation Volumes
5	Leave Open for Mounted Constellation Volumes
6	Floppy Drive
7	Omninet Network Card & Mounted Constellation Volumes

Perform the following three steps for each account:

1. On the DOS 3.3 and ProDOS worksheets, write in the mount locations you'll be using for that account. On Pascal and CP/M worksheets, write in the unit letters and unit numbers.

2. For each account, write under the mount locations the names of the volumes that you want the account to be able to use.

3. Next to each volume name write the type of access the account should have to the volume--read-only or read-write.

When you're done entering the information for one account, enter the information for the next.

Operating System:

Mount Locations: 57 D1, 57 D2, S5 D1

Name of Individual or Group	Private Account or Shared?	Account Name	Password	Volume	Access	Volume	Access	Volume	Access	Volume	Access	Volume	Access	Volume	Access
CLASS 1	S	CLS 1		DOSTUFF	RO										
MR. MORGAN	PA	PS140	140	DOSTUFF	RW	MORGAN	RW								
CLASS2	S	CLS 2		DOSTUFF	RO										
MS. KLIEN	PA	SPORT	MAY	DOSTUFF	RO	KLIEN	RW								
CLASS 1															
MARK N.	PA	C1MN	SOCCER					C1MN	RW						
JOE B.	PA	C1JB	CLICK					C1JB	RW						
SUE S.	PA	C1SS	MEAT					C1SS	RW						
MARCIA B	PA	C1MB	WRONG					C1MB	RW						
KEVIN R.	PA	C1KR	TREE					C1KR	RW						
FRANK L.	PA	C1FL	CRAZY					C1FL	RW						
CLASS2															
TONY L.	PA	C2TL	BORED					C2TL	RW						
TOM G.	PA	C2TG	MIND					C2TG	RW						
HENRY R	PA	C2HR	LOOSE					C2HR	RW						
WESS Y	PA	C2WY	MILE					C2WY	RW						
MARY L.	PA	C2ML	MOTORS					C2ML	RW						
KAREN W.	PA	C2KW	FISH					C2KW	RW						

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This completes instructions for filling out the worksheets. Now you should have at your fingertips all the information you need to use the Network Management Program to create the volumes and user accounts you've been planning.

But that's the business of Chapter 4. For now, let's go to Chapter 3. There you'll learn how to log on, how to make responses to prompts from the screen, and other basics of working with the Network Management Program.

Chapter 3

The Basics

Contents

Introduction

The Constellation III Network Management Program is designed to help you manage space on the Omnidrive. You use the program to create volumes for programs and storage on the hard disk, to create user accounts, and to give the accounts access to volumes by means of the account access table.

The Network Management Program also provides a view of the network map and ways to manage the PIPES volume, unlock semaphores, execute batch files, and change certain preset options.

You'll learn more about these things in the next chapter. The purpose of this chapter is to prepare you by briefly explaining the items on the main Network Management Program menu and by telling you the ground rules for using the menu and moving around in the program.

Logging On

To use the Constellation III Network Management Program, you must first log on. You can do this either from the hard disk or from a floppy. Both ways are described below. Ordinarily you would log on from the hard disk.

FROM THE HARD DISK

1. **Turn on your network station.**

   A screen appears asking for your account name.

2. **Type A2MGR and press** RETURN.

   A prompt asks for your password.

3. **Type NOS and press RETURN. (Or, if you have changed the network manager's password, type the new password.)**

   The Constellation III Network Management menu appears.

```
Constellation III Network Management

    1. Network Management Program

    2. ProDOS Utilities

    3.

    4.

    5.

Select [Esc] to exit.............

Use Arrow Keys or Numbers to Select Choice...
or Select '+' key to add your own choices
```

   Options 3, 4, and 5 on the menu are blank. You will learn how to create your own menu options for these entries later on in this chapter in the section "Customizing the Menu."

4. **Press 1 or use the arrow keys to select the Network Management Program.**

   A screen appears asking you to select the current server.

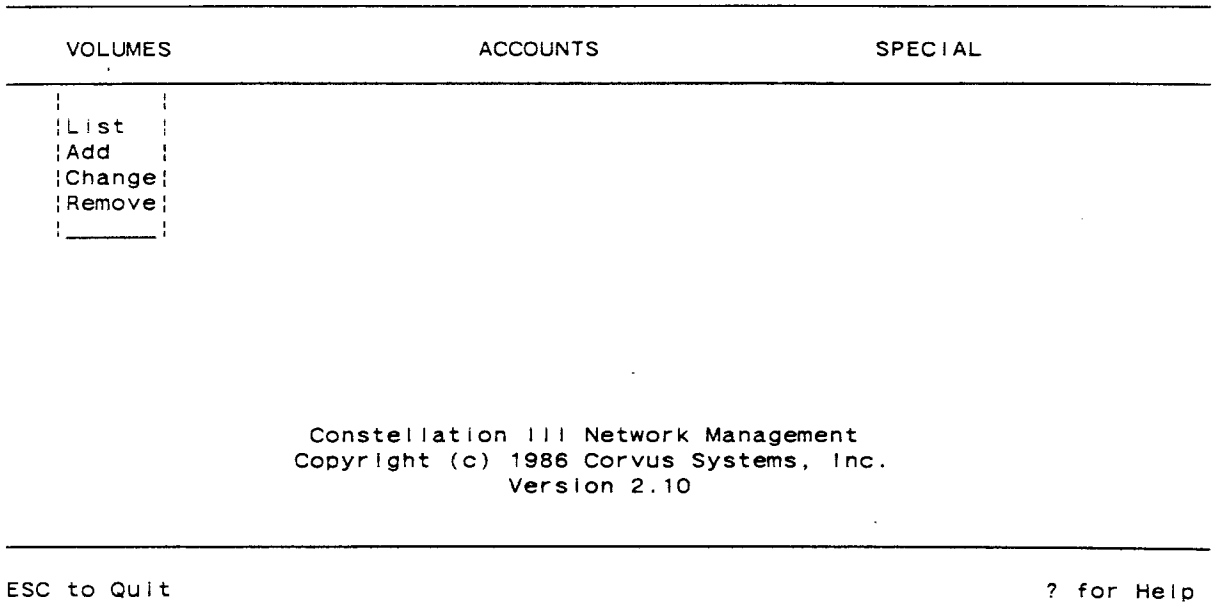
5. **If you have just one server on your network, press RETURN.**

   OR

   Use the arrow keys to move the highlight bar to the server containing the volumes that you want to work with and then press RETURN.

6. **Enter the drive password.**

   The main menu of the Network Management Program appears.



FROM A FLOPPY DISKETTE

1. **Determine the slot number where your floppy card is installed.**

   Remember this number for use in Step 2.

2. **Turn on the computer, insert the diskette labeled /C3 in drive 1, type PR#(slot number of floppy), and press [RETURN].**

   For example, if your floppy card is installed in slot 6, type PR#6

   and press [RETURN].

   The screen displays a menu.

3. **Select the Network Management Program.**

   The highlight bar should already be positioned on this option when the menu appears. If it is not, move the bar there with the arrow keys. Press [RETURN].

4. **If you have just one server on your network, press [RETURN].**

   OR

   Use the arrow keys to move the highlight bar to the server containing the volumes that you want to work with and then press [RETURN].

5. **Enter the drive password.**

   The main menu of the Network Management Program appears.

The Network Management Program Menu

Here is a summary of the functions on the main Network Management Program menu and a few words about each.

The summary is divided into three sections, one for each pull-down sub-menu on the main screen.

VOLUMES MENU

List — This function lists existing volumes and the amount of space that remains on the hard disk. You can use this function to list volume records to the screen, print them on a printer (slot 1), or save them in a ProDOS text file.

Add — You use this function to create or *add* a new volume.

Change — This function lets you change the name or availability of a volume.

Remove — You use this function to remove or delete a volume you no longer want.

WARNING: Under no circumstance should you change or remove the volumes CORVUS, A2SYS, or A2BOOT. These volumes must remain on the system in order for the system to function.

ACCOUNTS MENU

List — This function lets you see the list of user accounts on the screen, print them on a printer (connected in slot 1), or save them as a ProDOS text file.

Add — You use this function when you want to add a new user account.

Change Password — Use this function when you want to change somebody's password.

Remove — This is the function you use to remove or delete a user account.

Manage Access Table — You use this function to give a user account access to volumes, to specify the kind of access the account is to have, and to specify mount locations. Volumes can also be unmounted and deleted with this function.

Print Access Table — You can use this function to display the access table for an account so you can see what volumes a user has access to, etc. You can choose to have the program print the table if you have a printer connected to slot 1 of your computer. Or you can save the table display in a ProDOS text file.

SPECIAL FUNCTIONS MENU

Select Server — If yours is a multiple-server network--i.e., a network with more than one Omnidrive--you can use this function to change the Current Server and Drive settings.

Suppose you were trying to find a certain volume. You might need to use Select Server if you had already used the List function from the Volumes menu to list all the volumes on one drive and still hadn't found the volume you were looking for. Select Server lets you select a different drive so that you can look for your volume there.

View Network Map

Use this function to see a list of every station or device (printers and drives, for instance) on the network and the network address of each. This function is useful for determining which network addresses are free and which are in use.

Manage Transfer Area

Choose this function to manage space in the Transfer Area, also called the PIPES volume. The Transfer Area is where files go first when you send them to a network printer or another user.

Clear Semaphores

Semaphores are set to prevent files from being used by more than one person at a time. When set, a semaphore locks out other users. Semaphores can become stuck in the set position when there is a power or system failure. The Clear Semaphores function can be used to clear them.

Execute Batch Files

Choose this function to execute a batch file that has been stored as a ProDOS file.

Change Options

Use this function to change the options for inserting a line feed after a carriage return when printing, for choosing to format volumes automatically when they're created, and for enabling the debug mode.

Selecting from Menus

The Constellation III Network Management Program is a menu-driven program using a pull-down menu design. You do not need to remember a long list of commands. Instead, you just choose from the list of menu items presented by using the arrow keys and [RETURN]. When you want to choose a function from a menu, use the arrow keys to move the highlight bar to the function of your choice and then press [RETURN] to accept that choice.

You can also make a selection by pressing the first letter of the item you want. When you select an item this way, the program proceeds without waiting for you to press [RETURN].

After you have made your choice, the appropriate dialog screen is presented.

Customizing the Menu

Options 3, 4, and 5 on the main Constellation III Network Management menu are blank when you purchase Constellation III. These spaces have been purposely left blank to let you add as many as three options of your own to the menu.

```
Constellation III Network Management

   1. Network Management Program

   2. ProDOS Utilities

   3.

   4.

   5.

Select [Esc] to exit..............

Use Arrow Keys or Numbers to Select Choice.
or Select '+' key to add your own choices
```

Customizing the menu this way makes it more convenient to run programs you use frequently. For instance, if you make option 3 on the menu read *Word Processor*, say, and assign your word processing program to that option, from then on all you have to do to run your word processor is to select option 3. Your word processing program will start up automatically, without your having to enter any prefixes, subdirectories, or pathnames.

To assign an option of your own to the menu:

1. **Log on as the network manager.**

   Log on to the system from the hard disk as described at the beginning of this chapter in the section "Logging On": i.e., turn on the computer, type A2MGR and press [RETURN], and enter the password and press [RETURN]. The Constellation III Network Management menu appears.

2. **Press + to choose to make an assignment to one of the unassigned menu options.**

   If you press 3, 4, or 5 while the menu listing for that option is still blank, you receive a message that a syntax error has occurred. Press any key to return to the menu. You need to press + to display the first of the prompts that guide you through making assignments to the free menu options.

   After you press + the screen asks what number you want to add, i.e., which of the options 3, 4, or 5 you want to assign a program to.

3. **Press 3, 4, or 5 and then press [RETURN].**

   Press the number of the option you want to assign, or press [ESC] to return to the menu.

   After you press a number, the screen asks for the name you would like for your option.

4. **Enter a name for the option and press [RETURN].**

   Type the name you want the option to be listed by in the menu. For instance, you might choose to have a listing for your word processing program read *Word Processor.*

5. **Enter the prefix name and press** RETURN.

   Constellation III needs directions on how to find the program you are assigning. This is the same information you would ordinarily type to run the program yourself.

   The prefix you need to enter is the name of the Constellation volume where the program is stored. If the program is in a subdirectory, you need to type / and enter the name of the subdirectory, too.

   For example, if your word processor program is in subdirectory APWORKS in volume WORDPROC, type

   WORDPROC/APWORKS

   If there is no subdirectory, just type the volume name.

   When you've entered the prefix and any subdirectory names, press RETURN.

6. **Enter the pathname of your program and press** RETURN.

   The program's pathname is the name of the executable file that starts the program. What it is depends on the program. It might be *EDITOR*, *HELLO*, *STARTUP*, or something else. It's whatever you ordinarily type to run the program. Enter this name and press RETURN.

   The screen asks whether you wish to add another option to the menu.

7. **Add another option or return to the menu.**

   If you want to assign another option to the menu, press Y. The screen displayed at the end of Step 2 returns, asking what number you want to add. Pick up these instructions at Step 3 to add the option.

   If you don't want to assign another option, press RETURN. This takes you back to the Constellation III Network Management menu, where you'll see displayed the name of the new option you have added.

Making Responses on Dialog Screens

A dialog screen is like a printed form with blanks in it where you are to supply information. A highlighted bar picks out the blanks one at a time for you to fill in.

When you create volumes or new user accounts, or do anything else in the Network Management Program that requires you to enter information, you enter it by making responses on a dialog screen.

You make responses the same way whether you are creating a volume, changing an account password, or whatever.

ANSWERING QUESTIONS

Usually you will be asked to make one of these responses:

1. **Type your response to fill in the blank line.**

   Type your response on the blank line and press RETURN.

   Don't put extra spaces in front of your response. Type all words, symbols, spaces, and punctuation carefully and be careful not to add or leave out punctuation marks at the end.

   When you are asked to press RETURN or any other key, just press that key.

   To accept a response provided by the program, press RETURN.

2. **Select a response from the list that is presented.**

   To make a selection use the arrow keys to move the highlight bar to your choice and press [RETURN]. In a list, the item on which the highlight bar is resting is the selected item. To accept that item, press [RETURN].

   If you choose *not* to accept a response in the list provided by the program, move the highlight bar to Other, then press [RETURN], type your response, and press [RETURN] again.

MOVING FROM ONE HEADING TO ANOTHER

As you enter your answer to a question that appears at the bottom of the screen, your response will be placed under the appropriate heading at the top of the screen. The highlight bar will move to the next heading and a new question will appear at the bottom of the screen.

You can use [TAB] or [RETURN] to move the highlight bar to the next input field. As the highlight bar moves across the headings, the questions at the bottom of the screen change to correspond with the new heading chosen.

After making your response, press [TAB] or [RETURN] to move to the next field. To go backward to the previous field, hold down [OPEN-APPLE] and press [TAB].

CHECKING YOUR RESPONSES

It is much easier to change responses while you are still on the dialog screen before you press [RETURN] at the OK prompt than it is to change them later. After answering all the questions required to complete a record, you'll see a prompt asking that you confirm your responses by pressing [RETURN]. Check your responses at this time. If you need to make a change, use the combination [OPEN-APPLE] and [TAB] keys to move the highlight bar back to the heading for the response you want to change.

ABANDONING A DIALOG SCREEN

If, for any reason, you want to abandon the screen without making any entries, press [ESC]. Continue pressing [ESC] until you are back where you want to be. If you are several levels in, you will have to press [ESC] several times.

GETTING OUT ONCE YOU'RE DONE

When you have answered all the questions, the highlight bar moves to the OK box and a prompt asks you to press [RETURN] to confirm your responses. After you confirm that your answers are okay, the program will execute the function.

If your responses are not accepted by the program--for instance, if you have created a volume with a name that is already assigned to another volume--the program displays a message and presents a new screen on which to make corrections.

If your responses are accepted, it will offer another screen like the initial one for you to fill in. The answers you gave on the previous screen will appear as suggestions which you can accept or edit.

If you do not wish to proceed, press [ESC] to return to the menu.

CORRECTING AN ERROR

After you have entered all the information a dialog screen requires and have confirmed that it is correct, the only way you can change it is through the Change menu. See the sections "Changing Volumes" and "Changing Accounts" in Chapter 4 for more information.

Using the List Feature

Anytime you are prompted to supply the name of a volume or user account--for instance, when you're creating a new volume or account and need to specify a name--you can have the program present a list of existing volumes or accounts by pressing [SPACE]. If the list is too long to fit on one screen, press [SPACE] to continue the list. At the end of the list, press [SPACE] to return to the dialog screen.

If you want to return to the dialog screen without going through the entire list, press [ESC].

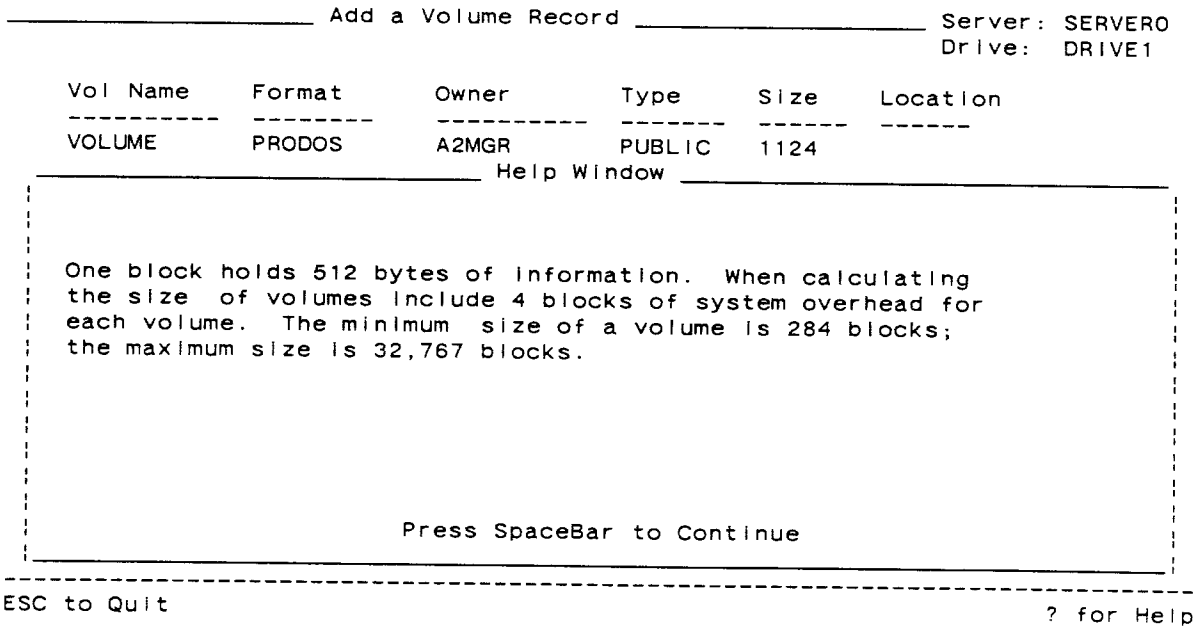
Volume records appear in the order in which they are located on the Omnidrive. Accounts appear in alphabetical order. You can select a volume or account from the list by typing just its number: you don't need to type the entire name. (This method, of course, doesn't work when you are adding a new volume or account, because the new name does not appear yet on the list.)

You'll find the List feature useful in these circumstances:

- When you are asked to type a name for a new volume or account and you need to be reminded of a group prefix.
- When you are asked to type a name for a new volume or account and you want to be sure that the name you have chosen is unique.
- When you are specifying the account name for an access table you want to edit and you are unsure of the exact spelling of the account name or of the operating system for the account.
- When you are adding volumes to an account access table and you are unsure of the exact spelling of a volume name or you are unsure of the volume type.

Using the Online Help

Help is always available online. Just press the ?/ key when you need more information about making menu choices or making responses on dialog screens.



Moving Around in the Program

The following chart summarizes the functions of important keys when you're using the Network Management Program.

Press:	In order to:
RETURN	Accept the entered response or the highlighted selection
ESC	Go back to the previous screen
?	Get information from Help
SPACE	Get a list; advance to the next page of the list or of Help
SHIFT	Move forward to the next field in a record
CTRL TAB	Move back to the previous field in a record
DELETE	Delete a single character
DELETE	Clear the existing response
→	Move the highlight bar to the right or down
←	Move the highlight bar to the left or up
↑	Move the highlight bar up
↓	Move the highlight bar down

Error Messages

When you give the Network Management Program information that it cannot handle for any reason, the program will automatically give you a message telling you that it has a problem dealing with your response. A list of these messages, called error messages, along with an explanation of what you can do to correct or avoid the problem, appears in Appendix B,"Error Messages", at the end of this guide.

For example, suppose that while creating an account, you specify a certain operating system and then receive this error message: Invalid OS format. If you look up the error message in the appendix, you will be told that the program cannot find a record for that operating system and that it may not be installed. Thus, to correct the error, you must either specify an operating system type that has been installed or install the operating system you specified.

If for any reason you are unable to resolve the problem, call your dealer for help.

Printing from the Network Management Program

From time to time, you may want to print lists of accounts and volume records for quick reference and for backup. There are two ways you can print:

1. You can print directly to the network or local printer connected to slot 1 of your network station.

2. If you don't have a printer connected to slot 1 of your station, you can first save the list as a ProDOS text file and then print it on a network printer using the File Spooler Program.

PRINTING DIRECTLY

In order to print directly from the Network Management Program, your computer must either be attached to a local printer--i.e., have a printer connected in slot 1--or else have a Corvus Print Spooler Card installed. The Print Spooler Card enables you to print from any application on a network printer as if it were a local printer.

SAVING AS A PRODOS TEXT FILE

Use this method if you don't have a printer card in slot 1 of your computer or a Print Spooler Card installed. First, save the list you want to print in a ProDOS text file. The program automatically provides a filename when you want to save a list. You can then use the File Spooler Program to send the file to a network printer. The details are explained in the section "To Save a List as a ProDOS Text File" in Chapter 4.

Chapter 4

Using the Network Management Program

Contents

Introduction

After planning how to set up the network with volumes and user accounts, your next job is to add the volumes and user accounts themselves.

Adding volumes and accounts is easy once you have filled out the planning worksheets. When you make an addition, the program will prompt you each step of the way with a series of questions. You'll find the answers to those questions on your worksheets. Even if you're not setting up a new network, but especially if you are, we strongly recommend that you fill out the planning worksheets before proceeding with adding volumes or accounts. If you haven't already created the worksheets, see Chapter 2 for instructions.

Each account record has an access table associated with it. This table lists the volumes to which that user account has access. When you add an account, the program automatically sets up a blank access table for the account. You give accounts access to volumes by filling out this access table.

We suggest that you follow this sequence in adding volumes and accounts for a given operating system:

1. Create *all* the volumes you want
2. Create *one* user account
3. Complete the access table for that account before creating another account

Do all the volumes and accounts for one operating system before turning to another.

In the sections that follow, you'll learn first how to create volumes, then how to create user accounts, and then how to give the users access to the volumes. But first you have to log on to the Network Management Program.

Logging On to the Network Management Program

When all network drives are on, turn on your computer. Then follow these steps:

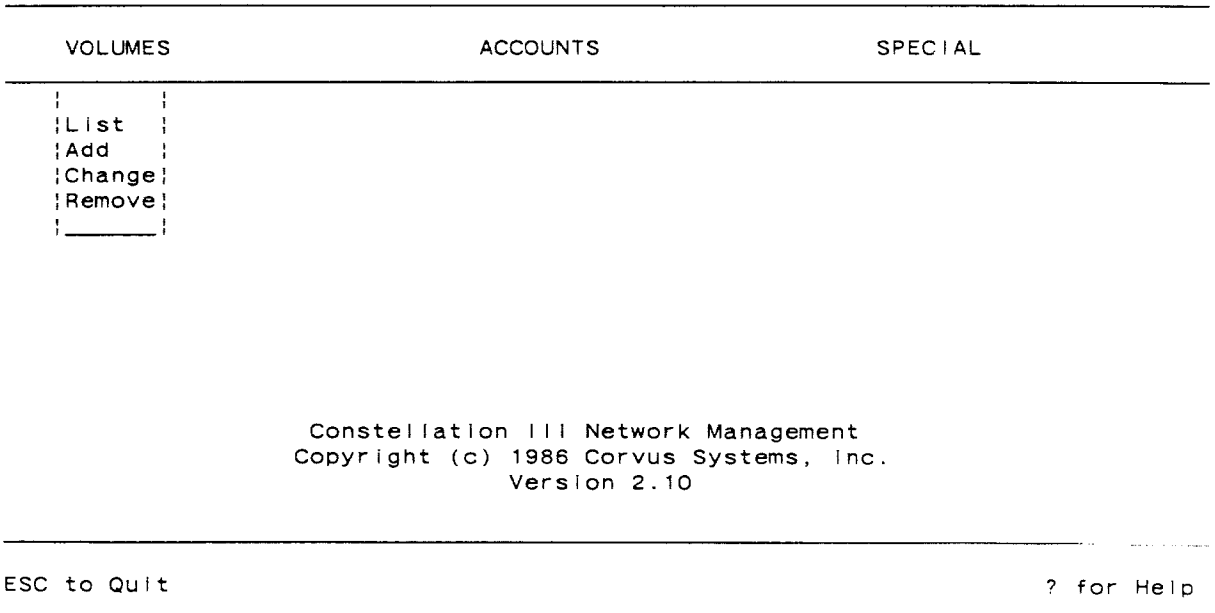
1. **At the log-on prompt, type A2MGR and press RETURN.**

2. **At the password prompt, type NOS (or whatever the new password is if you have changed it) and press RETURN.**

3. **Press 1 or use the arrow keys to select the Network Management Program from the menu on screen, and press RETURN.**

4. **On the Select Server screen, indicate the server that you want to work with and press RETURN.**

The Network Management Program menu appears.

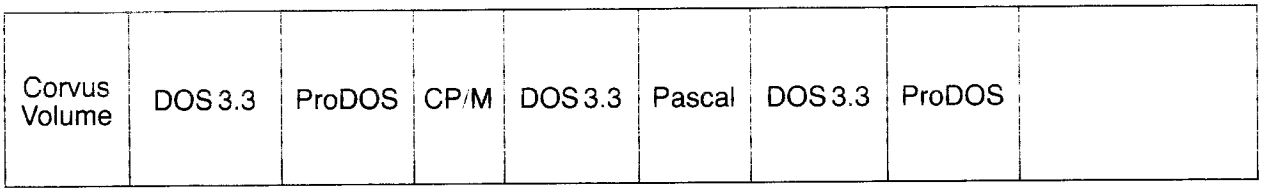


Adding Volumes

Having completed the planning worksheets, you're now ready to use them to help you add (i.e., create) volumes. To add a volume, you need to provide information about the kind of volume you want. This is done using the Add function in the Volumes menu.

Even with the best planning, after working with the network for a while you might find that you wished you had more volumes for a particular operating system. One of the virtues of the Corvus system is that you can add new volumes for a particular operating system at any time.

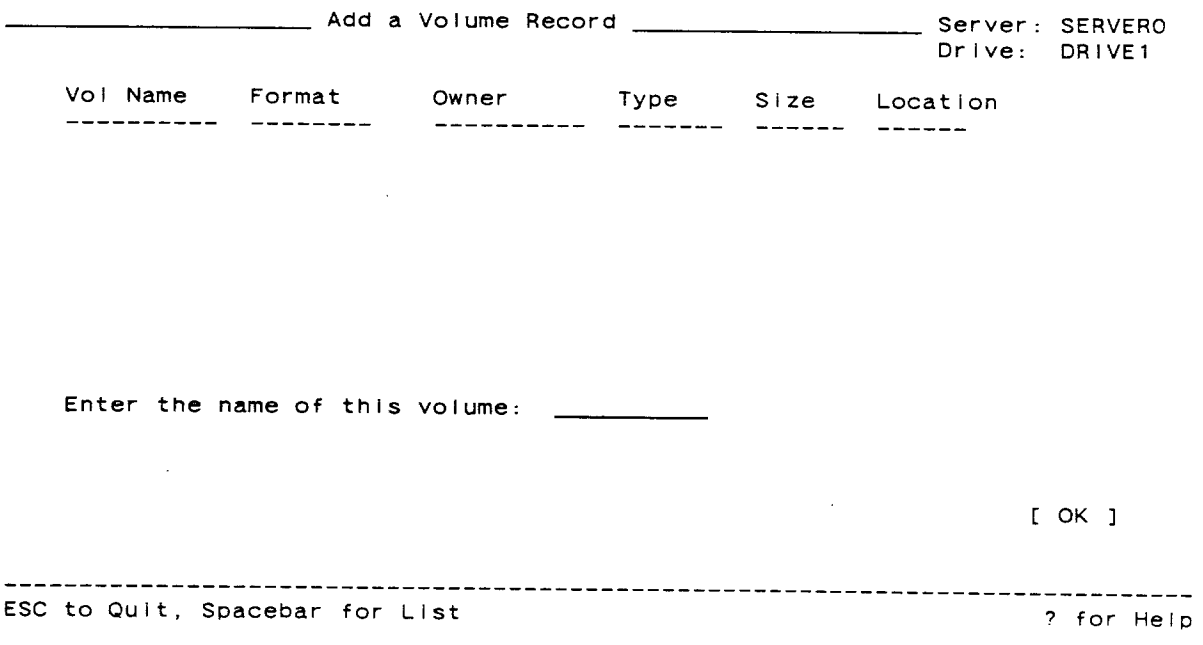
Dividing Space on the Hard Disk



You can continue adding volumes for any operating system in the space available.

1. **On the Network Management Program menu screen, select the Add function from the Volumes menu.**

   A Volume Record dialog screen appears. The highlight bar is on Volume Name, and the prompt at the bottom of the screen asks you to supply the volume name.



2. **Answer the questions that appear at the bottom of the screen.**

   Volume Name: These are the rules for assigning names to volumes:

   Rules for Naming Volumes

   - Names may be a maximum of 10 characters
   - Names must begin with a letter
   - Names may not contain spaces between characters
   - Names may contain any letters, any digits, and any of these additional characters: _ - . # $ ' ( ) ^

   Type a volume name and press RETURN.

If you want to see a list of existing volume names to make sure you are not using a name you have used already or to check to see what conventions you have established, press the space bar.

Operating System: Move the highlight to the operating system format you want for the volume and press [RETURN].

> **Note:** When you add a volume, the Network Management Program automatically formats the volume for the operating system you specify. If for any reason you do not want the volume formatted at the time you create it, you have to turn off the Automatic Format option using the Change Options function in the Special Functions menu *before* adding the volume. See "Changing Options" in the "Using the Special Functions" section of this chapter.

Owner: Enter the name of the account that will own the volume. You can display a list of existing accounts by pressing [SPACE].

Type: Specify whether you want the volume to be public, private, or uncontrolled.

Size: Accept the suggested size by pressing [RETURN], or type over the size given with the size you want.

For help estimating how big a volume you need, see the sections "Worksheet 1: Programs" and "Worksheet 2: Volumes" in Chapter 2.

Location: The options offered are AUTO and OTHER. AUTO, the default, will be highlighted. To place the volume in the next available space on the OmniDrive, press [RETURN]. If you want to place a volume at a particular address, select OTHER, then type a number for a different starting location, making sure that there is enough free space in that location for the new volume.

Refer to the section "Listing Volumes and Accounts" in this chapter for instructions on how to find out where there is space on the OmniDrive.

3. **Confirm that your responses are correct by pressing** [RETURN] **when the highlight bar is on the OK box.**

   OR

   If you want to clear what you've just done to start again or change a response, press [TAB].

   OR

   If you want to cancel what you've done and return to the menu, press [ESC].

   After you confirm that your responses are correct, the program adds the new volume to the OmniDrive. If the Automatic Format option has been set to On, the volume is formatted automatically for the operating system you specified.

   If the program accepts your responses, the screen shows the volume you entered, the highlight bar is on the name of the volume, and the corresponding prompt is at the bottom of the screen. If the program has a problem with any of your responses, you'll receive an error message.

4. **To continue adding volumes, repeat Steps 2 and 3.**

   Your responses for the previous volume are the default responses for the new volume. If you have already created a volume in this session, the name that you gave to the previous volume will appear as the suggested name. Type a new name instead.

Adding Accounts

After you've created all the volumes you want using your volumes worksheets, you're ready to create user accounts. To add a user account, you will use the Add function in the Accounts menu to enter information about the sort of account you want. If you filled out accounts worksheets, all the information you need is there.

To add a new account

1. **On the Network Management Program menu screen, select the Add function from the Accounts menu.**

   An Account Record dialog screen appears. The highlight bar is on Account Name, and the prompt at the bottom of the screen asks you to supply the account name.

```
_____ Add an Account _____ Server: SERVER0
                           Drive:  DRIVE1

  Account Name  Password  O.S.        Home Volume
  ----------    --------  ----------  ----------

  Enter the log-on name for this account: _____

                                              [ OK ]

--------------------------------------------------------------------------
ESC to Quit, Spacebar for List                              ? for Help
```

2. **Answer the questions that appear at the bottom of the screen.**

   Name: Press [SPACE] to display a list of the names of current accounts to select from, or type the log-on name for the account.

   These are the rules for assigning log-on names to user accounts:

   Rules for Naming Accounts:

   - Names may be a maximum of 10 characters
   - Names must begin with a letter
   - Names may not contain spaces between characters
   - Names may contain any letters, any digits, and any of these additional characters: _ - . # $ ' ( ) ^

   Password: Type the password for the account. Except that passwords may be a maximum of eight characters, the same rules apply for creating passwords as for assigning names to accounts.

   Operating System: Move the highlight bar to the operating system of your choice and press [RETURN].

   Only volumes of this operating system can be used by this account.

   Home Volume: Specify the name of the volume that you want the user to boot into automatically when he logs on. You may either type the name or press [SPACE] to display a list of the names of available volumes and select one. Press [RETURN].

3. **When the highlight bar is on the OK box, confirm your responses and press [RETURN].**

   OR

   If you want to clear what you've done to start again or change a response, press [TAB].

   OR

If you want to cancel what you've done and return to the menu, press ESC.

If the program accepts your responses after you confirm them, the screen shows the account you entered, the highlight bar is on the name of the account you last entered, and the corresponding prompt is at the bottom of the screen. If the program has a problem with any of your responses, you'll receive a message asking you to correct the error.

4. **To continue adding accounts, repeat Steps 2 and 3.**

   Your responses for the previous account become the responses the program suggests for the new one. To create another user account similar to the first, you may only need to change the account name. Each separate account needs a name of its own.

Managing Access to Volumes

At this point you have created volumes on the OmniDrive and you've also created some user accounts. Now you need to grant the accounts access to some volumes. To do this you use the Manage Access function in the Accounts menu.

To enter the Manage Access function:

1. **On the Network Management Program menu, select the Manage Access function from the Accounts menu.**

   A prompt appears asking you to type the name of the account. The program suggests the name of the last account that you created during this session.

2. **Press [RETURN] to accept the suggested name, or type the name of another account and press [RETURN].**

   If you are unsure of the account name, you can press [SPACE] to see a list of existing accounts. See "Using the List Feature" in Chapter 3.

   The access table appears with a prompt asking you to choose a function.

```
_____________________ Manage Access _____________________  Server: SERVER0
                                                           Drive:  DRIVE1
 Account:  A2MGR
    O.S.:  PRODOS

              Vol Name     Access       Mount
              ----------   ----------   ------
          1.  A2PRO        Read-Write   S6 D1
          2.  A2BOOT       Read-Only    -*
          3.  A2NET        Read-Write   S7 D1
          4.  APLWORKS     Read-Write   S7 D2
          5.
          6.

    What would you like to do?  Grant access
                                Change access
                                Remove access

                                                          [ OK ]

--------------------------------------------------------------------------------
ESC to Quit, Spacebar for List                                  ? for Help
```

Each row on the access table is numbered to make it easy to identify an entry in order to change or remove it. After entering a volume on the access table you can change the access, change the mount location, or remove access to the volume altogether using one of the three Manage Access functions.

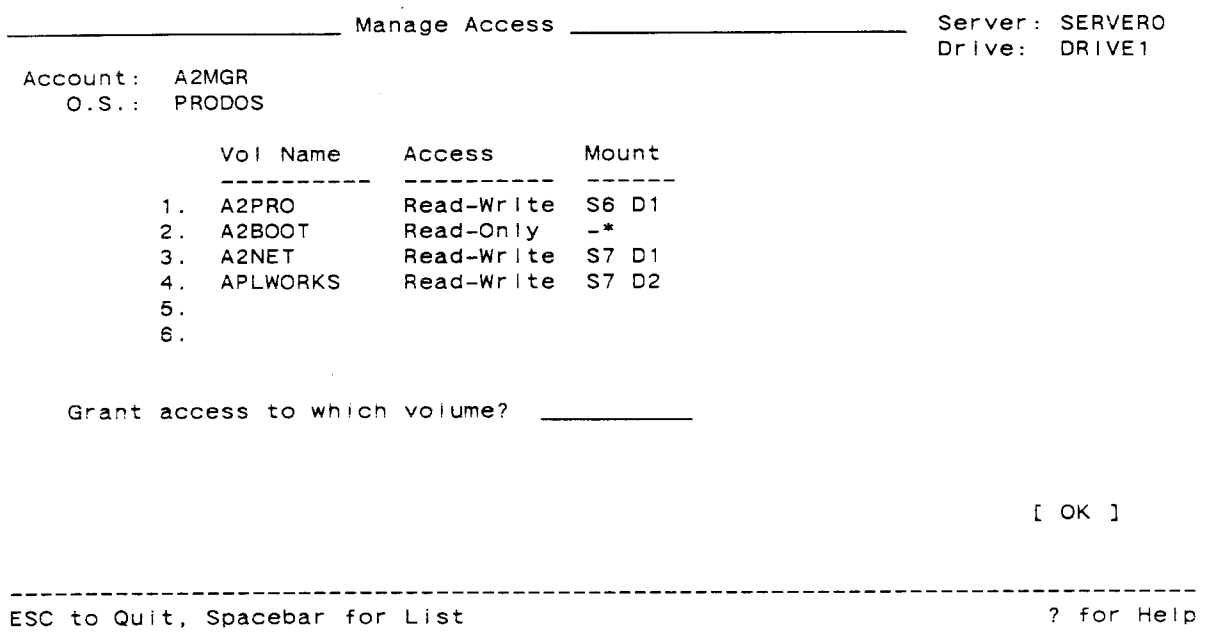
Refer to the access portion of the accounts worksheet for help in filling out the access tables. How to use this worksheet is covered in the section "Worksheet 3: Accounts and Access" in Chapter 2.

We'll begin with Grant Access, the function you use to grant an account access to some volumes.

TO GRANT ACCESS TO A VOLUME

The volume you designated as a user's home volume is added to the access table for that user automatically. To add any additional volumes, follow these steps:

1. **Choose Grant from the list of functions on the access table and press** RETURN.



2. **Answer the questions that appear at the bottom of the screen:**

Volume Name: Type the name of the volume you want to add and press RETURN.

Access: Select the type of access you want the account to have to the volume. See the entry "Types of Access" in the section "Fundamental Concepts" in Chapter 1.

Mount: Enter the mount location you want for the volume. Refer to your planning worksheets.

DOS 3.3 and ProDOS: When the highlight is on Slot, type the number for the slot you want and press RETURN. Valid slot numbers are 1 - 7. Next the highlight moves to Drive. Valid drives are 1 and 2. Press a number for the drive and then press RETURN. See the item "Mounting" in the section "Fundamental Concepts" in Chapter 1. Also see the section "Worksheet 3: Accounts and Access" in Chapter 2.

Pascal: Type a unit number. Valid unit numbers are 4, 5, 9, 10, 11, 12.

CPM: Type a unit letter. Valid unit letters are A - P.

Mount Location Equivalents

The Apple II		Mount Locations			
Physical Slot	Physical Drive	DOS 3.3	ProDOS	Pascal	CP/M
7	1	Slot 7, Drive 1	Slot 7, Drive 1	—	—
7	2	Slot 7, Drive 2	Slot 7, Drive 2	—	—
6	1	Slot 6, Drive 1	Slot 6, Drive 1	4	A (Floppy)
6	2	Slot 6, Drive 2	Slot 6, Drive 2	5	B (Floppy)
5	1	Slot 5, Drive 1	Slot 5, Drive 1	9	C
5	2	Slot 5, Drive 2	Slot 5, Drive 2	10	D
4	1	Slot 4, Drive 1	Slot 4, Drive 1	11	E
4	2	Slot 4, Drive 2	Slot 4, Drive 2	12	F

When all questions have been answered, a prompt requests that you press RETURN to confirm your responses.

3. **To grant access to the volume, press RETURN.**

   OR

   Press ESC to return to the Select A Function screen without granting volume access in the selected access table.

TO CHANGE ACCESS TO A VOLUME

1. **Choose Change from the list of functions under the access table and press RETURN.**

2. **Type the number for the entry that you want to change.**

   The highlight bar will move to Access.

```
_____________________ Manage Access _____________________   Server: SERVER0
                                                            Drive:  DRIVE1
 Account:  A2MGR
   O.S.:   PRODOS

            Vol Name     Access       Mount
            ----------   ----------   ------
         1. A2PRO        Read-Write   S6 D1
         2. A2BOOT       Read-Only    -*
         3. A2NET        Read-Write   S7 D1
         4. APLWORKS     Read-Write   S7 D2
         5.
         6.

    Select the type of access to this volume:  Read-Only
                                               Read-Write

                                                        [ OK ]

------------------------------------------------------------------------------
ESC to Quit                                                    ? for Help
```

3. **Answer the questions that appear at the bottom of the screen.**

   Access: Choose the type of access you want the account to have to the volume. If the access is okay as is, press [RETURN] or [TAB] to advance to the Mount heading.

   Mount: Enter the mount location for the volume if you want it mounted.

   OR

   If the mount location is okay as is, press [RETURN].

   A prompt appears requesting that you press [RETURN] to confirm your responses.

4. **Press [RETURN] to confirm that all entries are correct.**

   OR

   Press [ESC] to return to the Select A Function screen without making any of the changes you've specified.

TO REMOVE ACCESS TO A VOLUME

1. **Choose Remove from the list of functions under the access table and press [RETURN].**

2. **Type the number for the volume that you want to remove.**

   A prompt appears asking you to confirm that you really want to remove the volume whose number you specified.

3. **Press [RETURN] to confirm the removal.**

   OR

   Press [ESC] to return to the Select Function screen without making a change to the access table.

Listing Volumes and Accounts

You can use the List function in the Volumes and Accounts submenus of the Network Management Program menu to see a list of volumes or user accounts. You can display the list on the screen, save it as a ProDOS file, or print it on a printer.

Listing volumes is useful for getting the answers to these questions:

- How much space is available on the hard disk for more volumes?
- What volumes are on the hard disk?
- How have I been naming volumes?
- What is the operating system for a certain volume?
- Which accounts own which volumes?
- What is a volume's availability?
- What is a particular volume's starting location?
- Where is there some free space on the hard disk?

Listing accounts can help you with these questions:

- How have I been naming accounts?
- What is the prefix for a certain class?
- What's the password for an account?
- What's the operating system for an account?

Whether you use the List function from the Volumes menu or from the Accounts menu depends on whether you want to list volumes or accounts. Both functions work the same, though, and are described together below.

TO DISPLAY A LIST ON THE SCREEN

1. **From the main menu of the Network Management Program, select List from the Volumes or Accounts menu.**

   The Select Output dialog screen appears. The prompt asks you to select how you want the list output. List to screen is highlighted.

2. **Press [RETURN] to see the list on the screen. The list appears on the screen, 16 records per "page."**

```
_____________________ List Volumes _____________________ Server: SERVER0
                                                          Drive:  DRIVE1
  Vol Name    Format      Owner        Type      Size    Address
  ----------  --------    ----------   -------   ------  ------
  BLKS.0..7   RESERVED                 UNCONTR        8        0
  BLKS.8..8   RESERVED                 UNCONTR        1        8
  CORVUS      UCSD                     UNCONTR      760        9
  A2PRO       PRODOS      A2PRODOS     PUBLIC      1124      769
  A2BOOT      UCSD                     UNCONTR      300     1893
  A2NET       UCSD        A2MGR        PRIVATE     1124     2193
  A2SYS       UCSD        A2MAINT      PRIVATE     1200     3317
  A2BACK      UCSD        A2BACKUP     PUBLIC       300     4517
  A2DOS       DOS3.3      A2DOS33      PUBLIC      1124     4817
  APLWORKS    PRODOS      A2PRODOS     UNCONTR     1124     5941
  <unused>                                         2248     7065
  PIPES       UCSD        A2MGR        UNCONTR     1024     9313
  TEST        UCSD                     PRIVATE     1024    10337
  <unused>                                         1124    11361
  VOLUME1     UCSD        A2MGR        PUBLIC      1124    12485
  VOLUME2     UCSD        A2MGR        PUBLIC      1124    13609

Press Spacebar to continue.
-------------------------------------------------------------------------------
ESC to Quit                                                    ? for Help
```

3. **Press [SPACE] to page through the list.**

   OR

   Press [ESC] to return to the Network Management Program menu.

TO SAVE A LIST AS A PRODOS TEXT FILE

If you save a list as a ProDOS text file, you can then print it on a network printer by using the File Spooler Program. This lets you print the list if you don't have a printer connected to slot 1 of your own station, as required by the method of printing described in the next section.

See "Spooling" in Chapter 5 for more information. How to use the File Spooler Program is explained in the guide *Tools for Network Users.*

To save a list as a ProDOS text file,

- **At the Select Output dialog screen, move the highlight bar to Save As A ProDOS Text File and press** RETURN.

  The program provides a filename for you to use when you save a list. You don't have to name the file yourself.

  - For saving a list of *volumes* on the network as a ProDOS text file, the filename the program provides is NETVOL.
  - For saving a list of user *accounts*, the filename is NETACCT.
  - For saving a list of volumes to which a particular user has *access*, the filename is (USR).ACC, with the user's name taking the place of *(USR).*

Each time you save a list to one of these ProDOS files, the new list writes over any existing list in the file.

TO PRINT A LIST

Use this method to print if you have a printer connected to slot 1 of your station. Otherwise, save your text as a ProDOS file and print using the File Spooler Program, as outlined in the section above.

1. **At the Select Output dialog screen, move the highlight bar to Print and press [RETURN].**

   A prompt appears asking you to confirm that your printer card is in slot 1 and the printer is ready.

2. **Make sure the printer is turned on and that the paper is feeding properly. Press [RETURN] to print.**

   The list is printed and the program presents the Network Management Program menu.

   OR

   If you don't want to print, press [ESC] to return to the main menu.

TO QUIT THE LIST FUNCTION

Press [ESC] to return to the Network Management Program menu.

Using the Print Access Table

The Print Access Table function in the Accounts menu works just like the List function in the Volumes and Accounts menus. It shows the access table for the account you specify on the screen, prints the access table on a printer connected to slot 1 of your computer, or saves the access table in a ProDOS file for printing using the File Spooler Program. Refer to the instructions for using the List function to use Print Access Table.

Changing Volumes

You can change three aspects of a volume, using the Change function from the Volumes menu:

- its name
- its owner
- its availability type

You can't use the Change function to change a volume's operating system format, size, or location. If you want these aspects of a volume to be different, you have to delete the volume itself (first copying out the information you want to save, of course) and create a new volume that's different in the ways you want.

1. **From the Network Management Program main menu, select Change from the Volumes Menu.**

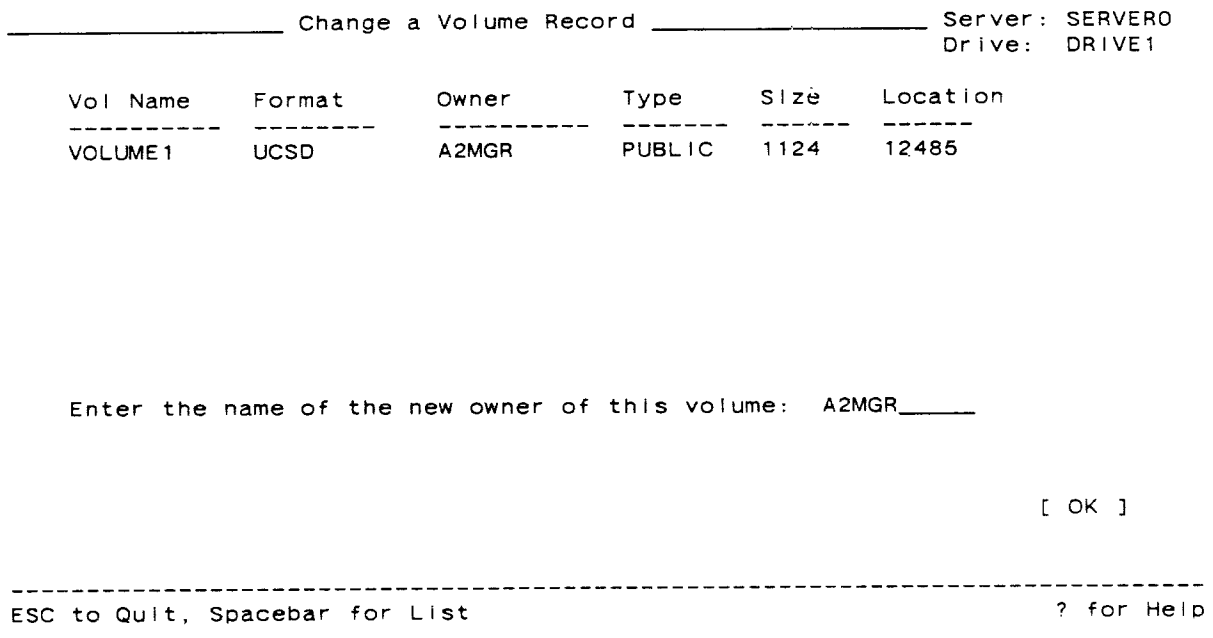
   A prompt appears asking you to supply the name of the volume that you want to change.

2. **Type the name of the volume you want to change and press [RETURN].**

   OR

   Press [SPACE] to see a list of volumes and choose from the list. See "Using the List Feature" in Chapter 3.

   When the volume record appears, the highlight is on Owner.



3. **By pressing [TAB] or [RETURN], move the highlight bar to the heading you want to change and press [RETURN].**

4. **Make the change and press [RETURN].**

5. **When you are through making changes, advance the highlight bar to the OK box. To confirm that the new information you have entered for the volume is correct, press** [RETURN].

   OR

   To go back to correct an entry, use [TAB].

Changing Accounts

The password is the only aspect of an account you can change. You use the Change Password function from the Accounts menu to do it.

If you want to alter an account's name or operating system, you have to use the Add function in the Accounts menu to create a new account with the name and operating system you want. You may then remove the old account if you wish.

To change an account password

1. **From the Network Management Program main menu, select Change Password from the Accounts Menu.**

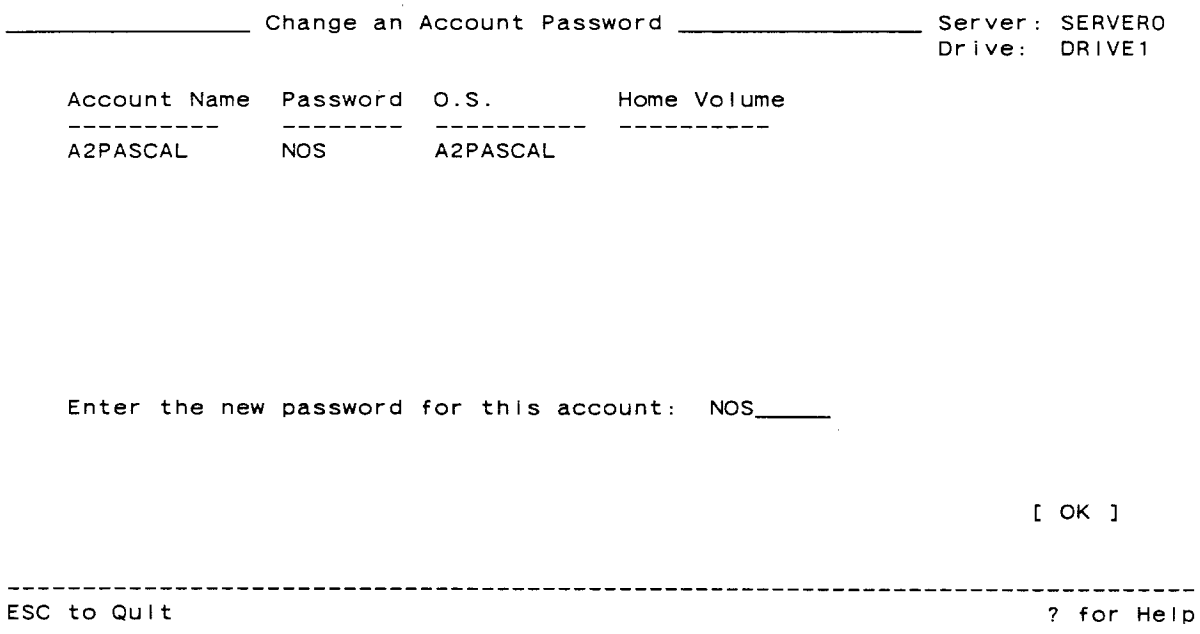
   A prompt appears asking you to supply the name of the account you want to change.

2. **Type the name of the account you want to change and press** [RETURN].

   OR

   Press [SPACE] **to see a list of accounts, choose from the list, and press** [RETURN]

   When the account record appears, the highlight is on Password; that is the only entry you can change.



3. **Type the new password on top of the existing password. The existing password is erased when you type the first letter of the new name.**

   The highlight bar advances to the OK box and a prompt appears asking you to confirm your changes.

4. **To confirm that the new password you have entered for the account is correct, press** RETURN.

   OR

   To go back to correct the password, use TAB.

Removing Volumes and Accounts

From time to time, you will want to clear the OmniDrive of outdated volumes and unused accounts. Unused volumes can take up space on the hard disk that you might want to use for other volumes. Similarly, unused accounts just clutter things up.

To remove a volume, you use the Remove function from the Volume menu.

To remove an account, you use Remove from the Accounts menu.

The procedures are identical and are described together below.

When you remove a volume, its name is removed from the directory of volumes on a drive and also from account access tables of all accounts that had access to the volume. This is done automatically; you do not have to update these tables yourself.

> **Warning 1:** *After you remove a volume, everything stored in the volume is lost to you. Be careful to verify that you've chosen the correct volume name before confirming that you want to remove that volume.*
>
> *Under no circumstance should you remove system volumes CORVUS, A2SYS, or A2BOOT.*

When you remove an account, the access table for that account is removed automatically; you do not have to manually remove that user's access to volumes. Any volumes belonging to the account still exist, however, and you will have to use the Remove function in the Volumes menu to remove them.

Remember that when you remove an account, the users of that account will no longer have access to the network through it.

Instead of removing them, you might consider dealing with obsolete accounts by just changing the passwords and giving these accounts to incoming users instead of creating brand new accounts.

To remove a volume or account

1. **From the Network Management Program main menu, select Remove from the Volumes or Accounts menu.**

   A prompt appears asking you to supply the name of the volume (or account) that you want to remove.

2. **Type the name of the volume or account you want to remove.**

   OR

   Press the space bar to see a list, type the number of the item you want to remove, and press [RETURN]. This displays the name of that volume or account.

   A prompt appears asking you to make sure you want to remove the item.

3. **To confirm that you do, press [RETURN].**

   OR

   Press [ESC] to return to the dialog screen without changing anything.

If You Accidentally Remove a Volume or Account

If you remove a volume by mistake, sometimes you can retrieve it by recreating a new volume of the same name and size, etc., at its same address on the OmniDrive. For this procedure to work, however, you must prevent the new volume from being automatically formatted once created. The formatting would erase the contents you want to recover.

To prevent the new volume from being automatically formatted, go to the Change Options function of the Special Functions menu and change the option Format Volumes Automatically from *YES* to *NO* before you recreate the volume. (Remember to change this back to *YES* after you recreate the volume.) Then recreate the volume, making sure that you specify the same operating system format, size, *and location* as the volume you removed. If you keep current printed lists of volumes and accounts, you'll be able to refer to them when reconstructing information to restore volumes and accounts that you remove by mistake. Because you recreated the volume but did not format it, the data in the volume should still be intact.

If you remove an account by accident, you will have to recreate the account and reconstruct the account access table for it.

Using the Special Functions

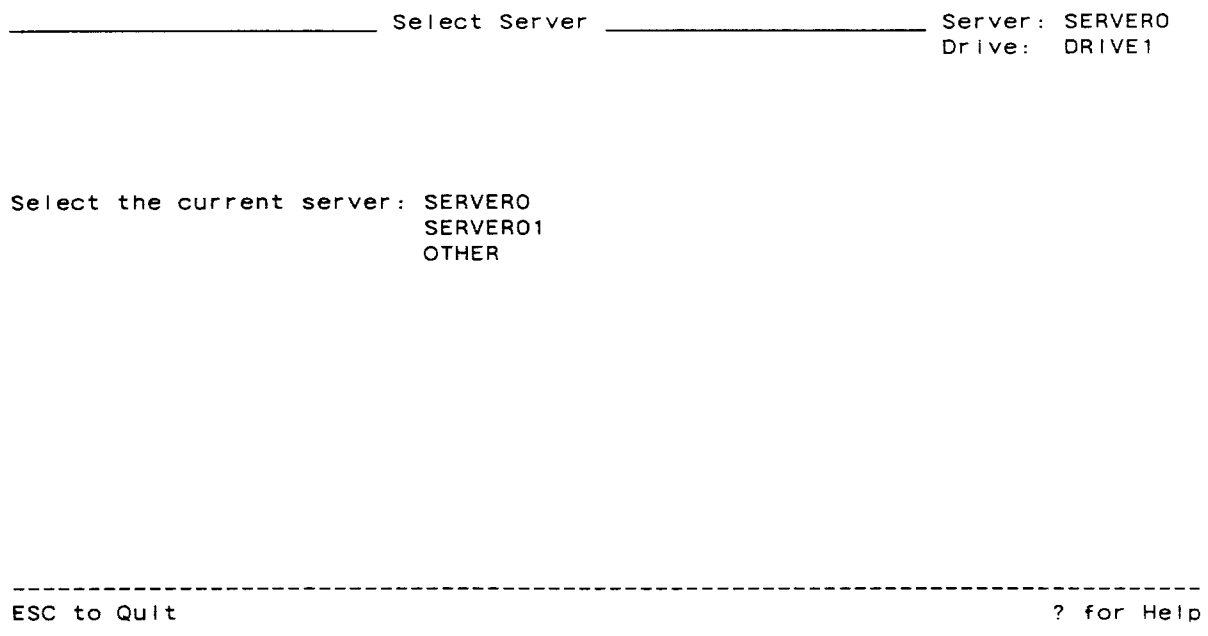
SELECTING THE SERVER

When you first run the Network Management Program, you are asked to select a server and drive. You can work with volumes on only one server or drive at a time. For example, if you use the List function in the Volumes menu, the only volumes you'll see will be those on the currently selected server/drive. If you have more than one server on your network, you need to use Select Server to make a different server current in order to see its volumes.

To use the Select Server function

1. **Select the Select Server function from the Special Functions menu on the Network Management Program menu.**

   A dialog screen appears with a prompt asking you to select a server from the list of servers shown.



2. **Move the highlight bar to the server you want to make the current server and press** RETURN.

   OR

   If the server you want to make current doesn't appear on the list but you know that it's on the network, select OTHER. Then type the server name and press RETURN. **If you don't know the server name but you do kn its network address, type the address instead, then press** RETURN.

If you have more than one drive on your nertwork, a prompt will appear asking you to select a drive.

3. **Move the highlight bar to the drive you want and press** RETURN.

   A prompt appears asking you to enter the drive password.

4. **Enter the drive password and press** RETURN.

   The password doesn't display on the screen as you type it. This helps keep it confidential.

   The program returns to the menu screen.

VIEWING THE NETWORK MAP

You'll find this function useful when you want to see which addresses on the network are occupied by servers, network stations, and other devices. The network map will tell you at a glance which address are taken and which are not. You need this information when adding a device to the network since you will have to specify an Omninet address for the device you are adding. The map is a chart, with the numbers 0 to 63 representing possible Omninet addresses.

To view the network map

1. **Select View The Network Map from the Special Functions menu on the Network Management Program menu screen.**

   A network map appears. You can page through it by pressing [SPACE]. At the end a prompt asks where you want the program to output the map.

```
________________________ Network Map _____________________ Server: SERVER0
                                                           Drive:  DRIVE1
Node      Name         Type          Node     Name        Type
--   ---------- ---------------      --   ---------- ---------------
 0   SERVER0    OMNi-DRIVE           16
 1                                   17
 2                                   18
 3                                   19
 4                                   20
 5                                   21
 6                                   22
 7                                   23
 8                                   24   A2MGR      APPLE2
 9                                   25
10                                   26
11                                   27
12                                   28
13                                   29
14                                   30
15                                   31

Press Spacebar to continue.
----------------------------------------------------------------------------
ESC to Quit                                                      ? for Help
```

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

   If you choose List To Printer, a dialog screen appears asking you to make sure your printer is ready. The printer card or Corvus Printer Spooler Card must be in slot 1 of your computer.

   If you choose Save To A ProDOS File, the screen proposes a ProDOS filename. See the section "Saving to a ProDOS Text File" in Chapter 3 of this guide.

3. **After viewing, printing, or saving the map as a file, select Quit to return to the main menu.**

MANAGING THE TRANSFER AREA

The Transfer Area is like a post office. Files sent to a printer or another network user go first to a sort of pigeonhole called a *pipe* in the Transfer Area and then are retrieved from there and sent on to their destination.

There can be up to 32 files in the Transfer Area. These files are contained in a volume called the PIPES volume. Even if you have a network with more than one OmniDrive, you should have only one PIPES volume. If the server you selected when you entered the Network Management Program doesn't have the PIPES volume on it, you will have to use the Select Server function in the Special Functions menu to find the server that does before you can proceed with using the Manage Transfer Area function. If you don't know which server has the PIPES volume, you can find out by listing the volumes for each server. Usually the PIPES volume is on the server having address 0.

Sometimes files get "stuck" open in the Transfer Area and need to be closed manually, and sometimes useless files that were never retrieved accumulate and need to be removed.

In either case, it is your job as network manager to keep the Transfer Area uncluttered and in good working order. Periodically you should clear the area of files that are stuck or otherwise unwanted.

When a file in the Transfer Area is open, its contents are either being *spooled* (a file is being written there) or *despooled* (a file is being read from there to the printer or a network user). As a file is spooled to the Transfer Area, the file's size (in blocks) grows; as it is despooled, its number of blocks decreases to zero.

A file is stuck if it's open but is neither growing nor shrinking in size.

You monitor files in the Transfer Area with the Manage Transfer Area function. When you select this function, you are presented with a menu of options.

Entering the Manage Transfer Area Function

- **Select Manage Transfer Area from the Special Functions menu of the Network Management Program menu.**

A File Status table appears and a menu. Here's how to use the functions on the menu, in the order of their appearance:

```
_____________________ Manage Transfer Area ___________________ Server: SERVER0
                                                               Drive:  DRIVE1
File#    Destination   Size       Status
 --       ---------    -----   ---------------
  1       PRINTER1        1    Closed
  2       PRINTER1       21    Closed
  3       PRINTER1        4    Closed
  4       PRINTER1        4    Closed




     Select a function:  List active files
                         Close a file
                         Remove a file
                         Re-initialize Transfer Area
                         Quit
------------------------------------------------------------------------------
ESC to Quit                                                         ? for Help
```

List Active Files

This function lists any files in the Transfer Area. The files listed in this chart are called *active files* in the sense that they are in use. They are identified by file number, destination, size (in blocks), and status.

The status of a file in the Transfer Area can be either of two conditions:

- closed
- open

A file is *closed* when the entire file has reached the Transfer Area--i.e., it's not still in the process of arriving--and it hasn't been opened again yet to be sent to its destination.

A file is *open* when it's either still arriving in the Transfer Area or is on its way out, to a printer or a network user, for instance.

Sometimes a file gets stuck open. For instance, if a file you sent to the printer never got there, and other files sent after yours have already been printed, list active files to see if you can find your file. You may have to close the file yourself.

Because the files are in a constant state of flux, spooling and despooling even as you review their status, you need to use List Active Files several times in a row, waiting a few seconds each time, to determine whether the size of a given file is changing. This is the only way to tell if a file is stuck.

To see what files are active and what is the status of each:

- **Move the highlight bar to List Active Files and press** RETURN.

  The status of all files that were active when you pressed RETURN **appears in the File Status table. To update the display, press** SPACE, **then select List Active Files and press** RETURN.

Close A File

Sometimes a file reaches the Transfer Area but for whatever reason remains stuck open as if it were still arriving. The file won't go on to the printer or anywhere else until the file is closed. Or sometimes after a file is sent on, the file won't close and disappear from the list of active files even though it's empty.

In either of these cases, you have to close the file yourself using the Close A File option.

1. **Move the highlight bar to the Close A File function in the list and press** [RETURN].

   A prompt appears asking you type the number of the file you want to close.

2. **Type a number.**

   The program closes the file. The file with that number remains on the File Status list and the status is closed. The original prompt asking you to choose an action appears.

3. **Move the highlight bar to Quit and press** [RETURN] **to return to the menu screen.**

Remove A File

Files should not be left to sit forever taking up space in the Transfer Area.

Suppose you send a file to the printer, it never gets there, you send it again, and this time it prints. Then you list active files and find that the first file is stuck. Or suppose you send a file to another user on the network and he decides he doesn't need it after all and never gets around to despooling it. These are cases of useless files taking up space in the Transfer Area. The files should be removed. Once a file is removed it disappears from the Files Status table.

1. **Move the highlight bar to Remove A File and press** [RETURN].

   A prompt appears asking you to type the number of the file you want to remove.

2. **Type a number.**

   The program removes the file. The file with that number disappears from the File Status table and the original prompt asking you to choose an action appears.

3. **Move the highlight bar to Quit and press RETURN to return to the menu screen.**

Reinitialize Transfer Area

If a number of files need closing or removing, you might find it easier to use this option than to close or remove them one at a time. Reinitializing the Transfer Area removes *all* the active files and wipes the table clean.

1. **Move the highlight bar to Reinitialize Transfer Area and press RETURN.**

   A prompt appears asking you to confirm that you want to reinitialize the PIPES volume.

2. **Press Y.**

   The program reinitializes the Transfer Area and all active files are removed.

3. **Move the highlight bar to Quit and press RETURN to return to the menu screen.**

UNLOCKING SEMAPHORES

Semaphores are locks, or flags, that a program sets to protect a file from being changed by different users at the same time, which could result in inconsistent data and destroy the file. When a user with read-write access calls up a file protected by semaphores, a flag is set to lock out anybody else. Until the semaphore is unlocked, other users can have only read-only access to the file.

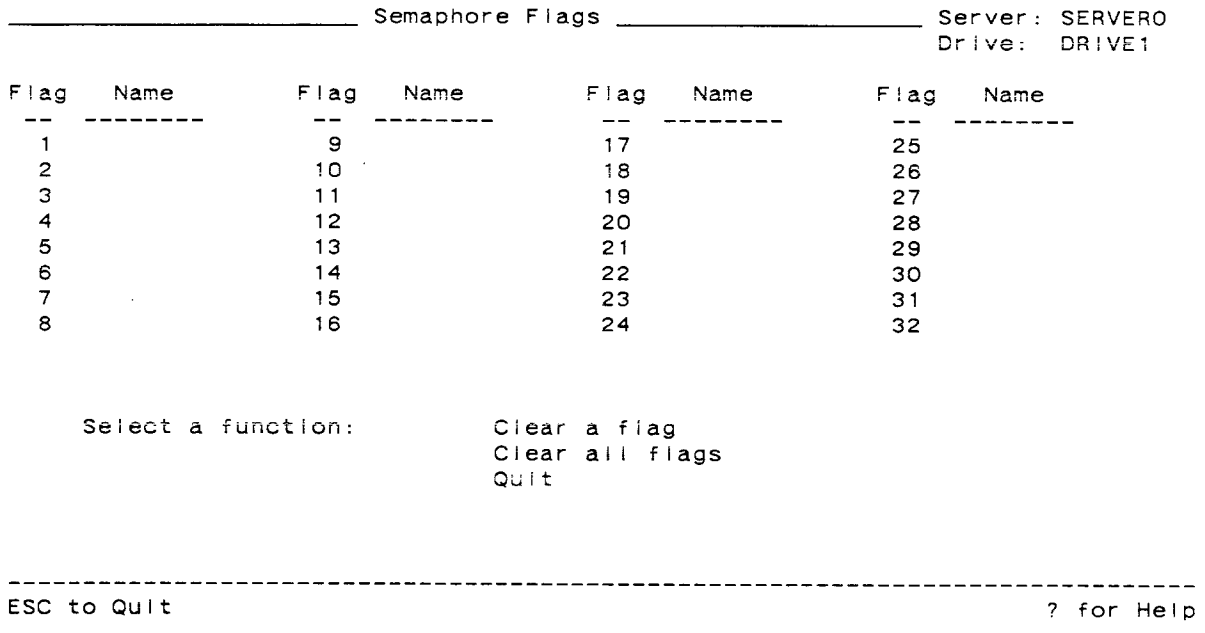
Various parts of the Network Management Program are protected with semaphores--for instance, the volume and access tables. Multiuser programs can set semaphores, and programmers working on the network might set their own.

Semaphores can become set inappropriately, locking out everyone even though nobody is using the protected file or program anymore. For instance, a power failure while you are using the program could set the semaphore in the locked position so that even you are locked out when you log on again and try to pick up working where you left off.

To unlock semaphores manually, you can use the Unlock Semaphores function in the Special Functions menu.

- **Select Unlock Semaphores from the Special Functions menu of the Network Management Program.**

A dialog screen appears.



To Clear a Flag

1. **On the dialog screen, move the highlight bar to Clear A Flag and press** RETURN.

   A prompt appears asking you to type the number of the flag you want to clear.

2. **Type a number.**

   The program clears the semaphore. The original prompt asking you to choose an action appears.

3. **Move the highlight bar to Quit and press** RETURN **to return to the main menu.**

To Clear All Flags

1. **On the dialog screen, move the highlight bar to Clear All Flags and press [RETURN].**

   A prompt appears asking you to confirm that you want to clear all flags.

2. **Type Y to clear all flags.**

   The program clears all semaphore flags. The original prompt asking you to choose an action appears.

3. **Move the highlight bar to Quit and press [RETURN] to return to the main menu.**

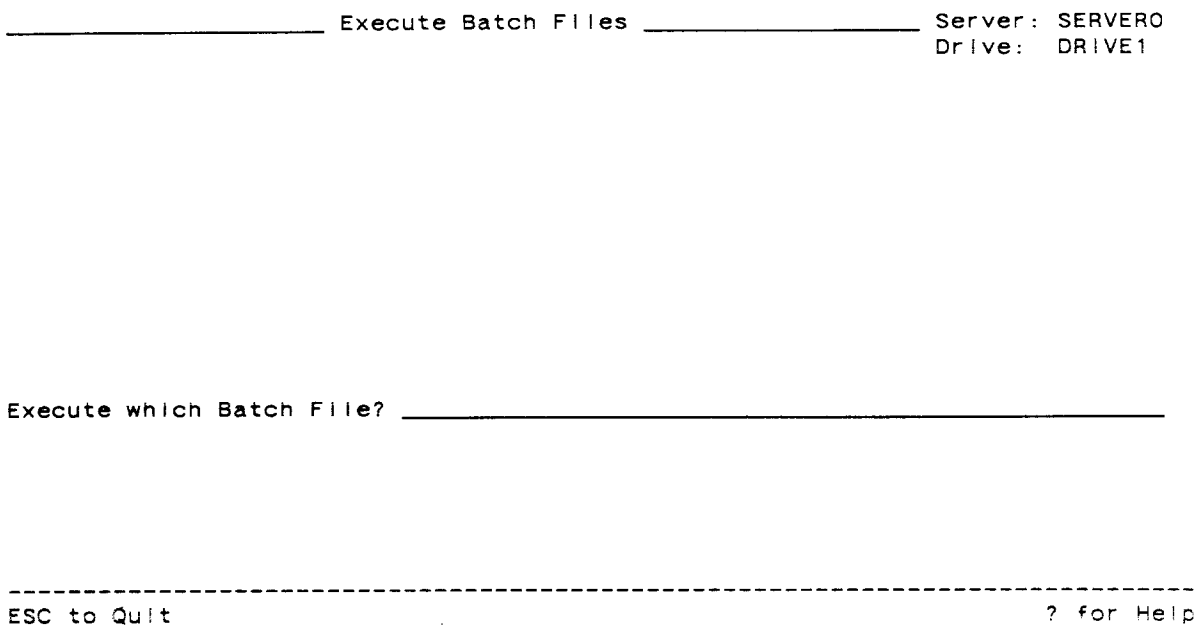
EXECUTING BATCH FILES

The Network Management Program allows you to execute *batch* or *command* files. These files consist of a batch of commands, all of which are executed when the file is run, or executed. How to create batch files is covered in Chapter 6.

A batch file must be a ProDOS text file to run. It must also be in the same volume as the Network Management Program.

1. **Select Execute Batch Files from the Special Functions menu of the Network Management Program main menu.**

A dialog screen appears with a prompt asking you to supply the filename for the batch file you want executed.



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

   The program executes the specified batch file.

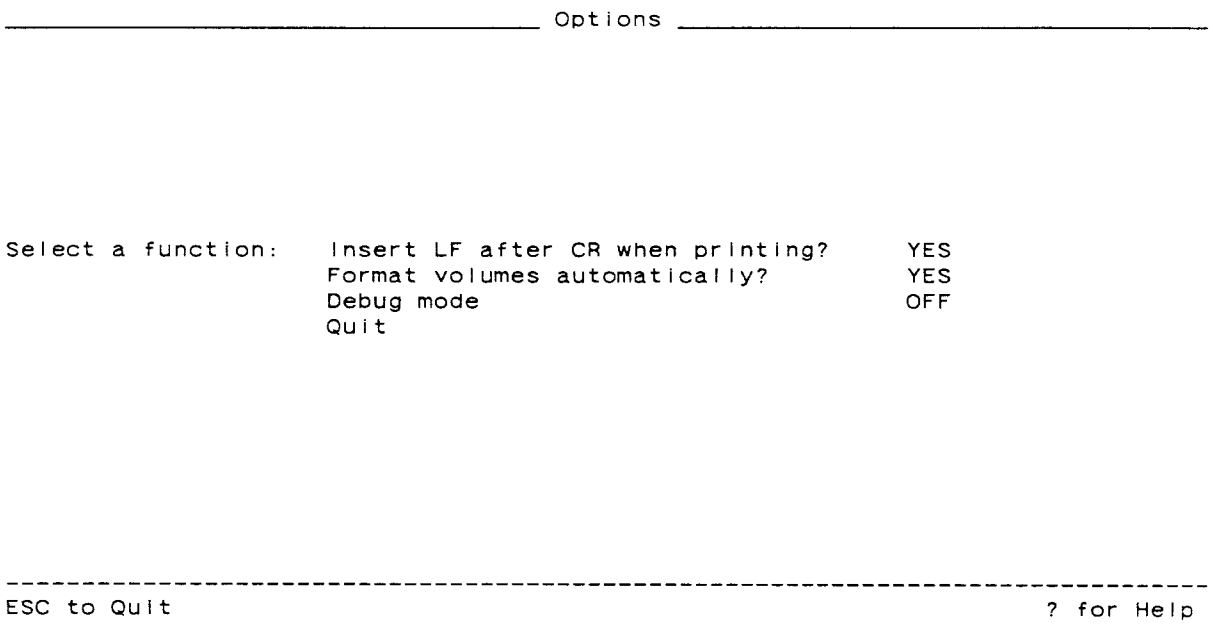
Batch commands may be run individually as well as in a file. Instead of a filename, type an exclamation mark (!) followed by the command, e.g., !ADD USER A2PAS,A2PASCAL,SERVER0.

CHANGING OPTIONS

There are three options that you can control using the Change Options function in the Special Functions menu. Once you alter the setting of an option, the new setting remains in effect until you use the function again to alter it or until you quit the program.

To change one of the options listed below,

- **Select Change Options from the Special Functions menu of the Network Management Program menu.**



Each option has two settings, On or Off. Move the highlight to the option you want to reset and press RETURN to turn the option On or Off.

- **Insert Line Feed after Carriage Return when Printing? (YES/NO)**

  Choose *Yes* if, for instance, your printer is printing all lines of a file on top of each other or if you want a single-spaced file to print double-spaced.

- **Format Volumes Automatically (YES/NO)**

  Yes causes new volumes you create to be formatted automatically for the specified operating system. Choose *No* if you want to create another same-named volume in the exact place of a volume you deleted by mistake, to try to recover the lost volume. Formatting the new volume would erase the information you want to reclaim. Change the setting to *Yes* again when you're done.

- **Debug Mode (ON/OFF)**

  When on, this option displays at the bottom of the screen the actual instructions that the program is sending to the drive. This option is intended for programmers' use only.

This completes instructions for using the options on the Network Management Program menu. Now go on to Chapter 5 for a discussion of the options for printing.

Chapter 5

Printing and Transferring Files

Contents

Introduction

This chapter tells you how to do two things:

- print files on a network printer (including how to use a local printer as a network printer)
- transfer files from one network station to another

Both these activities use the Transfer Area. They also use some combination of the Print Spooler Card Settings Program, the File Spooler Program, and the File Despooler Program. Each of these programs is discussed more fully in the *Tools for Network Users* guide. You may read up on them there as you need to.

The Transfer Area

Sending files over the network to a printer or another user is a two-step process. In the first step, files are sent to something called the Transfer Area. In the second step, the files are retrieved from the Transfer Area and sent on to their destination.

The Transfer Area is a volume called the PIPES volume on a hard disk drive. You create this volume during the initial setup of the OmniDrive, as explained in the *Setup Guide*. Even if you have more than one OmniDrive, you should have only one PIPES volume, generally located on SERVER0. It will show up in the list of volumes on that drive, if that's where it is.

As we said in Chapter 4, you might think of the Transfer Area as a sort of post office. A file being sent to a printer or to another network user goes first to the Transfer Area, where it's put into a *pipe*--like a box at the post office. This part of the operation is called *spooling*.

Next the file is *despooled* from the pipe to its destination by a despooler program, run by either a network printer server or by another network station, if that's where the file is headed.

In other words, spooling a file is like mailing it, and despooling a file is like collecting your mail from your post office box.

Spooling

There are two ways to spool files. They can be spooled automatically, using a Print Spooler Card and the Print Spooler Card Settings Program, if you want to send them to a network printer; or you can use the File Spooler Program to spool files manually, either to a network printer or to a person on the network.

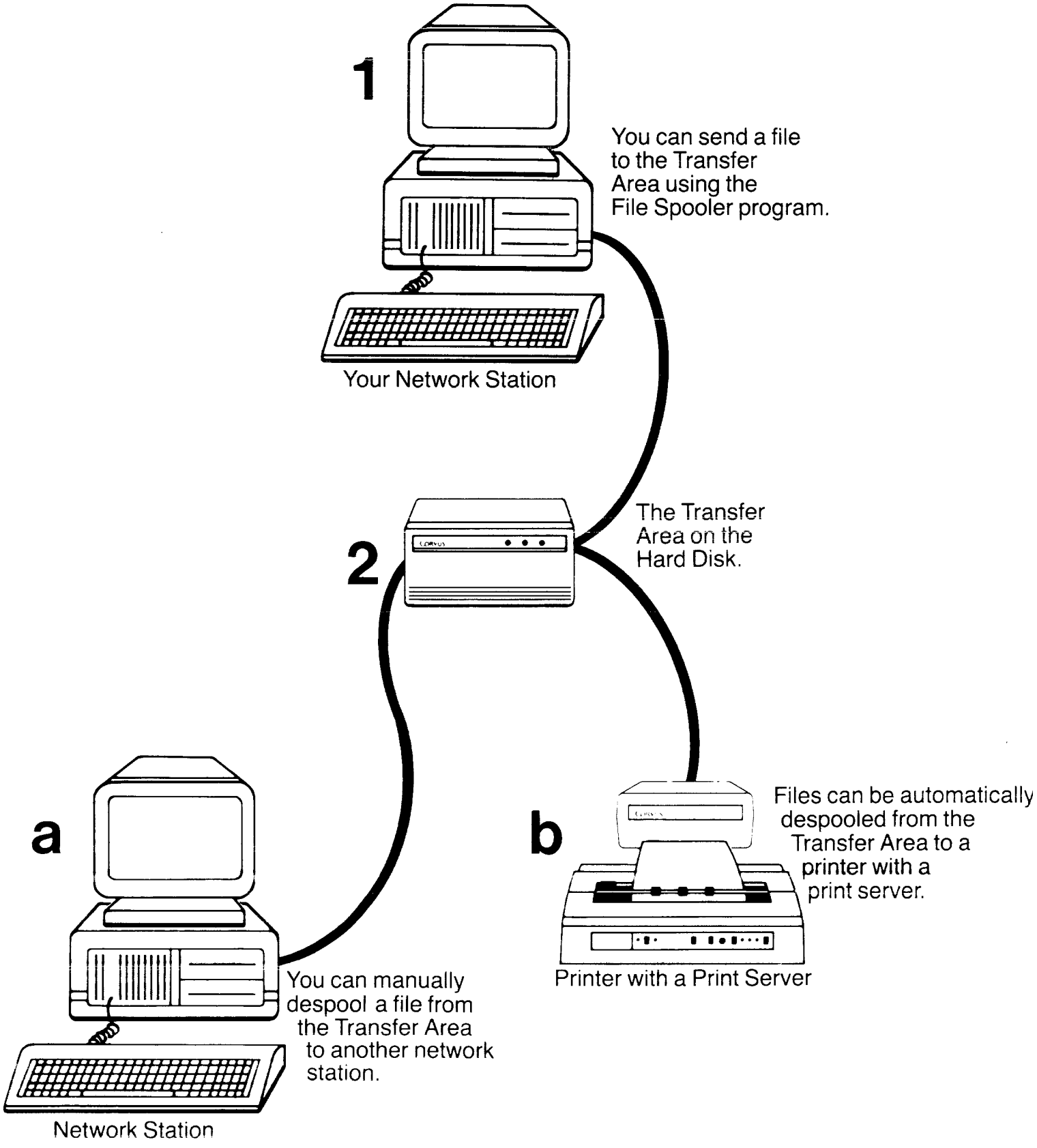
SPOOLING USING A PRINT SPOOLER CARD

When printing on a network printer from a computer that has a Corvus Print Spooler Card in slot 1, spooling can be done automatically. The Print Spooler Card lets users print from inside their current program. They don't have to exit the program to spool a file to the Transfer Area on the way to being printed.

SPOOLING USING THE FILE SPOOLER PROGRAM

When sending a file to another person on the network or when printing on a network printer from a computer that doesn't have a Corvus Print Spooler Card installed in slot 1, users must send their files to the Transfer Area manually. They do this by using the File Spooler Program. How to use this program is explained in the *Tools for Network Users* guide.

Spooling and Despooling



Printing

In order for all users to print over the network to a certain printer, the printer must be set up as a *network* printer.

The other way of setting up a printer is as a *local* printer. Only the person to whose computer the local printer is attached can use a local printer.

The differences between these two ways of setting up a printer are described below.

PRINTING ON A NETWORK PRINTER

A network printer is attached to the network by the Corvus Printer Server, a device that automatically despools to the printer any files sent to a pipe in the Transfer Area with the name used by that particular printer. The printer server continually despools files in these pipes from the Transfer Area in the order they arrived: first in, first out.

Network printers can be used by anyone on the network.

PRINTING ON A LOCAL PRINTER

You can also set up a printer without connecting it to a printer server by connecting it instead directly to slot 1 of a particular computer.

A printer set up this way is called a local printer, in the sense that it's local to that particular computer. The printer has no network address of its own and isn't available to other network users. Their files have no way of reaching it because it's not tied in to the Transfer Area by a printer server. Only files from its own computer can reach a local printer. They go to the printer directly, without first going to the Transfer Area.

USING A LOCAL PRINTER AS A NETWORK PRINTER

There is a way to turn a local printer into a network printer everyone can use. Just run the File Despooler Program, described in the *Tools for Network Users* guide, from the computer to which the printer is attached. This in effect turns that computer into a printer server that can despool files from the Transfer Area. The only drawback is that while the computer is being used for despooling it can't be used for anything else. But you can always regain full use of the computer by quitting the File Despooler Program.

Here's how to use the File Despooler Program to put a local printer on the network. Work from the computer where the printer is attached and follow these steps:

1. **Make sure the local printer is turned on and connected to the network station.**

2. **Run the File Despooler Program from the network station.**

   Select Output To Printer.

   Enter the name of the local printer as the pipe name and tell all uesrs who will be spooling files to this printer to use this name as the Pipe Name.

   Select Start Despooling from the File Despooler settings screen.

Now anyone on the network can spool files to the printer.

Transferring Files Between Users

Sometimes it's convenient to be able to transfer files to another user. People on the network can do this, with text files, by using the File Spooler Program and the File Despooler Program to send files to and retrieve them from the Transfer Area.

SENDING FILES

Using the File Spooler Program to transfer a file to another user is just like using it to send a file to be printed. The only difference is that this time you must use a pipe name other than the pipe name of a printer. Instead you might use the first name of the person to receive the file.

RETRIEVING FILES

Retrieving files with the Files Despooler Program is just like using the program to manually despool files to a local printer. Here the only difference is that the person using the file will usually choose to despool the file to the computer screen or to a filename of his choice, rather than to a local printer, and that to retrieve the file he will specify the pipe name for it that the sender used.

- **Run the File Despooler Program from the network station.**

  Select the form of output you want.

  Enter the pipe name the sender used as the pipe name.

  Select Start Despooling from the File Despooler setting screen.

Chapter 6

Using Batch Files

Contents

Introduction

If you want to change only one or two user or volume attributes--for instance, one user name, password, or type of access--it's simple to make the changes one at a time using the menus in the Network Management Program.

Sometimes, though, you may want to make a large number of changes at once. For instance, at the beginning of a school semester a teacher may want to delete the volumes and user names of the entire previous class and then to create new volumes and user names for all the students coming in. Instead of making each change individually by working from the menus in the Network Management Program, you can use batch files to put through the changes all at once from your word processor program. Using batch files in this situation can save considerable time.

The commands you can use in batch files are listed in Appendix A. These commands are specially designed for use in batch files and have a special format.

Creating a Batch File

To create batch files, you need a word processor program such as AppleWorks or FrEdWriter that creates ProDOS ASCII text files. In the word processor, you type the commands you want to run, and then you save the file as a ProDOS ASCII text file in the volume where the Constellation III Network Management Program is (CSMENU). Saving the file in this same volume enables the Network Management Program to find the file when you want to run it. To run the file and execute all its commands, you use the Execute Batch File option in the Network Management Program.

RULES AND ADVICE

An example of how to create a batch file follows, but first, here are some rules and advice to keep in mind when working with batch files:

- A list of the commands you can run in a batch file may be found in Appendix A. These commands have a particular syntax that must be followed exactly when you type them.

- The first commands you enter (after ETOGGLE: see below) should ordinarily be the SELECT commands. These commands select what server and drive are to be operated on by the commands that follow--what are to be the *current* server and drive, in other words.

  You can also select the server and drive you want from the Network Management Program menu before running the batch file. This capability lets you create batch files that are generic, in the sense that they don't themselves specify a server and drive. But be careful: if a batch file *does* specify a server and drive, that specification will be used instead of what you select from the Network Management Program menu. You could think you were running the batch file on one drive and in fact run it on another, destroying information you didn't want to lose.

- Volumes you create with batch files, using the ADD VOLUME command, are not automatically formatted for a particular operating system as volumes are that you create from the Network Management Program menu. Any time you create a volume with the ADD VOLUME command, you must also use the FORMAT command to prepare the volume for a particular operating system.

- Use the ETOGGLE command. The *E* stands for *Error*. If you don't use this command, the program aborts and exits to the command line prompt if it encounters an error in running the batch file. With ETOGGLE on, the program records an error message where it encounters an error, but it runs the other commands in the file. Put the command on the first line of the batch file.

- When adding volumes and users and giving users access to volumes all in one batch file, follow this progression: First use ADD VOLUME to add *all* the volumes you want. Then use ADD USER to add *one* user; follow with ADD ACCESS to give that user access to volumes before using ADD USER again.

  The program automatically uses the last-entered user account when you run the ADD ACCESS command. If you use ADD ACCESS right after using ADD USER, this last-mentioned user will be the one you want. If you add *all* user accounts before using ADD ACCESS, you'll have to separately specify the intended user for each ADD ACCESS command.

- When adding access to volumes with a batch file, you must also add access to volume A2BOOT for each user you create with the batch file. All users require access to this volume in order to boot. This access is not granted automatically when you use batch files, as it is when you give a new user access manually from the Network Management Program menu.

  The syntax to add read-only access to A2BOOT for the currently selected user is:

  ADD ACCESS A2BOOT, RO, *

- Be sure to use a *backslash* (\), not a regular slash (/), to separate the user name and password in the ADD USER command.

- If you type QUIT as the last line of your batch file, then the Network Management Program quits after the batch file is run. You are returned to the ProDOS operating system prompt.

- If you put STOP as the last line, the program returns you to the Network Management Program menu when the batch file is done running.

USING THE COPY FUNCTION

One labor-saving aspect of using batch files is that you create them in your word processor and can use your word processor's Copy function to save yourself a lot of typing.

In the word processor, first add all the volumes you want, following the syntax for the ADD VOLUME command.

Then type the ADD USER command to add one user, and type the ADD ACCESS command to give the user access to volumes.

To add a second user, use the word processor's Copy function to duplicate the first set of ADD USER and ADD ACCESS commands. Simply edit this duplicate to add the second user and his access. Continue this way to add all users and grant them access.

SAVING BATCH FILES

To run, a batch file must be saved as a ProDOS text file in the same volume in which you have the Network Management Program. (The Network Management Program appears in the volume directory as C3MENU, incidentally, in case you have to look for it.) The filename you use for the batch file can have a maximum of fifteen characters.

If you save the batch file you have just created in the word processor as a text file *only*, however, you may not easily be able to recall it into the word processor another time for editing. AppleWorks, for instance, doesn't allow straight text files to be called into the word processor directly.

If you're using AppleWorks or FrEdWriter or another program like them in this respect, it's a good idea to save the batch file twice, once as a ProDOS text file and once as a word processor file. (AppleWorks, for instance, identifies ProDOS text files with the suffix *TXT* and AppleWorks word processor files with the suffix *AWP* in the directory.)

If you save the file twice this way, you can easily recall the word processor version into the word processor, revise it, and then save it twice again.

In AppleWorks

In AppleWorks, to save a file as a *word processor* file, you use the Save function.

To save a file as a *ProDOS text* file, select the Print function. When the screen asks where you want to print the file, choose to print to a text file on disk and specify the pathname (i.e., /volume name/filename); for example, /A2PRO/NEWBATCH.

```
File: SAMPLE.BATCH                  PRINT MENU                Escape: Erase entry
=====|====|====|====|====|====|====|====|====|====|====|====|====|====|====|===



                    While the disk is running
                    you can use these keys:

                    Escape        to stop printing and
                                  return to Review/Add/Change

                    Space Bar     to pause
                                  to continue printing



--------------------------------------------------------------------------------
Pathname?  /A2PRO/NEWBATCH                                          50K Avail.
```

In FrEdWriter

In FrEdWriter, the Save function gives you the option of saving a file either way. You don't have to use the Print function.

An Example

A SAMPLE BATCH FILE

Below is a sample batch file illustrating some of the most useful commands. You can use it as a model.

If you have more than one Omnidrive, you will also need to use the SELECT commands at the top of the file to specify server and drive.

The batch file creates 10 private ProDOS volumes and 10 ProDOS users. It gives each user read-only access to a previously created ProDOS volume, A2PRO, on slot 7, drive 1, and read-write access to one of the private ProDOS volumes on slot 7, drive 2.

```
ADD VOLUME VOL01,PRODOS,2048,,RW,USER01,PR
ADD VOLUME VOL02,PRODOS,2048,,RW,USER02,PR
ADD VOLUME VOL03,PRODOS,2048,,RW,USER03,PR
ADD VOLUME VOL04,PRODOS,2048,,RW,USER04,PR
ADD VOLUME VOL05,PRODOS,2048,,RW,USER05,PR
ADD VOLUME VOL06,PRODOS,2048,,RW,USER06,PR
ADD VOLUME VOL07,PRODOS,2048,,RW,USER07,PR
ADD VOLUME VOL08,PRODOS,2048,,RW,USER08,PR
ADD VOLUME VOL09,PRODOS,2048,,RW,USER09,PR
ADD VOLUME VOL10,PRODOS,2048,,RW,USER10,PR
FORMAT VOLUME VOL01
FORMAT VOLUME VOL02
FORMAT VOLUME VOL03
FORMAT VOLUME VOL04
FORMAT VOLUME VOL05
FORMAT VOLUME VOL06
FORMAT VOLUME VOL07
FORMAT VOLUME VOL08
FORMAT VOLUME VOL09
FORMAT VOLUME VOL10
ADD USER USER01,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL01,RW,S7D2
ADD USER USER02,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL02,RW,S7D2
ADD USER USER03,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL03,RW,S7D2
ADD USER USER04,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL04,RW,S7D2
ADD USER USER05,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL05,RW,S7D2
ADD USER USER06,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL06,RW,S7D2
ADD USER USER07,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL07,RW,S7D2
ADD USER USER08,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL08,RW,S7D2
ADD USER USER09,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL09,RW,S7D2
ADD USER USER10,PRODOS,,
ADD ACCESS A2BOOT,RO,*
ADD ACCESS A2PRO,RO,S7D1
ADD ACCESS VOL10,RW,S7D2
```

EXECUTING THE FILE

To execute, or run, a batch file, follow these steps:

1. **Type A2MGR to log on as the network manager.**

2. **Enter the password for the network manager account and press** RETURN.

   The password for the network manager account is *NOS*, unless you've changed it.

   The Constellation III Network Management menu appears.

```
Constellation III Network Management

    1. Network Management Program

    2. ProDOS Utilities

    3.

    4.

    5.

Select [Esc] to exit.............

Use Arrow Keys or Numbers to Select Choice..
or Select '+' key to add your own choices
```

3. **Select 1. Network Management Program from the menu.**

   The screen asks you to identify the current server and drive.

4. **Select the server/drive where you want to add, change, or remove volumes.**

   Move the highlight bar to the server you want to make the current server and press RETURN.

   If the server you want to make current doesn't appear on the list but you know that it's on the network, select OTHER. Then type the server name and press RETURN. If you don't know the server name but you do know its network address, type the address instead, then press RETURN.

   A prompt appears asking you to select a drive. Move the highlight bar to the drive you want and press RETURN. A prompt asks you to enter the drive password.

5. **Enter the drive password and press RETURN.**

6. **Select Execute Batch File from the Special Functions menu.**

   The screen asks for the name of the batch file you want.

7. **Type the name of the batch file and press RETURN.**

   The program runs the batch file and executes the commands it contains. If you type QUIT on the last line of the batch file, the Network Management Program quits after the batch file is run. You are returned to the ProDOS operating system prompt.

   If you type STOP as the last line, the program returns you to the Network Management Program menu when the batch file is done running.

Appendixes

Contents

Appendix A: Batch File Commands

This appendix explains the various commands that can be used in a batch file. To create a batch file, type the commands in a word processor such as AppleWorks or FrEdWriter that lets you save work as a ProDOS text file.

Once the batch file has been created, process the file by selecting Execute Batch Files from Special Functions on the Network Management Program menu. For an example of how to make and process a batch file, see Chapter 6.

In the following explanations, the command keywords appear in **BOLD LETTERS**. Required parameters appear in normal type and optional parameters appear in *italics*. Below, for example, is the ADD USER command.

ADD USER UserName*Password*, OSType, *HomeServer*,*SINGLE*

When entering these commands, make sure that you press RETURN after each command line entry. Also make sure that you follow the syntax closely. If you do not enter a value for an optional parameter, you must still enter the comma.

In the CORVUS volume on each drive, there is a file called C3.Data that contains a list of the established values for the following parameters: BootType, DeviceType, OSType, VolumeType, Access, and Availability. Any value entered for one of these parameters must match one of the entries in the C3.Data file. A table at the end of this appendix lists the values for each parameter.

If you have more than one OmniDrive, you must use the SELECT commands at the top of the file to specify which server and drive subsequent commands are to act on.

The commands on the following pages are explained in alphabetical order. A synopsis appears at the end of the section.

The values for the parameters Access and Availability, wherever these parameters occur in the commands, are as follows:

Access: RO, RW, NA

Availability: PU, PR, UN

The values for Access stand for Read-Only, Read-Write, and No Access, respectively.

The values for Availability stand for Public, Private, and Uncontrolled, respectively.

ADD ACCESS

Description

This command grants access privileges to the specified volume for the current user and the current server and drive. The current user is set with the SELECT USER command. The current server and drive are set with the SELECT DRIVE and SELECT DISK commands.

Syntax

ADD ACCESS VolumeName,*Access*,*Unit*

Parameters

VolumeName is the volume name.

Access is the type of access the current user will be granted to the volume. The access may be either read-write or read-only. If this parameter is omitted the default access type is read-only.

Unit is the mount unit designator for the operating system. The value for this parameter is dictated by the mount type associated with the operating system. Unit can be a number (1-99), a letter (A-P), or a slot/drive. It can also be a dash (-) to indicate the volume is unmounted or an asterisk to signal that the volume is the user's boot volume. If this parameter is omitted, the default is unmounted.

Example

```
ADD ACCESS IBMVOL,RW,E
ADD ACCESS DOSVOL,RO,S6D2
```

ADD BOOT-CODE

Syntax **ADD BOOT-CODE** BootFile,BootType,*SINGLE*

Parameters BootFile is the filename of the Constellation boot file to be installed.

BootType is the machine type description that corresponds to the boot program.

The optional keyword *SINGLE* indicates that changes will be made only to the current server and drive.

Example

```
ADD BOOT-CODE BOOT.APPLE2,APPLE2
ADD BOOT-CODE BOOT.IBMPC,IBM-PC,SINGLE
```

ADD BOOT-TYPE

Description This command adds a new boot type record to the C3.Data file in the CORVUS volume.

Syntax **ADD BOOT-TYPE** BootName,BootNumber

Parameters BootName is a new computer name of up to 15 characters.

BootNumber is a base zero index to the block offset word element in the System.Boot table in the CORVUS volume.

Example

```
ADD BOOT-TYPE APPLE2,0
ADD BOOT-TYPE IBM,9
```

ADD DEVICE

Description

This command adds a DEVICE record to the NETWORK.USER table. All network drives are updated as for the ADD USER command.

Syntax

ADD DEVICE DeviceName*Password*,OSType, HomeServer, DeviceType, Host#, *SINGLE*

Parameters

DeviceName is the name of the network device to be added. The name can be a maximum of 10 characters, and there can be no other device with the same name.

Password can be supplied but is not particularly useful for device records.

OSType is the boot operating system for the device.

HomeServer is the name of the device's home disk server.

DeviceType is the device's type description. When adding a computer to perform a device boot the device type must be Workstation.

Host# is the Omninet address of the device.

The optional keyword *SINGLE* indicates that changes will be made only to the current server and drive.

Example

```
ADD DEVICE APPLE#22,A2PASCAL,SERVER3,USERWORKSTATION,22
ADD DEVICE PRINTSRVR,CP/M-80,SERVER0,PRINT-SERVER,18
```

ADD DEVICE-TYPE

Description This command adds a new device type record to the C3.Data file in the CORVUS volume.

Syntax **ADD DEVICE-TYPE** DeviceName,DeviceType

Parameters DeviceName is a new device name description of up to 15 characters.

DeviceType is the device type number that identifies the device's class.

Example ADD DEVICE-TYPE PRINT-SERVER,2

ADD OS-TYPE

Description

This command adds a new operating system type to the C3.Data file in the CORVUS volume.

Syntax

ADD OS-TYPE OSType,VolumeType,TypeOS, *LETTER|NUMBER|SLOT*

Parameters

OSType is the name of the new operating system. The name can be up to 15 characters.

VolumeType is the default volume type for the operating system.

TypeOS is the operating system number. This number is placed in the Network.User table to identify a user's operating system.

LETTER|NUMBER|SLOT is the volume mount designator used by the operating system. Most popular operating systems use either letters or numbers. Apple II computers use slots. For this parameter, enter one of the following values: letter, number, or slot.

Example

ADD OS-TYPE MSDOS,MSDOS,4,Number

ADD USER

Syntax

ADD USER UserName*Password*,OSType,*HomeServer*, *SINGLE*

Parameters

UserName*Password* is the new user's name and password. The name can be a maximum of 10 characters; the password can be a maximum of eight characters.

OSType is the user's boot operating system.

HomeServer is the name of the user's home disk server. A home disk server is used at boot time to locate operating system information stored in a boot volume. If this parameter is omitted, the current server is used as the home disk server.

The optional keyword *SINGLE* indicates that changes will be made only to the current server and drive.

Example

ADD USER A2PAS\GWATSA,A2PASCAL,SERVER0

ADD VOLUME

Description

This command creates the volume on the server and drive that was determined with the SELECT DRIVE and SELECT DISK commands.

The ADD VOLUME command does not format the volume for use with its designated operating system. To format volumes, use the FORMAT VOLUME command.

Syntax

ADD VOLUME VolumeName,VolumeType,Length, *Address,Access,Owner,Availability*

Parameters

VolumeName is the volume name. The name can be up to 10 characters.

VolumeType is the volume type description for the new volume--i.e., its operating system.

Length is the size of the volume in 512-byte blocks. When creating Macintosh volumes you must indicate the size of the volume in blocks. You cannot specify volume size by typing a size such as extra-large.

Address is the starting block address of the volume. This is checked along with the length to make sure volumes do not overlap. If this parameter is omitted, the volume will be assigned the lowest address of available disk space.

Owner is the owner of the volume. The owner must be set to an existing user's name.

Values for the parameter *Availability* are PU, PR, and UN, for Public, Private, and Uncontrolled, respectively.

Example

```
ADD VOLUME TEST,UCSD,1024,1000,RW,GREG,PR
```

ADD VOLUME-TYPE

Description This command adds a new volume type record to the C3.Data file in the CORVUS volume.

Syntax **ADD VOLUME-TYPE** VolumeType,TypeVol,VolOffset

Parameters VolumeType is a new volume type--i.e., operating system--description (up to 10 characters).

TypeVol is the volume type number.

VolOffset is the block offset from the physical beginning of the volume's starting block address.

Example ADD VOLUME-TYPE UCSD,1,0

BATCH

Description This command lets you automatically execute a batch file upon completion of a previous batch file.

Syntax **BATCH** *BatchName*

Parameters BATCH must appear as the last command in a batch file. *BatchName* is the name of a batch file to be used as input. If omitted, Constellation III uses a default batch filename of C3INPUT.

Example

```
ETOGGLE
DELETE USER JOE,PRODOS,,
        (More Batch commands)
COPY VOL1, TESTDATA, VOL2
```

CHANGE ACCESS

Syntax **CHANGE ACCESS** VolumeName,*Access*,*Unit*

Parameters VolumeName is the name of the volume for which access rights will be modified.

Access is the user's new access rights to the volume.

Unit is mount unit designator for the new operating system.

Example CHANGE ACCESS VOL2, ,6

Comment When using this command you must first specify a user with the SELECT USER command.

CHANGE DEVICE

Syntax

CHANGE DEVICE DeviceName*Password,OSType, HomeServer,DeviceType,Host #,SINGLE*

Parameters

DeviceName is the name of the current device.

OSType is the device's new boot operating system.

HomeServer is the device's new home disk sever.

DeviceType is a new type description for the current device.

Host# is the device's new Omninet address.

The optional keyword *SINGLE* indicates that changes will be made only to the current server and drive.

Example

CHANGE DEVICE APPLE22, ,SERVER3, ,23

CHANGE USER

Description

This command allows modifications to be made to a network user's record. Only those parameters that are supplied cause changes to the record.

Syntax

CHANGE USER UserName*Password*,*OSType*, *HomeServer*,*SINGLE*

Parameters

UserName*Password* is the name of the user whose attributes will be changed. The user's password can be changed, but the user's name cannot be altered.

OSType is the user's new boot operating system.

HomeServer is user's new home disk server.

The optional keyword *SINGLE* indicates that changes will be made only to the current server and drive.

Example

CHANGE USER MARY, ,SERVER3

CHANGE VOLUME

Description

This command allows changes to volume attributes. The changes do not affect the volume's contents.

Syntax

CHANGE VOLUME VolumeName,*NewName*, *VolumeType*,*Access*,*Owner*,*Availability*

Parameters

VolumeName is the name of the volume to be modified.

NewName is the new name for the volume.

VolumeType is the new volume type--i.e., operating system--for the volume.

Access is the new global access for the volume.

Owner is the new owner for the volume.

Values for the parameter *Availability* are PU, PR, and UN, for Public, Private, and Uncontrolled, respectively.

Example

CHANGE VOLUME VOLA,VOLB,CPM,RW, ,

CONSOLE

Description

This command causes subsequent display output to appear on the console device only. This command is normally used in conjunction with the PRINTER command.

Syntax

CONSOLE

COPY

Description The COPY command is used to transfer files from an external volume to a volume on a Corvus drive. It works *only* with Pascal volumes.

Syntax **COPY** SourceVol,FileName,DestinationVol

Parameters SourceVol is the external volume name where the file is stored. External volumes may or may not be floppy diskettes, depending on which computer Constellation III is hosted by.

FileName is the name of the file to be copied.

DestinationVol is the name of a formatted volume on a Corvus drive.

Example COPY VOL1, File1, VOL2

DELETE ACCESS

Description This command removes the current user's access to a specified volume.

Syntax **DELETE ACCESS** VolumeName

Parameter VolumeName is the name of the volume that will be removed from the current user's list of accessible volumes.

Example DELETE ACCESS VOL1

Comment When using this command you must first specify a user with the SELECT USER command.

DELETE BOOT-CODE

Syntax **DELETE BOOT-CODE** BootType,*SINGLE*

Parameters BootType is the Constellation boot file to be deleted.

The optional keyword *SINGLE* indicates that changes will be made only to the current server and drive.

Example DELETE BOOT-CODE IBM

DELETE DEVICE

Syntax **DELETE DEVICE** DeviceName,*SINGLE*

Parameters DeviceName is the name of the device to be deleted.

The optional keyword *SINGLE* indicates that changes will be made only to the current server and drive.

Example DELETE DEVICE PRINT-SERVER

DELETE USER

Syntax **DELETE USER** UserName,*SINGLE*

Parameters UserName is the name of the user to be deleted.

The optional keyword *SINGLE* indicates that changes will be made only to the current server and drive.

Example DELETE USER BILL

DELETE VOLUME

Syntax **DELETE VOLUME** VolumeName

Parameter VolumeName is the name of the volume to be deleted.

Example DELETE VOLUME NOTES

ETOGGLE

Syntax **ETOGGLE**

Normally if a command input from a batch file causes a logical error, Constellation III halts. The ETOGGLE command causes the program to display an error message and to complete batch processing. The command is a toggle: the first time it is entered, it turns the function on; to turn the function back off, enter the ETOGGLE command again. It is automatically turned off at the end of each batch file.

FORMAT VOLUME

Description

This command is used to format a volume. The type of format is dictated by the volume's type attribute--i.e., its intended operating system. Depending on the volume type, a variable number of optional format parameters may be specified to override defaults.

Syntax

FORMAT VOLUME VolumeName,*ParmA*,*ParmB* . . . , NOZERO

Parameters

VolumeName is the name of the volume to be formatted.

ParmA, *ParmB* . . . are the optional parameters that may be specified to override the default values.

For UCSD volumes one parameter may be specified. This parameter determines the number of files in the directory as well as the directory size. The range for the parameter is from 1 to 77. If omitted, the default is 77.

For MS-DOS volumes, three parameters may be specified--1) Cluster Size, 2) Reserved Sectors, and 3) Number Of Directory Entries. All three parameters are optional and independent of each other. If you do not enter new values for any of the parameters the default values will be implemented. The default values are as follows:

1) Cluster size varies with volume size

2) Reserved Sectors: 1

3) Directory Entries: 256

Volume Size = N (Blocks)	Default Cluster Size
N < = 2,000	4
2,000 <N < = 16,000	8
16,000 <N < = 32,000	16
N > 32,000	32

For CP/M volumes four parameters may be specified--Block Allocation Size, Number Of Directory Entries, Sectors Per Track, and Number Of Reserved Sectors. The default values for omitted parameters are:

Sectors Per Track: 64

Reserved Sectors: 0

Block Allocation Size: 2k

Directory Entries: (block allocation size * 1024)/32

Volume Size = N (Blocks)	Block Allocation Size
N < 2,000	2k
2,000 <N < = 8,000	4k
N = > 8,000	8k

Directory entries = (Block Allocation Size * 1024)/32

NOZERO signifies that the volume directory should not be formatted, i.e., only the information for the Corvus volume header is written.

For DOS 3.3 volumes, only the NOZERO keyword may be included. The usable number of 280-block DOS 3.3 volumes is calculated as

(Absolute vol. size - 4) / 280 (rounded toward zero)

Example FORMAT VOLUME FINANCES , , ,16

LIST

Description

Constellation III can display useful lists of network components with the LIST command, given below. There are five LIST commands. They may be used independently of one another.

Syntax

LIST NETWORK
LIST USER
LIST DEVICE
LIST VOLUME
LIST ACCESS

Comment

LIST ACCESS requires that you first use the SELECT USER command.

PIPE

Description There are four pipe commands. The commands can list active pipes, close a pipe, purge a pipe, and initialize the pipes area.

Syntax **PIPE** function,*ParmA*

Pipe Parameter Table:

Function	Parm A
List	
Close	Pipe#
Purge	Pipe#
Initialize	VolumeName

Examples

```
PIPE LIST
PIPE CLOSE,PIPE3
PIPE PURGE,PIPE5
PIPE INITIALIZE,PIPES
```

PRINTER

Description This command causes subsequent console output to be echoed to a printer, if any. The use of the printer is machine-specific. See CONSOLE command.

Syntax **PRINTER**

QUIT

Description This command causes an orderly shutdown of the Constellation III program. Any opened files are closed and control is returned to the operating system command line.

Syntax **QUIT**

SELECT

Syntax **SELECT** keyword= Name*Password*

Select Parameter Table:

Keyword	Name	Password
Disk	ServerName	ServerPassword
Drive	DriveName	DrivePassword
User	UserName	

Examples

```
SELECT DISK= SERVER1\MK
SELECT DRIVE= DRIVE1\PUB
SELECT USER= TOM
SELECT DISK= SERVER1\MK DRIVE= DRIVE1\PUB
       USER= TOM
```

Comments The SELECT DISK and SELECT DRIVE commands are used to set the current server and drive. These commands should be used at the beginning of your batch file. Note that when a password is given for a server or a drive, Constellation 3 will remember the passwords. Thus the user may switch between various servers and drives without reentering passwords.

All three selection keywords and their parameters may be given on the same command line.

SEMAPHORE

Description There are four semaphore commands. The commands can list active semaphores, lock a semaphore, unlock a semaphore, and initialize the semaphore table.

Syntax **SEMAPHORE** function,*ParmA*

Semaphore Parameter Table:

Function	ParmA
List	
Locked	SemaphoreName
Unlock	Index#
Initialize	

Examples

```
SEMAPHORE LIST
SEMAPHORE LOCK,MBLOCK
SEMAPHORE UNLOCK,2
SEMAPHORE INITIALIZE
```

STOP

Description This command signals the end of a batch file and returns to the Network Management Program menu.

Syntax **STOP**

Parameter Value Table

The table below shows the parameters and the list of valid values for each parameter. This table is stored in the C3.Data file in the CORVUS volume.

BootType	DeviceType	OSType	VolumeType
Apple2	Apple2	A2CP/M	A2SOS
Apple3	Apple3	A2DOS3.3	AFS
Atari-800	Atari800	A2Pascal	Atari
Companion	Bank	A2Runtime	CCOS
Concept	Boot-Device	A3SOS	Cndimage
Concept2	Comm-Server	Atari	CPM
DEC-Rainbow	Commodore-Pet	C2IV.0	DOS3.3
IBM	Companion	CCOS	Image
LSI-11	Concept-Plus	CP/M	Invimage
Macintosh	Corvus-Concept	CP/M-68	Mac
Nec-PC8000	DEC-Rainbow	CP/M-86	MSDOS
PET	IBM/PC/XT	Mac	New80
Printer-Server	LSI-11	MSDOS	NewDos
Sony-SMC-7086	Mirror-Server	NCIIV.0	PET
TI-Pro	NEC-PC8000	New80	ProDos
TRS-80-Mod1	Omni-Drive	NewDos	Reserved
TRS-80-Mod3	Print-Server	Pet	RSX11
Xerox820	TI-Professional	ProDos	RT11
Z-100	TRS-80-Mod1	RSX11	UCSD
Zenith-H89	TRS-80-Mod2	SoftechIV0	UNIX
	Workstation	UCSDII	
	Xerox	Unix3	
	Z-100	Unix5	
	Zenith-H89		

Synopsis

ADD ACCESS VolumeName,*Access,Unit*
ADD BOOT-CODE BootFile,BootType,*SINGLE*
ADD BOOT-TYPE BootName,BootNumber
ADD DEVICE DeviceName*Password*,OSType,HomeServer,DeviceType,
Host#,*SINGLE*
ADD DEVICE-TYPE DeviceName,DeviceType
ADD OS-TYPE OSType,VolumeType,TypeOS,*LETTER|NUMBER|SLOT*
ADD USER UserName*Password*,OSType,*HomeServer,SINGLE*
ADD VOLUME VolumeName,VolumeType,Length,*Address,Access,Owner,*
Availability
ADD VOLUME-TYPE VolumeType,TypeVol,VolOffset
BATCH *BatchName*
CHANGE ACCESS VolumeName,*Access,Unit*
CHANGE DEVICE DeviceName*Password,OSType,HomeServer,*
DeviceType,Host #,SINGLE
CHANGE USER UserName*Password,OSType,HomeServer,SINGLE*
CHANGE VOLUME VolumeName,*NewName,VolumeType,Access,Owner,*
Availability
CONSOLE
COPY SourceVol,FileName,DestinationVol
DELETE ACCESS VolumeName
DELETE BOOT-CODE BootType,*SINGLE*
DELETE DEVICE DeviceName,*SINGLE*
DELETE USER UserName,*SINGLE*
DELETE VOLUME VolumeName
ETOGGLE
FORMAT VOLUME VolumeName,*ParmA,ParmB . . .*,NOZERO
LIST NETWORK
LIST USER
LIST DEVICE
LIST VOLUME
LIST ACCESS
PIPE function,*ParmA*
PRINTER
QUIT
SELECT keyword= Name*Password*
SEMAPHORE function,*ParmA*
STOP

Appendix B: Error Messages

In this appendix you will find a listing of the error messages the Network Management Program can generate, together with instructions to follow should you receive one of them, or possible causes.

Each error message is presented in **boldface**, followed by guidance on how to proceed. The messages are listed in alphabetical order.

A semaphore has been set that prevents access to the selected drive.

Make sure no one else is using the Network Management Program. Use the Clear Semaphores function in the Network Management Program to unlock the semaphore.

Access not allowed for this account.

You do not have access to the volume, and only the network manager can give it to you. See the network manager.

Account already exists.

OR

Account does not exist.

Try again, making sure you type the name of the account exactly as it appears on the account record. Be careful that you do not include extra spaces or characters.

Blank input not allowed.

You must enter something or press [ESC] to exit.

Can't find that account's home server.

Make sure all servers are properly connected and are turned on and ready.

Can't find that drive.

Make sure all drives are properly connected and are turned on and ready.

Can't find that server.

Make sure all servers are properly connected and turned on.

Can't format volumes for that operating system.

Format the volume from a computer that supports that operating system.

Can't put a volume at that address.

Use the List function from the Volumes menu to check the available space on the drive. Make sure that you specify an address that defines an area on the drive large enough to hold the volume.

Can't put that volume at that address.

Use the List function from the Volumes menu to check the available space on the drive. Make sure that you specify an address that defines an area on the drive large enough to hold the volume.

CIII has not been installed on that drive.

Install CIII on the drive. Use the Constellation III INITI diskette and choose Upgrade Existing Drive from the main menu. See instructions in the *Setup Guide*.

Disk semaphore error.

One or more areas of the drive may be damaged; call your dealer.

Error in retrieving account information.

Call your dealer.

Error in semaphore area.

Exit the Managing Semaphores function and try again.

File number is not active.

Enter a number for an existing file.

File number is out of range.

Enter a number that is in range.

Home volume has wrong OS type.

Enter the name of a home volume that has the same operating system as the account.

Home volume may not be private.

Choose a public volume to be the home volume, or change the access type on the volume record from private to public.

Home volume under different DOS.

Enter the name of a home volume that has the same operating system as the account.

Input must be numeric.

Type the appropriate number.

Invalid DOS type.

The program cannot find a record for that operating system. The operating system may not be installed or may be installed under another name.

Invalid OS format.

The program cannot find a record for that operating system. The operating system may not be installed or may be installed under another name.

Invalid O/S mount type.

OR

Mount unit already in use.

Enter a mount unit that is not in use.

No active files.

The PIPES volume has been found and it is empty.

No printer is connected.

Make sure the printer is connected, turned on, and in slot 1 of your network station.

PIPES volume not found.

There is no PIPES volume on the network. Make sure all servers are connected and turned on. If all servers are on, you must create a volume for the Transfer Area and name it PIPES. The PIPES volume should reside on server 0. See instructions in the *Setup Guide* for creating a PIPES volume.

ProDOS batch file not found.

Make sure you enter the filename exactly.

Reserved volume, change not allowed.

The volumes A2BOOT and CORVUS can neither be changed nor removed.

Reserved volume, remove not allowed.

The volumes A2BOOT and CORVUS can neither be changed nor removed.

Server name or address not found.

Make sure the server name and address are correct. Make sure the server is is on the network and is turned on.

Semaphore number not active.

Enter a number for an active semaphore.

Semaphore number out of range.

Enter a new number that is in range.

Semaphore table is full.

There are too many users using multiuser programs.

The access table for the account is full.

Remove volumes from the access table as required in order to add new ones.

The volume size is too big for the operating system.
The volume size is too small for the operating system.

Enter a new volume size.

	minimum	**maximum**
DOS	284 blocks (1 floppy disk)	32,767 blocks (117 floppy disks)
ProDOS	284 blocks	32,767 blocks
CP/M	284 blocks	15,625 blocks
UCSD	284 blocks	15,625 blocks

There has been a CIII installation error on the selected drive.

Reinstall Constellation III on the drive. Use the C3 INITI diskette and choose Upgrade Existing Drive from the main menu. See instructions in the *Setup Guide*.

There has been a CIII installation error on the selected drive or there is a bad area on the selected drive.

Reinstall Constellation III on the drive. Use the C3 INITI diskette and choose Upgrade Existing Drive from the main menu. If reinstallation doesn't work, refer to the *Diagnostics Guide.*

There is no room for additional accounts and/or devices.

Delete accounts and/or devices as required in order to add new ones.

There is no room on the network for additional access.

Remove access to some volume from some account on the drive, to make room.

There is no room on the network for additional volume records.

Remove volumes as required in order to add new ones.

There's not enough space on the drive for that volume.

Check the available space on the drive and enter a smaller size.

Transfer area is not initialized.

Reinitialize the Transfer Area using the Manage Pipes Volume function in the Other Functions menu.

Volume already exists.

OR

Volume does not exist.

Make sure you type the name of the volume exactly as it appears on the volume record. Be careful that you do not include extra spaces or characters.

Appendix C: Planning Worksheets

This appendix consists of three planning worksheets, numbered C-1 through C-3, that you can duplicate as needed for your own network planning.

PROGRAMS

Vol. Name: _____
Format: _____
Owner: _____
Type: _____
Size: _____

Program Name	Special Requirements	Own Installer?	Size in Blocks or No. Floppies	Greeting Program Name	Directory (Pathname) or DOS Vol. No.

VOLUMES

Volume Name	Format	Owner	Volume Type	Volume Size	Contents Summary	Special Requirements

PAGE of DATE

ess	Volume	Access	Volume	Access	Volume	Access	Volume	Access