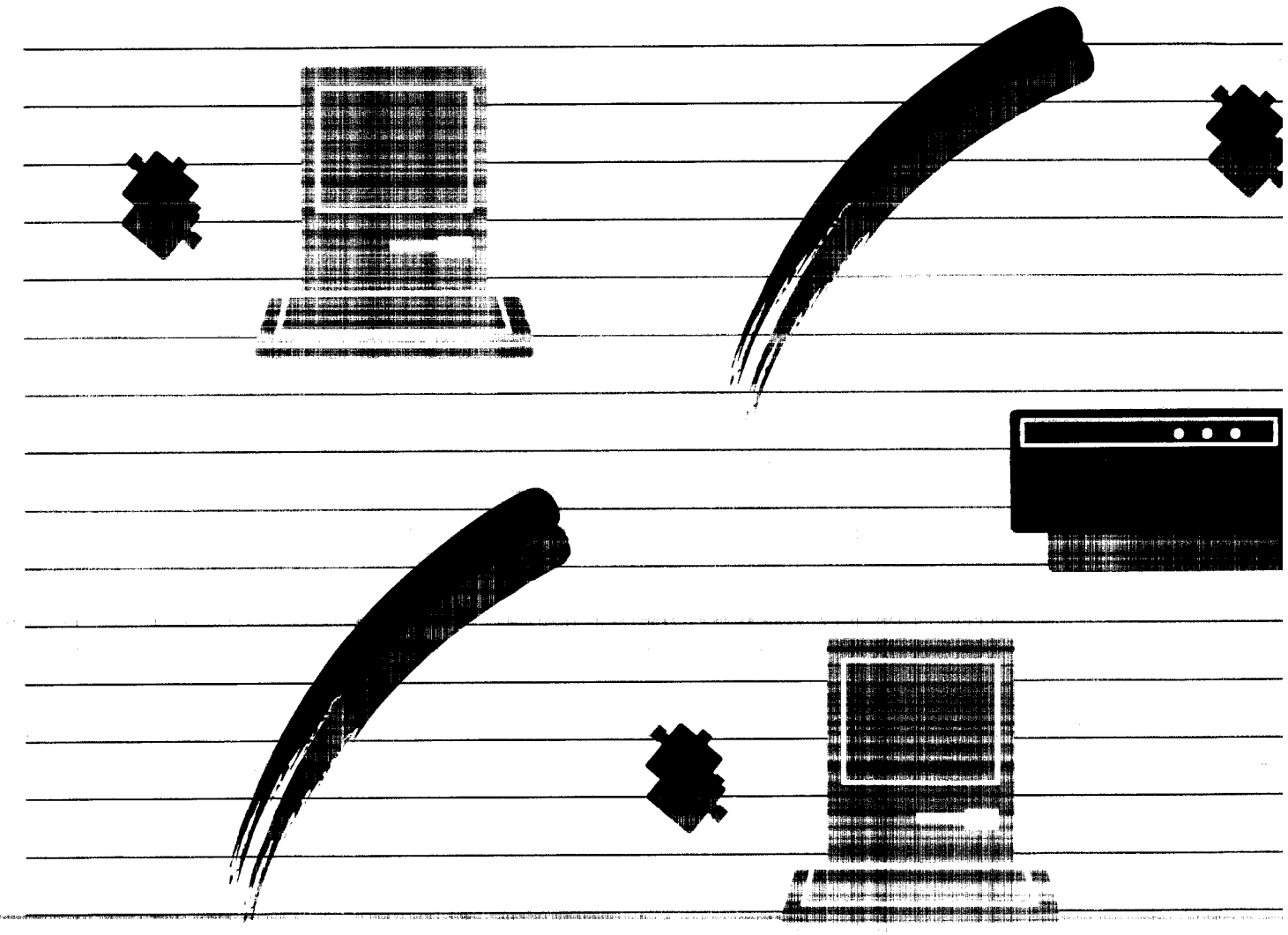
# Constellation III™

Macintosh Series



CORVUS

# Constellation III
# for the Macintosh (Release 2.0)

# Table of Contents

# Chapter 1

# Introduction

# Contents

## About This Guide

The purpose of this guide is to help you install and run Constellation III software for Macintosh computers on your Omninet Network. The guide is arranged as follows:

- Chapter 1 is a brief introduction describing what hardware and software you will need, and defining the terms that are used.
- Chapter 2 describes the characteristics of the different volume types, and gives you the information needed to effectively plan your network.
- Chapter 3 describes the steps necessary for connecting and setting up hardware.
- Chapter 4 details the steps in setting up the initial Network Manager and public volumes.
- Chapter 5 provides instructions for the routine tasks of network management, such as adding and deleting users and volumes, checking stats, and changing user or volume attributes.
- Chapter 6 tells you how to set up printing on your network.
- Chapter 7 is aimed at the user of the network, and explains how to carry out routine tasks on the system.
- Chapter 8 describes how to use Constellation III's diagnostic utilities.

If you are upgrading an existing Constellation III for Macintosh network to Release 2.0, please refer to Appendix A.

To further clarify the instructions, informational and cautionary notes have been added. Watch for the icons.

 indicates an informational note.

 indicates a cautionary note.

It is assumed that you are setting up (or upgrading) a Corvus Network using one or more OmniDrives and Macintosh computers, and that you are familiar with how to use a Macintosh. If concepts such as dragging, clicking, and pulling down menus are new to you, refer to your Macintosh manual.

## Before You Get Started

### COPY DISKETTES

The first thing you must do is make backup copies of the Constellation III software. You do not need a special disk copy program to copy them; this software is not electronically copy-protected, although copyright restrictions do apply.

Store the master copy of all three diskettes in a safe place. Use the copies to install or upgrade your network.

### MINIMUM HARDWARE REQUIREMENTS

In order to install and create a network, you need at least the following hardware:

- 512K Macintosh
- Corvus OmniDrive
- Corvus Omninet network cabling
- Corvus Transporter Network Interface Card for each Macintosh

## MINIMUM SOFTWARE REQUIREMENTS

In order to install and create a network, you need the following software :

From Corvus Constellation III (Release 2.0) software:

- Network Manager Diskette
- User's Diskette
- Diagnostics

From Apple the latest versions of the following files:

- System (3.2 or later)
- Finder (5.3 or later)
- Font D/A Mover
- Hard Disk 20 (for non-Enhanced, non-Mac Plus Macintoshes)

These versions of System, Finder, and Hard Disk 20 can be found on the Corvus Diagnostic diskette

## KEY TERMINOLOGY AND PROGRAM NAMES

**Device Booting** — Device booting eliminates the logon process of entering a name and password; in other words, a user might want to be able to turn on his Macintosh, insert a Startup diskette, and boot up without entering a user name or password. This feature is especially useful if you want to set up a Macintosh in a public place so that several people can share the computer.

**File Transfer** — The File Transfer program allows users who do not have the same volume mounted to transfer files among themselves within a network. The program is especially useful for exchanging information between users with different computer types.

**Logoff** — The Logoff program unlocks any locked volumes, unmounts any mounted volumes, ejects floppy diskettes, and reboots the machine. This program should be run at the end of the day to close and update all volumes.

**Logon**

The Logon program allows a user to log on to the network.

**Mount Manager**

Mount Manager is used to access and display volumes on the Macintosh desktop ("mount" on the desktop) and put back volumes ("unmount" from the desktop), as well as control the number of volumes mounted on the desktop (the maximum is six Constellation volumes) at one time. It can also be used to create a special file that will automatically mount specified volumes when a user logs on ("boots up") to the network.

**Network Manager**

The Network Manager is the person who implements and maintains the network system. It is also the name of one of the primary programs in Constellation III. The Network Manager program (found on the Corvus Mgr Diskette) is used primarily to create, delete, and change attributes for volumes and users.

There are three display modes in the program: Users, Volumes, and Drives. The modes are shown by pulling down the View menu.

In the Volume mode, the Network Manager can create new volumes, delete old volumes, and modify existing ones.

The Users mode allows a Network Manager to add new users, delete old ones, and print out lists of current users.

The Drives mode is for selecting OmniDrives on the network.

**Pipes**

Pipes is a program that allows you to view files that are in the queue to be despooled to a printer or transferred to another user on the network.

**System file**

The System file controls many of your system functions. See your Macintosh manual for further information on this file.

**System folder** The System folder contains the System file and the Finder. In order to install or upgrade your network, you will have to copy files from the new Corvus diskettes into the System folder.

**System volume** Your System volume is the volume displayed in the upper right-hand corner of your desktop after you have logged on. It should be the only volume mounted on the desktop with a System folder in it. If you have System folders in any volumes besides your System volume, delete them; these extra folders can cause serious network problems.

# Chapter 2

# Planning an Omninet Network

# Contents

# Planning for Constellation III

Constellation III allows you to tailor your system to your particular needs. So, before setting up the network, you should consider how it will be used. For instance, if most of the users on your network will be running multiuser applications programs, you may want to add more uncontrolled volumes than you would if your users were working on individual private files. This chapter provides you with the basic information needed to plan an Omninet network. In order to plan a network effectively, you have to understand users and volumes.

## Users

When setting up a network, you first need to determine who will be using it. Each person who will use the network needs a User Name (and, if desired, a User Password). The User Name can have a maximum of ten characters and the User Password can have a maximum of eight. Each user will need a Startup diskette to log on to the system, and a System volume.

## Volumes

A Corvus network is built around an OmniDrive network hard disk server. The OmniDrive can hold the equivalent of tens to hundreds of regular Macintosh diskettes. Corvus divides this hard disk into units called volumes.

Volumes are much like diskettes except that volumes can hold anywhere from half a diskette to forty diskettes' worth of data. Standard volumes range in capacity from one to eight diskettes, but you can also create custom volumes.

Volumes and diskettes are both represented by icons on the Macintosh desktop. The volume icon is a representation of the OmniDrive. Mounting a volume gives you access to that volume. When you mount a volume, the volume icon appears on the Macintosh desktop. The computer can then read and write data to and from that volume, unless the volume is locked or the access is controlled.

When planning volumes, there are three main considerations: the volume type, the volume attributes, and the volume access. The contents of a volume will usually dictate the volume access type and size. For shared programs, you will create either a public or controlled volume, unless you use multiuser applications programs, in which case you would need an uncontrolled volume. If you plan to share a printer on the network, you will also need to create a special volume called the Pipes volume.

## VOLUME TYPES

In order to plan the exact kinds of volumes you need for your network, you need to understand the various types. There are four types of volumes, each serving a different purpose on the network. The four types are private, public, controlled, and uncontrolled. They differ in the way that users are allowed to access the information within a volume. For any of the four types, you may specify a password for added security.

Once you have created volumes, use them instead of diskettes to improve the speed and efficiency of your operations. Copy all your files to the volumes and use diskettes only to log on or keep backup copies of files.

The four volume types are explained below.

Private Volumes. A private volume can be mounted and accessed only by its owner. The volume owner always has read-write access to his own private volumes, but he can choose to have read-only access if he wants to be certain that nothing in the volume will be modified or deleted. Every user will need to have his own private System volume.

Public Volumes. Public volumes are for data and programs that users can share. The Network Manager should place the Mount Manager, File Transfer, Pipes, and Logoff programs in the same public volume. Everyone can then share them without using up space on their own volumes.

Only the owner of a public volume has read-write access and can actually change the volume's contents. Other users who know the password have only read-only access; they can open applications and documents in the volume, but they cannot make changes to them.

Controlled Volumes. Controlled volumes should contain files that you want users to be able to update. Information in a controlled volume can be added to or modified by selected users on the network from their workstations.

Controlled volumes are set up so that the first user to mount a controlled volume has read-write access to it. Other users who mount the volume later have only read-only access until the first user unmounts the volume. Then someone else is free to mount the volume with read-write access.

Uncontrolled Volumes. Uncontrolled volumes allow all users who have the volume mounted to read and write data at the same time. If you have multiuser applications programs, then you will need to put them in uncontrolled volumes. However, if application programs that are not specifically designed for simultaneous use by multiple users are put in uncontrolled volumes, unrestricted read-write access could result in loss of data.

You should not create an uncontrolled volume unless you have a specific multiuser application to use with it, and you should not put a System folder with System files in an uncontrolled volume.

## VOLUME ATTRIBUTES

Some of the volumes on your network may be used by more than one person. The Constellation III network software has certain features that prevent users from interfering with each other's work. There are five features, called attributes, for each volume: owner, password, type, size, and operating system.

All five attributes are specified when a volume is created. As the Network Manager, it is your responsibility to create volumes and assign them a volume owner.

The volume password provides the second level of control for volume access. If a volume is protected with a password, only users who know the password can mount that volume.

Volume size is the third attribute. Volumes can be either small, medium, large or extra-large in size; their size should be determined by the amount of information they are expected to hold.

Volume type is the fourth attribute you will specify for any volume you create. Being able to select from different types of volumes gives you another level of control over your volumes.

Operating system is the last volume attribute. You can specify whatever operating system you want the volume to work under. In most cases this will be Macintosh.

## ACCESS TYPES

Corvus volumes allow two different types of access: read-only (R/O) and read-write (R/W). When a volume can only be opened (or read, but its information not changed), its access is read-only (R/O). Read-only access is comparable to locking a diskette with the lock tab.

When information in a volume can be changed the volume has read-write (R/W) access.

The following table shows how access correlates with volume type.

| Access | Volume Type | | | |
|---|---|---|---|---|
| | **Private** | **Public** | **Controlled** | **Uncontrolled** |
| **R/W** | Owner Only | Owner Only | First User to Mount Volume | All Users |
| **R/O** | Owner Only | All Users | All Users | All Users |

## CREATING VOLUMES

The standard volume sizes are 800 (small), 1600 (medium), 3200 (large), and 6400 (extra large) blocks. The Network Manager should determine the size of the volumes created by their anticipated uses.

| | Small | Medium | Large | Extra-Large |
|---|---|---|---|---|
| **Blocks** | 804 | 1604 | 3204 | 6404 |
| **kb/MB** | 400kb | 800kb | 1.6MB | 3.2MB |

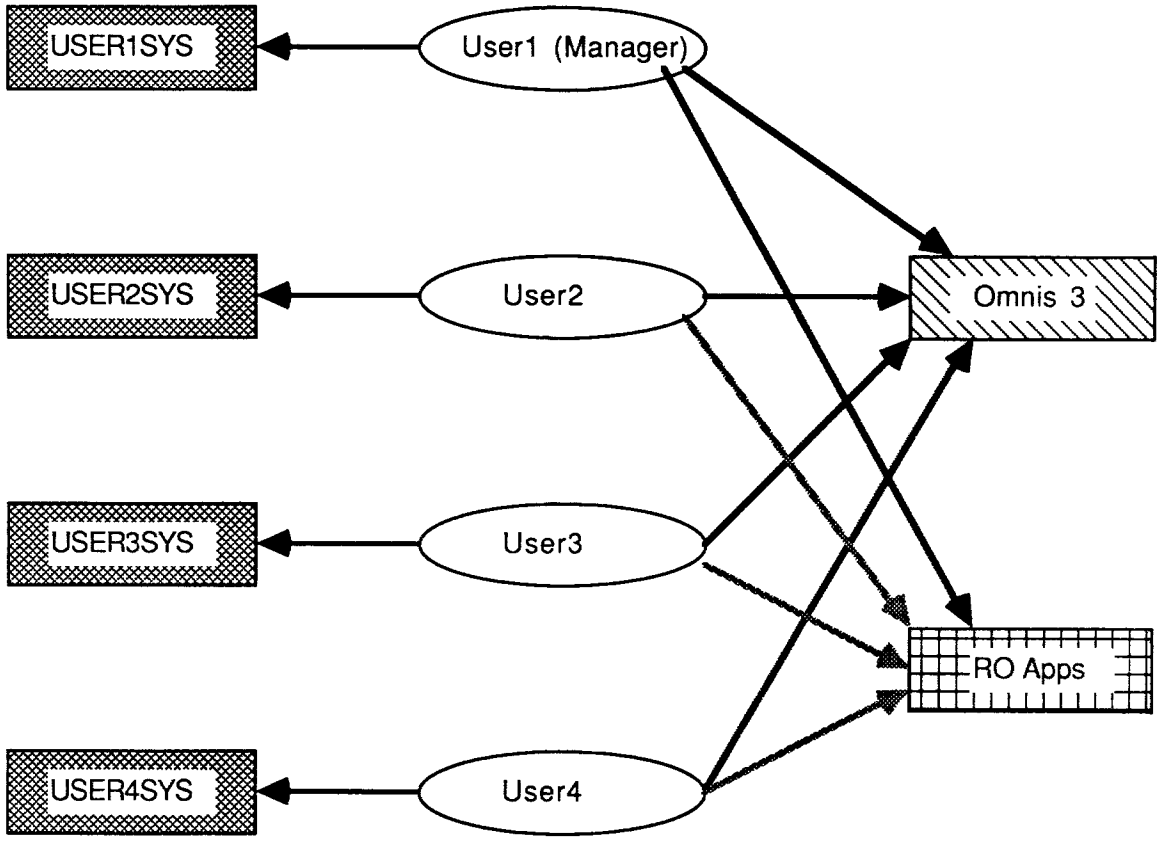
The Network Manager should create a System volume for each user. This volume is typically a private volume and contains both the user's System folder and his private files. It is also a good idea for the Network Manager to create a public volume containing the Mount Manager, File Transfer, Logon, and Logoff programs. This way, all network users can share the Corvus utilities. For himself, the Network Manager should create a private System volume with all the latest Corvus software, any application programs, and the System folder.

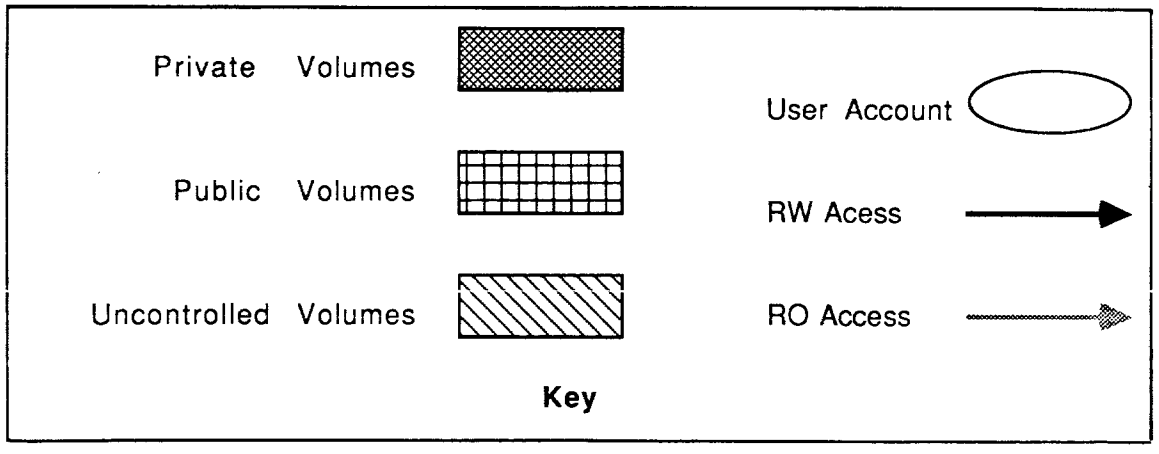
Finally, make a list all of the applications programs, documents, folders, and any other information that needs to be shared.

The chart below illustrates the way that users, volume types and access interrelate.

Constellation III for Macintosh

Arrangement of Users and Volumes



# Chapter 3

# Setting Up the Network

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# Setting Up the Network

This section describes how to set up the hardware and configure your network. It includes instructions for the initial installation process and for making additions to the network later.

Whether you're setting up an entirely new network system or just adding new hardware and Constellation III for the Macintosh to an existing network, you will need to follow the instructions in this section.

If you are already running Constellation III for the Macintosh on an existing network and now wish to upgrade your system for Release 2.0, please refer to **Appendix A, Upgrading Your Constellation III for Macintosh Network.**

For a new network, you will need to work through the entire chapter.

If you are adding Constellation III for the Macintosh to an existing Constellation for Apple or IBM network, then you should follow the instructions for **Connecting A Macintosh to the Network**, and for **Initializing a Non-Macintosh Constellation Drive for Macintosh Use.**

If you are simply transferring an OmniDrive from another Constellation III for the Macintosh network to your network, then you need follow only the directions for **Initializing An OmniDrive From A Different Constellation III For Macintosh Network.**

## SETTING UP NEW EQUIPMENT

The following hardware items are required to set up the OmniDrive:

- OmniDrive
- Power Cord
- Tap or Drop Cables
- Transporter Network Interface Card
- Trunk Cables
- Trunk Adapters

If you are not familiar with how to set up cabling for an Omninet network, please refer to Corvus's Omninet Cabling System II Installation Guide for further information.

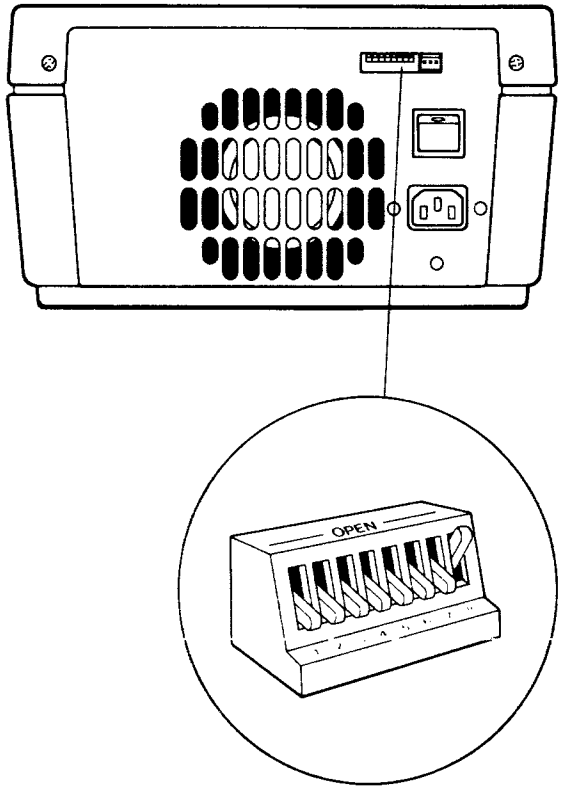
## SETTING UP THE OMNIDRIVE

Handle the OmniDrive with care. Place it on its base on a flat surface where the air vent on the back panel is not blocked.

To set up the OmniDrive and connect it to the Macintosh,

1. **Set the OmniDrive switches.**

   Find the switches marked ADDRESS on the back of your OmniDrive. Choose an address between 0 and 63. If this is the first OmniDrive on your network, the address should be set to 0. Setting it to 0 will make certain network functions easier. If you are adding the OmniDrive to an existing network, the address must be unique. Set the drive by pushing the switches toward or away from the numbers, using the table on the following page for reference.



Switches 7 and 8 are not used for setting the device address. Switch 7 should be pushed toward the numbers for ALL OmniDrives. Switch 8 is the bias switch. Only one OmniDrive on a network should have the bias switch pushed toward 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 | | | | | |

■ switch towards number
□ switch away from number

**Network Device Addresses**

2. **Attach the tap or drop cable to the Omnidrive.**

   Plug the three-slot connector at the end of the drop cable into the three-pronged connector marked TAP, next to the switches, on the back of the OmniDrive.

3. **Connect the tap or drop cable to the tap box or trunk adapter on the network.**

4. **Plug the power cord into the OmniDrive and into a power outlet.**

5. **Turn on the OmniDrive.**

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

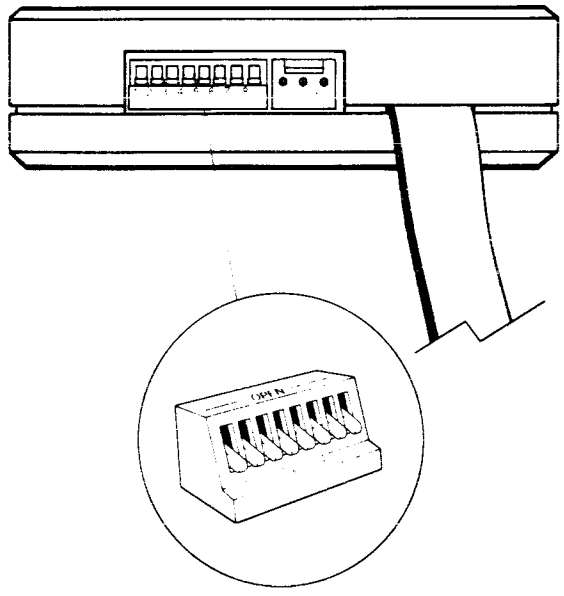
   Once the drive is turned on, the three lights on the front panel will come on. After about twenty seconds, only the READY light should remain on, indicating that the drive is ready for use.

   If the READY light is not the only light on after one minute, reset the OmniDrive by turning it off, waiting 20 seconds, then turning it back on. If the READY light still does not come on correctly, recheck all connections. If the drive still does not respond correctly, call Corvus Customer Service.

## SETTING THE DEVICE ADDRESS FOR THE WORKSTATION

You must set the device address for your workstation on the Transporter before you connect it to your workstation. Allowable addresses are 0 through 63, and the device address of your workstation must be different from the address of any other device on your network. Your network manager should be able to give you an address for your workstation.

1. **Locate the switch box on the end of the card.**

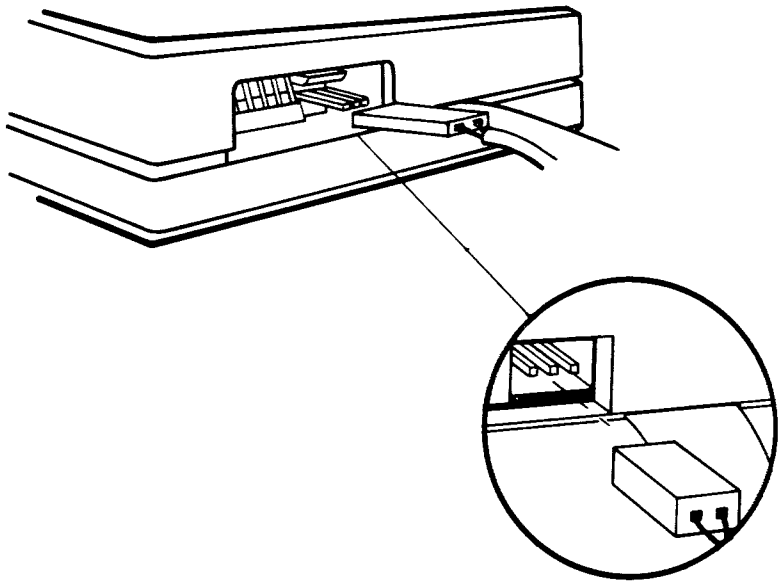


Transporter Network Interface Card, showing location of switch unit.

2. **Set the switches to the device address assigned to your workstation according to the table of Network Device Addresses on page 3-5. Make a note of your device address. Switches 7 and 8 are not used. Set them to the ON position, i.e., toward the numbers.**

## CONNECTING THE TAP OR DROP CABLE TO THE TRANSPORTER

Attach the three-slot socket at one end of your tap or drop cable to the three-pronged plug next to the switch box.



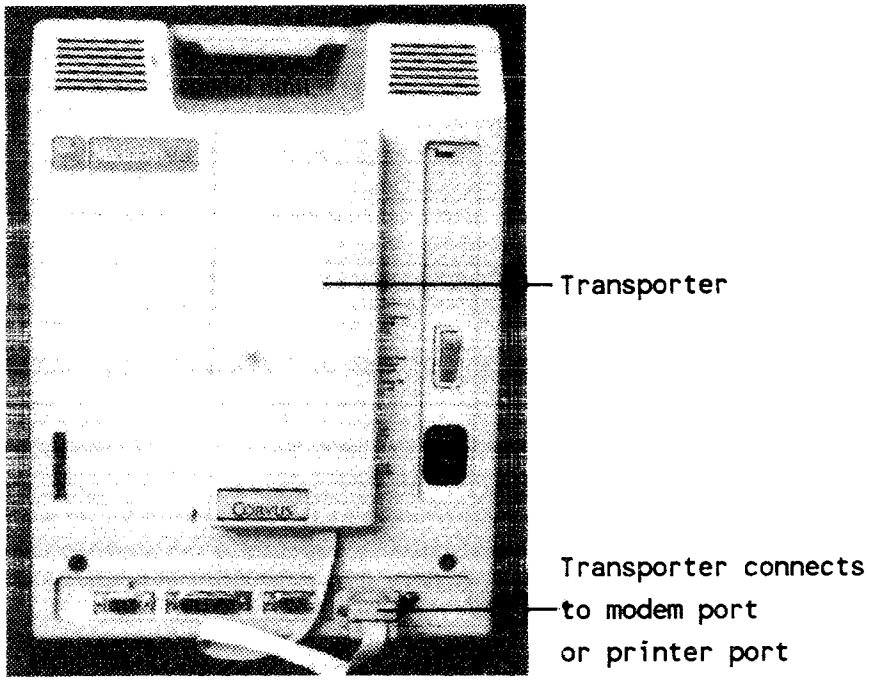
Connecting the tap or drop cable to the Transporter.

Turn off your Macintosh before proceeding with Transporter installation.

## CONNECTING A MACINTOSH TO THE NETWORK

### Macintosh 512K

1. **Plug the nine-pin connector (at the end of the ribbon cable that extends from the Transporter) into a serial port at the back of the Macintosh. The nine-pin connector can be attached to either the printer port or the modem port.**



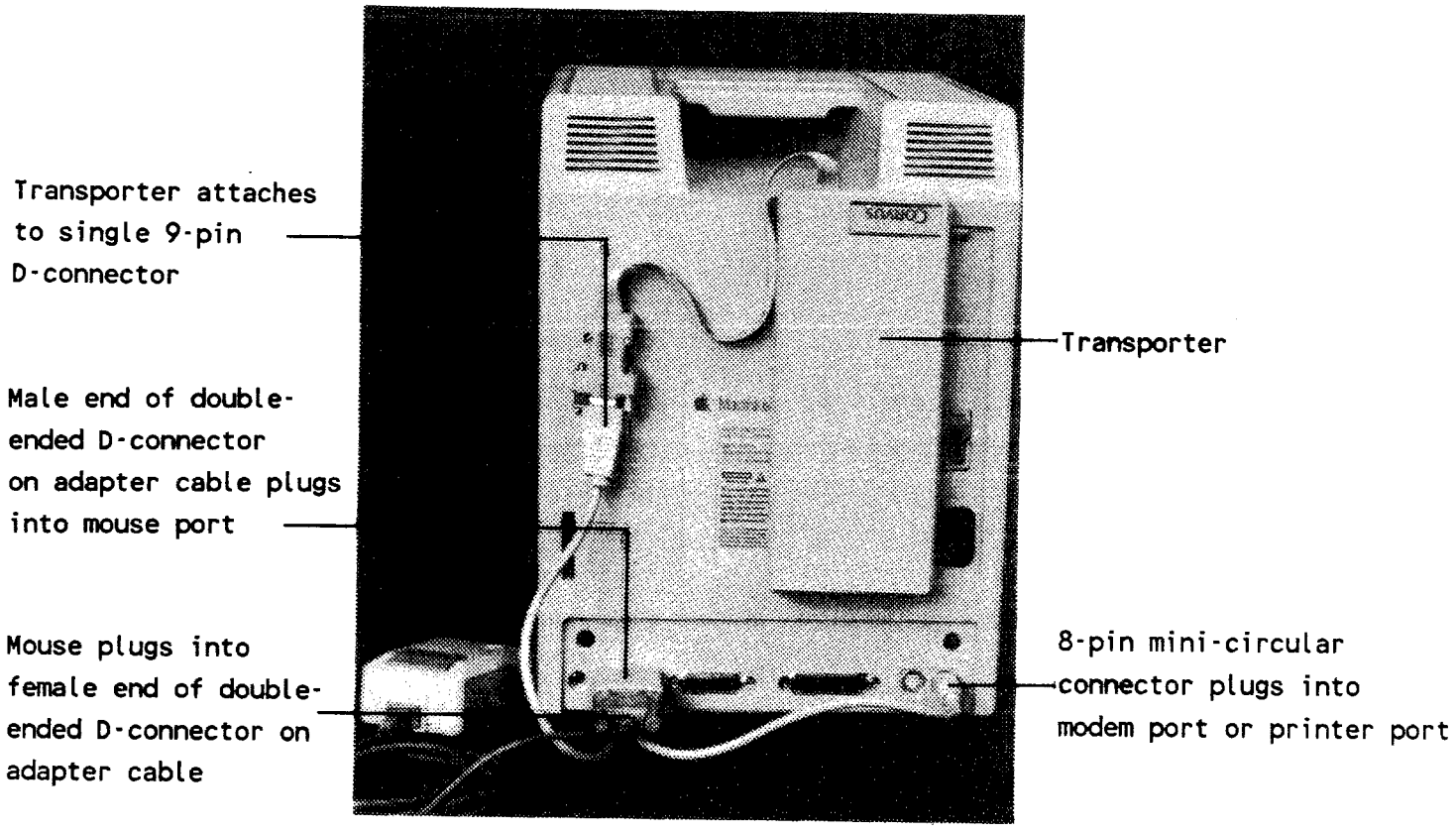

Mac 512K Transporter installation. Connect to either modem or printer port; configure your Startup diskette accordingly.

Your Transporter Network Interface Card is now installed. Connect the other end of the drop cable to a trunk adapter and your Macintosh is connected to the network.

## Macintosh Plus

If you have a Macintosh Plus, follow these instructions:

You need the special Corvus adapter cable (Corvus Product Code MCBL) for the Macintosh Plus in order to connect your Transporter.




Mac Plus Transporter installation. Note mouse connector plugged into adapter cable.

1. **Plug the male end of the double-ended 9-pin D-connector on the adapter cable into the mouse port on the back of your Mac. Tighten the screws.**

2. **Plug the mouse into the female end of the double-ended 9-pin D-connector. (This connector has two cables coming out of it). Tighten the screws.**

3. **Attach the flat ribbon cable from the Transporter to the matching single D-connector on the adapter cable. Tighten the screws.**

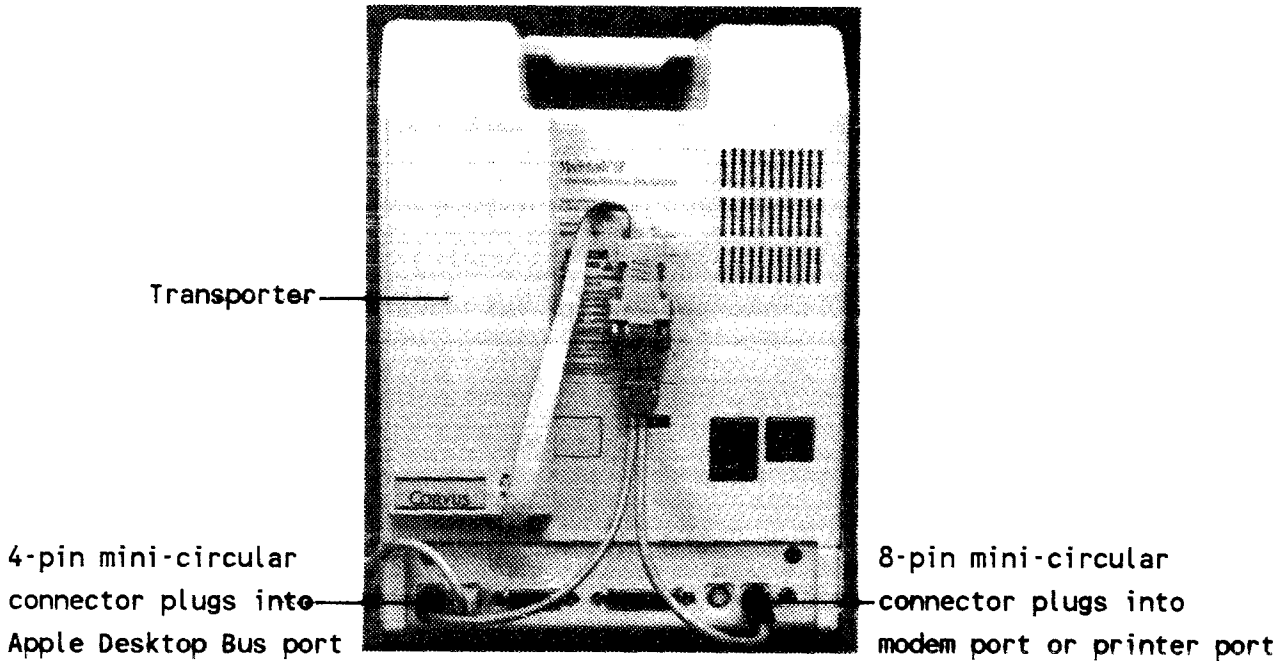
4. **Plug the 8-pin, mini-circular connector on the adapter cable into either the modem or printer port, depending on which one you are using for your configuration.**

Your Transporter Network Interface Card is now installed. Connect the other end of the drop cable to a trunk adapter on your network. Your Macintosh is now connected to the network.

### Macintosh SE or Macintosh II

If you have a Mac SE or Mac II, follow these instructions:

You need the special Corvus adapter cable (Corvus Product Code M2CBL) for the Macintosh SE or II in order to connect your Transporter.




Mac SE and Mac II Transporter installation. SE shown; port connection is the same for Mac II configuration.

1. **Plug the connector at the end of the ribbon cable extending from the Transporter into the matching connector on the adapter cable. Tighten the screws.**

2. **Plug the 8-pin, mini-circular connector into either the modem or printer serial port, depending on which one you are using for your configuration.**

3. **Plug the four-pin, mini-circular connector into the Apple Desktop Bus™ port on your Macintosh SE.**

Your Transporter Network Interface Card is now installed. Connect the other end of the drop cable to a trunk adapter. Your Macintosh is now connected to the network.

## Initializing an Omnidrive

There are three separate procedures for initializing OmniDrives. They vary slightly, depending upon the circumstances under which you are initializing the drive.

- If you are initializing a new drive on a new network, you will need to update the firmware and then use the Setup drive function in the Installer menu.

- If you are adding Constellation III for Macintosh to an existing drive that has been in use with Constellation III for Apple or IBM, you will need to use the Corvus volume update in the Installer menu.

- If you are adding an Omnidrive to your network that has been in use on another Constellation III for Macintosh network, you will need to Merge network user tables from the Installer menu.

Complete directions for initializing a drive in each situation follow.

## INITIALIZING A NEW OMNIDRIVE ON A NEW NETWORK

Before a new OmniDrive can be used with a Macintosh, the firmware must be updated and the drive must be set up, or initialized. When a drive is initialized, a volume called CORVUS is created. The CORVUS volume contains tables that are used to manage the storage area on the drive.

### Updating the Firmware

Before any computer can communicate with an OmniDrive, a firmware file must be copied onto the drive. This step uses the Corvus Diagnostic program. After you have made copies of the original Corvus diskettes, follow the steps below, using your copies of the orginals.

1. **Insert the Corvus Diagnostic diskette.**

   Click twice on the Diagnostic diskette icon, and again on the Diagnostic program icon to open the application.

2. **Select the server and drive.**

   The server name displayed is SERVERnn, where "nn" is the network address of your OmniDrive. If you only have one drive on the network, it will be selected automatically. If you have more than one drive, type in the name of the drive you want. Click the Select button.

3. **Pull down the Diagnostic menu and select Update FW.**

   You will be asked if you want to update the firmware on the server you have selected. If the server and drive displayed are correct,

4. **Click OK.**

   A message is displayed indicating that the firmware is being updated, then you are asked to reset the drive.

5. **Reset the drive.**

   Reset the drive by turning it OFF and then ON again. Once the drive's ready light is lit,

6. **Click OK.**

The Corvus Firmware is now added to your drive.

7. **Pull down the File menu and select Quit.**

   You will be returned to the desktop. You should now initialize the drive.

8. **Eject the Diagnostic diskette, then initialize the drive.**

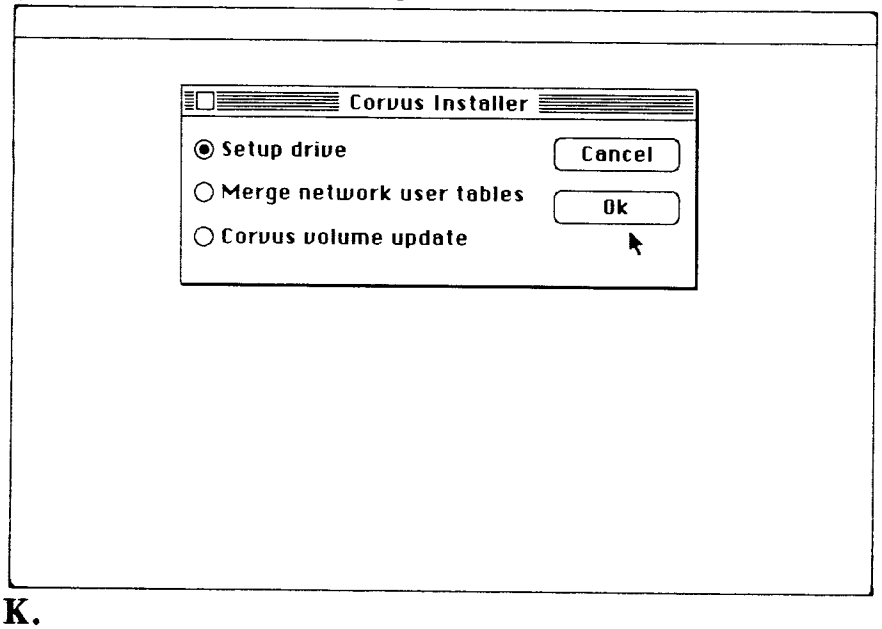
**Initializing a new OmniDrive:**

1. **Insert the Mgr diskette and double-click the Corvus Installer program icon.**

   The screen displays three options: Setup drive, Merge network user tables, and Corvus volume update.

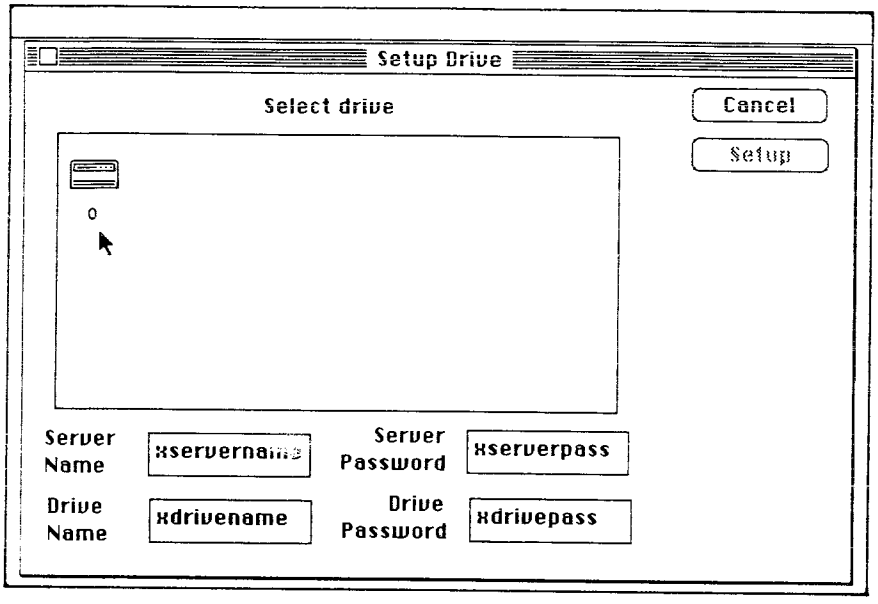
2. **Select the Setup drive button.**

   Click the button labeled Setup Drive. The OK button darkens.




3. **Click OK.**

The Setup Drive screen will appear.




**4. Select an OmniDrive.**

The screen should show only one OmniDrive icon with the drive's network address. Select this drive by clicking on the drive icon. A box is drawn around the drive, the Setup button darkens, and default server and drive names appear.

**5. Check the server and drive.**

The OmniDrive has a built-in disk server that should be assigned a name and a password. The drive also should be assigned a name and a password. Defaults for the server and drive name will appear at the bottom of the screen. Accept or change these default values. Assign passwords for the server and drive by clicking the pointer in the boxes labeled Password and typing one in. Before continuing with Step 6, write the server and drive names and passwords below.

*Server Name* _____

*Server Password* _____

*Drive Name* _____

*Drive Password* _____

6. **Click Setup.**

   You will be warned that the initialization procedure will destroy any existing data on the drive.

7. **Click OK.**

   A message appears on the screen indicating that the drive is being set up. Once the process is complete, the screen displays a message indicating that the drive is set up, and asking you to turn the drive off and then on.

8. **Reset the drive.**

   Turn the drive OFF and then back ON. Once the drive's Ready light is lit,

9. **Click OK.**

   The screen displays the main menu of the Installer program.

10. **Click Cancel to exit the Installer program.**

## INITIALIZING AN OMNIDRIVE ON A NON-MACINTOSH CONSTELLATION NETWORK FOR MACINTOSH USE

If you are adding Constellation III for Macintosh to a drive on a network that has been used with Constellation III for Apple or IBM, you will need to to do the following:

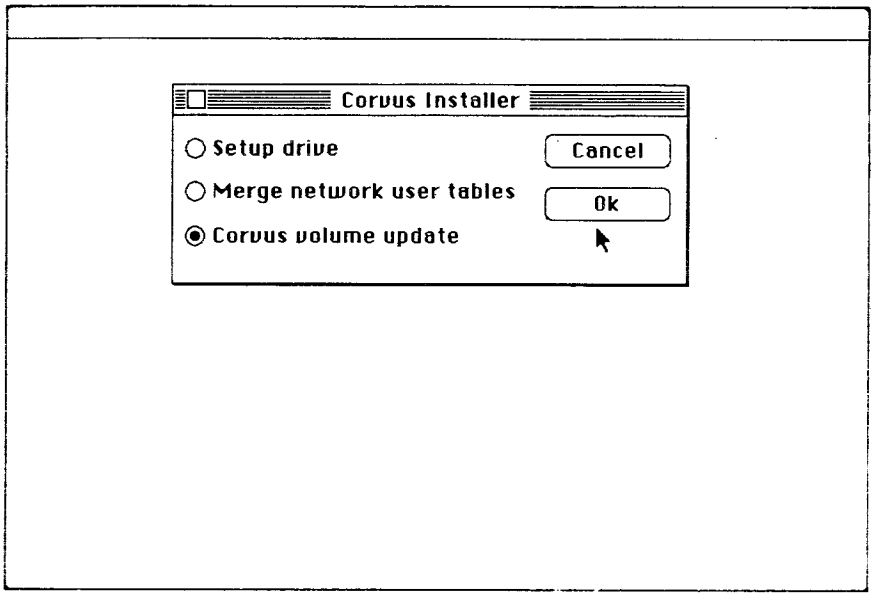
1. **Insert the Mgr diskette and double-click the Mgr diskette icon to open it.**

2. **Double-click the Installer program icon.**

   The screen displays three options: Set up drive, Merge network user tables, and Corvus volume update.

3. **Select the Corvus volume update button.**

   Click the button labeled Corvus volume update. The OK button darkens.




4. **Click OK.**

   A message will appear telling you that the Corvus volume is being updated.

5. **Reinsert your Startup diskette.**

   The screen will now confirm that the update process has been completed.

6. **Click OK, then click Cancel to exit the Installer program.**

Your OmniDrive is now ready for use.

## INITIALIZING AN OMNIDRIVE FROM A DIFFERENT CONSTELLATION III FOR MACINTOSH NETWORK

If you are adding an OmniDrive that has previously been in use on another network running Constellation III for Macintosh, do the following:

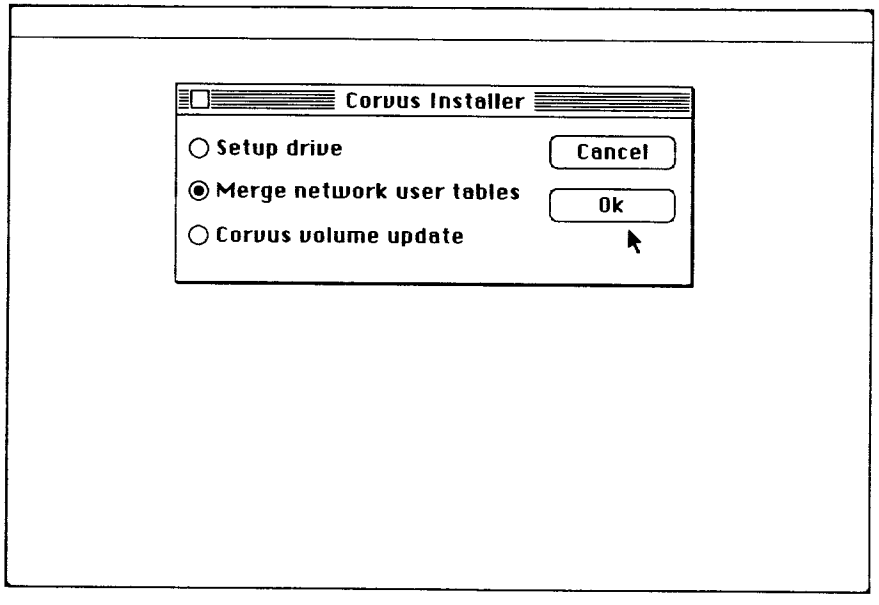
1. **First, boot up using the Diagnostic diskette, then eject it, insert the Mgr diskette, and double-click the Mgr diskette icon to open it.**

2. **Double-click the Installer program icon.**

   The screen displays three options: Set up drive, Merge network user tables, and Corvus volume update.

3. **Select the Merge network user tables button.**

   Click the button labeled Merge network user tables. The OK button darkens.




4. **Click OK**

   The screen displays a drive icon for each OmniDrive on the network.

5. **Select an OmniDrive.**

   Below each drive icon is the drive's Omninet address.

6. **Click the drive you wish to add.**

   A box is drawn around the drive, and the Merge button darkens.

7. **Select the Merge button.**

   A message appears indicating that the current server's users will be added to the network.

8. **Click OK.**

   A message is displayed saying that the user tables are being merged. Once the process is complete, another message appears indicating that the network user tables were successfully merged.

9. **Click OK.**

   The screen displays the Main Menu of the Installer program.

10. **Click Cancel to exit the Installer program.**

    Your Omnidrive is now ready for use.

# Chapter 4

# Getting Started

# Contents

## The Network Manager

The Network Manager is the individual assigned to install and maintain the network. Initially, the Network Manager coordinates the installation process, makes sure hardware and software are in place, and sets up the first users and volumes. Once the network is installed, the Network Manager's responsibilities are to maintain the network: create new users, update old volumes, add new devices, etc.

### NETWORK MANAGER'S NOTEBOOK

Keeping a notebook with relevant information about the network simplifies the Network Manager's responsibilities.

The notebook should include the following:

- Diagram of trunk line and tap box or trunk adapter locations
- List of volumes and their attributes
- List of network users
- List of server and drive names and passwords
- List of spare tracks
- Record of any diagnostic operations performed on an OmniDrive
- List of network device addresses

A quick and efficient way to create the volume, user, and drive lists is to use the Print option in the Network Manager program. This option is discussed in the section on Printing Lists in Chapter 5.

## Creating the First User

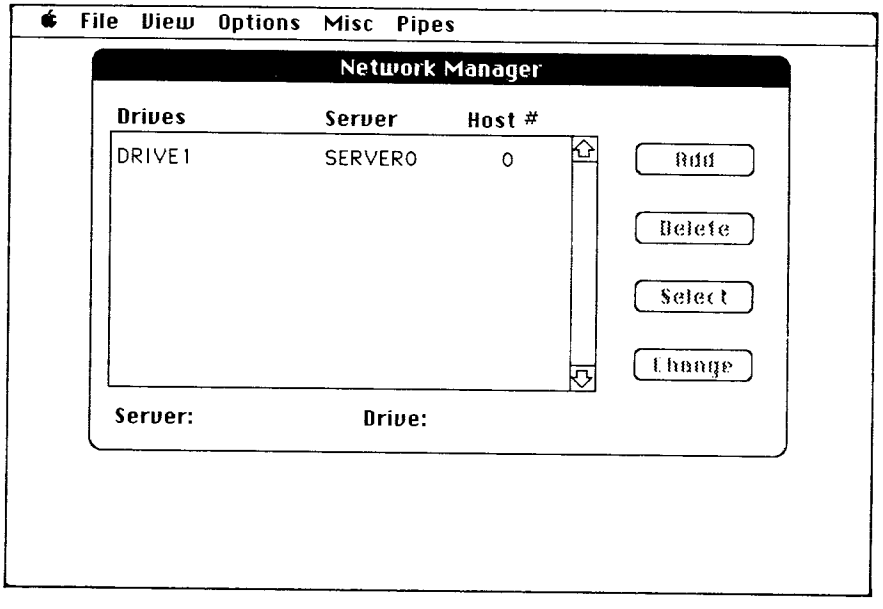
The Network Manager should be the first user created for the system. This user will have several special capabilities that no other user on the network should have.

To create a Network Manager user:

1. **Insert the Corvus Mgr diskette.**

2. **Double-click first on the Network Mgr diskette icon, and then on the Network Mgr icon to open the Network Manager program.**

   The network drives will be listed on the screen.




3. **Click anywhere on the row to select the correct drive. Click the Select button.**

   The server and drive names will darken, and a box asking for the Server password will be superimposed on the screen. This will be followed by a box asking for the Drive password.

4. **Enter the Server and Drive passwords.**

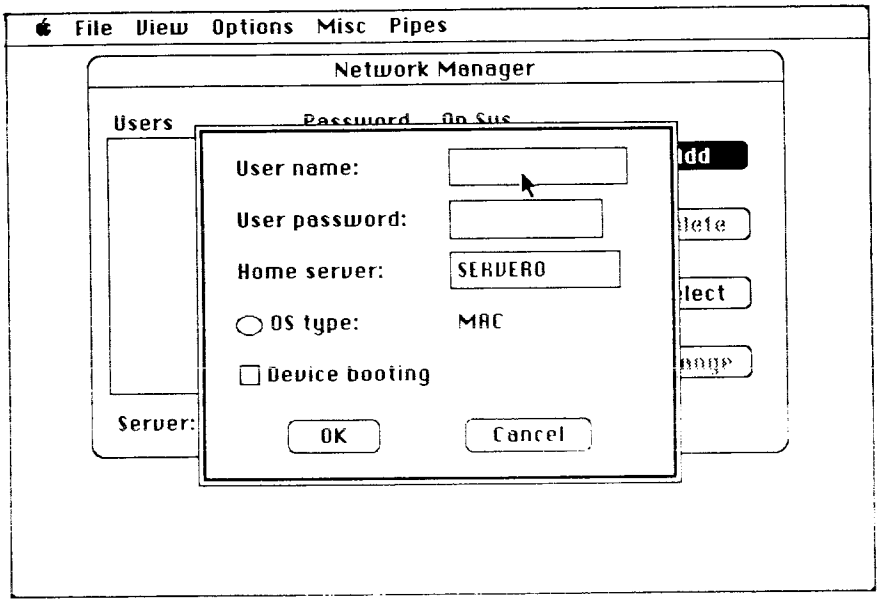
   Refer to Chapter 3 for the passwords you assigned. Enter both passwords, pressing return after each one.

5. **Pull down the View menu and select Users.**

   The User table displays a list of each user's name, password, and boot operating system. Since this is the first Macintosh user you are adding, the table will be empty.

6. **Click the Add button.**

A screen asking for user information appears.




7. **Enter a name and password.**

The User Name can have up to 10 characters (letters, numbers, and periods). You can enter a password, if you like.

To enter a password, move the cursor to the password box, click, and type the password. The password can have up to eight characters (letters, numbers, and periods).

The user's operating system type should be set to Mac, and the home server should be the drive you selected earlier. The Device booting square should not be marked.

8. **Click OK.**

The new User Name for the Network Manager will appear in the user display table.

# Making The First Three Macintosh Volumes

The next step for a Network Manager is to create three specific volumes on the network.

The first volume should be a private System volume for the Network Manager containing the network management software and the System folder.

The second volume should be a public volume that contains the network utilities for users.

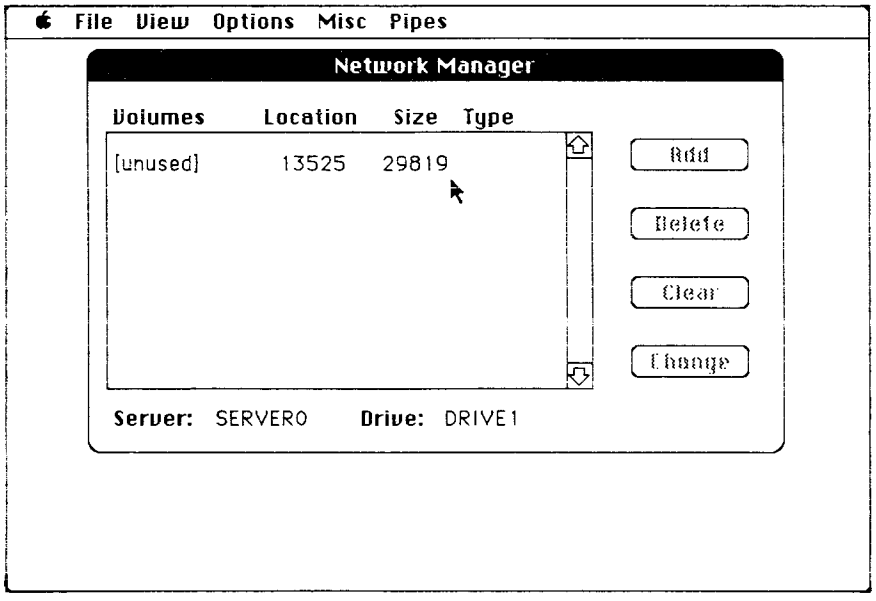
The third volume you need to create is the Pipes volume, which is a sepcial volume used for print spooling and transferring files.

## THE MANAGER'S PRIVATE SYSTEM VOLUME

To create a private volume for the Network Manager, from the Network Manager program,

1. **Pull down the View menu and select Volumes.**

   If you are upgrading an existing system, you will see a list of volumes and the segments of unused space available on the drive. Each unused row on the display represents a segment of available space at a certain address on a drive. It is with these segments of unused space that you create new volumes. If you are setting up a new network, and there are no previous volumes existing, you will see only the unused space on the drive you selected.




2. **Click on an unused row.**

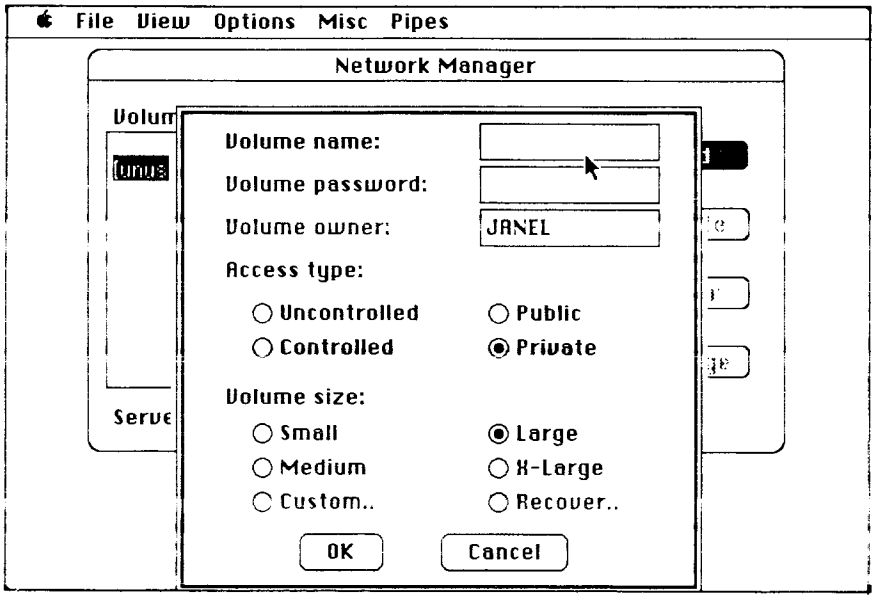
   The Add button will darken.

3. **Click the Add button.**

   A list of operating systems will appear.

4. **Select the button labeled Macintosh and click OK.**

   A menu showing attributes to assign to your new volume will appear.



5. **Enter a name for your volume.**

   Up to ten characters (letters, numbers, or periods) are permitted.

6. **Enter a password up to eight characters long.**

   If you want a password, click anywhere in the box for volume password, and type in the password.

7. **Choose the access type.**

   Private is already selected. This is correct for the private Network Manager's System volume that you are making.

8. **Choose the volume size and click the appropriate button.**

| | Small | Medium | Large | Extra-Large |
|---|---|---|---|---|
| **Blocks** | 804 | 1604 | 3204 | 6404 |
| **kb/MB** | 400kb | 800kb | 1.6MB | 3.2MB |

The above table shows size equivalents for standard volumes. You should choose large or extra-large for the Network Manager's private System volume. The buttons are dim for any volume size requiring more unused space than there is in the segment you've selected.

9. **Click OK.**

   Clicking OK returns you to the Volume display. It also adds the volume you've just created to the list of volumes in the display.

## THE FIRST PUBLIC VOLUME

To make a public volume, you follow the same procedure as above, except that you click on the public button in the menu that lists volume attributes instead of accepting the default (private).

## THE PIPES VOLUME

The third volume that a Network Manager must create is the Pipes volume. The Pipes program makes both printing and file transfer between users possible.

To create the Pipes volume, from the Network Manager program,

1. **Pull down the View menu and select Drives.**

   A list of your drives will appear.

2. **Select the drive having network address zero. Click the Select button.**

3. **Pull down the View menu and select Volumes.**

   A list of your volumes will be displayed.

4. **Select the unused space.**

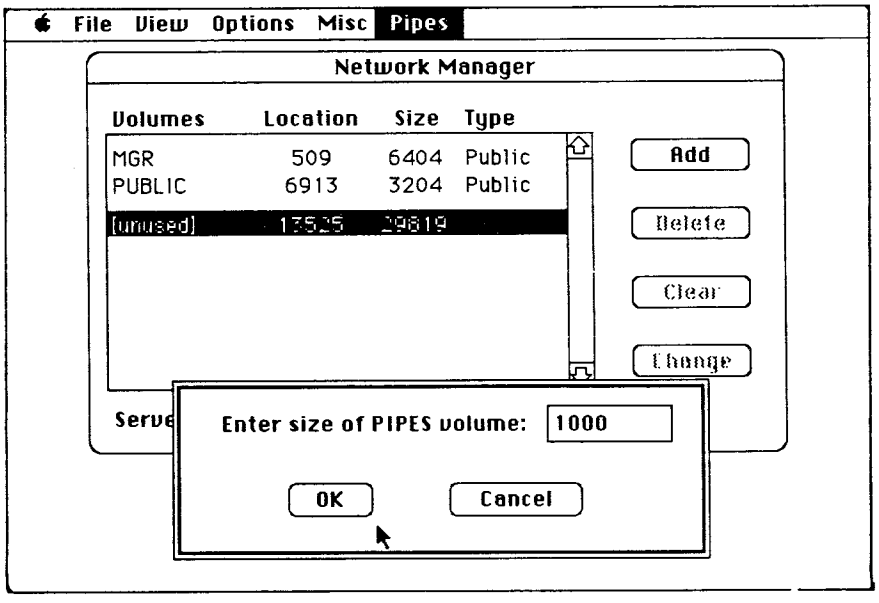
   In the volume table, click on an area of unused space. The row of the selected area will darken. Do *not* click Add.

5. **Pull down the Pipes Menu and select the Create option.**

   The screen prompts for the size of the pipes volume.

6. **Determine the size of the Pipes volume.**

Move the pointer to volume size box and click. Type the size of the Pipes volume. The recommended size for the pipes volume is 1000 blocks.




7. **Click OK.**

The Pipes volume is now created and will appear in the volume table. In the future, however, you will not see it listed in the Volumes table unless you turn off the Mac volumes option in the Option menu.

At this point you can continue to create volumes or you can go on to make your Startup diskette. When you are finished creating volumes,

8. **Pull down the File menu and select Quit to return to the Macintosh desktop.**

## Making the Network Manager Startup Diskette

To create the Network Manager Startup diskette:

1. **Initialize a new diskette and label it "NetMgr Startup".**

2. **Create a new folder on the diskette and label it "System Folder".**

3. **Add files to the System folder.**

   The System folder should contain the following files:

   - System (version 3.2 or later)
   - Finder (version 5.3 or later)

Also, if you have a 512K, one that is neither enhanced nor a Macintosh Plus, copy:

- Hard Disk 20

These files are all available from your Apple dealer, and are also on the Corvus Diagnostic diskette. You must use the latest versions of these files.

It is essential that the System file and the Finder on the Startup diskette be exactly the same version as those in the System volume. Your new private System volume should have no files in it at this point. When you add these System and Finder files to your System volume, you will insure that they are they same by copying them from the Startup diskette that you are creating now.

You must also add one of the following two files from the Corvus User Diskette to the System folder:

- Corvus Modem Port 2.0
- Corvus Printer Port 2.0

Which file you add depends on which port you will use to connect your Transporter. If you will be using the modem port, for example, copy the Modem file.

From the Corvus User diskette, copy the files

- Logon
- Mount Manager

to the Startup diskette, but *not* to the System folder.

When you have finished copying the files onto your new Startup diskette,

4. **Select (but do not open) the Logon icon.**

5. **Pull down the Special menu on the desktop and select "Set Startup".**

You have now created the first Startup diskette. The same procedure is used to create Startup diskettes for other users.

You can modify your Startup diskette to mount your volumes automatically, by following the steps in the next section, but first you should test your new diskette. To do that, simply shut down your Macintosh and then use your new Startup diskette to log on.

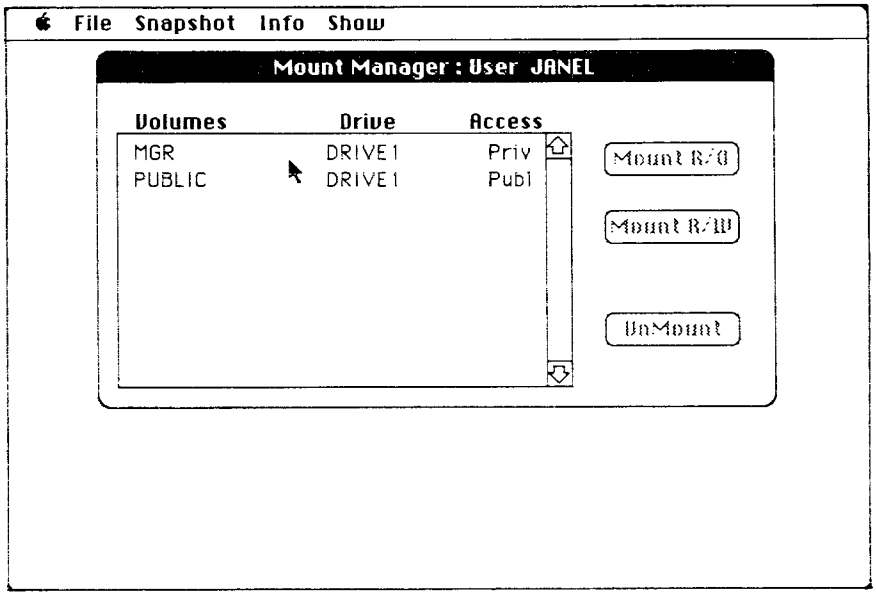
## AUTOMOUNTING VOLUMES WITH SNAPSHOTS

Snapshots provide a method of mounting volumes automatically at the time you log on. The Mount Manager program allows you to select up to six volumes to be be mounted each time you run the Logon program. Taking a snapshot creates a special automount file that does the mounting for you.

To take a snapshot,

1. **Log on using your Startup diskette, then open the Mount Manager program by double-clicking the Mount Manager icon.**

The Mount Manager menu will appear, listing the volumes you have available for mounting.




2. **Click on the name of any volume that you would like to have mounted automatically each time you log on, then click Mount R/W or Mount R/O. Repeat this step for each volume you would like to add to your automount snapshot.**

   The names of the volumes you have chosen will be shown in boldface, which indicates that they have been mounted and are now ready for use. You may select whichever volumes you like, but you must include your System volume. Mount the System volume with the button marked R/W. Mount other volumes with either R/W or R/O, depending on the volume type.

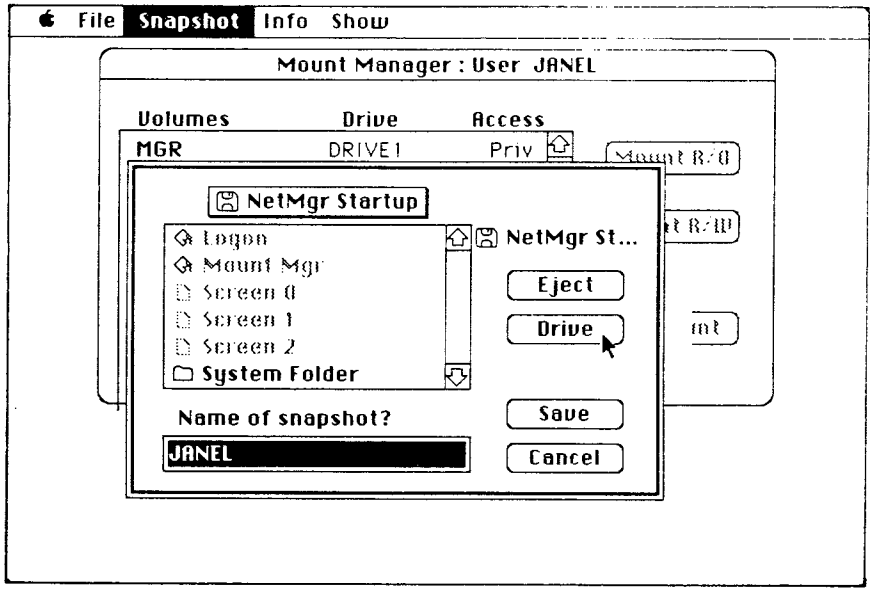
3. **Pull down the Snapshot menu and select Take.**

   A screen showing the volumes you have chosen and asking you to select your System volume will appear.

4. **Select your System volume by clicking on its name and then clicking the Select volume button.**

   A box showing available locations for saving your snapshot and listing your User name as the default name for the snapshot will appear superimposed on the screen.

**5. Click the Drive button until your Startup diskette is displayed.**




You *must* save the snapshot on your Startup diskette. *Do not* save it on your System volume. The name of the snapshot is, by default, your User name.

**6. Click on the Save button.**

Your snapshot has now been saved on your Startup diskette, and the volumes you selected will be mounted automatically each time you log on.

You may now either pull down the File menu and select Quit to exit the Mount Manager program or remain in the program to make your volumes HFS and add files to them.

## Making Volumes HFS

With Constellation III you can make MFS volumes into HFS volumes.

This process completely erases any data on the volume, so you should convert your volumes *before* you add files to them. If you want to convert a volume that already has data in it, you *must* back up any data you wish to keep *before* you convert it.

To convert volumes from MFS to HFS:

1. **Use the Mount Manager program from your Startup diskette to mount any volumes you want to convert which are not already on the desktop. Open the program and select any volumes that you wish to convert. Pull down the File menu and select Quit to return to the desktop.**

2. **Select (but do not open) the volume to be modified.**

3. **Pull down the Special menu.**

4. **Select the Erase Disk option.**

   A box naming the volume to be erased and asking you to cancel or initialize the operation will be superimposed on the screen .

5. **Click the Initialize button.**

   Your volume is now an HFS volume.

## Adding Files

You should now copy files to the first two volumes you created. The following should be added to your private System volume:

- System Folder (from Startup diskette)
- Network Manager program (from Mgr diskette)
- DMM (from Mgr diskette)
- Font D/A Mover (from Apple System Tools diskette)

Then, from the User diskette, copy:

- Logoff
- Logon
- D/A
- OmniWriter
- OmniPrep
- Modem Port or Printer Port (depending on which port you will use to connect to the network)

You may add whatever applications programs you wish to the public volume, but you should also add the following files, all found on the User diskette:

- Mount Manager
- File Transfer
- Pipes
- Logoff

If you converted your volumes to HFS, then they should already be mounted on the Macintosh desktop. If you decided not to convert them, then you must use Mount Manager, as in the above directions on Automounting volumes, to mount your volumes on the desktop before you can add files to them. When your volumes are mounted, you can copy files to them using standard Macintosh procedure.

# Chapter 5

# Managing the Network

# Contents

# Maintaining the Network

In addition to setting up the Constellation III system initially, the Network Manager must also perform certain tasks periodically to update and maintain the system. These tasks include adding and deleting users and volumes, checking stats, changing passwords, and managing access. This section describes the routine tasks a Network Manager must perform to maintain the network.

## Adding Users

Users may be added to the network at any time. Startup diskettes are usually made at the same time that users are added.

To add a user,

1. **Open the Network Manager program and click the name of the Drive assigned to the new user then click on the Select button. Enter passwords, if required.**

2. **Pull down the View menu and select Users.**

3. **Click the Add button.**

   A menu listing user attributes will appear.

4. **Enter the user's name (and optional password).**

   The user's name can have up to 10 characters (letters, numbers, and periods). To enter a password, move the cursor to the password box, click, and type the password. The password can have up to eight characters (letters, numbers, and periods).

5. **Enter the name of the home disk server.**

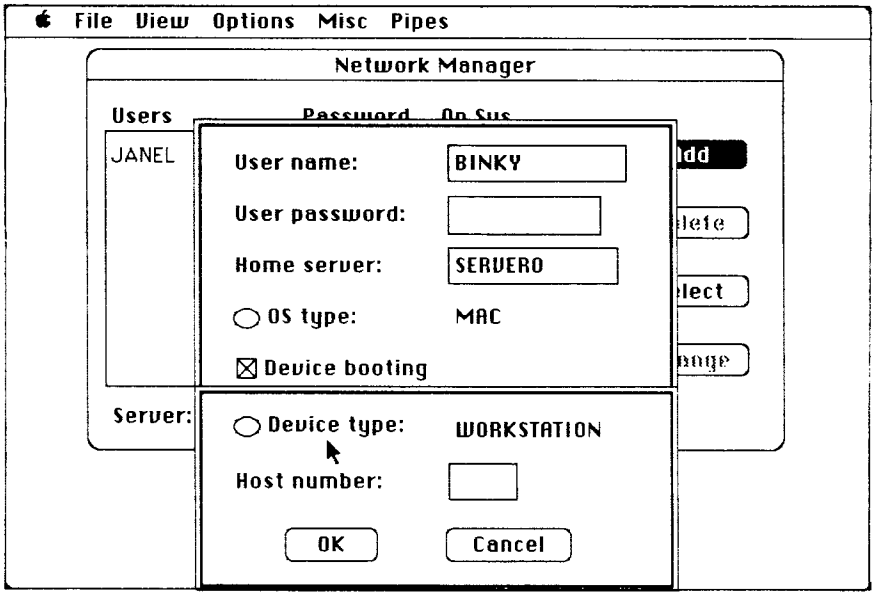
   Either accept the default home disk server name and continue, or move the pointer to the home disk server box, double-click, and enter a new disk server name.

6. **Select the user's operating system.**

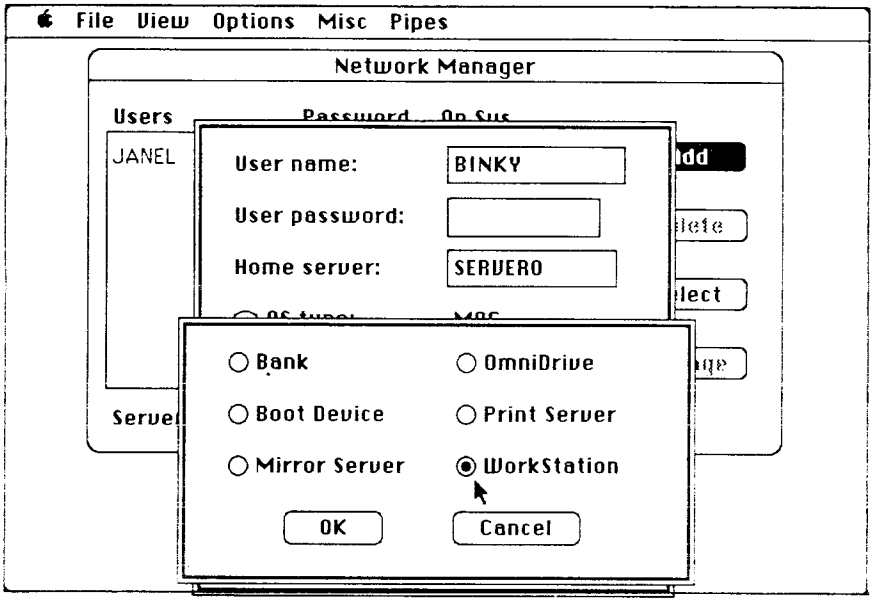
   The default operating system type should be MAC. If it is not, click the OS type button and select the Macintosh operating system by clicking the button labeled MAC. If you are creating a user for a computer other than the Macintosh, click on the desired operating system.

7. **Click the Device booting box, if you want the user's workstation or the device to log on automatically, then click OK. If you do not want the user's workstation to log on automatically, go directly to Step 8.**

   Another menu will be superimposed on the screen. The default device type should be set to Workstation.



If it is not, click the Device type button and select Workstation from the menu that will then appear.




Click OK to return to the previous menu, then type in the Omninet address of the Macintosh that will perform the device boot. If you do not know the address, compare the setting of the address switches on the Macintosh's Transporter box with the network address chart in Chapter 3 of this guide. When you have entered the information, click OK.

**8. Click OK to create the user.**

The user's name will appear in the list of users.

# Adding a Standard Volume

Adding a standard volume is the quickest and easiest way to create volumes. You need only the volume name and any password you want the volume to have.

From the Network Manager program,

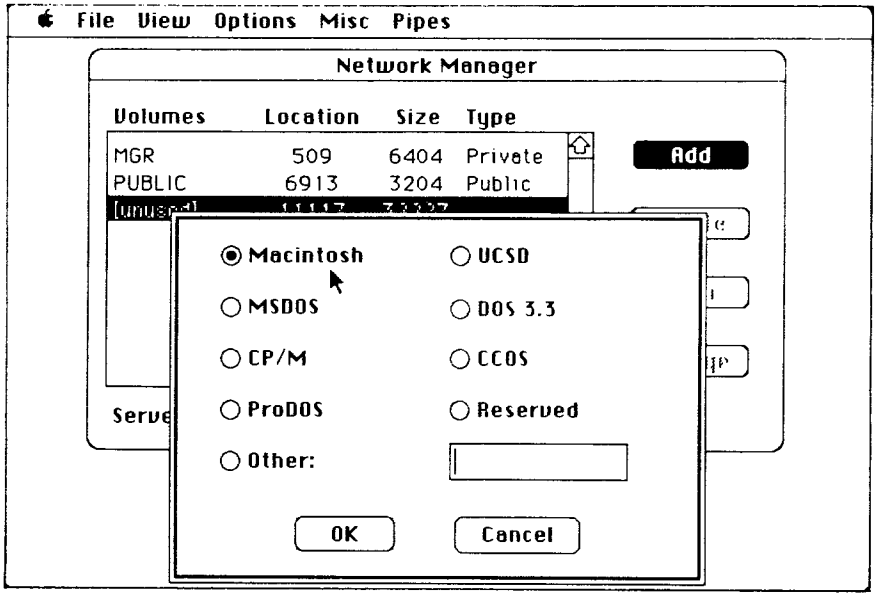
1. **Select the drive on which you want the new volume to be located and enter passwords, if required.**

2. **Pull down the View menu and select Volumes.**

   At the end of the list of volumes are the segments of unused space available on the drive and their sizes.

3. **Select a segment large enough for the volume you want to create by clicking first on an unused row, then on the Add button.**

   The Operating System option screen will appear.




4. **Click the MAC button to select the Macintosh operating system if it is not already darkened. Click OK.**

   A menu of other volume attributes will appear.

5. **Enter a volume name.**

   Up to ten characters (letters, numbers, or periods) are permitted.

6. **Enter the volume owner's name.**

7. **Enter a password up to eight characters long.**

   If you want a password, click in the box for volume password and type in the password.

8. **Choose the access type.**

   Private is already selected. To change the selection and make a different type of volume, click on the appropriate button.

9. **Choose the volume size.**

| | Small | Medium | Large | Extra-Large |
|---|---|---|---|---|
| **Blocks** | 804 | 1604 | 3204 | 6404 |
| **kb/MB** | 400kb | 800kb | 1.6MB | 3.2MB |

   The table above will help you determine the volume size you need. The buttons are dim for any volume size requiring more unused space than is in the segment you've selected.

10. **Click the button for the size volume you want.**

11. **Click OK.**

    Clicking OK returns you to the Volume display. It also adds the volume you have just created to the list of volumes in the display.

Pull down the File menu and select Quit to exit to the Macintosh desktop or use the Launch option to go directly to another application.

## ADDING CUSTOM VOLUMES

Custom volumes are created in generally the same way as standard volumes. The only difference is that after you name the volume and choose its password and type, you select the Custom button. Then when you click OK a new dialog box appears.

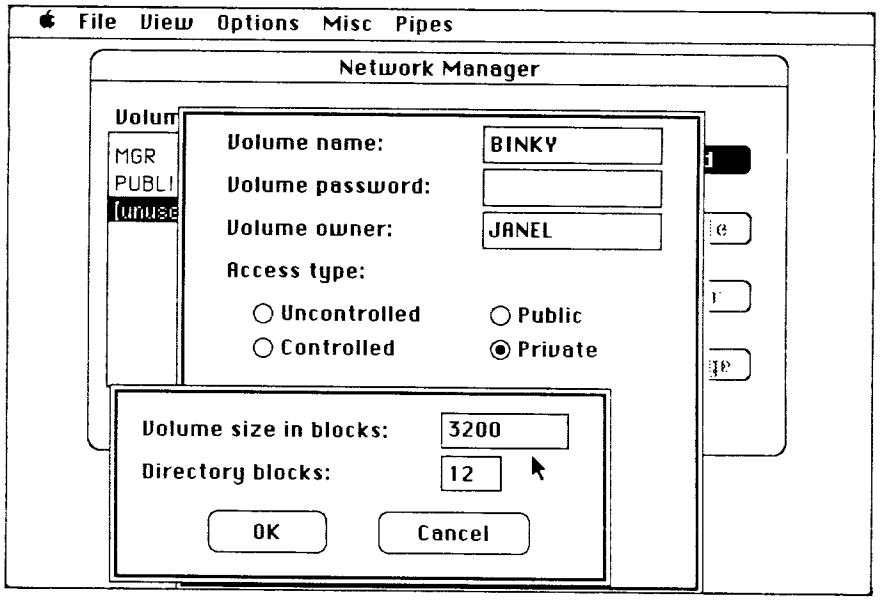
Custom volumes can be any size from 400 blocks (200 kb) to 65,536 blocks (32 Mb). Recommended directory size is 12 blocks.

To add a custom volume, follow steps 1 through 7 under Adding a Standard Volume, then:

1. **Click the Custom button.**

2. **Click OK.**

   The dialog box for adding a custom volume appears.




The edit box for volume size is highlighted and displays the largest number of blocks your custom volume can occupy in the segment of unused space you have selected.

3. **Choose a volume size.**

   To accept the highlighted volume size, leave it unchanged and go on to the other box. If you want a smaller volume, click in the volume size box and type in the number of blocks you want. The volume size must be from 400 to 65,536 blocks. If you choose a number outside this range, it will not be accepted and nothing will happen.

4. **Choose the number of directory blocks.**

   Double-click the box for directory size. Type the size directory you want, from 8 to 32 blocks. If you choose a number outside this range, it will not be accepted and nothing will happen.

5. **Click OK.**

   An entry for the volume you've created will appear now in the Volume display table.

## Making User System Volumes

Each user needs his own private System volume. To make a User System volume, first create a standard private volume. For now, you should enter the Network Manager's name as the volume owner. This facilitates adding the necessary files to the volume. Later, you will change the volume owner's name to that of the actual user. When you have created the volume, pull down the File menu and Launch Mount Manager. Mount the volume on the desktop, then create a new folder on the volume labeled "System folder", and copy the files listed below into the System folder.

- System (version 3.2 or later)
- Finder (version 5.3 or later)

Also, if you have a Macintosh 512K, one that is neither enhanced nor a Macintosh Plus, copy

- Hard Disk 20

These files are all available from your Apple dealer, and are also on the Corvus Diagnostic diskette. It is essential that you use the latest versions of these files.

When you have finished copying the files, the System volume will be functional. However, if you want the user to be able to spool files to the network printer, you will also want to add spooling capabilities to the volume. If so, continue with the following section. If you do not want to add spooling capabilities to the user's System volume, then skip ahead and make a Startup diskette for that user.

## SETTING UP PRINT SPOOLING CAPABLITIES

With the user's System volume mounted,

1. **Copy OmniWriter from the User diskette into the System folder on the the user's System volume.**

2. **Next, double-click the D/A icon in the User diskette window.**

   This will activate Font D/A Mover. The Font D/A menu will appear on the screen.

3. **Click the Desk Accessories button to select it, if it is not already darkened.**

   The Corvus Spooler and the Corvus Despooler will be listed in the box on the left of the menu.

4. **Click the Open button on the right side of the screen.**

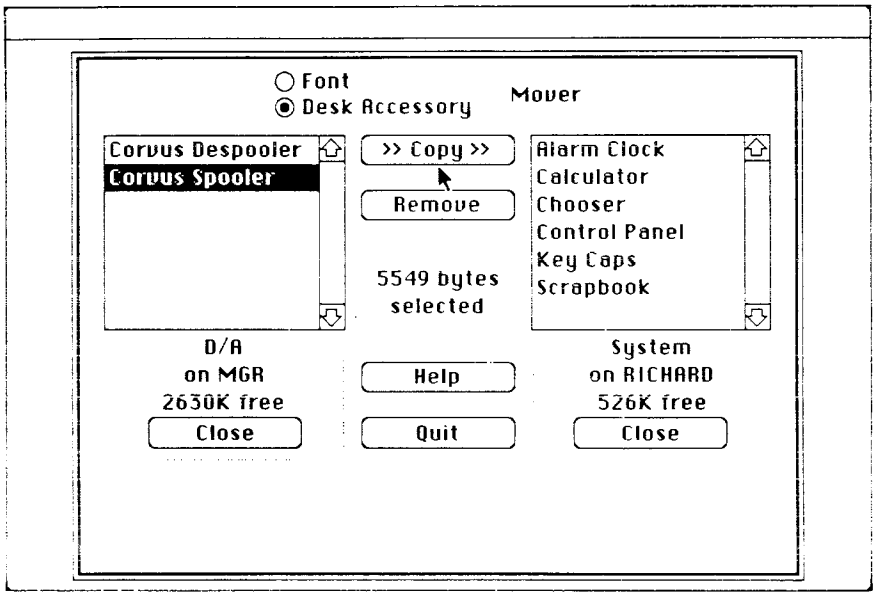
   A box displaying the User diskette and several buttons will be superimposed on the screen.

5. **Click the Drive button until the user's System volume is displayed.**

6. **Be sure the System folder is selected and darkened, then click Open.**

7. **With the System folder open, be sure the system file is highlighted, then click the Open button.**

8. **Select the Corvus Spooler from the left hand side, then click the Copy button to copy it to the user's System volume.**




9. **Click the Quit button to leave Font D/A Mover and return to the desktop.**

10. **Open the Network Manager program and select the drive on which the user's volume will reside. Enter passwords, if necessary.**

11. **Pull down the View menu and select Volumes.**

12. **Select the user's volume, then click the Change button.**

13. **Change the owner name to that of the actual user, then click OK.**

14. **Pull down the File menu and select Quit to return to the desktop.**

15. **Unmount the user's volume by dragging it to the Trash.**

    The user now has a System volume with print spooling capabilities. You should now make a Startup diskette for the user.

## Making Startup Diskettes for Users

To make a Startup diskette for your new user,

1. **Initialize a new diskette and label it "Startup diskette".**

2. **Copy the System folder from the user's System volume onto the new Startup diskette.**

3. **Copy one of the following two files from the Network Manager's System volume to the user's System folder:**

   - Corvus Modem Port 2.0
   - Corvus Printer Port 2.0.

   Which file you add depends on which port you will use to connect to the network.

4. **Copy the following files to the user's Startup diskette, but not to the System folder:**

   - Logon (from the Network Manager's System volume)
   - Mount Manager (from the Public volume)

When you have finished copying the files onto the new Startup diskette,

5. **Select (but do not open) the Logon icon.**

6. **Pull down the Special menu on the desktop and select "Set Startup".**

You have now created the user's Startup diskette. Each user can customize his diskette to mount his volumes automatically at the time of logging on by using the Snapshot option. Refer to the instructions in Chapter 7.

# Deleting Users and Devices

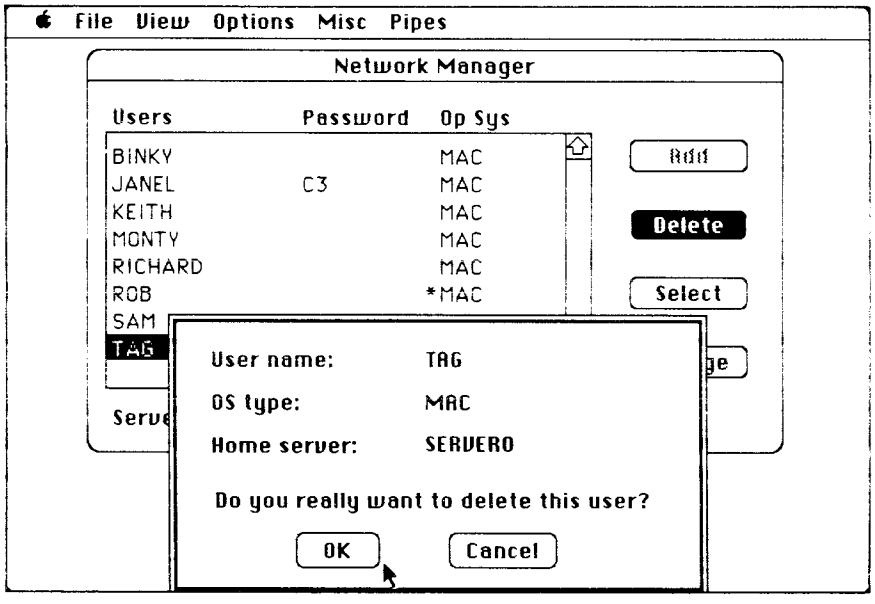
From the Network Manager program:

1. **Select Users from the View menu.**

2. **Select the user (or device) to be deleted.**

3. **Click the Delete button.**

   The screen displays information about the user and asks if you want to continue.




4. **Click OK.**

   The user's display table will once again appear, showing that the user you have deleted is no longer listed on the Network.

# Changing Password, Home Disk Server, or Operating System

If you need to change a user or device password, home disk server or boot operating system, use the Change option.

You cannot change a user's name directly. You have to delete the user and then add that user to the system under a different name.

In the Network Manager program,

1. **Pull down the View menu and select Users.**

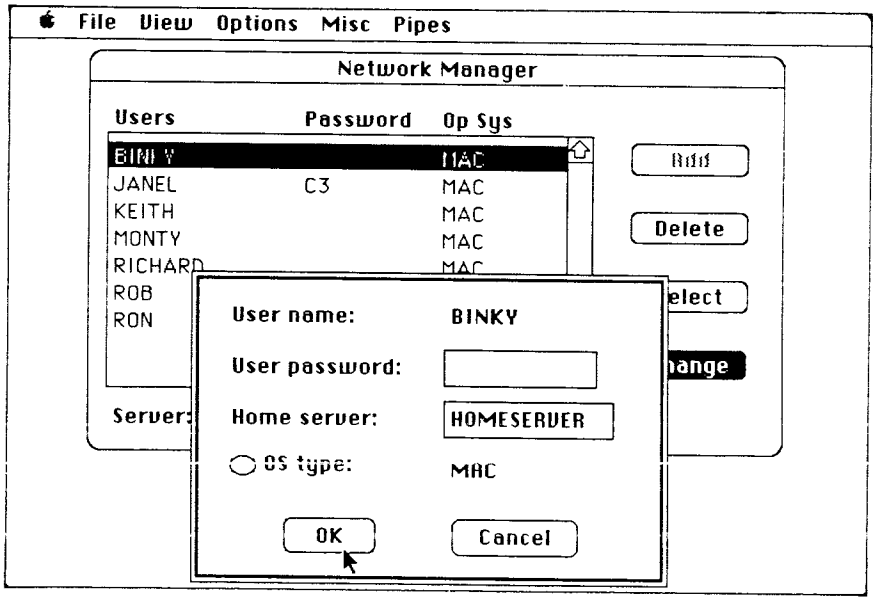
   The User table will appear.

2. **Select an entry.**

   Choose the user or device whose attributes you want to change.

3. **Click the Change button.**

   A menu will appear listing the attributes that you may change. Enter the desired changes.



3. **Click OK.**

   The changes have been made.

## Deleting, Recovering, Clearing, or Changing a Volume

You can clear a volume of its contents, change a volume's attributes, or delete a volume entirely.

### DELETING A VOLUME

Deleting removes a volume and all its files from the network. All the information in the volume is lost. Before deleting, be sure to save any files you want.

From the Network Manager program,

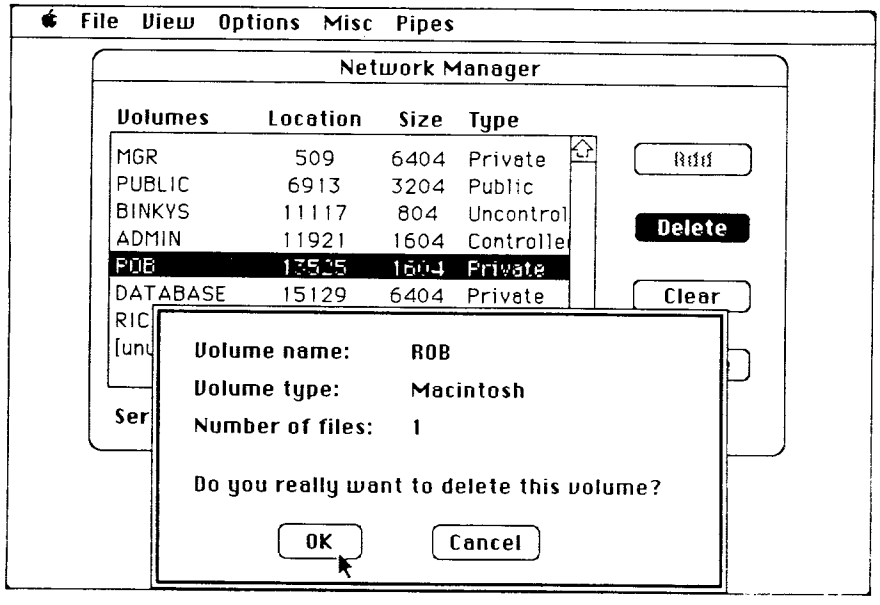
1. **Pull down the View menu and select Volumes.**

   A listing of all the Macintosh volumes appears. Some volumes on your network, such as the Pipes volume, are not Macintosh volumes and will not appear unless you pull down the Options menu and unselect the Mac volumes option.

2. **Click on the name of the volume you want to delete.**

3. **Click the Delete button.**

A box listing information on the volume you selected and asking if you really want to delete that volume will be superimposed on the screen.




4. **Click OK.**

## RECOVERING A VOLUME

You can recover a volume that you have accidentally deleted as long as you have not written over the disk space that the volume occupied.

From the Network Manager program,

1. **Select the drive on which the volume was located and enter passwords if required.**

2. **Pull down the View menu and select Volumes.**

3. **Select an area of unused space, then click the Add button.**

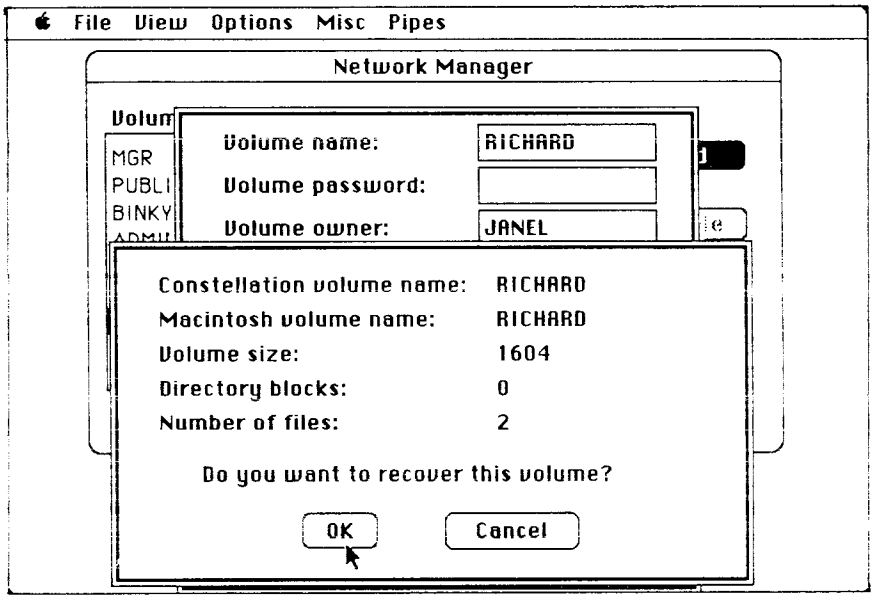
   A menu asking for the operating system of the volume you want to add will be displayed.

4. **Select the operating system of the volume that has been deleted and click OK.**

   A menu of volume attributes will appear.

5. **Type in the name of the volume that was deleted and click the Recover button. Click OK.**

   The Recover dialog box will appear.




6. **Click OK.**

   If you have not written over the volume, it will be recovered and will once again appear in the list of volumes.

## CLEARING A VOLUME

Clearing makes a volume an empty MFS volume. To make it an HFS volume, use the Erase Disk function from the desktop.

Clearing a volume destroys the volume's files. Be sure you copy any files you want to save before clearing a volume.

From the Network Manager program,

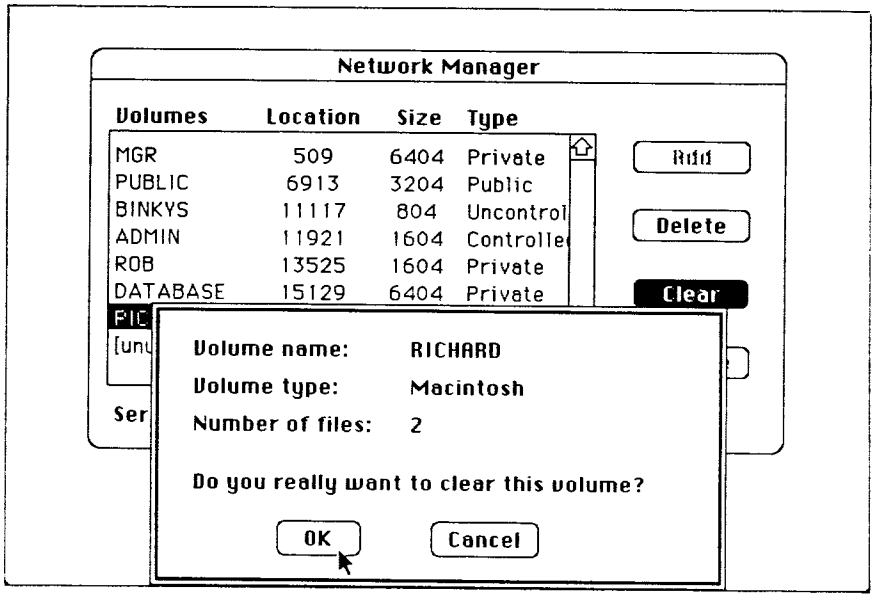
1. **Pull down the View menu and select Volumes.**

   A listing of all the Macintosh volumes appears. Some of the volumes on your network, such as the Pipes volume, are not Macintosh and will not appear unless you pull down the Options menu and unselect the Mac volumes option.

2. **Click the name of the volume you want to clear.**

3. **Click the Clear button.**

   A box listing information about the volume you have selected and asking you if you really want to clear it will be superimposed on the screen.




4. **Click OK.**

   The display will return to the volume display list.

## CHANGING A VOLUME

A Network Manager can use this option to change a volume's name, password, owner, and type.

The volume's size cannot be changed. To change the size, you must add a new volume, move the old volume's files to the new volume, and then delete the old volume. You cannot change a volume that is locked. In addition, if you wish to change an uncontrolled volume, you should verify that no one else has that volume mounted.

From the Network Manager program,

1. **Pull down the View menu and select Volumes.**

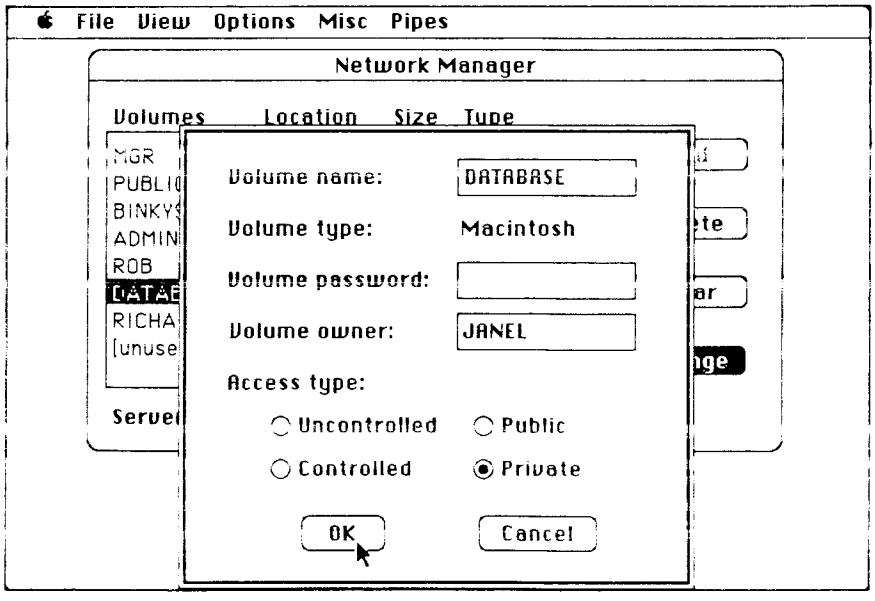
2. **Click the name of the volume you want to change.**

3. **Click the Change button.**

   A menu showing the volume attributeswill appear.

4. **Enter any new information.**

   Double-click the Volume Name, Volume Password, or Volume Owner boxes to highlight them, then type in your changes. If you wish to change the access type, click the appropriate button.



5. **Click OK to register the changes.**

When you use Change to give a volume a new name, you change the Constellation name of the volume, but not the Macintosh name. The name of the icon representing that volume on the Macintosh desktop will not change unless you rename it on the desktop. Anytime you change the Constellation name, you should make sure that the user with desktop read-write access to that volume changes the Macintosh name, as well.

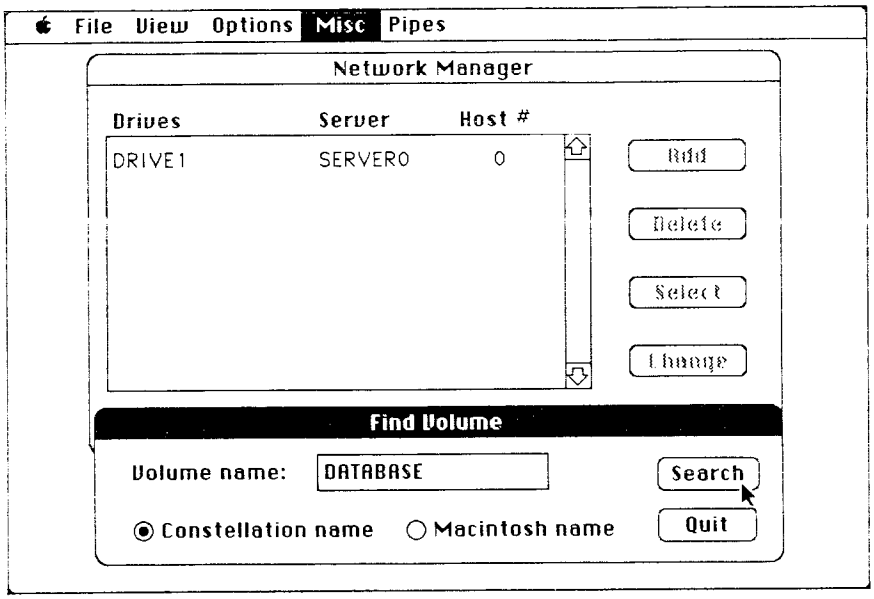
## Finding A Volume

You can find a volume by searching lists of the entire contents of each drive on the network. A faster method, however, is to use Find Volume in the Misc menu.

In the Network Manager program, select a drive to search, then

1. **Pull down the Misc menu and select Find Volume.**

   A box asking you to enter the name of the volume to be found, and asking you to specify whether that name is a Constellation or Macintosh name will appear at the bottom of the screen. Ordinarily, the two names will be the same; however, if you have used the Change function to change only the Constellation name of the volume and have left the Macintosh name unchanged, or if you have changed the Macintosh volume name on the desktop, you will have to indicate whether the name you have specified is the Constellation name or the Macintosh name.




2. **Enter either the Constellation or the Macintosh name.**

   Type the name of the volume you want to find.

3. **Click the Search button.**

   The computer searches for your volume and, when it finds it, highlights the name of the drive on which the volume is located. While the computer is searching, the cursor will appear as a watch. When the cursor becomes an arrow again, the search is finished.

   If the computer completes its search without finding your volume, the watch will change back to an arrow and none of the drives displayed will be highlighted. If this happens, there are several possible explanations: the volume may have been deleted and no longer exists; its name may have been changed; or the volume may be listed on the Constellation drive by a name different from the one that appears on the volume's Macintosh icon.

4. **Click the Quit button to return to the desktop.**

# Removing the Pipes Area

From the Network Manager program,

1. **Select the drive named Server0, on which your Pipes volume resides, and enter passwords, if necessary.**

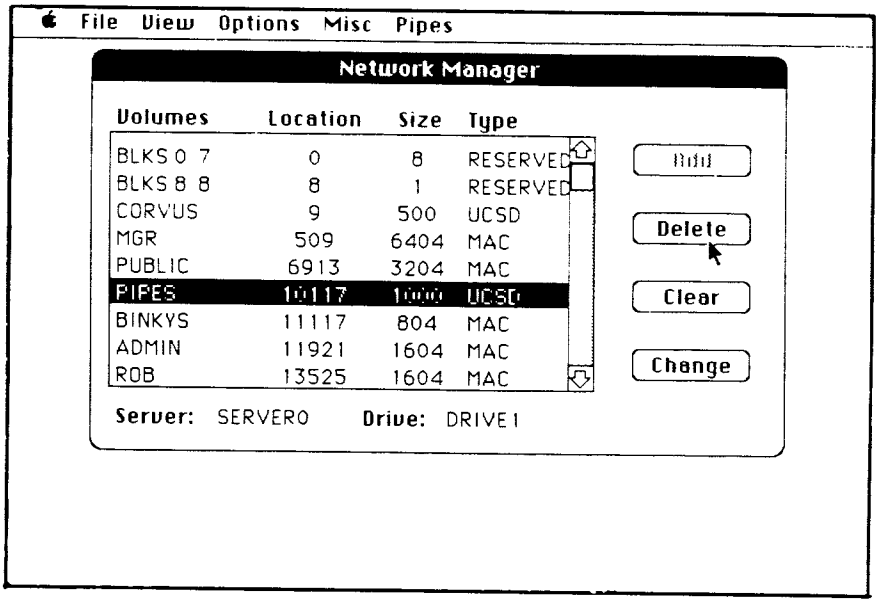
2. **Pull down the Options menu. If there is a check mark next to the Mac Volumes choice, select it to remove the check mark and turn off the Mac Volumes option.**

   This will allow you to see all the volumes on the drive. With the Mac Volumes option on, you will see only the Macintosh volumes. Because the Pipes volume is a UCSD volume, not a Macintosh volume, you must unselect the Mac Volumes option in order to view it.

3. **Pull down the View menu and select Volumes.**

   A listing of all your volumes on the selected drive will appear.

4. **Select the Pipes volume by clicking its name.**




5. **Click the Delete button.**

A box listing information about the Pipes volume and asking you if you really want to delete it will appear.

6. **Click OK.**

   The pipes area is deleted. Now you must uninitialize it.

7. **Pull down the File menu and select Launch. Insert the Diagnostic diskette and open the Diagnostic program. Pull down the Pipes menu and select Uninitialize. Click OK.**

   The pipes volume is now deleted and uninitialized.

## Checking Stats

The Stats option in the View menu provides information on users, volumes, drives, and the network as a whole. With the Stats option you can view names, sizes, passwords, and space usage.

### DRIVE STATS

The stats for a drive show the drive name, size, total number of Macintosh and other volumes, and percentage of space used. To check drive stats:

From the Network Manager program,

1. **Open the Drive display.**

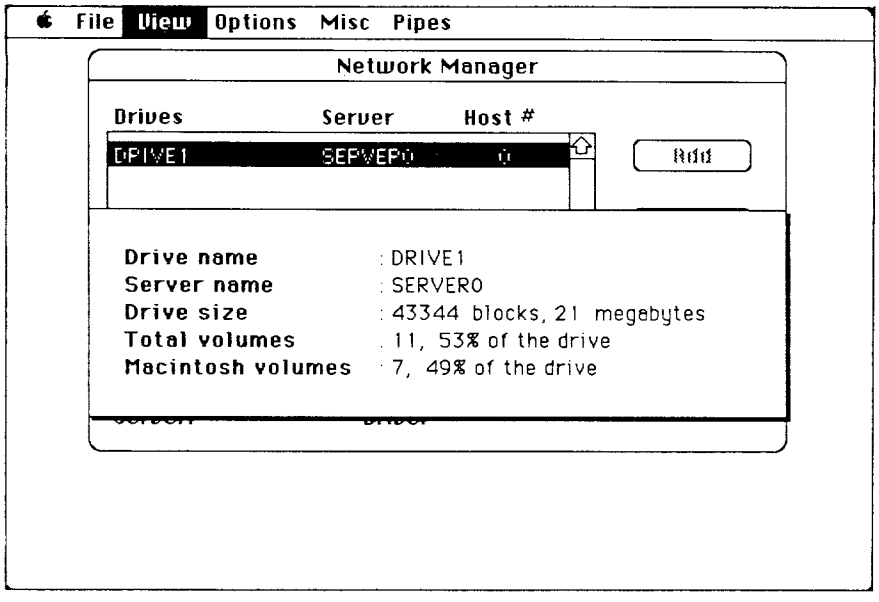
   This display will come on when you enter the Network Manager program. If you have been performing other tasks in the program and are not currently viewing the Drive display, pull down the View menu and select Drives.

2. **Select a drive.**

   Click the drive's name to highlight it, but do not click on the Select button.

3. **Pull down the View menu and select Stats.**

   Stats for the drive you selected will appear.




4. **Click anywhere in the box to remove the display.**

## VOLUME STATS

For Macintosh volumes, the Stats show volume name, password, owner, file block size, directory and file blocks, volume size in kilobytes, whether the volume is HFS, and a graphic depiction of used file space.

In the Network Manager program,

1. **Select the drive containing the volumes you want to view. Enter passwords, if necessary.**

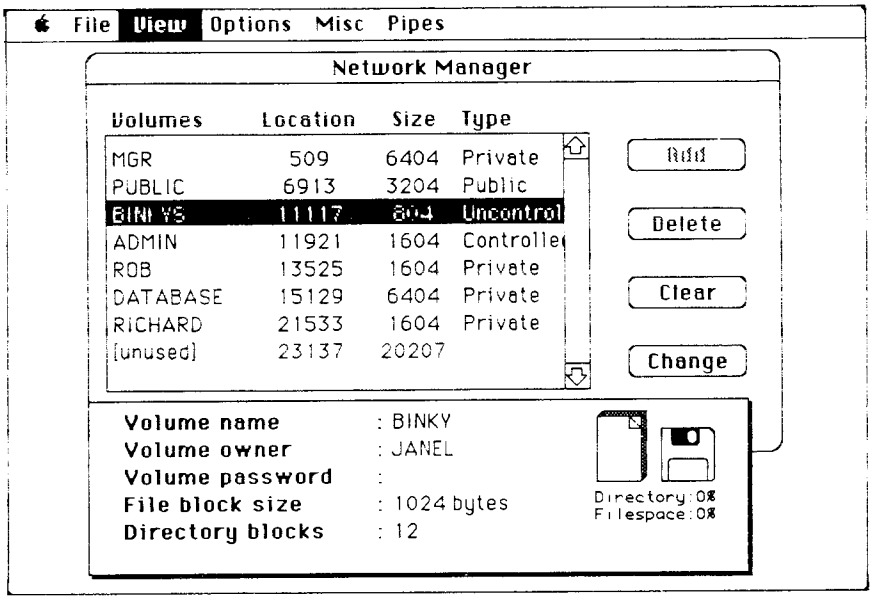
2. **Pull down the View menu and select Volumes.**

   A list of Macintosh volumes on the drive you selected will be displayed. If you are interested in viewing a non-Macintosh volume, you will need to pull down the Options menu and unselect (remove the check mark from) the Mac Volumes option.

3. **Select a volume by clicking on its name, but do not click the Select button.**

4. **Pull down the View menu and select Stats.**

   Information about the selected volume will appear.




5. **Click anywhere in the box to remove the display.**

## USER STATS

The stats for a user show the user's name, home disk server, and number of volumes he owns. To check User stats:

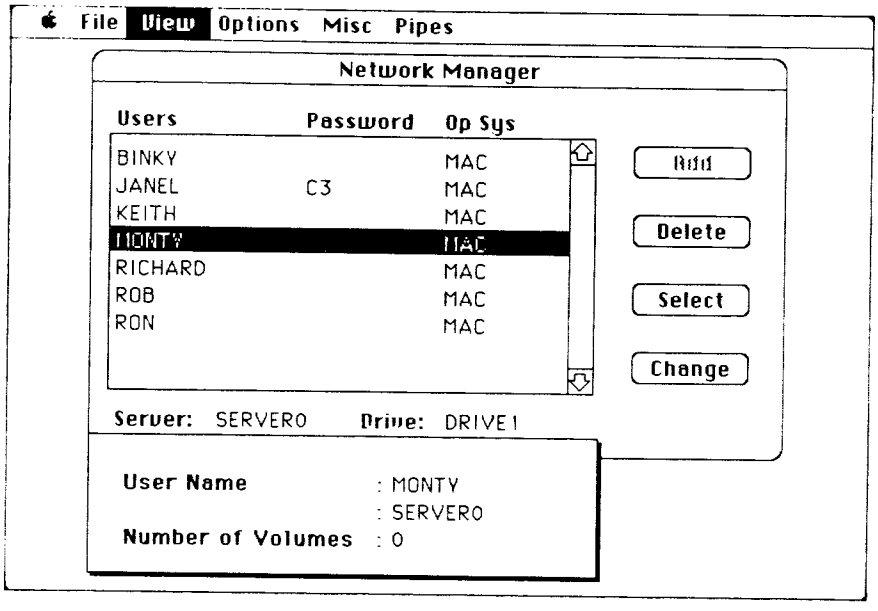
From the Network Manager program,

1. **Pull down the View menu and select Users.**

2. **Select a user by clicking the user's name, but do not click the Select button.**

3. **Pull down the View menu and click Stats.**

   Information about the user you selected will appear.



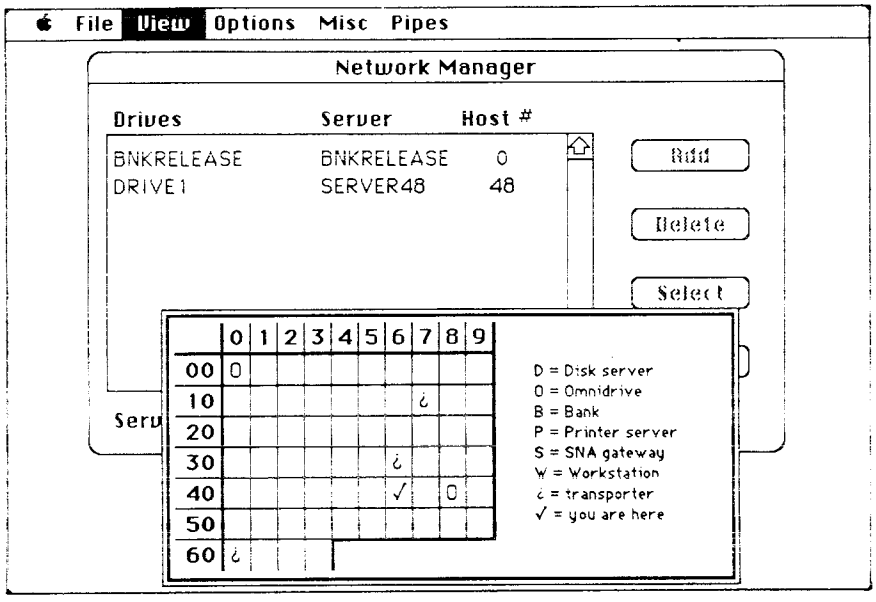

4. **Click anywhere in the box to remove the display.**

## NETWORK STATS

Network stats shows a map of the network, with the network address and device type for every active piece of equipment operating on the network.

1. **Pull down the View menu and select Network.**

   Information about your network will appear in graphic form.




2. **Click anywhere in the box to remove display.**

## Printing Lists

The Print Option prints a complete list of whichever mode is currently displayed. Use this option to obtain a drive, user, and volume list for your Network Manager's Notebook. Use Page Setup to specify the size paper and format you want. To print a particular list:

In the Network Manager program,

1. **Select a drive and enter passwords, if necessary.**

2. **Pull down the View menu and select Users, Volumes, or Drives.**

3. **Pull down the File menu. Select Page Setup to organize the output, then select Print.**

## Changing The Drive Password

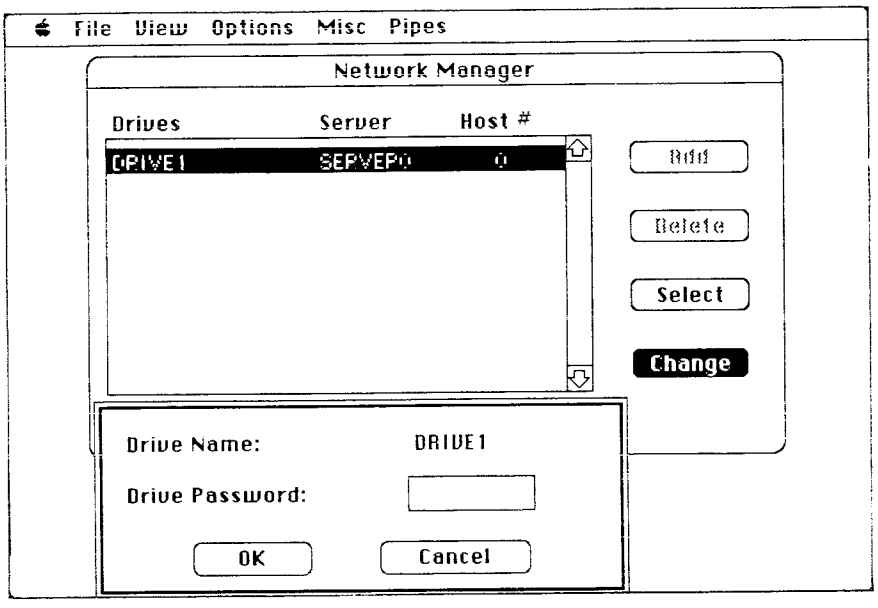
To protect the contents of your drive, you should change drive passwords periodically. To change drive passwords:

In the Network Manager program, from the Drive display,

1. **Select the drive with the password to be changed.**

2. **Select Change.**

A screen for new password entry will appear.




3. **Enter the new drive password**

   Up to 8 letters, numbers, or periods may be used.

4. **Click OK.**

## Managing Access For Other Computer Types

If you have several different computer types on your network, each running the appropriate Constellation software, then occasionally you might find it necessary to manage volume access for non-Macintosh users and non-Macintosh volumes. Ordinarily you should manage other computer types using the software for that type of computer; however, you can use the Constellation III for Macintosh Access option to grant, remove, or change access to a volume for a selected user. The selected user's operating system must be compatible with the volume's operating system.

Constellation III for Macintosh can be used with Constellation II for Apple and with Constellation software for the IBM. However, the current release is not fully compatible with the new Access function in Constellation III for the Apple II. If you have Apple computers running Constellation III on your network, use the Apple Network Manager to manage them.

In the Network Manager program,

1. **Pull down the Options menu and unselect the Mac Users option, then unselect the Mac Volumes option.**

   This will remove the check mark from those options.

2. **Pull down the View menu and select Users.**

3. **Click on the desired user name, then click the Select button.**

   The user name that you have just selected will be listed on the menu title bar.

4. **Pull down the View menu and select Volumes.**

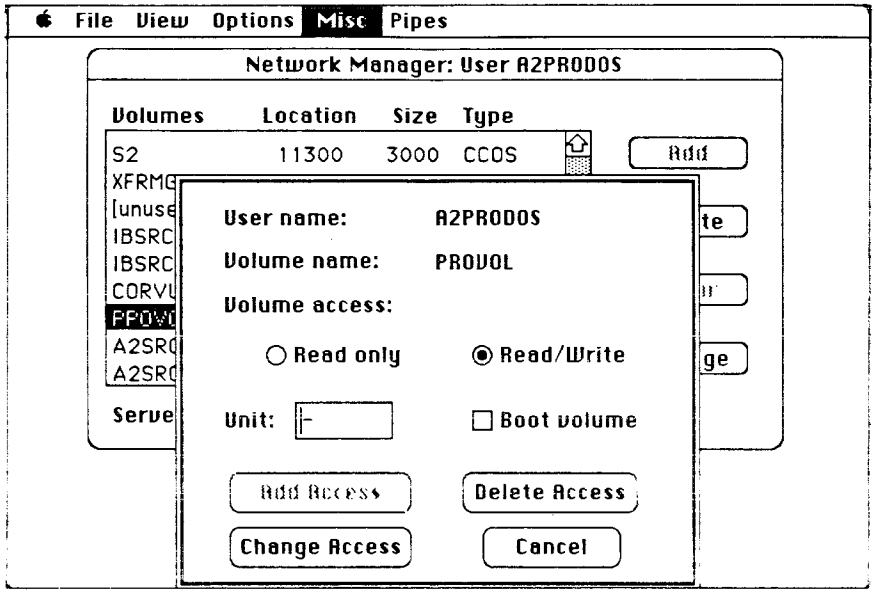
5. **Position the cursor on the volume to which you want to grant, remove, or change access for the selected user.**

   Make sure the selected volume and user have the compatible operating systems. Compatible operating systems are shown below.

| | User | Volume |
|---|---|---|
| IBM | MSDOS | MSDOS |
| | C2IV.0 | UCSD |
| | A2PASCAL | UCSD |
| Apple | A2DOS3.3 | DOS 3.3 |
| | | UCSD boot volume |
| | PRODOS | PRODOS |
| | | UCSD boot volume |

6. **Pull down the the Misc menu then select the Access option.**

   The screen displays the selected user's access to the selected volume.




7. **Set the new Access attributes.**

   Information on mount units and read-write and read-only access for non-Macintosh computers can be found in the *Constellation Network Manager's Guide for the Apple II* or the *Constellation Network Manager's Guide for the IBM PC.*

# Chapter 6

# Setting Up Printing

# Contents

# Setting Up Printing

There are two types of printers on a network: local and network.

A *local* printer can be used only by the operator of the computer to which it is connected. Follow the printer manufacturer's instructions when you set up your printer as a local unit.

A *network* printer can be shared by everyone on the network.

Constellation III, unlike many other networks, offers true spooling capabilities for network printers. When you spool a file it is sent to a transfer area, called Pipes, where it awaits despooling. Printing a file in this way has several advantages:

- It frees your Mac for other tasks.
- You can spool even if the printer is down.
- The spooling functions operate transparently.

The first step in setting up network printing capabilities is to select a printer and computer that will act as the Network Printer and Despooling Station. The printer must be connected to the selected Macintosh. The Despooling Station will serve to direct traffic coming to the printer; however, it does not have to be dedicated to that one task. A user can perform other tasks on the Macintosh that is designated as the Despooling Station even though other users may be spooling files. Despooling is a background task that doesn't interfere with the user.

## SETTING UP THE HARDWARE FOR A NETWORK PRINTER

You can use a LaserWriter or an ImageWriter printer for your network printer.

Cables are available that allow you to connect your Mac to a variety of printers. You can connect to either port on the Laserwriter. Set the config switch on the side of the LaserWriter to the 9600 position. Use standard serial cables to connect the LaserWriter. For Macintosh 512K, use the ImageWriter I cable to connect to the LaserWriter. For Macintosh Plus or Macintosh SE, use the Mac 512K to ImageWriter II cable.

To connect an ImageWriter, simply follow the manufacturer's directions, using the standard ImageWriter serial cable that comes with your ImageWriter.

## SETTING UP THE DESPOOLING STATION

Your despooling station can be a Macintosh that a user employs for other tasks, or it can be a dedicated, non-user Macintosh. Despooling is a transparent background function that does not interfere with the normal operation of the Macintosh.

### Setting Up a User Despooling Station

To make a user's workstation function as a despooling station:

1. **Create a Startup diskette and a System volume for the workstation that will be the despooler.**

   Create a Startup diskette and System volume for the despooler's user, remembering not to give ownership of the volume to the actual user just yet. Use the Mount Manager program on your Public volume to mount the user System volume that you have just created. Convert it to HFS, if you wish, then add the System folder from the user's Startup diskette to the volume. Remove the Corvus Modem Port from the System folder on the new System volume.

2. **Copy the OmniPrep program from the Network Manager's System volume to the new System volume.**

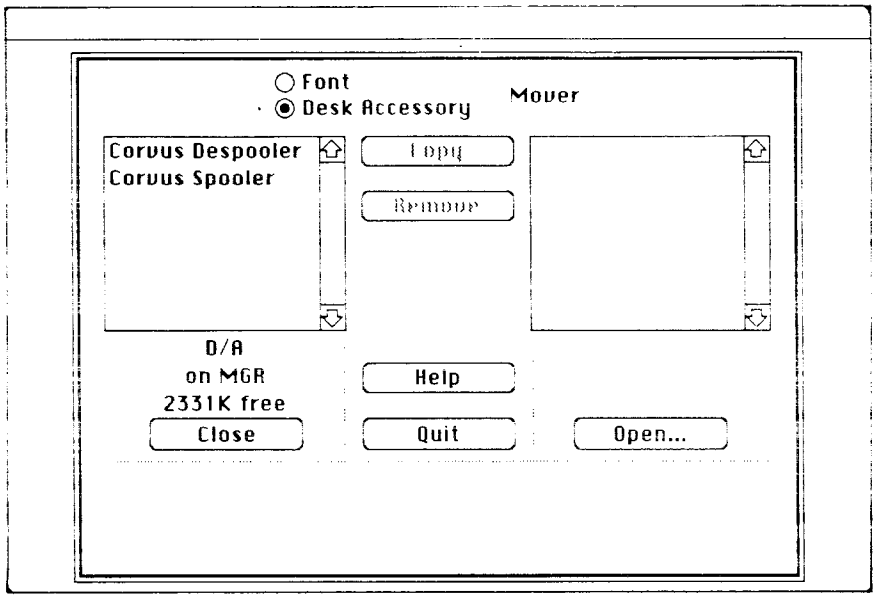
   Copy it to the root window of the System volume, but not into the System folder. You may also wish to copy the Pipes program from the Public volume to the System volume. If you do have Pipes on the despooler System volume, you will be able to watch the progress of files as they pass through the transfer area; however, it will also be possible for the user to purge files in the Pipes volume that are waiting to be despooled.

3. **Next, double-click the Corvus D/A icon in the Network Manager's System volume.**

   This will activate Font D/A Mover. The Font D/A menu will appear on the screen.

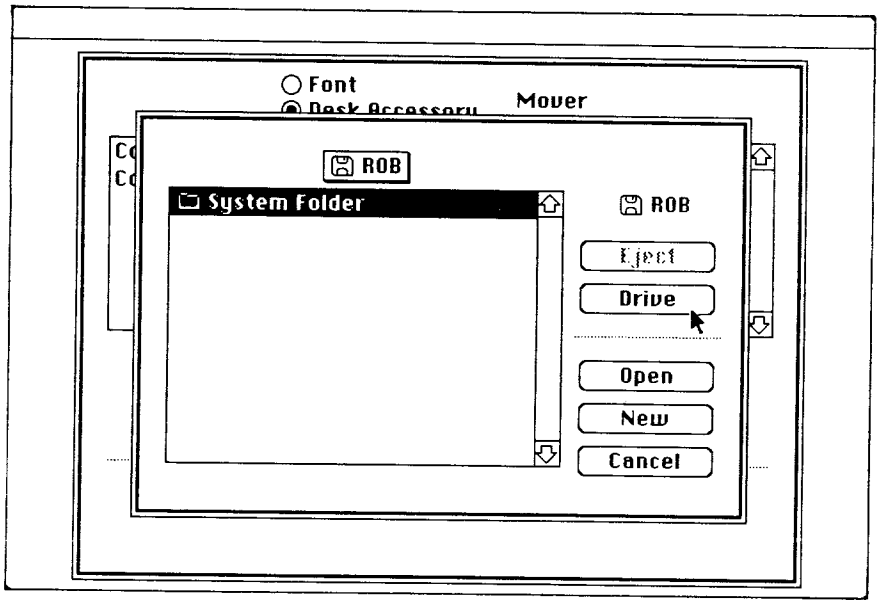
4. **Click the Desk Accessories button to select it, if it is not already darkened.**

   The Corvus Spooler and the Corvus Despooler will be listed in the box on the left of the menu.




5. **Click the Open button on the right side of the screen.**

6. **Click the Drive button until the despooler's System volume is displayed.**

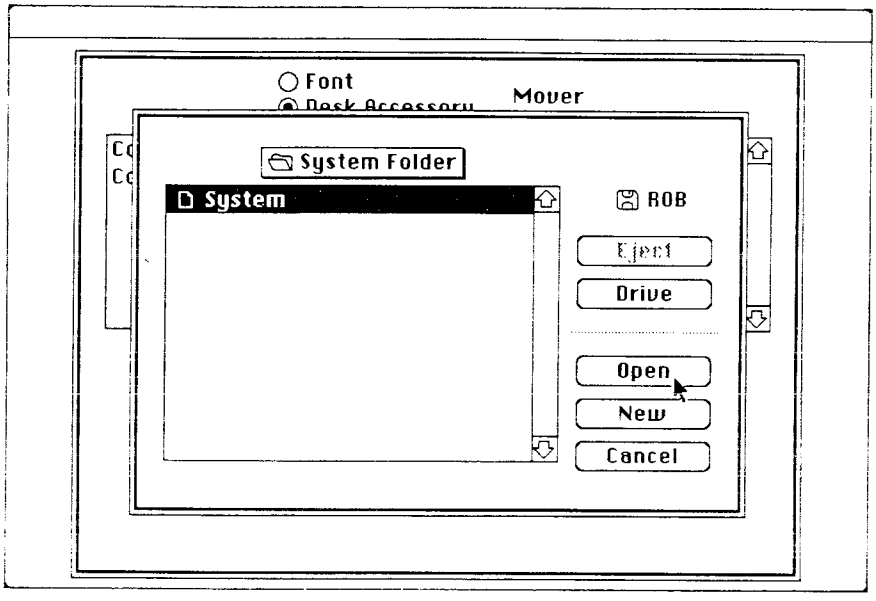



7. **Be sure that the System folder is darkened, then click Open to open the folder.**

   If you have created a new System volume for the despooler according to the preceding instructions, there should only be one folder listed in the display.

8. **With the System folder open, be sure the system file is highlighted, then click the Open button.**

If you have any files other than the System file in the despooler's System folder, then you will need to click on the name of the System file to select it.




10. **Select the Corvus Despooler from the left hand side, then click the Copy button to copy it to the despooler's System volume.**

11. **Click the Quit button to leave Font D/A Mover and return to the desktop.**

12. **Enter the Network Manager program and change the name of the volume owner to that of the actual despooler station user.**

Now, you should make an automount snapshot for the despooling station. To do this,

1. **Pull down the Special menu and select Shutdown.**

2. **Insert the despooler's Startup diskette.**

3. **Log on as the despooler's user.**

4. **Open Mount Manager and mount the user's System volume, as well as any other volumes that the user will be using regularly.**

5. **Pull down the Snapshot menu and select Take.**

6. **Select the despooler's System volume, then click on Select Volume.**

7. **Save the snapshot to the user's Startup diskette.**

8. **Pull down the File menu and select Quit.**

### Setting Up a Dedicated Non-user Despooling Station

To set up a dedicated non-user despooling station, assign a name to the despooler and list it in the User table as a device-booting workstation. Then, make a Startup diskette and System volume for the workstation, and copy the following files to the System folder in the new System volume:

- System (version 3.2 or later)
- Finder (version 5.3 or later)
- OmniWriter

Then, copy the following files to the System volume, but not into the System folder:

- Logon
- OmniPrep
- Pipes
- Corvus Despooler D/A
- Corvus Spooler D/A (optional)

It is not necessary for the despooler to have the Corvus Spooler D/A, but if you do add the Spooler D/A, then you will be able to use the dedicated despooler to spool files.

Copy

- Corvus Modem or Printer Port 2.0

to the despooler's Startup diskette.

Your dedicated despooling station is now set up.

## INITIALIZING THE PRINTER

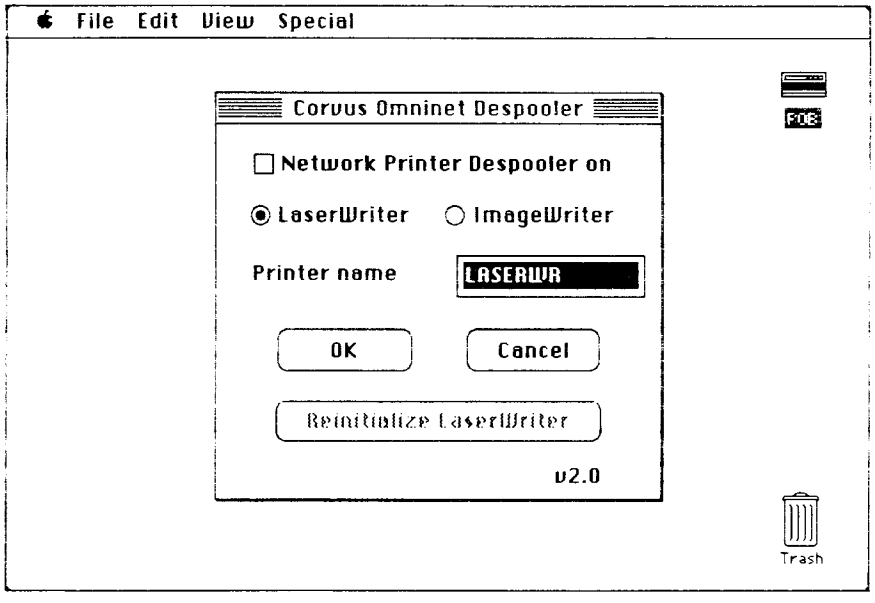
Having set up the despooling station, the next step is to initialize the printer.

1. **Turn on the Macintosh despooling station.**

2. **When the desktop is completely drawn, turn on the printer.**

   If you are using a LaserWriter (or compatible) printer on your network, allow it to complete its startup process before going any further.

3. **Pull down the Apple Menu and select Corvus Despooler.**




4. **Select the type of printer you have.**

5. **Enter the printer name or accept the default.**

   This name must be from one to eight letters or numbers in length.

6. **Click Network Despooler On.**

7. **Click OK to complete the process.**

   Your network printer is now ready for use.

# Chapter 7

# Using the Network

# Contents

## Networking with Constellation III

Constellation III with the Omninet network allows you to

- Access remote computers and devices from your own workstation
- Expand your storage capablity through the use of OmniDrives
- Work on multiuser application files
- Transfer files between computers
- Perform more efficiently within your working environment.

Constellation is easy to learn and use. There are just a few things you need to know to use your Constellation III network.

Before you get started with Constellation III, however, you need at least the following items:

- User Name
- Startup diskette (to log your computer on to the network)
- System volume (to store your system files)
- Private volumes (as needed)
- Public volume containing the following programs:

    Mount Manager
    File Transfer
    Pipes
    Logoff
    Any other shared programs or files

If you do not have these items, contact your Network Manager. It is his responsibility to provide them for you.

In order to use the network effectively, you have to understand a few things about the way the network operates. In this chapter we will discuss how to use volumes (the way a network stores information), how to send files to print, and how to transfer files between users.

# Volumes

The OmniDrive on your Omninet network is a hard disk that can hold the equivalent of hundreds of regular Macintosh diskettes. Corvus divides the hard disk into units called volumes, each of which can hold as many as forty double-sided (800k) diskettes' worth of data. Your Network Manager will determine the actual size of the volumes when he sets them up for your use.

On the Macintosh desktop, volumes are represented by icons depicting an OmniDrive. To gain access to a volume, you "Mount" it. The volume's icon will then be visible on the desktop, and your computer can read and write data to and from that volume. When you are finished, you "Unmount" the volume.

## VOLUME ACCESS

There are two types of access to volumes:

- **Read-write** (R/W) access allows you to view, change, save, delete, rename, and move files around, and rearrange the desktop in a volume.

- **Read-only** (R/O) access allows you to view and copy the contents of a volume, but not change anything in it.

In addition, any volume can have a password that permits access only to those who know the password.

## VOLUME TYPES

There are four types of volumes on the system.

- **Private volumes** can be used only by the volume's owner, and he always has R/W access to them. Private volumes are for files that no one else will be using.

- **Public volumes** can be read and used by any user, unless the volume is password protected, but only the volume's owner can make modifications to the volume through R/W access. Public volumes are typically used to keep data that all network users need to share.

- **Controlled volumes** allow R/W access by all users, unless the volume is password protected, *but not at the same time.* The first user to mount a controlled volume has R/W access to it; subsequently, all other users who mount the volume have read-only access. Once the first user unmounts the volume, another user can mount it with read-write access. This allows a variety of users to take turns looking at and writing to files.

- **Uncontrolled volumes** allow R/W access by several users at the same time. This permits multiple users to work with applications programs specifically designed to accept simultaneous input. These types of programs must be used with uncontrolled volumes. Programs that are not designed for multiuser applications should not be located in uncontrolled volumes, as unrestricted read-write access to single-user applications can result in loss of data.

## Mounting and Unmounting Volumes--

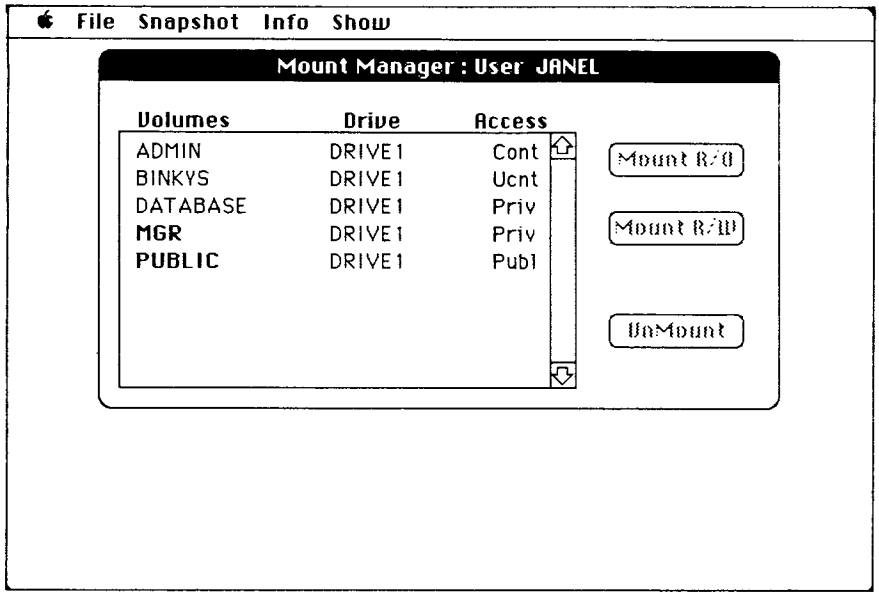
## The Mount Manager Program

You must mount volumes before you can work with them, and you can mount as many as six Corvus volumes at one time. The Mount Manager is the program you use to mount volumes. Initially, you can run the Mount Manager from your Startup diskette; but once your Network Manager has created a public volume with Mount Manager on it, you should run the program from that volume. Also, you can have your volumes mounted automatically each time you log on by using the Snapshot option, as explained later.

### MOUNTING VOLUMES

1. **Open the the Mount Manager program by double-clicking on the Mount Manager program icon.**

Mount Manager will display all the volumes you can access. The Drive column shows you which drive each volume is on. The Access column shows you the volume type. If volume names are listed in boldface letters, they are already mounted.




2. **Select a volume from the list.**

   Use the indicator to move through the list until you find the volume you want to mount, then click on the row to select the volume.

3. **Click either the Mount Read-Write or the Mount Read-Only button.**

   Both options will not always be dark. If the volume you select is a public volume, for example, and you are not the owner, only the Mount Read-Only button will darken.

4. **Type the volume password (if you are prompted to do so), then click OK to mount the volume.**

   If the volume has a password, you will be prompted to enter it. If it doesn't, the volume will be mounted as soon as you click either the Mount Read-Write or Mount Read-Only button.

Volumes can also be mounted by double-clicking on the volume name in the list or by pressing return after the volume name is selected. Double-clicking a volume always mounts it with read-write access, if that option is available.

To exit Mount Manager, pull down the File menu and select Launch (to go directly to another program) or Quit to return to the desktop.

## UNMOUNTING VOLUMES

To unmount a volume and remove it from the Macintosh desktop,

1. **Open the Mount Manager program by double-clicking on the Mount Manager icon.**

2. **Select a volume from the list by moving the cursor and clicking on the row of the volume you wish to unmount.**

3. **Click the Unmount button.**

You can unmount any mounted volume except the one from which you are running the Mount Manager program.

## SNAPSHOTS

Snapshots provide a method of automatically mounting volumes at the time you log on. The Mount Manager program allows you to select up to six volumes to be be mounted each time you run the Logon program. Taking a snapshot creates a special automount file that does all the mounting for you.

To take a snapshot,

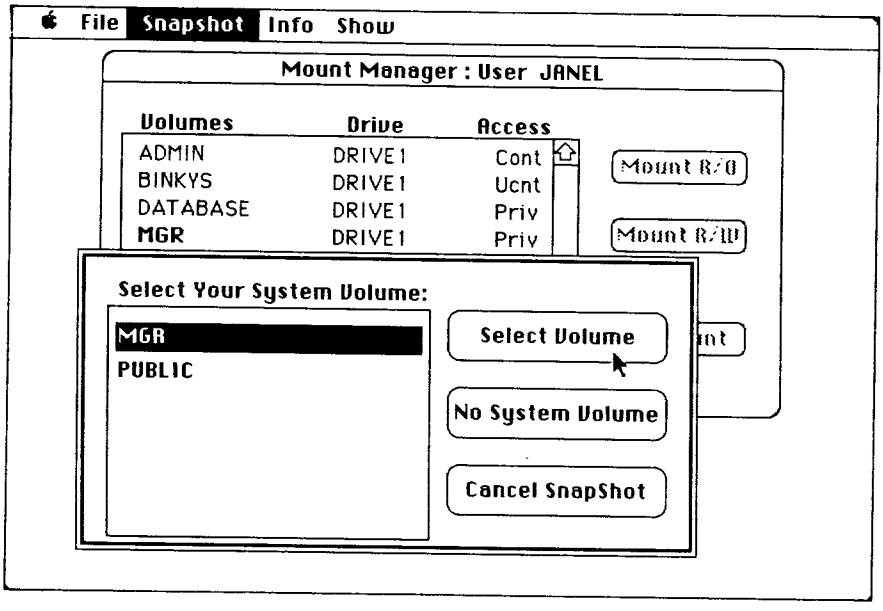
1. **Open the Mount Manager program by double-clicking the Mount Manager icon.**

2. **Select and mount the volumes you want mounted automatically each time you log on.**

   You may select any volumes you wish, but your System volume must be one of them.

3. **Pull down the Snapshot menu and select "Take".**

   A box asking you to select your System volume will be superimposed on the screen.



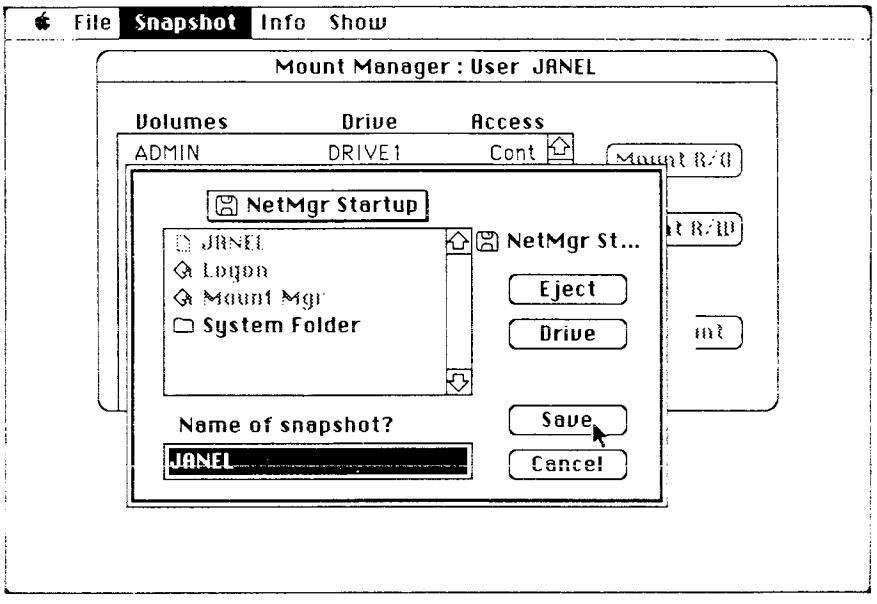

4. **Select your System volume, then click Select Volume.**

   Your System volume contains your System folder with the System file and Finder in it. The Network Manager should have created one for you. You should only have one.

   When you click Select Volume, another screen asking for the location of your snapshot will appear.

   If you click the No System Volume button, the volumes will be mounted when you logon and the Startup diskette will be the System diskette.

5. **Click the Drive button until your Startup diskette is listed.**




6. **Save the file.**

   Save the file under the default name (your user name) and save it on your Startup diskette. Do *not* save it on your System volume. The snapshot will work only if it is loaded on the Startup diskette. Use the drive button in the dialog box to select your Startup diskette.

7. **Pull down the File menu and select Quit to exit from Mount Manager and return to the desktop, or use Launch to move directly into another program.**

To test your new Startup diskette:

1. **Log off the system, then log on with your new Startup diskette.**

2. **Enter your name (and password, if you have one).**

   Your Startup diskette will be ejected and the volumes you chose to be mounted automatically will be mounted. In a few seconds, their icons will appear on the Macintosh desktop display.

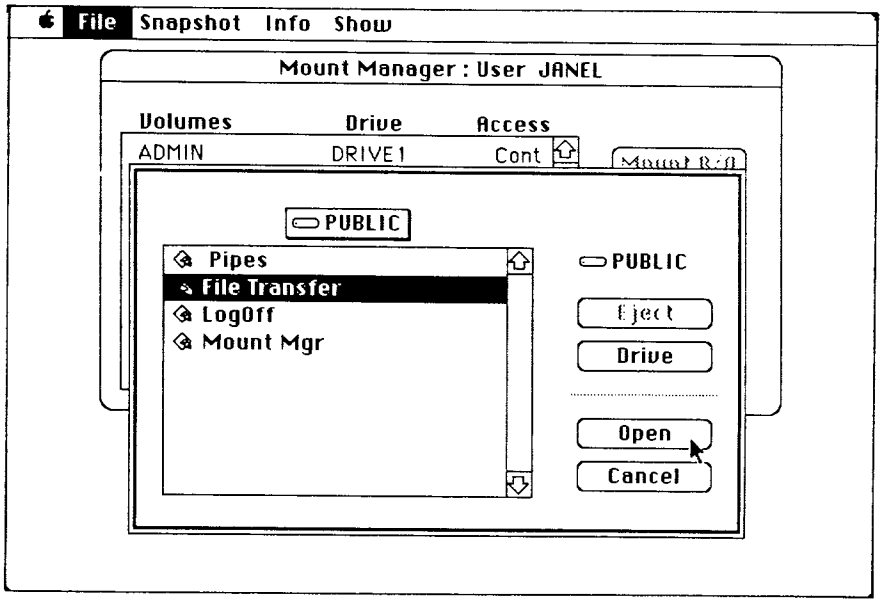
You can also view your automount snapshot and the volumes you've selected to automatically mount by pulling down the Snapshot menu and selecting the Look option.

## LAUNCH

The Launch option is a convenient way of moving directly from one application to another without going to the desktop first. You can open any application in any mounted volume or inserted diskette using the Launch option. To use the Launch option,

1. **Pull down the File menu and select Launch.**

   The window at the left in the Launch box contains a list of applications. All these applications are in the volume or diskette named above the window.




2. **Click the Drive button to list the applications in a different mounted volume or inserted diskette.**

   The name of a different volume or diskette appears above the window that displays the applications in that volume. You can scan applications in all your mounted volumes and inserted diskettes by continuing to click Drive.

If you want to eject a diskette, click Eject when the name of the diskette in the drive is showing. You cannot eject a volume.

When you see the application you want to open, double-click on its name to open it. Or you can first click on its name to select it and then click the Open button. Either method opens the application.

## Printing

As a user on a network, you have two printing options: you can use a local printer or a network printer. Before you install your printer desk accessories, determine what kind of printing you are going to be doing.

- If you are always going to be using a local printer and never printing on the network printer, you will not need the Corvus Spooler D/A.
- If you are always going to be using the network printer and never printing locally, you will not need the Apple Chooser D/A.

### LOCAL PRINTING

A local printer is one connected directly to your Macintosh. To print from a local printer, use the Apple Choose Desk Accesory. See your printer manual and appropriate Macintosh manuals for instructions on how to use the Chooser.

### NETWORK PRINTING

When you print on a network printer, your file is sent (spooled) to a transfer area where it is temporarily stored, then despooled and printed. This means that you can move directly on to other tasks. You don't have to wait for your file to finish printing before you can use your computer again.

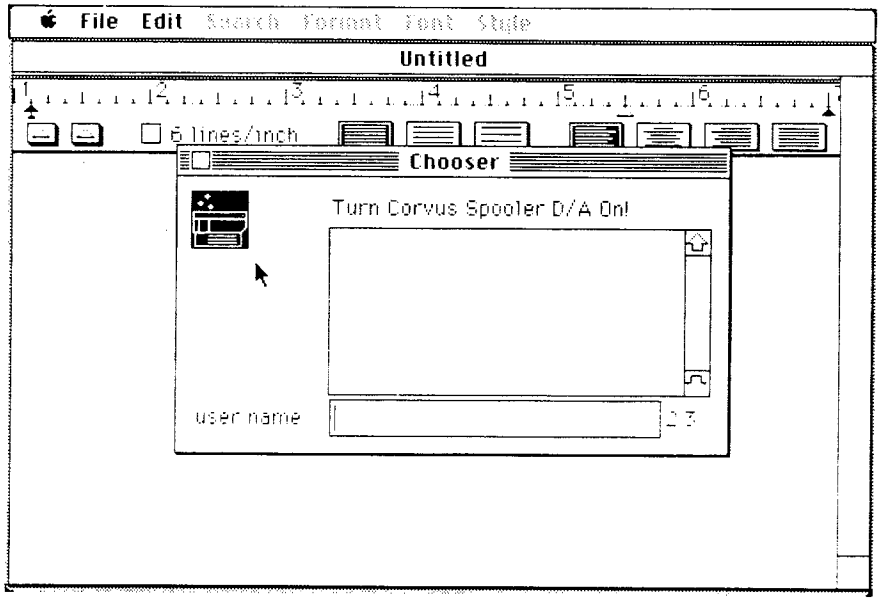
To use a network printer, you must have the correct Corvus network software--a Desk Accessory called the Corvus Spooler. You need a second Desk Accessory (the Corvus Despooler) if your workstation is a despooling

station. If a printer connected to your Macintosh is designated as the network printer, your workstation will be a despooling station. You must use the Corvus Spooler D/A to print on any network printer, even if it is connected directly to the Macintosh you are using.

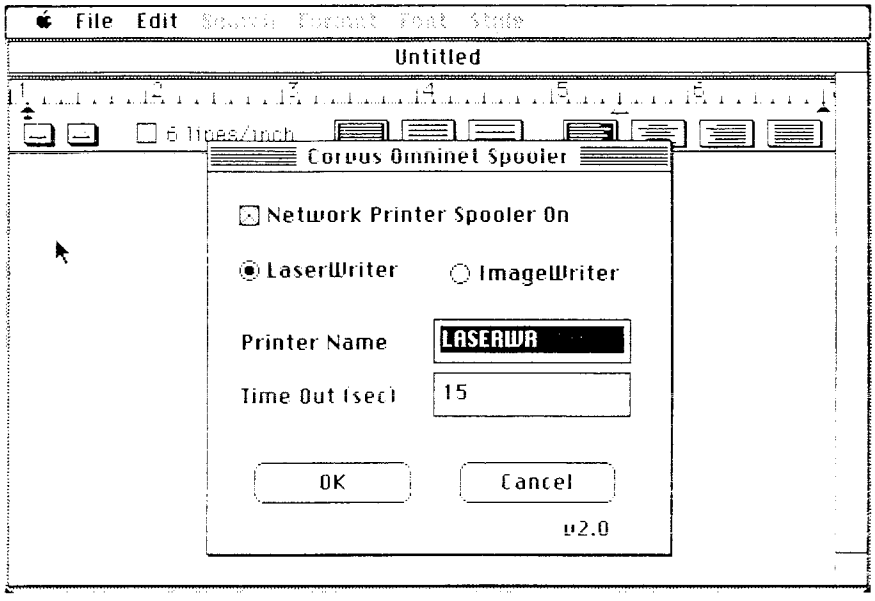
## PRINTING LOCALLY AND ON THE NETWORK

If you plan to do both both local and network printing, keep and use both the Chooser and Corvus Spooler desk accessories.

If you usually print locally but want to print on the network printer, use the Chooser D/A to select Omniwriter. The OmniWriter driver is identified by three stars above the LaserWriter icon.




Click in the go away box in the upper right hand corner, then pull down the Apple menu, select Corvus Spooler, and be sure that there is an X in the box marked Network Printer Spooler On.




If you have been printing on the network and want to print on your local printer, turn off the Corvus Spooler D/A, then use the Chooser D/A to select the printer driver as you would normally.

You must use Chooser version 3.0 or earlier. Do not use Chooser version 3.1 or later, as the later versions are incompatible with the Corvus software. The System file on the Corvus Diagnostic diskette contains Chooser version 3.0.

## NETWORK DESPOOLING STATION

A despooling station is a workstation on the network that is connected directly to the network printer and provides a background task called despooling. Despooling essentially means directing the network printing traffic, which takes place with no interruption to the user who is at the despooling station. If your workstation is the network despooling station, you have two additional responsibilties:

- You must be sure the Corvus Despooler D/A is in your System file.
- You must turn on the Despooler D/A each time you reboot.

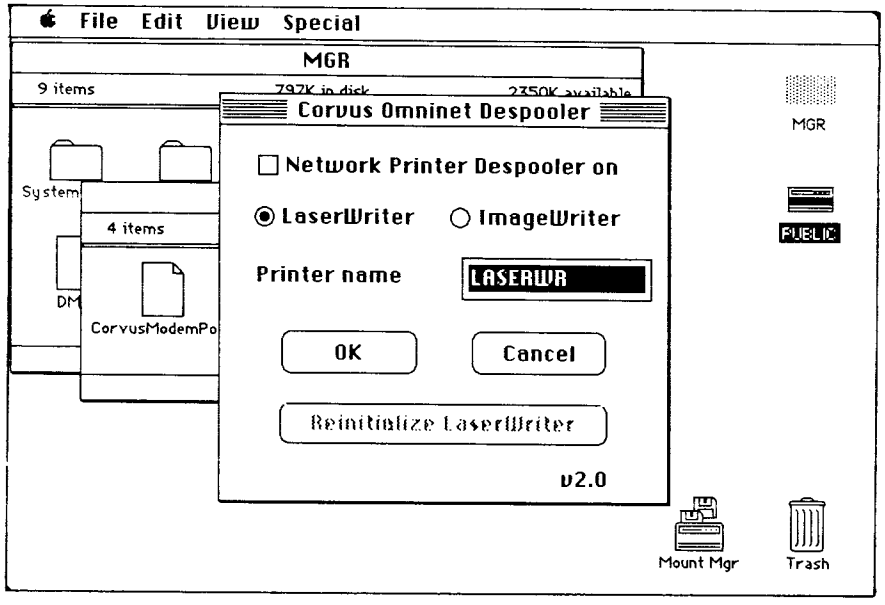
To turn on the Corvus Despooler,

1. **Turn on your Macintosh and wait until the desktop is completely drawn.**

2. **Turn on the printer. If it's a LaserWriter, wait until it produces the startup page.**

3. **Pull down the Apple Menu, then select the Corvus Despooler.**

   A screen asking you to select the type of printer you have and asking for its name appears.




4. **Select the type of printer that you will be using.**

   LaserWriter and ImageWriter are the two choices. Select one by clicking on the button next to the one you want. The button will darken.

5. **Enter the printer name.**

   The printer name default is LASERWR. Write down the printer name, and be sure that everyone who will be spooling files to that printer knows its name.

6. **Click the Network Printer Despooler On box.**

   An X will appear in the box.

7. **Click OK.**

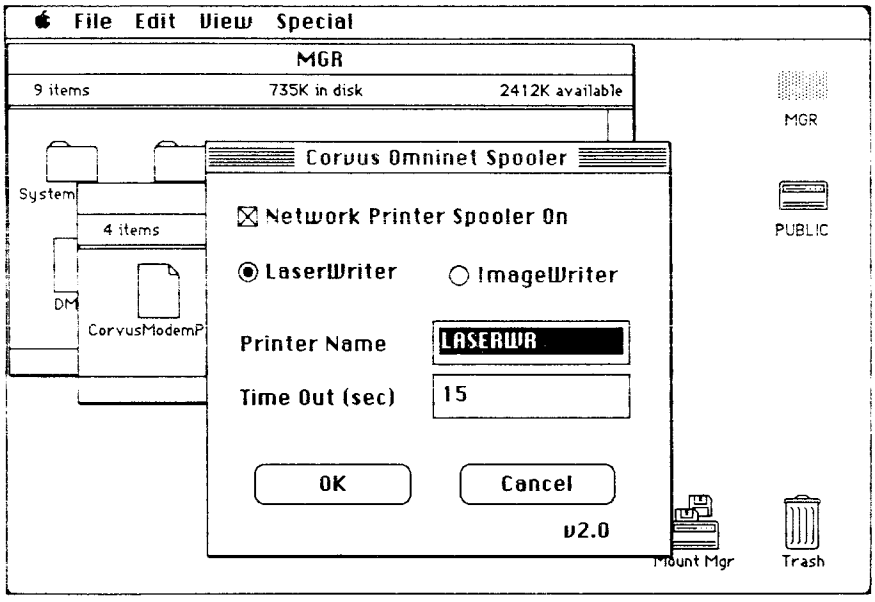
   If the printer is a LaserWriter, it will initialize. Clicking on the Cancel button will cancel the entire operation.

## SPOOLING A FILE TO THE PRINTER

With the Spooler D/A in your System file, you can send a file to print on the network printer.

1. **Pull down the Apple menu and select the Corvus Spooler D/A.**

   The Spooler screen will appear.




2. **Choose the printer type.**

   Click either the LaserWriter or ImageWriter button.

3. **Click the box next to the Network Printer Spooler On.**

   When the spooler function is turned on this box will have an X in it. Click the box if it is not already marked with an X.

4. **Choose the printer name.**

   Find out the name that has been given to the printer you want to use. If you click on the LaserWriter button, the default is LASERWR.

5. **Enter the value for time outs.**

   When you send a file to the Pipes area, the computer does not automatically know when to terminate the print job. The time out tells the network printer driver to finish sending a file after a specified period of time has elapsed. If no data is received after the specified number of seconds, the network printer driver assumes there is no more data and closes the pipe so that the file can be printed.

   The default value for the time out is 15 seconds. A busy network may require more time to send a file and a longer time out may be required. However, if the time interval is set too long, a second file may be sent as part of the original file. In this case, two separate files would be printed as one. If the time interval is too short, the entire file may not be sent. One file would then be printed in two separate pieces, and data might be lost. The default value (15 seconds) should prove effective in most cases.

6. **Click the OK button to complete your selections or Cancel to stop the transaction.**

   Clicking "Cancel" will make no changes to the system. You must click OK to complete the selection. Then you can begin to print from within your application or from the desktop, just as you would normally.

## File Transfer

The File Transfer program allows you to exchange files electronically with other users on the network. When you send a file using the File Transfer program, your file is sent to the transfer area. It is stored there until it is despooled by the workstation that is to receive it. The File Transfer program also allows you to exchange files between different types of computers--you can exchange files between Macintoshes and IBM PCs, for example.

## DATA AND TEXT MODES

The data mode sends or receives entire program files; the text mode sends or receives only the text files. Any file, text or program, can be sent through the network in its entirety from one Macintosh to another, or to a PC, and vice versa, using the data mode. However, not all files can be exchanged between a Macintosh and a non-Macintosh.

Macintosh files have a particular structure that may not be readable by other computer types, but the text mode converts text files to ASCII files that can be read by all computers. Therefore, you will generally want to use the text mode when sending files between Mac and non-Mac computers. Some application programs, such as Word 3 and Excel, are available for both Mac and non-Mac machines. These programs offer the option of saving a file in a non-Mac format. If you are using such a program, you can send a file from a Mac to a non-Mac using the Data option. This will send the entire file, enhancements as well as text.

## SENDING FILES

The Transfer File program should be in a public volume that your Network Manager has created for all network users to share. To send a file in the File Transfer program:

1. **Double-click the File Transfer program icon to open the program.**

   A screen asking you to specify the mode and the name of the Pipe to which you want the file to be sent will appear.

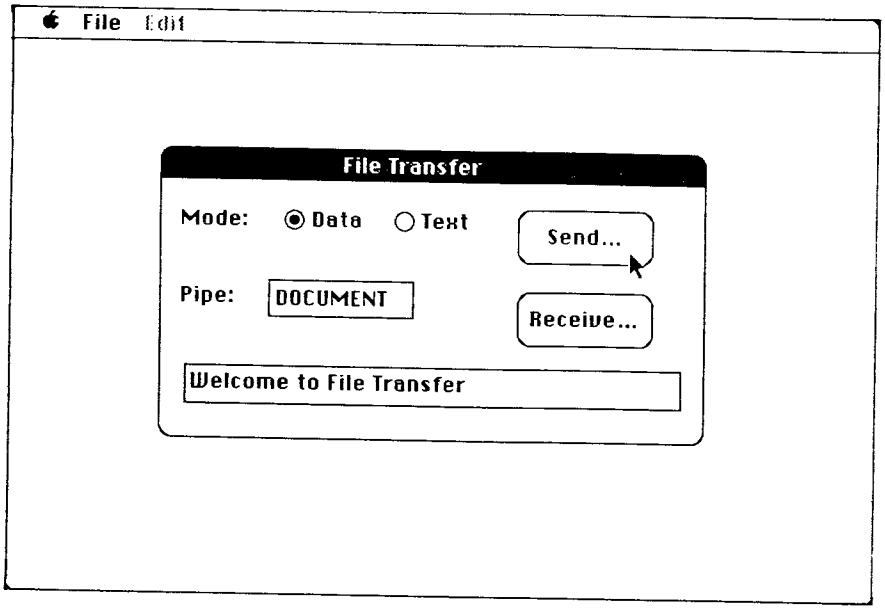
2. **Choose the mode.**

   Click either the Data or Text mode button.

3. **Enter the Pipe name.**

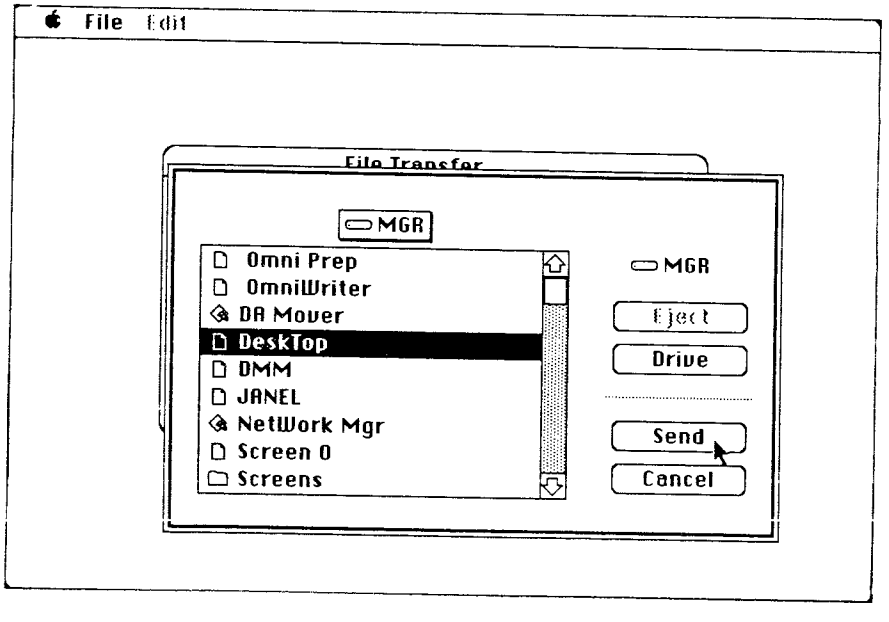
   Give the pipe a unique name. The name of the pipe can be from one to eight letters or numbers long. Do not use "LASERWR" or "IMAGEWR" as pipe names, because they may already be used as the pipe names for the printers.

Entering the pipe name darkens the Send and Receive buttons.




**4. Click the Send button.**

The screen will show the files that you have available to send. If you chose the Text option, only text-only files will be displayed. You can move between drives by clicking on the Drive button. Find the file to be sent and select it by clicking on its row.



5. **Click the Send button to send the file.**

   A message reading "Sending file [XX]" will appear. The number of blocks being sent will also be displayed until the process is complete. When the file has been sent successfully, the screen will display a message informing you of this and telling you how many blocks were sent. The file has been sent to the Pipe you named, and another user can receive it.

## RECEIVING FILES

To receive a file, double-click the File Transfer program icon to open the program.

1. **Choose the mode.**

   Click either on the Data or Text mode button.

2. **Enter the Pipe name.**

   Enter the name of the pipe to which the file was sent. Entering the pipe name darkens the Send and Receive buttons.

3. **Click the Receive button.**

   A window will appear asking for a name under which to save the file. This will default to the name of the file sent. Use the Drive button to change drives, if necessary.

If only one file was sent, the name the file was sent under will appear in the the box labeled, "Receive the file". If more than one file was sent, the name in the box may not be the first file sent. When files are sent to the transfer area, pipes are numbered based on the activity of the area as a whole.

4. **Type in the name of the file to save and click Receive.**

**5. Click the receive button.**

The file will then be received. The number of data blocks being received will be displayed until the process is complete, at which time a message will be displayed telling you that there are no more Pipes with the name you specified. If more than one file has been spooled to the pipe you have just used, the Receive File message will reappear, asking you if you want to receive the next file in the queue. If you do, click Receive to repeat the process. If not, click Cancel.

Clicking on the Cancel button in the receive box removes a pipe. If you click on the Cancel button to halt the transaction, you will remove the pipe.

# Chapter 8

# Diagnostics

# Contents

# Introduction

The Diagnostic program contains tools that you can use to fix certain problems on an OmniDrive. It also allows you to customize your drive for special situations. This section outlines how a hard disk drive works and explains what the various utilities in the Diagnostic program can do.

# The OmniDrive

A hard disk drive contains several aluminum disks, or platters, mounted like phonograph records on a central spindle. To the side is an actuator with a number of data heads attached to it, one for each side of each disk in the drive. Each head extends out over the surface of a disk like the tone arm of a record player, and reads and writes data on the disk.

The data is stored concentric rings called tracks. Tracks are subdivided into zones called sectors. The purpose of this organization is to provide coordinates for locating specific units of data on the tracks. These units are called blocks. On an OmniDrive, each block commonly stores about half a kilobyte of information.

## DRIVE INDICATOR LIGHTS

The OmniDrive has three front panel lights labeled Fault, Busy, and Ready. These show the condition of the drive. The drive takes a minute or so to become ready. During this time the Fault and Ready lights will be lit, and the Busy light will flash. Then the Ready light will come on by itself, signifying that the drive is ready to respond to a command.

If the Ready light doesn't come on after twenty seconds, reset the drive by turning it off, waiting a minute, and then turning it on again. If the drive has been given a command and is in the process of responding to it, the Busy light will come on and flicker with the Ready light as data is transferred to and from the drive. The behavior of these lights taken in conjunction with other symptoms can help identify problems with the drive.

# The Diagnostic Program

The Diagnostic program contains a number of different utilities that allow you to analyze and correct problems with the OmniDrive. These utilities are on the Corvus Diagnostic diskette. To enter the Diagnostic program, you will need to insert the Diagnostic diskette, double-click on its icon, then double-click on the Diagnostic program icon. When you do this, a box listing information about your OmniDrive will appear on the screen.

## BAD TRACKS

Sometimes a track has a bad sector, like a scratch on a phonograph record, and the heads can't read information stored there. This causes an error in reading or writing to any file stored on the bad sector. The remedy is to tell the drive to skip or "spare" the track containing the bad sector so it is no longer used.

### Media Check

In order to find a bad track, you have to run a media check. A media check verifies the integrity of all the blocks on the drive. A media check performs a cyclical redundancy check (CRC) of the magnetic media on the drive platter surface. Any tracks reported as bad in a CRC test should be spared. To run a media check:

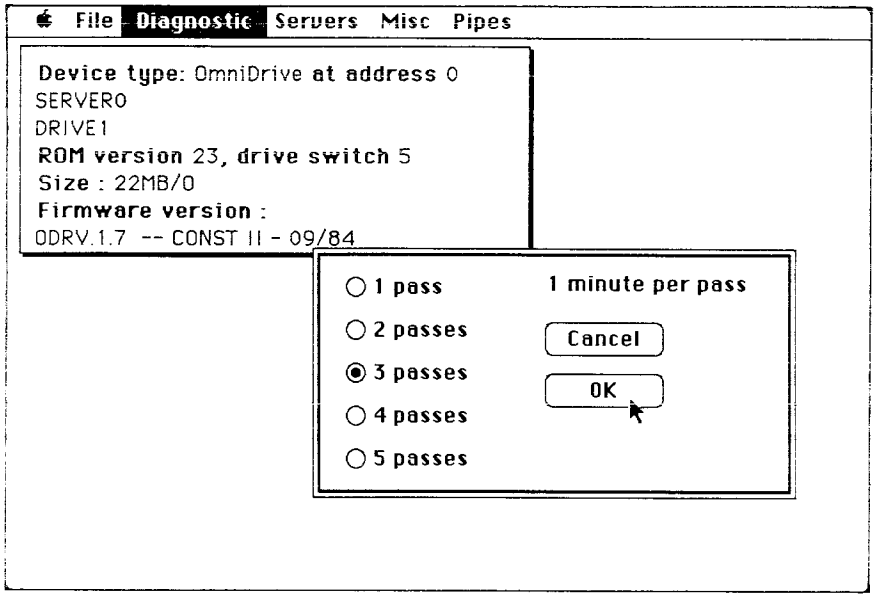
In the Diagnostic program,

1. **Pull down the Diagnostic menu and select the Media Check option.**

   A screen asking you to select the number of passes you would like the media check to make will appear.

2. **Select the number of passes.**

   The recommended number of passes is 3 to 5.




3. **Click OK.**

   You will be told that the media check is in progress and how long it will take to complete. During the time that the media check is being performed, the Busy light on your OmniDrive will be lit. When the media check is finished, the program will report whether or not any bad tracks were found.

4. **If there were no bad tracks, Click OK.**

   If there are bad tracks, make a record of them.

5. **Either spare the tracks or press Cancel.**

Sparing a track moves data on the drive, and can result in data loss; thus, you should always back up your drive before sparing tracks. If you have already backed up the drive, you can spare the tracks. Otherwise, press cancel and read the next section, Sparing Tracks."

## Sparing Tracks

When a bad track is found, the drive must be told to skip that track when data is written to it. This process is known as "sparing" a track.

Before a track is spared, make sure all the data on the drive are backed up.

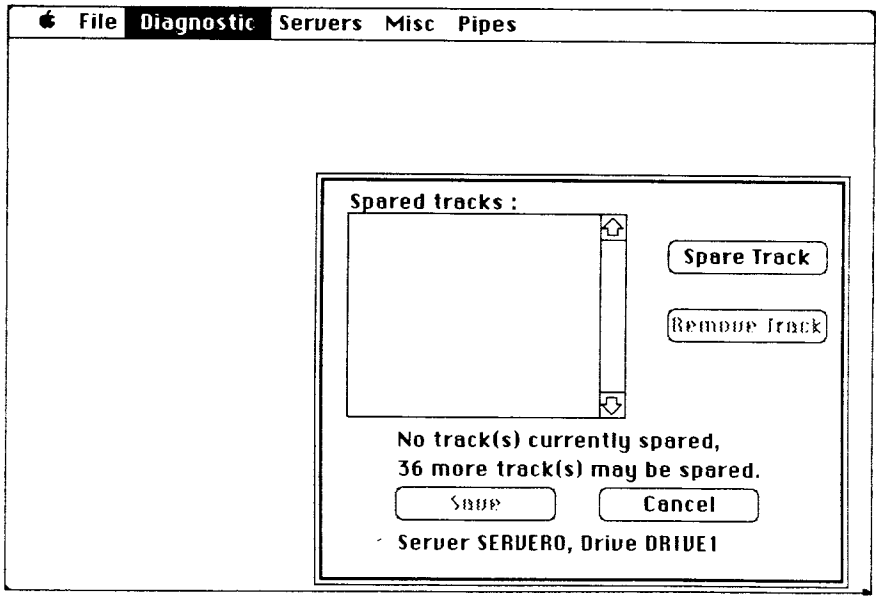
If a track is spared by mistake, delete it from the drive table immediately.

The maximum number of tracks that can be spared will vary from drive to drive. If you spare the maximum number of tracks, contact Corvus Customer Service. To spare a track:

In the Diagnostic program,

1. **Pull down the Diagnostic menu and select the Spare Tracks option.**

   A menu will appear showing you tracks that have already been spared.




2. **Click the Spare Track button.**

3. **Specify the track to be spared.**

   Enter the number of the track you want to spare.

4. **Save the Spare Track table.**

   Click the Save button. (Click Yes when asked if you want to continue.)

### Removing Tracks

Generally, it is not advisable to remove a track from the spare track table. If you are instructed to remove a track from the table by Corvus Customer Service, select the Spare Tracks option, remove the track by clicking the Remove Track button and saving the table.

### Formatting a Drive

The address of any track that has been spared because of a bad sector is recorded in the drive's spare track table. Over time, this table can become full. If this happens, you should contact Corvus Customer Service. They may advise you to format the drive to reduce the number of bad sectors, and consequently the number of tracks needing to be spared.

Formatting a drive will permanently remove all data on that drive.

Formatting a drive sets up a grid-like control pattern on the disks to delineate where the blocks fall. A completely blank disk that is missing this control information cannot be read by the drive controller board. Reformatting a drive that has previously been formatted wipes out the original control information and replaces it with new control information.

A sector may be bad because of a media defect in the platter itself. But a bad sector may also be caused by faulty control information. If this is the problem, laying down new control information may correct the condition. To format a drive:

In the Diagnostic program,

1. **Pull down the Server menu.**

   The Select Server screen will appear.

2. **Select the Server you wish to format, then click the Select button.**

3. **Pull down the Diagnostic menu and select the Format option.**

   A warning telling you that all data on the drive will be destroyed by this procedure and asking you if you want to continue will be displayed.

4. **Click OK to continue.**

5. **Format the drive.**

6. **Reset the drive.**

   Turn the drive off and then back on.

## UPDATING FIRMWARE

The spare tracks table is located in the firmware area of a drive. Also in this area are the active User/device table, the pipes pointer, and the controller code. The controller code, often called the firmware, translates between computers and the drive. It interprets computer commands so that the drive controller board can understand and act on them. You may wish to update firmware if it becomes damaged, or to upgrade the firmware with a newer version.

If the current version of your firmware is faulty, your drive will be inoperable and the Fault light will remain lit. Replace the firmware and, if the problem persists, contact Corvus Customer Service.

To Update the Firmware:

In the Diagnostics program,

1. **Pull down the Diagnostic menu and select the Update FW option.**

   You will be asked if you want to update the firmware on the drive that is currently selected.

2. **Click OK to update the firmware.**

3. **Reset the drive.**

   Turn the OmniDrive off and then back on to reset it.

4. **Click OK.**

## SEMAPHORES

Semaphores are a tool for allowing multiple users on a network to use write access to the same files safely. When a specially designed multiuser application locks a semaphore for a file, no one else can gain write access to that file until the semaphore is unlocked again. The file is therefore protected from being changed by two or more users simultaneously.

An example of this technique can be found in your Constellation software. The Corvus Drive Management software uses a semaphore to protect the CORVUS volume, where the drive management tables and directory of volumes on a drive are stored. You update this volume any time you use the Network Manager to add, delete, or change a volume on the drive. Whenever you perform one of these operations, the CORVUS volume semaphore, named CRVSEMA4, locks for a second or so to keep other users out of the volume.

It is possible, in unusual circumstances, such as a power failure, for a semaphore to become "stuck" in a locked position. If this should happen, unlock the semaphore using the Diagnostic diskette.

You will not need to lock semaphores, unless directed to do so by Corvus Customer Service. Instructions on how to unlock and clear semaphores using the Diagnostic program follow.

### Unlocking Semaphores

To unlock a semaphore, in the Diagnostic program,

1. **Pull down the Diagnostic menu and select Semaphores.**

   The semaphore list will appear, showing you all the currently locked sempaphores.

2. **Click the name of the semaphore you want to unlock.**

3. **Click the Unlock button.**

   The semaphore you selected will disappear from the table.

4. **Click OK.**

   This quits the Semaphores option and returns you to the main level of the Diagnostic program.

### Clearing Semaphores

Clearing semaphores unlocks all semaphores at once and removes their names from the list of locked semaphores. To clear semaphores,

1. **Pull down the Diagnostic menu and select Semaphores.**

   The semaphore menu will appear.

2. **Click the Clear button.**

   All semaphores in the table will disappear.

3. **Click the OK button to exit to the main Diagnostic desktop.**

## READ AFTER WRITE

When this option is selected, the drive controller reads each sector on a disk after writing to it to verify that data is recorded correctly. The option is useful for protecting vital data, but using it slows program response time. Unless you have special concern about the integrity of your data, you should leave this option turned off.

To turn on Read After Write, from the Diagnostic program,

1. **Pull down the Diagnostic menu and select Read After Write.**

2. **Click the Read After Write button.**

3. **Click OK.**

## UNINITIALIZE PIPES

When the transfer area of a drive is initialized, a pointer in the firmware is set to the pipes area's address. If you delete the pipes volume to remove the pipes area from the drive, you must also clear the pointer in the firmware using the Uninitialize Pipes option. Failure to clear the pointer could result in data loss.

To uninitialize pipes in the Diagnostic program,

1. **Pull down the Pipes menu and select Uninitialize.**

   You will be asked to confirm that you want to remove the pipes pointer.

2. **Click OK.**

   The pipes volume is now unitialized.

## PARKING HEADS

Parking the heads moves them to an area on the disk where there isn't any data. This positions them where they cannot destroy information on the disk if the drive is dropped or jarred when being moved. You should always park the heads before shipping or transporting a drive.

To park the heads, from the Diagnostic program,

1. **Pull down the Diagnostic menu and select the Park Heads option**

   A message will appear telling you that parking the heads will end you communication with the drive.

2. **Click OK.**

3. **Turn off the drive.**

## EXERCISING HEADS

You can exercise the heads to check for hard and soft errors on the drive. This provides information that may be useful to Corvus Customer Service, if you should need to call them about a problem with your drive. The Exercise Heads option is found in the Diagnostic menu.

## SPEED TEST

The Speed test shows the rotational speed of the drive in revolutions per minute. Running the Speed Test provides information that may be useful to Corvus Customer Service, if you should need to call them about a problem with your drive. The Speed Test option is found in the Diagnostic menu.

# Appendixes

# Contents

# Appendix A

# Updating an Existing Constellation III for Macintosh System to Release 2.0

This appendix describes how to update an existing Constellation III network for Release 2.0. To update your network, you will need to do the following:

- Back up volumes and convert from MFS to HFS, if desired.
- Make new Startup diskettes and System volumes containing fresh copies of System 3.2 (or later) and Finder 5.3 (or later) on them .
- Add new versions of the Network Management software and delete old ones.
- Add new Corvus Printing Desk Accessories to fresh copies of System.

## CONVERTING VOLUMES FROM MFS TO HFS

Volumes on your current Omninet network are MFS volumes. With this release you have the option of converting them to HFS to take advantage of Apple's new HFS capabilties.

The conversion process erases any data in the volume. Before converting from MFS to HFS you should first back up any data you want to save.

To convert a volume from MFS to HFS,

1. **Back up data you wish to save.**

2. **Shut down your Macintosh, then boot up using the Corvus Diagnostic diskette.**

3. **Use the new Mount Manager (from the Corvus User diskette) to mount any volumes you wish to convert.**

4. **Select (but do not open) the volume to be modified.**

5. **Pull down the Special menu.**

6. **Select the Erase Disk option.**

   A box naming the volume to be erased and asking you to cancel or initialize the operation will be superimposed on the screen.

7. **Click the button marked Initialize.**

Once erased in this manner, the volume becomes an HFS volume.

You can now make new System volumes and Startup diskettes for your network.

## MAKING NEW STARTUP DISKETTES

To update your network to Release 2.0 you must make new Startup diskettes for everyone on your network. You should make them all at this time.

Follow the instructions in Chapter 4 for making Startup diskettes. Make sure you *do not* use copies of the System and Finder from your old Startup diskettes. Older versions of System and Finder will conflict with the new Constellation III software. Use fresh copies of System 3.2 (or later) and Finder 5.3 (or later) from your Apple System Tools diskette or from the Corvus Diagnostic diskette.

## ADDING NEW VERSIONS OF THE NETWORK MANAGEMENT SOFTWARE

This release of the Constellation III software provides new versions of the following files:

- Log On
- Mount Manager
- Network Manager
- File Transfer
- Corvus Modem Port
- Corvus Printer Port
- Pipes
- D/A's
- Omniwriter
- OmniPrep
- Logoff

You *must* replace older versions of these files with the latest releases. Failure to do so could result in serious network difficulties.

To add the new files,

1. **Log on to your network with your new Startup diskette.**

2. **Make sure the System folder in your System volume contains fresh copies of the following files:**

   - System (3.2 or later)
   - Finder (5.3 or later)

   Also on your system volume, but not necessarily in a folder, you need:

   - Font D/A Mover

3. **Copy the following files from the User diskette into your System volume.**

   - Mount Manager 3.4
   - File Transfer 1.0
   - Logoff 3.1

4. **Copy the following file from the User diskette into the System folder in your System volume:**

   - OmniWriter

   **And for a despooling station, copy OmniPrep from the User diskette to the System volume, but not into the System folder.**

   (When prompted to replace old files, click OK).

## ADDING NEW VERSIONS OF THE PRINTING DESK ACCESSORIES

This release of the Constellation III software provides new versions of the following desk accessories (D/A's):

- Corvus Spooler
- Corvus Despooler

In order to print on the Omninet network, you must use these new versions of the Corvus printing desk accessories.

You may not install these new D/A's on an old Corvus System file. Make a new Corvus System file. Simply deleting old Corvus printing D/As from an old Corvus System file and adding the new ones is not sufficient to guarantee printing on the Omninet network.

To add new D/A's,

1. **While logged on, with your System volume in the upper right corner of the desktop, insert the User diskette.**

2. **Open the User diskette and double-click on the Corvus D/A 2.0 icon.**

   This will execute the Font D/A Mover.

3. **Select Desk Accessories.**

   You should see two files, the Corvus Spooler and the Corvus Despooler, on the left side of the screen (under User diskette).

4. **Click the Open button on the right side.**

5. **Use the Drive button to select your System volume.**

6. **Open the System file in the System folder on the right side.**

   There should not be any Corvus D/A's in your System file at this time.

7. **Copy the Corvus Spooler Desk Accessory from the User diskette to your System file.**

8. **If you are setting up the Network Despooling station, also copy the Corvus Despooler D/A file from the User diskette to the System file.**

Your Constellation III for Macintosh software has now been updated for Release 2.0.

# Appendix B

# Error Messages

This appendix contains a list of common error and warning messages generated by the Corvus Constellation III software. Error messages may also be generated by the Apple Macintosh programs. For information about error messages not found in this appendix, check your Apple Macintosh manuals.

Error messages are displayed on the screen with numbers. The error message provides a reference number for Corvus Customer Service, if you should need to call them.

If you get an error message numbered 99, you have duplicate Omninet addresses on your network. The screen will display the standard system error message "Sorry, a system error occurred" when you attempt to boot up the system. Check all the addresses of the drives and computers on your network and change any duplicates to a unique address.

The error messages are discussed on the following pages. Each message is given with a brief explanation and instructions on how to proceed.

**Cannot relocate CORVUS volume within the first 32 MB.**

When updating a drive's CORVUS volume, the Installer program relocates the existing CORVUS volume and makes it larger. The new size for the CORVUS volume will be 130 blocks plus the number of blocks of the existing CORVUS volume. The new CORVUS volume must reside within the first 32 Megabytes of the drive. You will have to delete a volume to make room within the first 32 Megabytes of disk space.

**Corvus volume too small for merge.**

Your attempt to merge user tables failed because your existing drive's CORVUS volume is too small. If you have not already updated the drive's CORVUS volume, do it now and then try again to merge user tables. If you have already updated the drive's CORVUS volume, call Corvus Customer Service.

**Disk/Drive Unavailable for Update/Access**

You tried to update the CORVUS volume--add a volume, change a user's attributes, etc.--when the CORVUS volume semaphore, CRVSEMA4, was locked. Normally, the semaphore is locked only when a user is updating the CORUVS volume. In this case, the semaphore will be locked only temporarily. Try your operation again, after a few minutes' wait..

If the error message appears again, enter the Diagnostic program and use the Unlock Semaphore option. When prompted for the name of the semaphore to unlock, type CRVSEMA4.

**Drive must have a name.**

You tried to set up a new drive without specifying a drive name. Type a name for the drive that is 10 characters or less.

**Drive or server name must be 10 characters or less.**

You entered a drive or server name that was more than 10 characters. Type a new drive or server name that is 10 characters or less.

**Drive Volume sequence error.**

While attempting to update your drive's CORVUS volume, the Installer program failed because the CORVUS volume was corrupted. Contact Corvus Customer Service for instructions on how to proceed. Make sure you have a current volume list in your Network Manager's notebook. This list will help you reconstruct the drive.

**Duplicate User/Device**

The user or device that you are attempting to add already exists. Enter a new name for the user or device.

**Duplicate Volume Name**

You've tried to add a volume with the same name as another volume already on the drive. Each volume must have a unique name. Type in a new name of 10 characters or less.

**File OmniPrep is not on the system volume.**

The file OmniPrep is not in your system volume, meaning that you will not be able to use the Restart LaserWriter button in the LaserWriter Despooler desk accessory. You will still be able to despool files. Copy the file OmniPrep to your system volume.

**Invalid Home Disk Server Name**

The home disk server name for a user or device is longer than 10 characters. Enter a new home disk server name that is 10 characters or less.

**Invalid Host #**

You've tried to set up a Macintosh to perform a device boot, but the Omninet address specified was not in the range 0-63. Be sure you have the current Omninet address of the Macintosh.

**Invalid Name**

You have given an invalid Drive Management name. Drive Management names must be 10 characters or less and must contain only letters, numbers, and periods. They are used to identify users, volumes, devices, servers, and drives. Enter a valid name.

**Invalid Password**

You've typed a password that is longer than eight characters. Type a new password that is eight characters or less.

**Invalid Volume Length**

You've tried to add a custom volume that's too large to fit in the segment of unused space you've chosen. Specify a smaller volume size or choose a different space.

**Invalid Volume Name**

The volume being added, changed, or deleted is named incorrectly, the name is longer than 10 characters, or the volume is not on the current drive.

**Network User table size mismatch.**

The attempt to merge network user tables was halted because the Installer program found user tables of varying sizes on the network. All user tables must be the same size. Call Corvus Customer Service.

**No disk servers found on the network.**

The network has no active servers. Attach your drives to the network. If your drives are already attached, then make sure the drives are turned on, all cables are secure, and your Transporter is connected to the network.

**Passwords must be 8 characters or less.**

You entered a server or drive password that was more than eight characters. Type a new password that is eight characters or less.

**Pipes Volume Address Too High**

The pipes volume must reside within the first 32,000 blocks of the drive. Clear an area large enough for your pipes volume within the first 32,000 blocks of your drive. Try again to create the pipes volume.

**Sorry . . . That's the wrong password**

You entered the wrong server or drive password when entering the Network Manager mode. Type the correct server or drive password.

**The Corvus Installer must be run from a floppy disk.**

You tried to run the Corvus Installer program from a volume on your drive. Run the program from the Corvus Installation disk.

**The inserted disk is not a system disk.**

The disk you inserted to be made into a Corvus Startup disk does not contain a System folder. Insert a disk that does contain a System folder.

**The selected drive is already set up. If you continue, all information on the drive will be destroyed.**

You are installing the Drive Management tables on a drive that has already been set up. All information on the drive will be destroyed if you continue. Make sure you have selected the proper drive and that you have saved all valuable information.

**There must be more than one drive on the network to merge user tables.**

You tried to use the Merge network user tables option on a network that only has one drive. If you are adding a new drive to an existing network, make sure that you attach the new drive to the network before using this option.

**There are no servers with a Pipes area on the network.**

You have tried to use the pipes area when it does not exist yet. Follow the steps in Chapter 4 of this guide to create the pipes area.

**There was an error copying the Logon program to the startup disk.**

The Logon program was not copied to your startup disk. You probably do not have enough free space on your disk. The Logon program requires 16K. Make sure your disk has at least 16K of free space, copy the Logon program onto your disk, and try again.

**Too many users for merge.**

Merging user tables on your network failed because the number of combined users exceeded the capacity of the network. The maximum number of users for an Omninet network is 512. Delete unnecessary users.

**Unexpected I/O error.**

There has been an error when the Installer program tried to either read from or write to your drive. Contact Corvus Customer Service.

**Volume Not Found**

You have tried to change or delete a volume that is not on the current server and drive. Select the appropriate server and drive.

**Volume Owner Not Found**

You've tried to assign ownership of a volume to a user whose name is not in the network user tables. Select a user that has already been created.

# Appendix C

## Pinouts for Cables from the Macintosh to a LaserWriter

| Macintosh 512K or 512KE | Signal | LaserWriter(DB25) |
|---|---|---|
| 1 | Ground | 1 |
| 2 | +5VDC | 7 |
| 5 | TxD- | 3 |
| 7 | DTR | 20 |
| 9 | RxD- | 2 |

| Macintosh Plus or SE | Signal | LaserWriter(DB25) |
|---|---|---|
| 3 | TxD- | 5 |
| 4 | Ground | 3 |
| 5 | RxD- | 9 |
| 6 | Ground | 3 |

All other signal pins are unused.

- To use a LaserWriter with a Macintosh 512K or 512KE use a standard "Macintosh 512K to ImageWriter" cable.

- To use a LaserWriter with a Macintosh Plus or Macintosh SE use a standard "Macintosh 512K to ImageWriter II" cable.

# Appendix D

# Batch File Commands

A batch file is a group of instructions that have been bundled together so that they can be processed at one time. Constellation III for Macintosh includes an option for processing batch files. The Batch option is ideal for environments such as schools, where large groups of new users must be managed on a regular basis.

This appendix explains the various commands that can be used in Constellation III for Macintosh batch files. In the following explanations, the command keywords appear in bold letters. Required parameters appear in normal type and optional parameters appear in italics. Below is an example of the Add User command.

**Add User** UserName*Password*, OSType, *HomeServer*

When entering these commands, make sure that you press RETURN after each command line entry. Also make sure that you follow the syntax exactly. Even if you do not enter a value for an optional parameter, you must still enter the comma following the parameter.

To process a batch file,

1. **Create the batch file using MacWrite or any other text editor and save it as Text Only.**

2. **Enter the Network Manager program and select the drive on which you saved the batch file.**

3. **Pull down the Misc menu and select Batch.**

4. **Click the drive button until the volume with your batch file is displayed.**

5. **Open the batch file.**

   Opening the batch file will initiate processing. The batch file that is being processed will be displayed. A message will tell you the batch file processing is complete.

**6. Click the go away box to clear the screen.**

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, and VolumeType. A value entered for one of these parameters must match one of the entries in the C3.Data file. There are two more parameters, Access and MacAccess, that have a range of values as well. The values for these parameters are built into the Data Management Module, a support file for the Network Manager program. Two tables at the end of this appendix list the values for each parameter.

When making a batch file, you must use the Select commands to set the current server and drive.

The commands on the following pages are explained in alphabetical order.

## 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. This command is only used for non-Macintosh volumes and users.

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 either be 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 DEVICE

Description: This command adds a device record to the NETWORK.USER table.

Syntax: **Add Device** DeviceName, 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.

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.

*Single* indicates that changes will be made only to the current server and drive.

Example: Add Device MacBoot, Mac, MacPubs, Workstation, 22,

## ADD USER

Description: This command creates a new user record in the NETWORK.USER table.

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 you are creating a Macintosh user, any server on the network may be designated as the home disk server because the Macintosh boots from a disk instead of a volume. If this parameter is omitted, the current server is used as the home disk server.

*Single* indicates that changes will be made only to the current server and drive.

Example: Add User Mike\BMW, Mac, ,

## ADD VOLUME

Description: This command creates a volume on the server and drive designated by 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 non-Macintosh volumes, use the Format Volume command. To format Macintosh volumes, you must use the Clear option in the Volume mode of the Network Manager program.

Syntax: **Add Volume** VolumeName, VolumeType, Length, *Address*, *Access*, *Owner\Password*, *MacAccess*

Parameters: VolumeName is the volume name. The name can be up to 10 characters.

VolumeType is the volume type description for the new volume.

Length is the size of the volume in 512k 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.

*Access* is the global access designation for the volume. A value should be entered for this parameter only when creating a non-Macintosh volume. Global access always takes precedence over any of the user's individual access rights as well as the type of access set with the Add Access batch command. If this parameter is omitted, the default access will be read-only.

*Owner\Password* is the owner and password of the volume. These parameters should be used only when creating Macintosh volumes. The owner must be set to an existing user's name. The password is optional and can be up to eight characters.

*MacAccess* is the volume access type for Macintosh volumes. See the table at the end of this appendix for the access values.

Example: Add Volume MACVOL1, Mac, 1600, , , Greg\GBS, Pu

## CHANGE ACCESS

Description: This command allows modifications to be made to the current user's access rights to a volume.

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: This command is only for non-Macintosh volumes. When using this command you must first specify a user with the Select User command.

## CHANGE DEVICE

Description: This command allows modifications to be made to a network device's record.

Syntax: **Change Device** DeviceName, *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.

*Single* indicates that changes will be made only to the current server and drive.

Example: Change Device MacBoot, , , , 24,

## CHANGE USER

Description: This command allows modifications to be made to a network user's record. Only those parameters which are supplied cause changes to the User's 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.

*Single* indicates that changes will be made only to the current server and drive.

Example: Change User Joe\JDS, , ,

## CHANGE VOLUME

Description: This command allows modifications to be made to volume attributes. Changes to a volume do not affect its logical format or record.

Syntax: **Change Volume** VolumeName, *NewName*, *VolumeType*, *Access*, *Owner\Password*, *MacAccess*

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 for the volume.

*Access* is the new global access for the volume. You can only change this parameter when working with non-Macintosh volumes.

*Owner\Password* is the new owner and password for the volume. You can only change these parameters when the current volume is a Macintosh volume.

*MacAccess* is the new access type for a Macintosh volume. This parameter can only be modified when using a Macintosh volume.

Example: Change Volume MACVOL1, , , , , Co

## DELETE ACCESS

Description: This command is only for non-Macintosh volumes. When using this command you must first specify a user with the Select User command.

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

## DELETE DEVICE

Description: This command deletes all associated records for a network device.

Syntax: **Delete Device** DeviceName, *Single*

Parameters: DeviceName is the name of the device to be deleted.

*Single* indicates that changes will be made only to the current server and drive.

Example: Delete Device MacBoot,

## DELETE USER

Description: This command deletes all associated records for a network user.

Syntax: **Delete User** UserName, *Single*

Parameters: UserName is the name of the user to be deleted.

*Single* indicates that changes will be made only to the current server and drive.

Example: Delete User Bill,

## DELETE VOLUME

Description: This command deletes all associated records for a network device.

Syntax: **Delete Volume** VolumeName

Parameter: VolumeName is the name of the volume to be deleted.

Example: Delete Volume NOTES

## FORMAT VOLUME

Description: Use this command only to format non-Macintosh volumes. To format Macintosh volumes after creating them with the Add Volume batch command, use the Clear option in the Volume mode.

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 1-77. If omitted, the default is 77.

For MS-DOS volumes, three parameters may be specified--cluster size, reserved sectors, and 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:

| **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 |

Directory entries = 256
Reserved sectors = 1

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 the omitted parameters are

| **Volume Size** = N (Blocks) | Default Block Size |
|---|---|
| N < 2,000 | 2 |
| 2,000 < N < = 8,000 | 4 |
| N = > 8,000 | 8 |

No. directory entries =
(Block Allocation Size * 1024)/32

Sectors per track = 64

Reserved sectors = 0

Nozero signifies that the volume directory should not be formatted. Only the information for the Corvus volume header is written.

Example: Format Volume FINANCES , , , 16,

## PIPE

Description: There are three pipe commands. The commands close a pipe, purge a pipe, and initialize the pipes area.

Syntax: **Pipe** Function, ParmA

Parameters:

| **Function** | **Parm A** |
|---|---|
| Close | Pipe# |
| Purge | Pipe# |
| Initialize | VolumeName |

Examples:

```
Pipe Close, Pipe3
Pipe Purge, Pipe5
Pipe Initialize, PIPES
```

## SELECT

Description: The Select Disk and Select Drive commands are used to set the current server and drive. Use the Select User command to select the user when managing volume access for non-Macintosh users.

Syntax: **Select Keyword=** Name*Password*

Parameters:

| Keyword | Name | Password |
|---|---|---|
| Disk | ServerName | ServerPassword |
| Drive | DriveName | DrivePassword |
| User | UserName | |

Examples:
```
Select Disk= MKTG\MK
Select Drive= MACPUBS\PUB
Select User= Tom
```

Comments: 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 III will remember the passwords. Thus the user may switch between various servers and drives without reentering passwords.

## SEMAPHORE

Description: There are three sempahore commands. The commands can lock a semaphore, unlock a semaphore, and initialize the semaphore table.

Syntax: Semaphore Function, *ParmA*

Parameters:

| Function | ParmA |
|---|---|
| Lock | SemaphoreName |
| Unlock | Index# |
| Initialize | |

Examples:

```
Semaphore Lock, MBLock
Semaphore Unlock, 2
Semaphore Initialize
```

## 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 | Cndimage |
| Concept | Boot-Device | A3SOS | CPM |
| Concept2 | Comm-Server | Atari | DOS3.3 |
| DEC-Rainbow | Commodore-Pet | C2IV.0 | Image |
| IBM | Companion | CCOS | Invimage |
| LSI-11 | Concept-Plus | CP/M | Mac |
| Macintosh | Corvus-Concept | CP/M-68 | MSDOS |
| Nec-PC8000 | DEC-Rainbow | CP/M-86 | New80 |
| PET | IBM/PC/XT | Mac | NewDos |
| Printer-Server | LSI-11 | MSDOS | PET |
| Sony-SMC-7086 | Mirror-Server | NCIIV.0 | ProDos |
| TI-Pro | NEC-PC8000 | New80 | Reserved |
| TRS-80-Mod1 | Omni-Drive | NewDos | RSX11 |
| TRS-80-Mod3 | Print-Server | Pet | RT11 |
| Xerox820 | TI-Professional | ProDos | UCSD |
| Z-100 | TRS-80-Mod1 | RSX11 | UNIX |
| Zenith-H89 | TRS-80-Mod2 | SoftechIV0 | |
| | Workstation | UCSDII | |
| | Xerox | Unix3 | |
| | Z-100 | Unix5 | |
| | Zenith-H89 | | |

The values for the parameters Access and MacAccess are shown below. The values for MacAccess are the first two letters of the desired volume type. For example, Pr stands for Private, Pu stands for Public, etc.

| Access | MacAccess |
|---|---|
| NA | PUB |
| RO | PR |
| RW | CO |
| | UN |

# Appendix E

# Using Constellation III with Non-Corvus Drives

Constellation III for Macintosh and the Omninet network may be used with non-Corvus drives. Familiarity with ResEdit (resource editor from Apple) is essential.

There are three major methods of linking to hard drives:

- Automatic boot, such as used with Hyperdrive and Apple HD20
- Floppy boot, such as the Corvus configuration
- Program link, a program that links the hard drive and the Macintosh.

Apple's HD20 is categorized as an auto-booting hard drive even when booting from floppy on a Macintosh 512K, since the system used is the one found on the HD20.

The following instructions refer to a "Corvus boot diskette". This should be a User diskette configured with Corvus's INIT resource for either the Modem or Printer port. Before continuing, set up the hard disk according to the manufacturer's instructions.

## AUTOMATIC BOOT METHOD

### MFS (System 2.0, Finder 4.1)

Using ResEdit, copy OmniDriver (ID=11) and OmniInit (ID=10) from the Corvus boot diskette to the local hard drive's system.

Copy Logon to the hard drive, but do not set it as Startup--you may not always wish to log on to the Corvus network. When you wish to use the Corvus drive, run Logon and enter your name and password as usual. Then run Mount Manager to access the volumes.

Each time you boot, be sure the Transporter is connected. If it is not connected, the Macintosh will hang at the Welcome screen. This is because the Corvus INIT resource attempts to communicate with the card at boot time.

If at any time you wish to boot your local drive without a Transporter, you will have to remove the INIT resource from the System file.

### HFS (System 3.1.1+, Finder 5.x)

For HFS volumes, you can use the same procedure as above, or take advantage of a new feature of Apple's System.

At startup time, System now searches for files that have the file type INIT. To use this, use ResEdit to create a new file in the System folder and copy OmniDriver (ID=11) and OmniInit (ID=10) to this file. Set the file type to INIT. The creator type is not important. This file will be opened at startup time. If you do not wish to use Omninet, then change file type from INIT to four spaces.

The advantages to using this method are that

- It's easier to deactivate the Omninet link.
- You do not have to reinstall the Corvus driver to upgrade Apple's system.

After booting your local drive, you should run Logon and Mount Manager in the normal fashion. This procedure will allow you to use HFS on OmniDrives, allowing you to mix MFS and HFS volumes. To format an OmniDrive volume as HFS, simply click on the volume, select Erase Disk from the Special menu, then click Initialize in the dialog box.

## FLOPPY BOOT

The only difference between this method and the Automatic booting method is that the system modifications are made on your boot diskette instead of on your hard drive.

### MFS (System 2.0, Finder 4.1)

Use ResEdit to copy OmniDriver (ID=11) and OmniInit (ID=10) to the System file on your boot diskette. Make sure that the driver and INIT resources do not clash with items already in the System file. Renumber the files, if necessary, so that their numbers are unique.

### HFS (System 3.1.1+, Finder 5.x)

For HFS volumes, follow the above procedure for MFS volumes; or you can create an INIT file and store it in the same folder as the System file.

The biggest difference with the new System is that there is a separate INIT file, and so there can be no ID clashes. Follow the instructions for Automatic booting, creating a new file that should be stored in the System folder on the boot diskette.

## PROGRAM LINK

When using a linking program, simply boot the Corvus diskette, then run the program that links you to the hard drive.

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Corvus Systems, Inc.

CORVUS

# PACKING LIST

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If you have any questions, please contact your Corvus Dealer