

Macintosh OmniDrive

User Guide

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Release Date: July 1984
Revision: A

FCC WARNING

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

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Mirror[®] U.S. Patent #4,380,047 International patents pending
Corvus Concept,[™] patent pending
Omninet,[™] patent pending

TABLE OF CONTENTS

Getting Started	1
Connecting the OmniDrive to Macintosh	3
Using the OmniDrive with Macintosh	9
The Mount Manager	12
Link Check	17
Reference Information	19

GETTING STARTED

This manual explains how to set up the Corvus OmniDrive™ mass storage system for use with the Apple® Macintosh™ computer. First the OmniDrive must be connected to Macintosh. Once the connection is made, simply inserting the Corvus boot disk and turning the Macintosh on puts up to 45 megabytes (MB) of storage space at your fingertips. Making the connection is explained step by step in the section “Connecting the OmniDrive to Macintosh.”

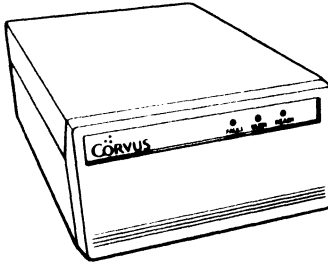
The storage space on the OmniDrive is comparable to a large number of Macintosh disks; a 5 MB OmniDrive holds more information than 12 disks, while a 45 MB OmniDrive holds more information than 112 disks. The OmniDrive is shipped with the storage space divided into areas of fixed size called volumes. Corvus supplies a program, Mount Mgr, the mount manager, to select which volumes Macintosh will use at a given time. Volumes and the mount manager program are explained in the section “Using the OmniDrive with Macintosh.”

This guide assumes you are familiar with the information in *Macintosh*, the Apple manual explaining how to use Macintosh.

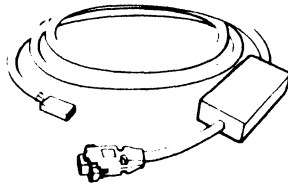
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HARDWARE REQUIRED

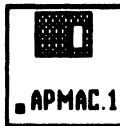
The following items are required to use the OmniDrive with Macintosh:



OmniDrive



Interface Cable



Corvus Boot Disk

CONNECTING THE OMNIDRIVE TO MACINTOSH

This section gives step-by-step instructions for connecting the OmniDrive mass storage system to Macintosh. Follow the steps below before using the Corvus boot disk to start Macintosh. Before beginning, note these points when using the OmniDrive:

- Handle the OmniDrive with care.
- Operate the OmniDrive on a flat surface.
- Operate the OmniDrive on its base.
- Allow for proper ventilation around the OmniDrive.
- Make sure the air vent on the back panel is never blocked.

To set up the OmniDrive and connect it to Macintosh, follow the steps below:

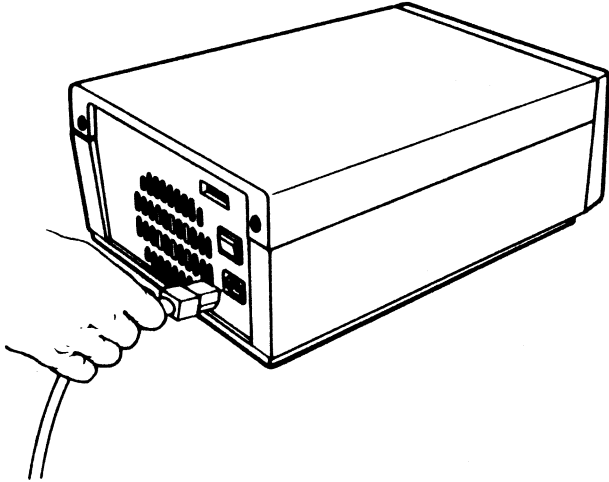
1. Unpack the OmniDrive.

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

2. Put the OmniDrive on a flat surface.

A 15-foot (4.5 m) interface cable is supplied to connect the OmniDrive to Macintosh. Place the OmniDrive in an appropriate location within that distance of Macintosh.

- 3. Plug the power cord into the OmniDrive.**

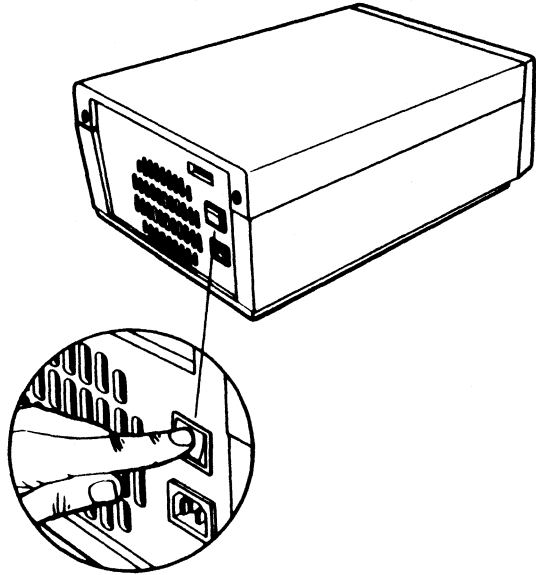


Plugging the power cord into the OmniDrive

- 4. Plug the power cord into a power outlet.**

5. Turn on the OmniDrive.

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



Turning on the OmniDrive

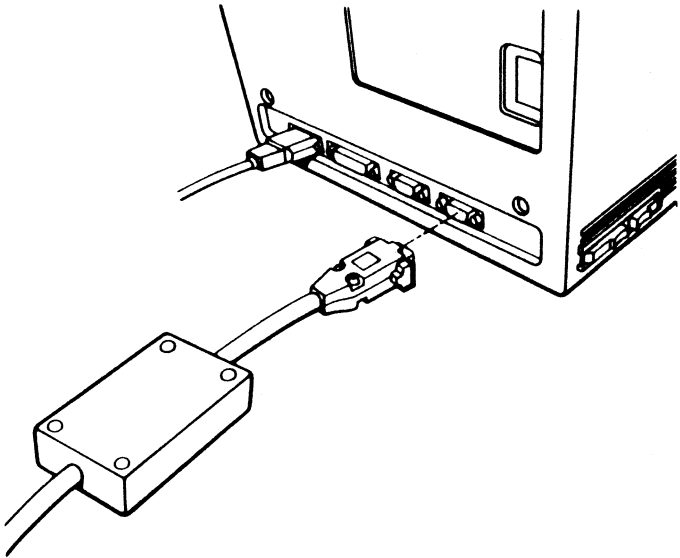
When the drive is turned on, the three lights on the front panel light up. After about twenty seconds, only the READY light will stay lit. This means that the drive is ready for use. Go to the next step.

If, after one minute, the READY light is not on all by itself, reset the OmniDrive by turning it off, then back on. If the READY light still does not come on all by itself, call Corvus Customer Service for assistance.

6. Turn off the OmniDrive.

7. Attach the interface cable to Macintosh.

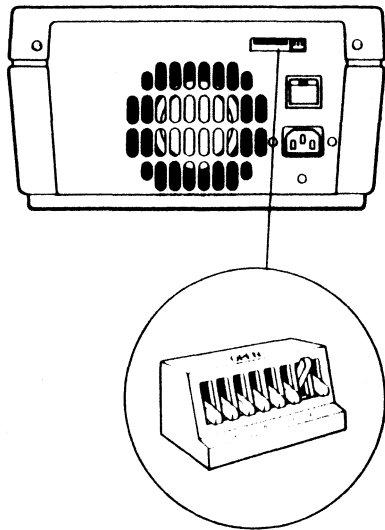
Connect the 8-pin connector end of the interface cable to the modem connector on the back of Macintosh. The modem connector is identified by the symbol of a telephone above it. Be sure to tighten the screws that hold the connector to the computer.



Attaching the interface cable to Macintosh

8. Check the switch settings.

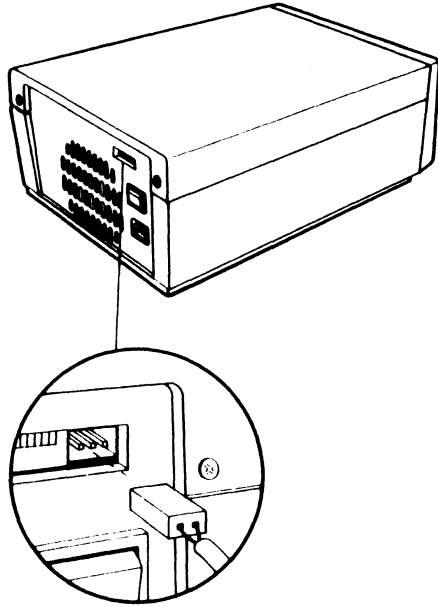
Locate the switches marked "ADDRESS" on the back of the OmniDrive. The switches are numbered 1 through 8. Make sure switch 7 is up and all other switches are down, indicating the OmniDrive is ready for use with Macintosh. If switch 7 is down, use a suitable tool to flip it up.



Correct switch setting

9. Attach the interface cable to the OmniDrive.

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



Attaching the interface cable to the OmniDrive

10. Turn on the OmniDrive.

After about twenty seconds, only the READY light will remain lit. The OmniDrive is ready for use. Go to the next section to learn how to use the mass storage now available.

USING THE OMNIDRIVE WITH MACINTOSH

The OmniDrive mass storage system now connected to Macintosh contains from 4 to 17 different volumes. The OmniDrive is shipped with a pre-determined number of volumes already on it. The number of volumes available depends upon the model chosen. The chart on the next page shows how many volumes each version of the OmniDrive contains, as well as the name, block size, and allocation size of each volume.

Volumes are similar to the disks Macintosh usually uses, but they hold much more information; the smallest volume on the smallest OmniDrive holds more than twice as much information as one regular disk. Macintosh treats the volumes the same way it treats disks, with a few exceptions. The exceptions will be explained a little later. First, turn on Macintosh and begin exploring the mass storage Macintosh now has available.

Insert the Corvus boot disk, labeled "APMAC.1," into the disk drive and switch Macintosh on. After a few seconds, the screen displays the icons ApMac.1 and Mac.01. Mac.01 is the first volume on the OmniDrive. Icons for the boot disk and the first volume on the drive always appear on the desktop when using the OmniDrive. Before opening Mac.01, check the contents of ApMac.1.

Display the directory of ApMac.1. It should have four icons: the System folder, an Empty folder, the Mount Mgr application and the lnkchk application. Mount Mgr and lnkchk are Corvus programs for using the OmniDrive. Mount Mgr is the mount manager program, which is the key to using the volumes on the

OmniDrive. Linkchk is the link check program, a diagnostic tool explained at the end of this chapter.

OmniDrive Model and Capacity	Number of Volumes	Volume Names	Volume Sizes in .5K blocks	Allocation Sizes in Bytes
5MB	4	Mac.01	2500 blocks	4K
		Mac.02	2500 blocks	4K
		Mac.03	2500 blocks	4K
		Mac.04	2500 blocks	4K
11MB	8	Mac.01	2500 blocks	4K
		Mac.02	2500 blocks	4K
		Mac.03	2500 blocks	4K
		Mac.04	2500 blocks	4K
		Mac.05	2500 blocks	4K
		Mac.06	2500 blocks	4K
		Mac.07	2500 blocks	4K
		Mac.08	2500 blocks	4K
16MB	10	Mac.01	2500 blocks	4K
		Mac.02	2500 blocks	4K
		Mac.03	2500 blocks	4K
		Mac.04	2500 blocks	4K
		Mac.05	2500 blocks	4K
		Mac.06	2500 blocks	4K
		Mac.07	2500 blocks	4K
		Mac.08	2500 blocks	4K
		Mac.09	6000 blocks	10K
		Mac.10	6000 blocks	10K
45MB	17	Mac.01	5000 blocks	8K
		Mac.02	5000 blocks	8K
		Mac.03	5000 blocks	8K
		Mac.04	5000 blocks	8K
		Mac.05	2500 blocks	4K
		Mac.06	2500 blocks	4K
		Mac.07	2500 blocks	4K
		Mac.08	6000 blocks	10K
		Mac.09	6000 blocks	10K
		Mac.10	6000 blocks	10K
		Mac.11	6000 blocks	10K
		Mac.12	6000 blocks	10K
		Mac.13	6000 blocks	10K
		Mac.14	6000 blocks	10K
		Mac.15	6000 blocks	10K
		Mac.16	6000 blocks	10K
		Mac.17	6000 blocks	10K

All volumes on the four different model drives have 10 directory blocks.

Corvus uses the term mount to mean that the volume's icon is visible on the desktop, allowing the computer to read data from and write data to the volume. Only mounted volumes can be read from and written to, just as only floppy disks in the disk drive can be read from and written to. Mounting is necessary because all the volumes cannot be available at the same time. Macintosh has only enough memory to have two volume icons on the desktop at any given time. The mount manager shifts the volumes around, placing one on the desktop while putting another away.

While these two icons are mounted, copy the mount manager program and the system folder from ApMac.1 to Mac.01. Do not copy the files by moving one icon to the other. Open the ApMac.1 window and select the Mount Mgr and System Folder, then copy them to Mac.01. Because the volume or floppy from which the mount manager is run cannot be unmounted, having the mount manager in Mac.01 makes it possible to unmount ApMac.1, clearing room for another volume or disk. Be sure to use the System Folder supplied by Corvus, because the Corvus programs need that particular version to run properly.

Now might also be a good time to rename Mac.01. Corvus creates Macintosh volumes with the generic names listed in the chart above, but you are encouraged to rename the volumes to reflect their contents. Rename Mac.01 to MacSys, because this volume will be used as a system volume. A system volume contains applications and utilities, and it should be considered the same as a startup disk. To rename a volume, simply select it, then **type** the new name and **press** **RETURN** .

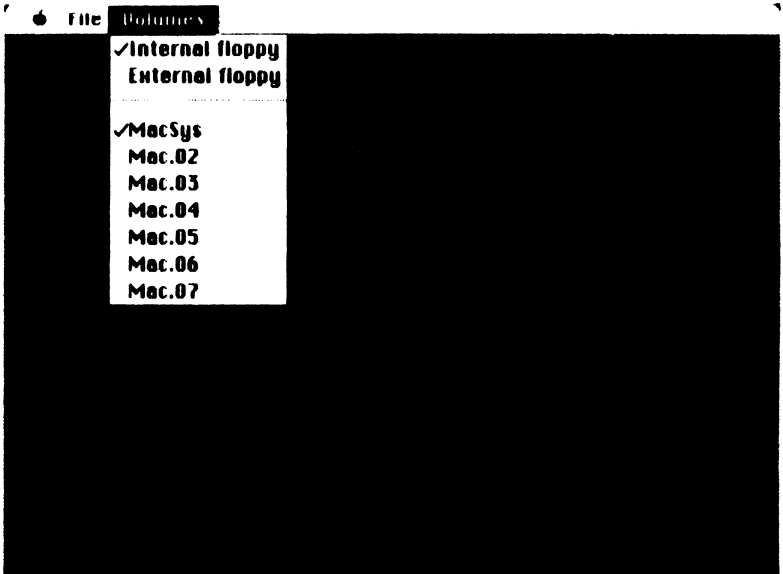
Having a system volume with all application software in it saves disk space, since only one copy of the program is on the drive. As long as the system volume is mounted, selecting and opening one of the documents will also open the application. Corvus recommends copying any application programs you have into MacSys before creating any documents.

Considering MacSys a system volume calls for some guidelines for using it. Corvus recommends that MacSys always be mounted, and that applications always be run from it. The rest of the volumes should be used to hold documents. This recommendation stems from the fact that the volume holding the mount manager cannot be unmounted. If you store applications and documents in a number of different volumes, and need to mount and unmount those volumes, the mount manager program must be in several of the volumes to avoid the constraint described above. To successfully mount and unmount volumes, you would have to open and close the program in a number of volumes to avoid the unmounting constraint. The next section describes how to use the mount manager.

THE MOUNT MANAGER

The desktop should have MacSys and another icon displayed. Open the MacSys window, then select and open the mount manager. The screen displays a menu bar with the Apple logo and the menus File and Volumes. Move the pointer to File and **press** and hold the mouse button. The screen displays the only option, Quit. To exit the mount manager, move the pointer down to Quit and release the button. For now, do not exit the program, but move the pointer to Volumes and **press** and hold the mouse button.

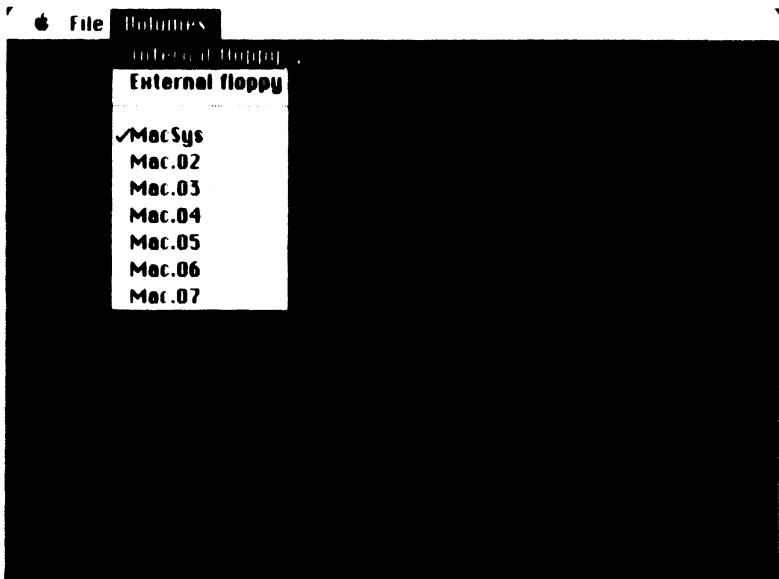
The screen display is similar to:



The check marks next to Internal floppy and MacSys indicate that they are the two mounted volumes. Note that for reliability reasons, only two volumes can be mounted at any given time. Attempting to mount more than two volumes causes a warning message not to have more than two volumes mounted. However, it is your responsibility to heed the warning; the program will allow more than two mounted volumes. The ability to mount more than two has been provided because a Macintosh with more than 128K of memory can mount more than two.

To practice using the mount manager, first unmount the internal floppy. Note that an unmounted floppy can be mounted again, but not with the mount manager. To reactivate the floppy, replace the floppy in the disk drive and exit the mount manager.

Press the mouse button with the pointer on Volumes, then move the pointer to Internal floppy. Do not release the button yet. The screen display is similar to:



Now release the mouse button. The floppy is ejected from the drive and the menu bar reappears. If you pull down the Volumes menu again, you will see that Internal floppy no longer has a check mark by it. This means that it is unmounted. Now that only one volume is mounted, mount one of the other volumes from the list.

With the list pulled down, move the pointer to one of the volumes on the list and release the button. The screen displays the menu bar. Pull down the list to check that the selected volume has a check mark by it. As you have probably noticed, the check mark is like a toggle switch; mounting and unmounting volumes is just like flipping the switch.

Macintosh treats Corvus volumes in much the same way as floppy disks. You will find that most of the Finder™ commands function identically with the two types of storage media. However, several limitations do exist. These are noted below.

Copying — Copying files to or from Corvus volumes by dragging desktop icons damages the volume structure. Attempting to copy this way causes a warning about completely replacing the contents of one with the other. Cancel the command and copy files to and from volumes by opening the window and selecting the desired files, then dragging them all to the desktop icon.

Do not copy files by dragging one desktop icon to the other.

Erase Disk — Erase Disk not only erases the files in a volume, but also damages the volume structure itself.

The Finder™ is a trademark of Apple Computer, Inc.

Do not use Erase Disk on any Corvus volumes.

- Eject** —Eject can be used with volumes, but be warned that ejecting the startup disk or volume without a copy of the mount manager available in another volume will require restarting Macintosh with the Corvus boot disk. Restarting with the boot disk clears any information from applications that has not been saved. Corvus recommends not using Eject for volumes, but using the mount manager instead.
- Clipboard** —The clipboard and scrapbook files are maintained in the system disk or volume. A Scrapbook volume containing the system folder becomes the system volume when an application is run from it. If applications are run from different volumes, items in the clipboard or scrapbook may be lost. To avoid any inconvenience, run all applications from MacSys.

Note that the warning message about having more than two volumes mounted is part of the Corvus software, not the Macintosh software. Therefore, be aware of the Corvus volumes mounted and do not insert a floppy disk when it would exceed the limit. Inserting a floppy disk mounts it without any warning message. Always be sure that no more than two volumes are mounted at a time.

LINK CHECK

Link check is a diagnostic program that should only be used with the help of a Corvus customer service representative. Link check writes patterns to an unused area on the disk then reads them to make sure communication takes place between Macintosh and the OmniDrive. Although no damage will occur if the program is run, there is no reason to do so without the advice of a customer service representative.

REFERENCE INFORMATION

This section contains relevant information on a number of topics concerning the use of an OmniDrive with the Macintosh. Please check each item in this section to see that nothing interferes with your use of the OmniDrive with Macintosh.

- **Switching from the OmniDrive to a modem**

The OmniDrive can be disconnected and a modem connected without turning off the OmniDrive. Simply make sure all open windows have been closed and eject any disks from the disk drives. Disconnect the OmniDrive interface cable and connect the modem as instructed. Because the OmniDrive and the modem cannot be used simultaneously, MacTerminal or other communication programs must be run from floppy disks.

To reconnect the OmniDrive, plug in the interface cable and restart Macintosh with the Corvus boot disk. The volumes on the OmniDrive are ready to use again.

- **Using MacPaint™ with the OmniDrive**

MacPaint version 1.3 or greater is required for compatibility with the OmniDrive. Earlier versions of MacPaint do not work properly when run from the OmniDrive. Check the version number by selecting the Apple logo from the menu bar after entering MacPaint, then choosing About MacPaint, which includes the version number.

MacPaint™ is a trademark of Apple Computer, Inc.

- **Using Microsoft® Multiplan® with the OmniDrive**

Because of the copy protection scheme on the floppy disk, Multiplan should be run from the floppy and only data files should be stored on the OmniDrive. One volume should be used to store all Multiplan data files, since the floppy is considered one of the two volumes that can be mounted at one time. It is also a good idea to keep the mount manager and the system folder supplied by Corvus in the volume with the data files to be able to change applications and volumes without switching floppies.

- **Running the Mount Manager from Floppy Drives**

Running the mount manager from the external floppy drive can cause errors. Although the mount manager should be run from MacSys, it can be run from a disk that is inserted in a floppy drive. If intending to run the mount manager from a disk, make sure not to insert it in the external floppy drive.

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