DiskExpress™ II

NOW FEATURING NEW
OPTIMATIC™ TECHNOLOGY

ELIMINATE
HOLES
IN YOUR
HARD DISK
FOREVER

MACINTOSH® SYSTEM SOFTWARE

ALSoft™
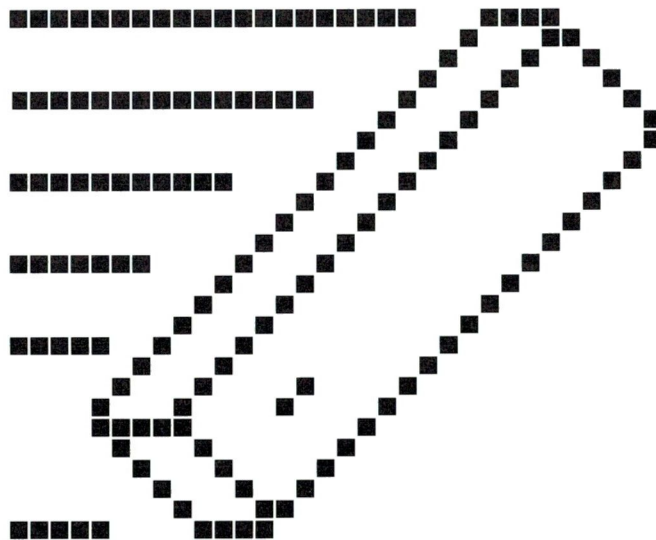
DiskExpress™ II

from...   **ALSoft, Inc.**

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DiskExpress II Credits:

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INTRODUCTION:

WHAT IS DISKEXPRESS II?

DiskExpress II is ALSoft's revolutionary disk optimization System software developed exclusively for the Macintosh.

WHY IS DISKEXPRESS II REVOLUTIONARY?

DiskExpress II is true disk optimization System software...not just a simple file copy program. DiskExpress II System software goes way beyond conventional disk optimization software with ALSoft's leading edge Disk Optimatic technology. Whatever optimization software you currently own, DiskExpress II with Disk Optimatic technology offers the very newest, safest and fastest way to optimize your hard disk. It will enable your hard disk to run faster than ever. It will speed up your file access times. Plus, it will likely improve your computer's overall daily productivity significantly. That's pretty revolutionary stuff even for a full-featured disk optimization program.

WHAT IS DISK OPTIMATIC?

Disk Optimatic technology is an exclusive development of ALSoft, one of the leading developers of utility software for the Macintosh. DiskExpress II features Disk Optimatic™ technology which is specially designed to **automatically optimize your hard drive's performance forever.** With Disk Optimatic, DiskExpress II is fully automatic, running transparently in the background mode. That means DiskExpress II will work around your busy schedule. That also means DiskExpress II will never tie you up or tie up your computer to optimize. Don't expect that kind of awesome power and intelligent performance from any ordinary disk optimizer. It's only available with the revolutionary DiskExpress II.

WHY OPTIMIZE WITH DISKEXPRESS II?

Remember when your hard disk was brand new? A new hard disk right out of the box is completely optimized and free of fragmentation. But each time you use your Macintosh, the computer's filing system creates something called fragmentation. The more files you add and the more you use your computer, the more fragmented it gets. Like its name, fragmentation "fragments" or pushes parts of files all over your hard disk. Some files wind up over here. Some fall into holes over there. Just like random holes in Swiss cheese. Soon, there are more holes than cheese. But, even if you could magically carve away all those pesky fragmentation holes with one fell swoop, your files could still be located great distances apart from each other on the hard disk. And since

the distances between file locations determine the amount of time your hard disk heads require to seek and access files, it's clear that file placement can be critically important to the speed of your hard disk as well as to the performance of your Macintosh. In today's complicated business world filled with pressing deadlines and increasing workloads, there's only one simple solution to the problem of file fragmentation. And it is a solution that cuts right to the source of the problem. Today, your hard disk needs the most powerful optimization and defragmentation tool money can buy, and it's right here in your new DiskExpress II with Disk Optimatic.

WHAT DISKEXPRESS II CAN DO FOR FOR YOUR HARD DISK

OPTIMIZE DISK PERFORMANCE AUTOMATICALLY

Because of its revolutionary Disk Optimatic feature, DiskExpress II is fully automatic, enabling it to run transparently in the background mode. This unique feature enables DiskExpress II to automatically start defragmentation and optimization of a disk volume every day. And because DiskExpress II is fully automatic, you never have to think about optimization or worry about file fragmentation again. DiskExpress II has the intelligence to work automatically and intuitively around the tightest work schedules. DiskExpress II is also smart enough to optimize the way you use your Macintosh in your particular office environment. DiskExpress II does even more for you, too.

NOW YOU CAN OPTIMIZE SAFELY

There was a time when optimization involved taking a big risk...like playing Russian roulette with your spinning hard disk. If a catastrophe (like a power surge) occurred while using a conventional disk optimizer, you could wind up the big loser, permanently losing hundreds or even thousands of your most important files. With DiskExpress II, there's no more playing around. DiskExpress II not only takes your important files seriously, DiskExpress II makes optimization safe and easy again. One big reason is that DiskExpress II uses the very safest optimization technology currently available. With innovative Disk Optimatic technology, DiskExpress II automatically optimizes your files, one file at a time. It's a more cautious and sane approach to disk optimization. As a result, DiskExpress II can be interrupted at any time without risk of scrambling any information on your hard drive. No conventional optimization program is safer to use. But that's just part of the advantages of using DiskExpress II.

GET ORGANIZED FAST AND STAY ORGANIZED FOREVER

DiskExpress II offers everything you need to get organized, up to speed again and to stay that way forever. DiskExpress II uses state-of-the-art Disk

Optimatic technology to automatically defragment and consolidate your files, regardless of their size. That includes giant graphics and database files which are commonplace, especially if you're a power user. DiskExpress II will constantly log all file activity to determine the optimum priority for file placement on your particular hard disk. In addition, DiskExpress II will automatically use this priority to group your frequently used files together for maximum disk performance, speeding file access times and improving your productivity. DiskExpress II is always there for you, ready and waiting to automatically optimize your hard disk's performance. In fact, DiskExpress II can optimize even if there's virtually no free space left on your hard disk. When you optimize automatically with DiskExpress II, it's all done with lightning fast speed and efficiency, too.

WORK WITH TRUE OPTIMIZATION SOFTWARE

Defragmented free space is required for such limited disk partitioning software as SUM, Hard Disk Partition™ and MacServe™. DiskExpress II obliges with true optimizing software for the Macintosh, not just a simple file copy program.

SEE GRAPHIC PROOF RIGHT BEFORE YOUR VERY EYES

A simple push of a button called Volume Info will graphically display any free space fragmentation and indicate the exact amount of fragmented free space as well as the size of the largest section of free space on your hard drive. This window will also display important information relating to the hard disk. As a result, you never have to wonder if optimization is really working. DiskExpress II always gives you graphic proof you can see both on your monitor and in improved disk performance.

IMPROVE THE SPEED OF YOUR NETWORK FILE SERVER

Unlike many conventional optimization utilities on the market, DiskExpress II maintains all AppleShare™ access privileges and is compatible with TOPS®, enabling it to significantly improve the speed of network file servers. Network licenses are also available for your convenience.

NOTE ABOUT MEMORY: If you plan to install DiskExpress II on your AppleShare file server, the Macintosh must have at least 2 megabytes of memory.

EASY COMPATIBILITY

DiskExpress II is compatible with System Software Version 6.0 or greater. DiskExpress II supports any HFS disk connected to the Macintosh Plus, SE, SE/30, II, IIx, IIcx, IIci and Portable. DiskExpress II also maintains all file directory

information making it compatible with all hard disk backup programs. What's more, DiskExpress II is completely compatible with MultiFinder.

NOTES ABOUT COMPATIBILITY: The "Read Before Using DiskExpress II!" document contains important information about compatibility issues concerning DiskExpress II. To review this document, simply double-click the "Read Before Using DiskExpress II!" icon.

Be sure to read this section if you have any question about compatibility with DiskExpress II.

WARNING ABOUT TURBOCHARGER: If you own Turbocharger, be sure to deinstall it. Do <u>not</u> run DiskExpress II if Turbocharger is running.

Now that you know some of the benefits of optimizing with DiskExpress II, it's time to learn how.

GETTING HELP

DiskExpress II has been designed by ALSoft to be easy to work with by **all** Macintosh users. That's exactly why we put together this step-by-step manual just for you. Virtually all questions asked by DiskExpress II users can be answered by simply **READING THIS MANUAL**. We believe this manual is complete. But, if the answer to your question is not in this manual, please call ALSoft's Customer Support at (713) 353-1510. Our Customer Support Specialist will be ready to help you. When you call, please be sure to have the serial number of your copy of DiskExpress II ready to give the ALSoft Customer Support Specialist. Please note that support may be limited if you have not registered your purchase of DiskExpress II before calling.

A QUICK LOOK AHEAD

This manual will lead you step-by-step through every important aspect of optimizing your hard disk with DiskExpress II. You may be eager go jump ahead and skip a step or two, but remember that each step is important to installing and using DiskExpress II properly. Here's what you'll be doing:

Chapter 1: GETTING STARTED

Chapter 2: BASIC OPTIMIZING TERMS AND CONCEPTS YOU NEED TO KNOW

Chapter 3: INSTALLING DISKEXPRESS II

Chapter 4: PERFORMING VOLUME OPERATIONS

1 | GETTING STARTED

Getting Started starts you off on the right track. You'll learn how to make a backup copy of DiskExpress II and how to register your new purchase.

First Make A Backup

DiskExpress II is <u>not</u> copy protected, so the Finder can be used to create a backup of the DiskExpress II master disk.

DiskExpress II Copy

1) Set the write protect tab on the DiskExpress II master disk to the write protect position (hole open).

2) From the Finder, erase a double-sided disk and name it "DiskExpress II Copy".

3) Make a complete copy of the DiskExpress II master disk by dragging the icon of the master disk onto the icon of the blank "DiskExpress II Copy" disk. Let the Finder replace the entire contents of the empty disk.

Be Sure To Register Your Purchase

DiskExpress™ II

1) In the Finder, click once with the mouse pointer (arrow) on the DiskExpress™ II <u>control</u> <u>panel</u> <u>document</u> <u>icon</u> (shown to the left) to select it. Do not click the DiskExpress II <u>disk</u> icon.

2) Choose the Get Info command from the File menu. The application name, release number, and serial number are in the comment section of the Info window (shown in Figure 1-1).

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Figure 1-1
The Info window contains your serial number

3) Completely fill out and sign the enclosed product registration card and mail it to ALSoft. **Be sure to include the serial number**.

NOTE ABOUT THE SERIAL NUMBER: This serial number is required for proper registration of your purchase so that you may receive technical support, updates and future product special offers.

2 | BASIC OPTIMIZATION TERMS AND CONCEPTS YOU NEED TO KNOW

This chapter provides helpful background information on each facet of DiskExpress II. The terms and concepts will be important in later chapters on using DiskExpress II. Detailed information about using DiskExpress II can be found in Chapter 6, **USING DISKEXPRESS II**.

Disks

Disks are the magnetic media on which information is stored. There are both floppy disks, such as the 3.5-inch disk which DiskExpress II comes on, and hard disks, like the Apple Hard Disk 20SC. A disk must be **initialized** before it can be used.

Volume

An initialized disk is called a **volume**. Because a disk normally contains only one volume, the terms disk and volume are frequently used interchangeably.

Partitions

Many hard disks come with management utilities which allow you to divide a volume into additional volumes called **partitions**. There is also independent system software, such as MultiPartition™ (included with DiskExpress II), MultiDisk™ from ALSoft, SUM, Hard Disk Partition™ and MacServe™ which allow you to partition a hard disk.

Startup Volume

The **startup volume** is the volume which contains a group of special files stored in the System Folder. Your Macintosh simply cannot operate without the information in these files. The startup volume appears at the top-right corner of the desktop.

Eligible Volume

To be **eligible** for <u>automatic</u> <u>optimization</u> by DiskExpress II, a volume must have been created as an HFS volume. In addition, an eligible volume must be located on a hard disk drive (not a diskette) that is locally attached to the Macintosh, it must not be write protected and it must have some free space available on it.

> **NOTE ABOUT NETWORKS:** DiskExpress II will <u>not</u> work with any volume that you must access <u>via</u> a network because it is on a file server. These volumes are only eligible to another copy of DiskExpress II installed on the file server.

Block

A **block** is one of an integral number of areas that composes a volume. Each block holds as little as 1/2K of data. A double-sided floppy disk has 800 blocks while a 20 megabyte hard disk can have over 40,000 blocks. The Macintosh stores files by breaking them into block-size pieces and writing them into unused blocks <u>wherever</u> they are available.

Directory

Blocks set aside by the Macintosh to store the number, names, locations (which blocks), and sizes of files for each volume comprise the **directory**.

File

A **file** is a collection of information stored in a volume. Files can be system files, application files or document files.

Free Space

The **free space** encompasses all the unused blocks on a volume. As free space, these blocks are available to be allocated to files or to the directory. Once a file is deleted, the blocks previously occupied by the file will be returned to the free space.

Fragmented File

A **fragmented file** is a file that is stored in noncontiguous blocks (not located next to each other). Over time, virtually every file can become fragmented, including the volume directory. To read an entire fragmented file, your hard drive must move its head from one part of a volume to another. The more fragmented files become, the longer it takes to retrieve information from them.

Fragmented Volume

A **fragmented volume** is a volume that contains fragmented files or fragmented free space. Free space is considered fragmented if the unused blocks are noncontiguous.

Application Program

An **application program** is the tool your computer uses to manipulate information and perform a useful function for you. Applications include such things as MacWrite and Font/DA Mover.

Document

A **document** is what you create with an application. Documents include the information you enter, modify, view or save to the your disk.

File Server

A **file server** is an application program designed to allow many Macintosh users to share common files via a network. Examples of AppleTalk network file server applications are AppleShare and TOPS.

3 | INSTALLING DISKEXPRESS II

This chapter will describe how to install and deinstall DiskExpress II properly.

Requirements

DiskExpress II requires at least a Macintosh Plus and System Software 6.0 or greater. System Software 6.0 or its replacement is available from any authorized Apple dealer.

Copyright Notice

As stated in the copyright notice in this manual, page ii, each Macintosh that will or could run DiskExpress II simultaneously will require a separately purchased copy of DiskExpress II.

Installation

DiskExpress II can be quickly installed by following the 3 easy steps below:

1) While in the Finder, insert the DiskExpress II backup disk made in Chapter 1, **GETTING STARTED**, into your Macintosh.

DiskExpress™ II

2) Drag the DiskExpress II control panel document icon to the System Folder of your startup hard disk, to have the Finder make a copy of it.

NOTE ABOUT THE SYSTEM FOLDER: Finder 6.0 or greater will display the System Folder with the icon shown on the left of Figure 3-1. Earlier versions of the Finder display the System Folder with the normal folder icon as shown on the right of Figure 3-1.

Figure 3-1
Icons representing System Folders. Newer folders (6.0 or greater) display the icon on the left.

NOTE ABOUT THE CONTROL PANEL: The DiskExpress II control panel document has two functional parts. One part is the operational part. The "operational" portion of DiskExpress II that performs all activities with hard disks, is normally loaded into memory at startup time. The other functional part of DiskExpress II is the user control part. The "user control" portion of DiskExpress II is loaded into memory when its icon is selected in the Control Panel.

3) Choose Restart from the Special menu.

Your installation is now complete.

Look for one of the DiskExpress II icons in Figure 3-2 to be displayed momentarily in the lower portion of the Macintosh screen.

 Loaded Not loaded Error

Figure 3-2
DiskExpress II icons displayed at startup

If The Loaded Icon Appears

As your Macintosh restarts, DiskExpress II should display the Loaded icon, shown to the left. If so, the installation is successful. You can then proceed to the next chapter knowing that DiskExpress II will now (by default) perform the following operations on all eligible volumes.

After Installation:

1) Automatic Monitoring and Recording Of File Usage

DiskExpress II will automatically monitor and record all file usage in a log file on each eligible volume.

2) Daily Analysis

DiskExpress II will analyze each volume's log file daily.

3) Automatic Defragmentation and Optimization

Using the results of this daily analysis DiskExpress II will then defragment and optimize each volume.

Loading Problems. What Went Wrong?

If the Not Loaded icon is displayed, try the following:

1) Repeat step 3 of the Installation section. Make sure not to press the **shift**, **command** or **option** keys while the Macintosh is starting.

2) Make sure that you have not locked the DiskExpress II control panel document that is in your System Folder.

3) After the Macintosh finishes starting, open the DiskExpress II control panel. An error message may be displayed which states the reason for not loading. Refer to Chapter 7, **TROUBLE-SHOOTING USING ERROR MESSAGES**.

If the Error icon is displayed, then verify that the System file on the startup disk is version 6.0 or greater. Repeat steps 1 through 3 of the Installation section.

If none of the icons are displayed at startup, then the installation was not successful and you must repeat steps 1 through 3 of the Installation section. Either the DiskExpress II™ icon was <u>not</u> dragged into the active System Folder or the DiskExpress II <u>diskette</u> icon was dragged into the System Folder. The latter action creates a folder within the System Folder which prevents DiskExpress II from starting. The System Folder is the folder that contains the System file and the Finder file. If you have more than one folder containing a System file and Finder file, then use one of these other folders when repeating steps 1 and 2 of this section. Apple strongly cautions against having more than one folder that contains a System file and Finder file.

Deinstalling DiskExpress II

If you ever have a need to deinstall DiskExpress II, follow these 2 easy steps:

1) Drag the DiskExpress II control panel document icon out of the System Folder of your startup hard disk and, if desired, drag it to the Trash.

2) Choose Restart from the Special menu.

Your deinstallation is now complete.

How To Get Even More Out Of DiskExpress II

At this point you could simply let DiskExpress II automatically take excellent care of your disks. But we highly recommend that you learn how to work with all the powerful yet easy-to-use features of DiskExpress II and MultiPartition. To learn how to use these advanced features, just continue reading.

Additional options for DiskExpress II are available in the Control Panel, including a special AppleShare file server option (explained in Chapter 5, **CONTROLLING DISKEXPRESS II**.)

4 | PERFORMING VOLUME OPERATIONS

This chapter describes the volume operations that DiskExpress II can perform on volumes. The primary function of DiskExpress II is to **defragment** and **optimize (prioritize) all files on each volume.**

An Extra Bonus: As an added bonus, DiskExpress II can also **display the relative location of fragmentation and free space, show important information about volumes, and examine entire volumes for media damage.**

Automatic Volume Optimization

DiskExpress II will automatically analyze all files on an eligible volume and rearrange them based on their fragmentation and optimization priority. When finished, all files, the directory and free space will be arranged in contiguous order on the volume. The physical order of files on the volume is determined by their priority.

DiskExpress II has two operating modes for working with a volume:

1) **Optimatic (default)** - In the Optimatic mode, DiskExpress II conducts daily defragmentation and optimization of an eligible volume including files, the directory and free space. Priorities are based on the last five days of activity.

2) **Optimize (selected volume now)** - In this mode, DiskExpress II performs immediate defragmentation and optimization of a volume including files, the directory and free space. Diskettes can be optimized in this mode. Here, priorities are also based on the last five days of activity. If five days of activity is not recorded, such as when DiskExpress II is first installed or when working with a diskette, files are prioritized according to a fixed default priority setting.

   NOTE ABOUT NETWORKS AND BACKUP APPLICATIONS: Both methods of defragmentation and optimization are 100% compatible with files servers, such as AppleShare and TOPS, as well as with all backup applications.

Determining File Prioritization

The priority for physical placement of files on every volume is determined by an analysis of its log file which is maintained by DiskExpress II. All files are first classified as either "anchored" or "movable".

Two Basic Classifications of Files:

1) **Anchored Files.** Anchored files are files such as a copy protection file, an open virtual memory file, and most partitions. They must remain where they are physically located (anchored) on the disk and will be skipped over by DiskExpress II.

   NOTE ABOUT PARTITIONS: DiskExpress II can only move MultiPartition and MultiDisk partition files. DiskExpress II assures that their invisible partition files are saved in contiguous space and that they are positioned correctly on the disk according to their priority. All other partition files on the root volume are classified as anchored and will be skipped.

2) **Movable Files.** Movable files are files which can be analyzed and given one of the following priorities based on their usage for the previous five days:

   a) **Active** - Active files are files that were used frequently but did <u>not</u> change size. Examples: system files and applications, etc.

   b) **Volatile** - Volatile files are files that <u>did</u> change size. Examples: application documents such as word processing files, spreadsheet files, and database files, etc.

   c) **Sporadic** - Sporadic files are files that were used occasionally but did not change size. Examples of sporadic files are utility programs, word processing and spreadsheet templates, etc.

   d) **Dormant** - Dormant files are files that have not been used.

If No Anchored Files Are On The Volume

If the volume has no anchored files on it, DiskExpress II will arrange your files according to their priority. Files on the volume will be arranged in the following order:
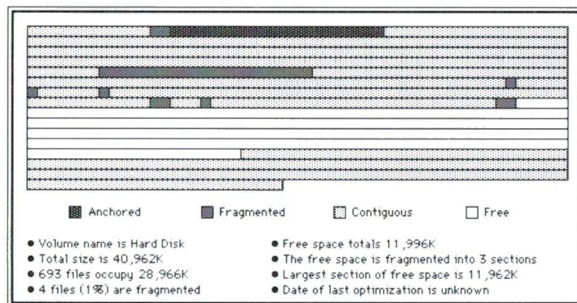
1) Volume Directory
2) Active Files
3) Volatile Files
4) Free Space
5) Sporadic Files
6) Dormant Files

If There Are Anchored Files

If there are anchored files on the volume, DiskExpress II may "surround" the anchored file(s) with the files prioritized to be placed in the physical area of the anchored files. This is done to eliminate any free space fragments, even though the file used for this will be left in two fragments.

The Volume Information Window

The Volume Information window contains a very useful Fragmentation Display which gives you a physical picture of your disk and Volume Statistics, is shown in Figure 4-1.

■ Anchored   ▦ Fragmented   ▨ Contiguous   ☐ Free

● Volume name is Hard Disk   ● Free space totals 11,996K
● Total size is 40,962K   ● The free space is fragmented into 3 sections
● 693 files occupy 28,966K   ● Largest section of free space is 11,962K
● 4 files (1%) are fragmented   ● Date of last optimization is unknown

Figure 4-1
The Volume Information window

The Fragmentation Display

The Fragmentation Display graphically shows the relative location of anchored files, fragmented files, contiguous files, and free space. Every block in the volume is assigned to one of these "display categories" based on its current file status. All blocks in the volume are represented sequentially in the Fragmentation Display from left to right and from top to bottom.

What To Look For
The display categories have a unique screen pattern that is drawn in small squares in the Fragmentation Display. These patterns are shown in Figure 4-1. Each square represents a section of 50 contiguous blocks on the volume. Since one section of blocks can contain multiple categories, a priority for selecting which category to assign for each section has been devised. The priority is as follows: (1) anchored, (2) fragmented, (3) contiguous, and (4) free. So, if a section has 49 blocks of free space and 1 block that is anchored, the section will be displayed as <u>anchored</u>.

Volume Statistics

The results of the Volume Statistics will appear beneath the Fragmentation Display as follows:

1) The name of the volume.
2) The total size of the volume in K.
3) The total number of files on the volume (some of which may be invisible) and the total amount of space, in K, they occupy.
4) The number and percentage of total files on the volume that are not saved in contiguous blocks.
5) The total size, in K, of the unused space on the volume.
6) The number of separate pieces the free space is broken into.
7) The size, in K, of the largest section of free space.
8) The date the volume was last optimized.

Verify Volume

Verify Volume does what it says. It actually verifies the volume's media by performing a sequential "read" of the entire selected volume. This operation does not change <u>any</u> information on the volume. If a portion of the volume is unreadable, an error message will be displayed. Refer to Chapter 7, **TROUBLE-SHOOTING WITH ERROR MESSAGES.** If no errors are found then nothing will be displayed.
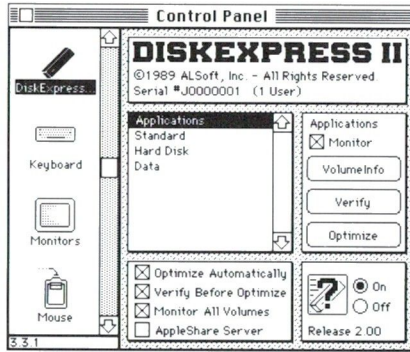
5 CONTROLLING DISKEXPRESS II

This chapter describes, in detail, the DiskExpress II control panel. The DiskExpress II control panel is **the command center for DiskExpress II.** From the control panel, you can manage all of the automatic and manual features of DiskExpress II on a global or per volume basis. All settings made in this window are "remembered" between startups.

Opening the DiskExpress II Control Panel

To open the DiskExpress II control panel follow these 2 simple steps.

1) Choose the Control Panel desk accessory from the Apple menu.

2) Click the DiskExpress II icon to display its control panel. (If necessary, use the scroll bar to bring the DiskExpress II icon into view.)

Figure 5-1
The DiskExpress II Control Panel

The following items appear on the DiskExpress II control panel:

Volume List

The Volume List shows a complete list of all eligible volumes and diskettes currently available to the Macintosh.

Rabbit Icon Preceding A Volume Name
If a volume name is preceded by a rabbit icon then it is currently undergoing automatic optimization.

Selecting Volumes
Volumes in the volume list can be selected by clicking a volume name or using the arrow keys. Clicking a volume name highlights it and a copy of the name is displayed over the Monitor check box (to the right) indicating that DiskExpress II is currently set to work with the volume.

Ineligible Volumes
Volumes that are not eligible to be worked with will not be shown in the list. Some examples of volumes that are not eligible are AppleShare and TOPS volumes which you are accessing via a network.

Monitor (Selected Volume) check box

If this option is checked, DiskExpress II will automatically monitor and record, in a log file, all file activity on the selected eligible volume. If the Monitor All Volumes option is on, you will not be able to turn off this option for any selected volume. A volume which is not monitored cannot be optimized automatically. Also, diskettes cannot be monitored or optimized automatically.

Volume Info button

When this button is clicked, DiskExpress II will display a Volume Information window for the selected volume. The Volume Information window (described in Chapter 4, **PERFORMING VOLUME OPERATIONS**) contains the Fragmentation Display and Volume Statistics. A mouse click or key press will remove the window.

Status button

If the selected volume is undergoing automatic optimization (its name is preceded with a rabbit icon), the Volume Info button changes to a Status button. **When the Status button is clicked**, DiskExpress II will present a dialog that displays a percentage of completion progress scale, a Cancel button and a Done button. The scale indicates the progress of the automatic optimization.

Clicking the Cancel button will temporarily halt the optimization. Optimization will automatically resume later.

Clicking the Done button dismisses the progress dialog.

Verify (Now) button

Clicking this button causes DiskExpress II to verify the selected volume's media by performing a sequential "read" of the entire selected volume. DiskExpress II first presents a dialog that displays a percentage of completion progress scale and a Cancel button. The verify operation will run until it either completes examination of the selected volume or you click the Cancel button.

If a portion of the volume is unreadable, an error message will be displayed. Refer to Chapter 7, **TROUBLE-SHOOTING WITH ERROR MESSAGES**. If no errors are found then nothing will be displayed.

Optimize (Now) button

When this button is clicked, DiskExpress II will defragment and optimize the selected volume. DiskExpress II first presents a dialog that displays a percentage of completion progress scale and a Cancel button.

This operation is <u>not</u> performed in the background as when DiskExpress II optimizes automatically. The Optimize (now) operation will run until it either completes optimization of the selected volume or you click the Cancel button.

Optimize Automatically check box

This option determines whether DiskExpress II will automatically defragment and optimize all monitored volumes on a daily basis. The installation default setting for this check box is checked (on).

Verify Before Optimize check box

If this option is checked, DiskExpress II will automatically verify a volume prior to optimizing it. This is true whether the volume is being optimized automatically or manually with the Optimize button. The installation default setting for this check box is checked (on).

Monitor All Volumes check box

Checking this option causes DiskExpress II to monitor and record, in a log file, all file activity on all eligible volumes. If DiskExpress II encounters an eligible volume for which no logging has occurred, it will automatically create a log file and commence logging. The installation default setting for this check box is checked (on).

AppleShare Server check box

Check this option if this copy of DiskExpress II is installed on an AppleShare file server. DiskExpress II will make special memory and operating considerations for a Macintosh that is a dedicated AppleShare file server. The installation default setting for this check box is unchecked (off).

? (Help) icon

Clicking this icon will display a window containing abbreviated instructions for using the DiskExpress II control panel. A mouse click or key press will remove the window.

On/Off buttons

If DiskExpress II has been successfully loaded, these radio buttons can be used to start or stop its operations. This includes all file activity logging and automatic optimization. The installation default setting is "on".

NOTE ABOUT STARTUP: A temporary "Startup Bypass" can be accomplished by holding down any of the **command**, **option**, or **shift** keys while the Macintosh is starting. DiskExpress II will display the Not Loaded icon and not load into memory the operational portion of DiskExpress II. Under these circumstances, even though you can work with the DiskExpress II

control panel and turn it "on", the Macintosh must be restarted to resume DiskExpress II's logging and optimization operations.

6 | USING DISKEXPRESS II

This chapter Includes step-by-step instructions on use DiskExpress II properly and how to get the very most performance out of it. Simply look for function you wish DiskExpress II to perform.

Stop Loading Into Memory On Startup

Permanently

To permanently stop DiskExpress II from loading into memory on startup, follow the same instructions as are given in the section on Deinstalling DiskExpress II (See Chapter 3, **INSTALLING DISKEXPRESS II**).

Temporarily

To temporarily stop DiskExpress II from loading into memory on startup, a "Startup Bypass" can be accomplished by holding down any of the **command**, **option**, and **shift** keys while the Macintosh is starting. When any of these keys are detected, DiskExpress II will display the Not Loaded icon, shown to the left, and not load into memory the operational portion of DiskExpress II.

Under these circumstances, even though you can work with the DiskExpress II control panel and turn it "on", the Macintosh must be restarted to resume DiskExpress II's logging and optimization operations.

Interrupting During Automatic Optimization

Interrupting DiskExpress II while it is automatically optimizing a volume, can be accomplished by first opening the DiskExpress II control panel. Next, select the volume name which has the rabbit icon next to it and then click the Status button. This displays a percentage of completion progress scale and a Cancel button. Click the Cancel button. Optimization will automatically resume later.

Selecting Specific Volumes

The Volume Name window shows a list of all eligible volumes and diskettes currently available to the Macintosh. You may select a volume to work with by clicking its name in the list.

When selected, the volume name will become **highlighted** and displayed over the Monitor check box, to the right, indicating that DiskExpress II is currently set to work with it. Volumes that are not <u>eligible</u> to be worked with will not be shown in the list.

Stopping The Recording Of File Activity

To stop DiskExpress II from recording file activity on a volume, simply select the volume you want to work with. Then, uncheck the Monitor check box. This action will stop automatic monitoring and recording of all file activity in the log file of the selected volume. This action also prevents the volume from being automatically optimized. If the Monitor All Volumes option is checked, monitoring will automatically resume the next time the volume is opened.

Viewing Fragmentation Display and Volume Statistics

Select the volume you want to work with, then click the Volume Info button. When this button is clicked, DiskExpress II will display the Volume Information window of the selected volume. This action also generates the Volume Statistics which will be shown under the Fragmentation Display.

Verifying A Volume Can Be Read

To verify a volume can be read without problems, select the volume you want to work with, then click the Verify button. When this button is clicked, DiskExpress II will present a dialog window and start sequentially reading and checking for errors, all blocks on that volume. This dialog displays a percentage of completion progress scale and a Cancel button.

To Optimize Now

To optimize a volume now, select the volume you want to work with, then click the Optimize button. When the Optimize button is clicked, DiskExpress II will present a dialog window and start defragmenting and optimizing the selected volume. This dialog displays a percentage of completion progress scale and a Cancel button.

Stop Automatic Optimization On All Volumes

To stop DiskExpress II from automatically optimizing all volumes, simply uncheck the Optimize Automatically check box. This prevents DiskExpress II from automatically defragmenting and optimizing all monitored volumes daily.

Stop Automatic Recording On All Volumes

To stop DiskExpress II from automatically recording file activity on all volumes, simply uncheck the Monitor All Volumes check box. This stops DiskExpress II from automatically monitoring and recording all file activity in a log file on all eligible volumes.

To Install On AppleShare Network File Servers

If you have AppleShare network file servers, note these **special instructions for installing DiskExpress II on an AppleShare network file server.**

Check the AppleShare Server check box and restart the file server Macintosh. This check box causes DiskExpress II to make special memory and operating considerations for the Macintosh that is a dedicated AppleShare file server.

To Stop Everything Temporarily

To temporarily stop all DiskExpress II operations on all volumes, simply click the Off button. All file logging and optimization operations will stop immediately.

To Start Again: To resume full operation at any time, click the On button.

7 TROUBLE-SHOOTING USING ERROR MESSAGES

Error messages are most likely to appear while performing a volume operation. A dialog box is displayed describing the nature of the error and, in some cases, a solution is suggested. The following are error messages that you might encounter.

❏ **LOADING ERROR**

The number of simultaneous users of this copy of DiskExpress II has exceeded your network license.

DiskExpress II detected more copies of itself simultaneously running on the network than it is licensed for. Clicking the Users button of this dialog will display available information about the current users of this copy of DiskExpress II. This information should help you locate the excessive user(s) so DiskExpress II can be removed from their startup disk.

This error condition is visually indicated by displaying the Not loaded icon at startup time and/or by alternately flashing a small DiskExpress II icon over top of the Apple in the menu bar.

You can easily verify that the Not Loaded error is caused by excessive copies of DiskExpress II running simultaneously on the network. Unplug the AppleTalk connector from the back of your Macintosh and then choose restart from the Finder's Special menu. DiskExpress II should now display the Loaded icon on startup. If not, and steps 1 and 2 of the section titled "**Loading Problems. What went Wrong?**" have been done, call the ALSoft support line at (713) 353-1510.

❑ **UNEXPECTED ERRORS**

An unexpected error occurred. If you report this error, mention the number ___.

An unexpected error is an error which occurs that DiskExpress II was not designed to handle. Try to remember every action taken with DiskExpress II prior to this error message being displayed. Call the ALSoft support line at (713) 353-1510 to report the number displayed in the error message.

❑ **MEMORY ERROR**

There is not enough memory to do___. If appropriate, try closing any open desk accessories or turning off any RAM disks or caches.

DiskExpress II needs memory to optimize a volume. The exact amount depends on the size of the volume and the number of files on the volume. Turn off any RAM disks or RAM caches and try again to optimize.

❑ **DIRECTORY DAMAGE ERROR**

The directory of the volume ___ is damaged.

DiskExpress II found an error in the volume's directory during the preoptimize scan of the directory. Try repairing the directory with a utility like Disk First Aid (supplied with your Macintosh). If the directory cannot be repaired see APPENDIX A, **REBUILDING A VOLUME**.

❏   **READ/WRITE ERROR**

DiskExpress II is unable to read/write block number ___ on the volume ___.

The disk media containing the volume is damaged. See APPENDIX A, **REBUILDING A VOLUME**.

APPENDIX A

REBUILDING A VOLUME

If an error is found in a volume then the volume must be rebuilt. The first step in rebuilding a volume is to attempt to back up its files. Do <u>not</u> make a "mirror" or "image" backup of the disk, as this will backup the error along with your files. Perform a "file-by-file" backup. It may take longer, but it's the best way.

If the damaged volume is on a floppy disk then the disk should be erased with the Finder **Erase Disk** command. Next, verify the disk's volume with the DiskExpress II Verify operation. Last, restore any files to the disk.

A hard disk volume that is damaged should be erased with the formatting or initialization application that came with the hard disk. For example, an Apple Hard Disk SC would be initialized with the Apple HD SC Setup utility. Next, verify the hard disk with the DiskExpress II Verify operation. Last, restore any files to the disk.

WHAT ELSE CAN I DO?

FOR EVEN BETTER HARD DISK PERFORMANCE...READ THIS NEXT SECTION.

Disk optimization is one of the best things you can do to improve the performance of your hard disk. Disk partitioning is another. That's exactly why each new package of DiskExpress II also comes with ALSoft's MultiPartition. MultiPartition is based on one of the industry's most full-featured and powerful disk partitioners called MultiDisk. As a result, MultiPartition is functionally very similar to MultiDisk.

The big differences lie in the additional features many advanced partitioning aficionados rave about with MultiDisk. While MultiPartition gives you basic partitioning capabilities, MultiDisk is the fully loaded, high performance model with all the whistles and bells you'll probably want next...like partition resizing, automatic encryption, and password protection. But until you're ready for MultiDisk, MultiPartition will give you just what you need to create new hard disk partitions and achieve greater data security as well as better hard disk performance. Plus, what you've learned with MultiPartition will also apply to MultiDisk later. There's no more starting from scratch if you decide to upgrade to MultiDisk. That includes all your work and all the partitions you've created with MultiPartition.

To begin using MultiPartition and enjoying the advantages of partitioning right away, read the MultiDisk manual enclosed next. You'll see that almost every step applies to both MultiPartition and MultiDisk.

Those few steps which only apply to using MultiDisk will be clearly flagged with the special MultiDisk icon, as shown to the left. Also, the various MultiDisk screen icons shown in the manual will be replaced by MultiPartition's counterparts, as shown next.

MultiPartition icons

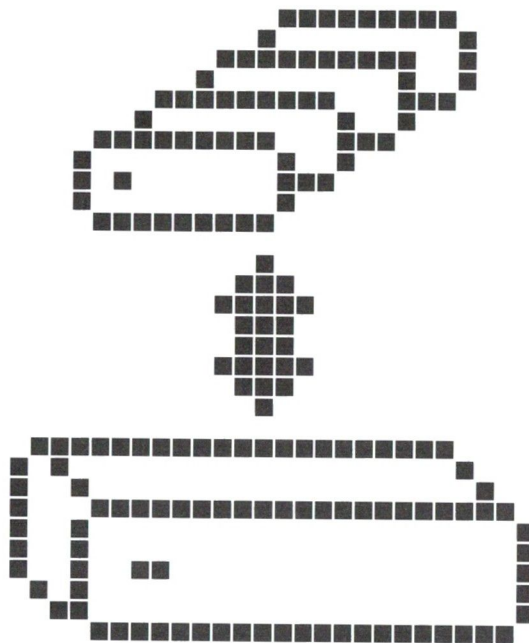Now, it's time to get started with partitions.

MultiDisk™

from...   ALSoft, Inc.

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Limited Warranty

CONTENTS

MultiDisk Credits:

MultiDisk written by	Al Whipple
Set File Count written by	Sean Neely
Manual written by	Larry Davis and Al Whipple
Editing by	Linda Hughes

INTRODUCTION:

WHAT IS MULTIDISK?

MultiDisk is ALSoft's innovative disk partitioning software which will enable you to divide your original hard disk into multiple new disks. Hence the name MultiDisk

MultiDisk is the most flexible, full-featured disk partitioning software currently available for the Macintosh. With MultiDisk, you'll be able to effectively add all the extra disks you need through a unique feature called flexible disk partitioning. You'll also be able to do much, much more. Like grouping your files into distinctly separate partitions containing fewer files, achieving faster file access, greater file protection against directory damage and virus attack as well as improved overall disk performance. With MultiDisk, you can even assign a separate password to each partition, plus you can assign automatic quick-encryption to any partition to achieve an even higher level of security. If you're in a network and use AppleShare™ or TOPS®, you can also remotely access partitions opened on the file server. If you're the network administrator in an environment with lots of classified data that means you can selectively restrict access without locking network users out of the entire hard disk. MultiDisk can partition any HFS disk. What's more, MultiDisk can also easily convert partitions created by less flexible partitioners like SUM, Hard Disk Partition or MacServe. MultiDisk does it all.

WHAT MULTIDISK CAN DO FOR YOU

SPEED DISK PERFORMANCE

When it comes to hard disks, size can determine computer speed and capacities for working with certain types of software. That's especially true for memory intensive files like graphics and database files. Soon, even big disks can get full. As they do, you'll notice more and more sluggish performance demonstrated by increasingly longer delays in the amount of time it takes the Finder to update the desktop. Especially each time you quit an application. If it seems like an eternity and time is important to you, partitioning can help improve performance significantly.

What MultiDisk does is to minimize the number of files you work with at any given time. How does MultiDisk do it? It's entirely logical. With MultiDisk, you place "logical groups" of your files into separate MultiDisk partitions. A logical grouping of files can include groups of just your applications files, your word processing documents, spreadsheets, graphics files, and so on. Partitioning with MultiDisk effectively enables you to isolate your applications files from

1

your information files, minimizing the effects of fragmentation which occurs when your information files constantly change size. As a result, MultiDisk enables you to work with just the files you need in just the partition you need, helping keep RAM requirements down, improving file access times and maximizing your hard disk's performance. But that's just part of the benefits of MultiDisk.

MORE POTENT VIRUS PROTECTION

Computer viruses justifiably instill fear in the hearts of all computer users. Like viruses that can multiply out of control attacking a vulnerable human immune system, computer viruses can incapacitate the unprotected Macintosh. As part of its attack, a computer virus will propagate itself by adding its "code" to your Macintosh System file or to your applications. Until computer viruses are wiped out completely, the only sure way to protect against virus infection is to "lock" your entire hard disk. But, locking an entire hard disk is impractical if not impossible in a real work environment. The safest, most practical alternative is disk partitioning with MultiDisk. Now you can place all your applications within one partition and lock it closed. A virus cannot add its code and therefore write to a locked or write-protected disk. As you add other applications, simply unlock and relock the partition when you're through. Partitioning with MultiDisk is not only safe and effective, partitioning offers many more advantages for you.

ENSURE INFORMATION SAFETY

Like lightning, a computer crash can occur without warning. Most crashes occur when your directory file becomes damaged or corrupted in some way. Some utilities on the market offer limited success in repairing important damaged directory files. Most of the time, however, most of the files are gone forever. That's one reason why ALSoft developed MultiDisk in the first place. MultiDisk enables you to create separate logical partitions...we call it a kind of "divide and conquer approach to the problem of computer crashes."

Each MultiDisk partition will appear in the directory file of your hard disk as one file, regardless of the number of files you actually have saved in it. Each MultiDisk partition also has its own independent directory file which reflects its own contents. As a result, any damage that occurs to the directory file of a partition will have NO EFFECT on the directory files of each of your other MultiDisk partitions. That means even if serious directory damage strikes, you need only recover the files in an individual partition to save hundreds or even thousands of your data files. After all, with partitioning, you now effectively have many separate drives instead of just one. Some might call it safety in numbers. We just call it MultiDisk.

INCREASED FILE SECURITY

You don't have to be in the spy business to want certain important files to be "for your eyes only." Yet in many office situations (especially networks), physical access to computers and vital files by unauthorized personnel remains virtually unrestricted. Stop worrying. Again MultiDisk comes to the rescue.

MultiDisk partitions can be structured to provide access only with the password of your choice. Without that secret password, the entire partition and all the important files in it remain safe. They cannot be accessed or used by anyone. For an even higher level of security, MultiDisk also enables you to quick-encrypt everything within a partition. That feature essentially makes the information appear "scrambled", and it was specifically designed to foil the most persistent individuals who might try to scan your disk for information. No security guard could be more effective. For the sake of convenience, MultiDisk will also automatically quick-decrypt information for all authorized users of your partition. MultiDisk will help keep your data safer than ever.

EASY COMPATIBILITY

MultiDisk is compatible with System Software Version 6.0 or greater. MultiDisk supports any HFS disk attached to a Macintosh Plus, SE, SE/30, II, IIx, IIcx, IIci and Portable. What's more, MultiDisk is completely compatible with MultiFinder.

THE FUNDAMENTALS OF DISK PARTITIONING

The first step in getting started is understanding disk partitioning. This section will give you basic guidelines and helpful suggestions on How To Divide Your Files and What Kinds Of Partitions Do You Need To Create For Them. After you read this section, you'll then be ready for the next step which will include thinking about and making a list which breaks down What Files You Plan To Put In Partitions and What Kinds Of Partitions You Need For Those Files. Taking a little time to learn the fundamentals now will help to expedite the section on Creating Partitions later.

The real beauty of MultiDisk is the flexibility it gives you to create partitions the way you use your Macintosh. While everyone uses their computer a little differently, there are similarities in the general types of files every computer uses.

GROUPING FILES LOGICALLY

Every computer uses system files, application (program) files and information (data, document) files. All these files can be easily broken down into groups

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of (1) files that can't be put into a partition (system files), (2) application files and (3) information files.

Separating the application and information files into more logical groups for placement into partitions is even easier. MultiDisk lets you further subdivide your application files and your information files based on activity. It makes good sense. Frequently used files should be grouped separately from those files you use only occasionally. And if you still have some files that aren't even used occasionally, why keep the extra baggage on your hard disk. Why not store these seldom used files on diskette? Think about it.

SYSTEM FILES

All of your system files should be located in the System Folder of your startup disk. That enables them to be used each time you start or boot up your Macintosh. Examples of these kinds of files that should stay in the System Folder are: Apple's system files, Control Panel devices (CDEVs) , Chooser Devices (RDEVs), startup documents (INITs) and various application "options/ setting" files. These System Folder file cannot be put into a MultiDisk partition. Doing so would make them unavailable to you at startup time. This also means you cannot start your Macintosh from a partition.

APPLICATION FILES

You should create at least one MultiDisk partition for your Applications and any associated files. If you have lots of applications, and they fall into both the frequently used and occasionally used groupings, you may want to cover both contingencies by putting them into 2 separate partitions.

After you create the Applications partition(s), you should then lock the partition(s). Next, remember to set the Frequently Used Applications partition to be automatically available to you at startup.

Most applications will work perfectly after their partition has been locked. But the best way and the sure way is to test them. Start each application. Then try to work with a test document from it. If the application does not run properly from a locked partition, simply place these applications along with any associated files in a folder on your startup disk.

INFORMATION FILES

Next, you should create at least one MultiDisk partition for your information files. Again, if you have lots of information files, they may also fall into both Frequently Used and Occasionally Used groups. If they do, you may also wish to create a partition for each group. There's no practical limit on the number

of partitions you can create on your hard disk. In fact, MultiDisk even lets you create partitions within partitions. Next, set the partition containing your Frequently Used group of information files to be automatically available at startup. If there is any sensitive information which resides in these information files, you may also want to optionally set a Password and/or Quick-Encryption for the partition. With MultiDisk, it's entirely up to you and how you use your computer. As you work with MultiDisk and partitions for a while, the best configuration for your particular work style and business will become evident. Now, it's time to get started.

Now that you know some of the benefits of partitioning with MultiDisk, it's time to learn how.

GETTING HELP

MultiDisk has been designed by ALSoft to be easy to work with by **all** Macintosh users. That's why we put together this step-by-step manual just for you. Virtually all questions asked by MultiDisk users can be answered simply by **READING THIS MANUAL**. We believe this manual is complete. But if the answer to your question is not in this manual, please call the ALSoft Customer Support Number at (713) 353-1510. Our Customer Support Specialist will be ready to help you. When you call, please be sure to have the serial number of your copy of MultiDisk ready to give the ALSoft Customer Support Specialist. Please note that support may be limited if you have not registered your purchase of MultiDisk before calling.

A QUICK LOOK AHEAD

This manual will lead you step-by-step through every important aspect of partitioning with your new MultiDisk. You may be eager to jump ahead and skip a step or two, but remember that each step is important to installing and using MultiDisk properly. Here's what you'll be doing:

Chapter 1: GETTING STARTED

Chapter 2: BASIC PARTITIONING TERMS AND CONCEPTS YOU NEED TO KNOW

Chapter 3: INSTALLING MULTIDISK

Chapter 4: USING MULTIDISK

1 | GETTING STARTED

Getting Started starts you off on the right track. You'll learn how to make a backup of MultiDisk and how to register your new purchase.

First Make A Backup

MultiDisk is <u>not</u> copy protected, so the Finder can be used to create a backup of the MultiDisk master disk.

1) Set the write protect tab on the MultiDisk master disk to the "write protect" position (hole open).

2) From the Finder, erase a double-sided disk and name it "MultiDisk Copy."

3) Make a complete copy of the MultiDisk master disk by dragging the icon of the master disk onto the icon of the empty "MultiDisk Copy" disk. Let the Finder replace the entire contents of the empty disk.

Be Sure To Register Your Purchase

1) In the Finder, click once with the mouse pointer (arrow) on the MultiDisk™ startup document icon (shown to the left) to select it. Do not click the MultiDisk <u>disk</u> icon.

2) Choose the **Get Info** command from the **File** menu. The name, release number, and serial number are in the comment section of the **Info** window (shown in Figure 1-1).

```
┌────────────────────────────────────┐
│▓▓▓▓▓▓▓▓▓▓▓ Info ▓▓▓▓▓▓▓▓▓▓▓▓▓│
├────────────────────────────────────┤
│                          Locked □   │
│  ⟋                                  │
│  ⟱   MultiDisk™                     │
│  ⟱                                  │
│    Kind : Startup document          │
│    Size : 16,482 bytes used, 17K on disk │
│                                     │
│   Where : MultiDisk, internal drive │
│                                     │
│                                     │
│  Created : Mon, Jun 12, 1989, 4:34 PM │
│ Modified : Mon, Jun 12, 1989, 4:34 PM │
│  Version : MultiDisk™ - Release 1.20 - Serial │
│            ▪H00001                   │
│                                     │
│ MultiDisk™ - Release 1.20 - Serial ▪H00001 │
│                                     │
│ ©1988, 1989 ALSoft, Inc. - All Rights │
│ Reserved                            │
└────────────────────────────────────┘
```

Figure 1-1
The Info window contains your serial number

MultiDisk Copy

3) Completely fill out and sign the enclosed product registration card and mail it to ALSoft. **Be sure to include the serial number from the Info window.**

NOTE ABOUT THE SERIAL NUMBER: This verifiable serial number is required for proper registration of your purchase, telephone technical support, and notification of updates, special promotions, and new product announcements.

2 | BASIC PARTITIONING TERMS AND CONCEPTS YOU NEED TO KNOW

This chapter provides helpful background information on each facet of MultiDisk. The terms and concepts will be important in later chapters on using MultiDisk. Detailed information about using MultiDisk can be found in Chapter 4, **USING MULTIDISK**.

Disks

Disks are the magnetic media on which information is stored. There are both floppy disks, such as the 3.5-inch disk which MultiDisk comes on, and hard disks, like the Apple Hard Disk 20SC. A disk must be **initialized** before it can be used. When a disk is initialized, a part of it is set aside for a **directory.**

Directory

The **directory** is used to store the number, names, locations, and sizes of files. Until you put files on a disk, the directory is empty.

Volume

An initialized disk is called a **volume**. Because a disk normally contains only one volume, the terms disk and volume are frequently used interchangeably.

Free Space

Any areas of a volume that are available to be allocated to files or the directory is called **free space**.

Partitions

MultiDisk is a utility which allows you to allocate some or all of the free space of a volume to create additional volumes called **partitions**. The original volume is called the **root** or **parent** volume. Partitions are used exactly like their parent volumes. In fact, partitions are represented on the Finder desktop with the same icon as their parent volume.

Partition Size

The size of a partition is limited only by the amount of free space on its parent. If you make a partition too small, it can be resized later. Sizes are specified in **kilobytes** (K) or **megabytes** (MB). One kilobyte equals 1024 bytes while one megabyte equals 1024 kilobytes.

Opening Partitions

A partition must be **opened** before it can be used. Partitions can be opened manually with the MultiDisk DA or they can be configured to **open automatically** when their parent volumes are opened.

Password Protection

Individual partitions can be protected from unauthorized access by a **password**. Without the correct password, you cannot open, modify, or delete a partition.

Encryption

Partitions can also be **encrypted**. Encryption is a kind of scrambling device which prevents advanced users with low-level disk tools from bypassing a password and retrieving files from a partition.

3 | INSTALLING MULTIDISK

This chapter will describe how to install and deinstall MultiDisk properly.

Requirements

MultiDisk requires at least a Macintosh Plus and System Software version 6.0 or greater. System Software 6.0 or its replacement is available from any authorized Apple dealer.

Copyright Notice

As stated in the copyright notice in this manual, page ii, each Macintosh that will or could run MultiDisk simultaneously will require a separately purchased copy of MultiDisk.

The Two Components of MultiDisk

MultiDisk is composed of two parts: a desk accessory that is installed in the System file of your startup disk and a startup file that is copied to the System Folder.

Installing the Desk Accessory (DA)

Installing the MultiDisk Desk Accessory With Font/DA Juggler *Plus* or MasterJuggler

If you have **Font/DA Juggler**™ *Plus* or **MasterJuggler**™ you need only follow their instructions on how to **Open** the DA file and you can skip this next section on using Font/DA Mover.

Installing the MultiDisk Desk Accessory With Font/DA Mover

To use **Font/DA Mover** to install the MultiDisk desk accessory follow these 7 easy steps:

1) **Select the Font/DA Mover icon and choose Open from the File menu, or just double-click the icon.**

   The Font/DA Mover dialog will appear (shown in Figure 3-1) with the **Fonts** button selected at the top. Listed on the left are the fonts included in the current startup System file.

2) **Click the Desk Accessory button.**

   The list on the left will display the desk accessories in the System file.

3) **Click the Open button on the lower-right side of the dialog.**

   Another dialog will appear with a directory of folders and System and DA files.

4) **Insert the disk "MultiDisk Copy" or, if it's already inserted, click the Drive button until the disk comes into view.**
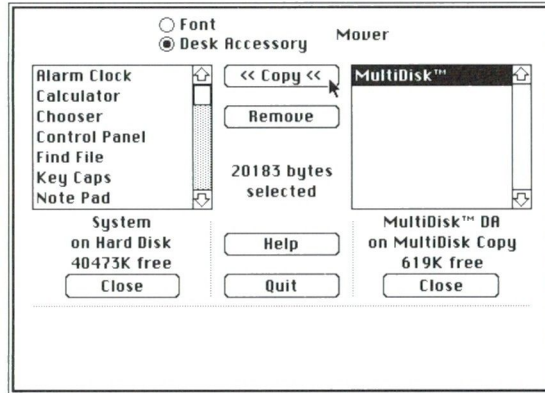
The list should contain the file "MultiDisk™ DA".

5) **Select the file "MultiDisk™ DA" and click the Open button.**

The directory dialog will disappear. The list on the right of Font/DA Mover dialog will be updated to show the MultiDisk DA.

6) **Select the "MultiDisk™" desk accessory and click Copy.**

The MultiDisk DA will be copied to the System file.

```
┌──────────────────────────────────────────────────────┐
│                                                        │
│   ┌──────────────────────────────────────────────┐    │
│   │           ○ Font            Mover            │    │
│   │           ● Desk Accessory                   │    │
│   │   ┌───────────────┐┌──────────┐┌────────────┐ │    │
│   │   │Alarm Clock  ⇧ ││ << Copy << ││MultiDisk™ ⇧│ │    │
│   │   │Calculator     ││          ││            │ │    │
│   │   │Chooser        │└──────────┘│            │ │    │
│   │   │Control Panel  │┌──────────┐│            │ │    │
│   │   │Find File      ││ Remove   ││            │ │    │
│   │   │Key Caps       │└──────────┘│            │ │    │
│   │   │Note Pad     ⇩ │ 20183 bytes│          ⇩ │ │    │
│   │   └───────────────┘  selected  └────────────┘ │    │
│   │       System       ┌──────────┐  MultiDisk™ DA │    │
│   │     on Hard Disk   │   Help   │ on MultiDisk Copy│  │
│   │      40473K free   └──────────┘    619K free    │   │
│   │    ┌──────────┐  ┌──────────┐  ┌──────────┐    │    │
│   │    │  Close   │  │   Quit   │  │  Close   │    │    │
│   │    └──────────┘  └──────────┘  └──────────┘    │    │
│   └──────────────────────────────────────────────┘    │
│                                                        │
└──────────────────────────────────────────────────────┘
```

Figure 3-1
Installing the MultiDisk™ DA using Font/DA Mover

7) **Click the Quit button.**

The Font/DA Mover will quit and return you to the Finder.

Installing the Startup File

To install the MultiDisk startup file follow these 2 easy steps:

1) **Put a copy of the "MultiDisk™" file icon into the System Folder of the startup disk on which you want to install MultiDisk.**

If not already in a disk drive, insert the "MultiDisk Copy" disk you made in Chapter 1, **GETTING STARTED**, into a disk drive. Select the icon "MultiDisk™" (shown to the left) and drag it to the System Folder of the startup disk on which you want to install MultiDisk. Do not rename or lock the icon. The icon must remain named **MultiDisk™** and **unlocked**.

Finder 6.0 or later will display the System Folder with the icon shown on the left of Figure 3-2. Earlier versions of the Finder display the System Folder with a normal folder icon as shown on the right of Figure 3-2.

Figure 3-2
Icon representing System folders. Newer Finders (6.0 or later) display the icon on the left.

2) Restart the Macintosh.

Choose **Restart** from the **Special** menu and restart the Macintosh from the disk on which MultiDisk was installed. **Important**: Do not press the **shift** key while the Macintosh is starting. Pressing the **shift** key will tell MultiDisk to bypass loading (elsewhere you can learn how to assign a different key to bypass loading).

Look for one of the MultiDisk icons in Figure 3-3 to be displayed momentarily in the lower portion of the Macintosh screen.

 Loaded Not loaded Error

Figure 3-3
MultiDisk icons displayed at startup

If The Loaded Icon Appears

If the Loaded icon is displayed, then installation was successful. You can now proceed to Chapter 4, **USING MULTIDISK**.

Loading Problems. What Went Wrong?

If the Not loaded icon is displayed, try the following:

1) Repeat step 2 of the **Installation** section. Make sure not to press the **shift**, key while the Macintosh is starting.

2) Make sure that you have not locked the MultiDisk™ icon that is in your System Folder.

If the Error icon is displayed, then verify that the System file on the startup disk is version 4.2 or greater. Repeat steps 1 and 2 of the **Installation** section.

If none of the icons are displayed at startup, then the installation was not successful and you must repeat steps 1 and 2 of the **Installation** section. Either the MultiDisk™ icon was <u>not</u> dragged into the active System Folder or the MultiDisk <u>diskette</u> icon was dragged into the System Folder. The latter action creates a folder within the System Folder which prevents MultiDisk from starting. The System Folder is the folder that contains the System file and the Finder file. If you have more than one folder containing a System file and Finder file, then use one of these other folders when repeating steps 1 and 2 of this section. Apple strongly cautions against having more than one folder that contains a System file and Finder file.

Deinstalling MultiDisk

If you ever have a need to deinstall MultiDisk, follow these 2 easy steps:

1) **Drag the icon "MultiDisk™" out of the System Folder of the startup disk on which you want to deinstall MultiDisk. Do not drag it to the Trash.**

   Open the System Folder on the startup disk on which you want to deinstall MultiDisk. Select the icon "MultiDisk™" and drag it to the Desktop or some other folder. Do <u>not</u> drag it to the Trash.

2) **Restart the Macintosh and then, if desired, drag the icon "MultiDisk™" to the Trash.**

   Choose **Restart** from the **Special** menu and restart the Macintosh. If you want to remove MultiDisk from the startup disk then, after the Macintosh has restarted, select the icon "MultiDisk™" and drag it to the Trash.

Your deinstallation is now complete.

4 | USING MULTIDISK

This chapter describes how to use MultiDisk properly and how to get the very most performance out of MultiDisk. This chapter includes step-by-step instructions on how to Open, Modify, Delete and View your partitions.
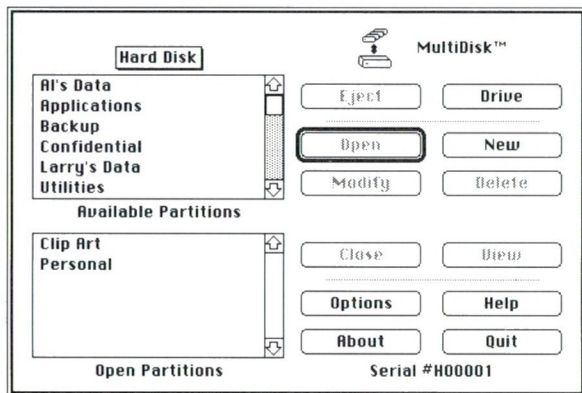
MultiDisk Desk Accessory - The Command Center

The MultiDisk Desk Accessory (DA) is the command center for MultiDisk. All interaction with MultiDisk is through this DA.

Opening the MultiDisk DA

To open the MultiDisk DA simply choose MultiDisk™ from the Apple menu. The MultiDisk DA window, similar to the one in Figure 4-1, will appear on the screen.

Figure 4-1
A typical MultiDisk DA window

Available Partitions List
This shows, in alphabetical order, a list of the partitions on the current volume that can be opened by MultiDisk. Partitions in the Available Partitions list can be selected clicking them or by typing one or more characters of the partition's name. The up and down arrow keys can also be used to select partitions in the Available list.

A solid diamond character proceeding the partition name indicates that the partition was created by either Hard Disk Partition from FWB Software, HD Partition which is part of SUM, or by MacServe from InfoSphere. **You will be given the opportunity to convert these partitions into a MultiDisk partition by opening them with the MultiDisk DA.**

By default, the current volume is the current startup disk. The name of the current volume is displayed immediately above the list in a box. When the box is pressed, it displays a pop-up menu containing the names of all selectable

volumes. The name of the current volume is checked. Choosing a volume name causes it to become the current volume.

Open Partitions List

This list displays, in alphabetical order, the names of all the partitions that have been opened by MultiDisk. When a partition is opened, its name is removed from the **Available Partitions** list and is placed in the **Open Partitions** list. Clicking the partition or holding down the command key and pressing the up and down arrow keys will select partitions in the Open Partitions list.

NOTE ABOUT THE PARTITION NAME: If a hollow diamond character precedes the partition name, it indicates that the partition could not be completely opened. The partition is accessible to file recovery programs such as Disk First Aid but it will not appear on the Finder desktop.

Eject

If the current volume is a 3.5-inch disk, you can click this button to eject that disk. Another volume–if there is one–becomes the current volume.

Drive

Use this button to switch volumes. Each time you click **Drive** another volume becomes the current volume.

Open

This button opens the currently selected partition in the **Available Partitions** list. You can also open a partition by double-clicking its name in the list.

New

Use this button to create partitions on the current volume.

Modify

When this button is clicked, a dialog box will appear which allows you to change the attributes of the currently selected partition in the **Available Partitions** list.

Delete

Use this button to delete a partition in the **Available Partitions** list.
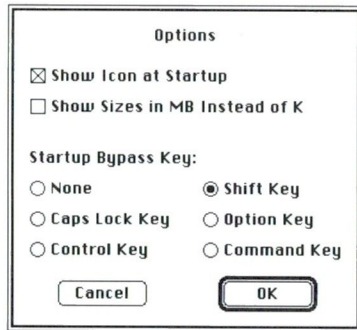
Close

This button will close the currently selected partition in the **Open Partitions** list. You can also close a partition by double-clicking its name in the list.

View

This button opens a dialog box which will display the attributes of the currently selected partition in the **Open Partitions** list.

Options

Clicking the **Options** button opens a dialog box which will allow you to alter the way that MultiDisk operates.

```
                    Options
  ⊠ Show Icon at Startup
  ☐ Show Sizes in MB Instead of K

  Startup Bypass Key:
  ○ None            ⦿ Shift Key
  ○ Caps Lock Key   ○ Option Key
  ○ Control Key     ○ Command Key
      [ Cancel ]        [  OK  ]
```

Figure 4-2
The MultiDisk DA options dialog

The following options are available:

❏ **Show Icon at Startup** - This option determines whether the Loaded icon will be displayed at startup.

❏ **Show Sizes in MB instead of K** - If the option is checked, numbers referring to the size of a partition will be displayed in megabytes instead of kilobytes.

❏ **Startup Bypass Key** - Choose one of the buttons listed under this label to select the key that will cause MultiDisk to bypass loading. Pressing this key while the Macintosh is starting will prevent MultiDisk from loading and will cause the Not loaded icon to be displayed.

About

Clicking About opens a window which displays information about MultiDisk. The information includes the MultiDisk release number, ALSoft mailing address, and telephone numbers. A mouse click or key press will remove the window.

Help

Clicking **Help** will display a window containing abbreviated instructions for using the MultiDisk DA. A mouse click or key press will remove the window.

Closing the MultiDisk DA

To close the MultiDisk DA you need only click the **Quit** button.

Creating Partitions

Now it's time to actually create partitions. Because of the incredible flexibility of MultiDisk, you will be able to create as many partitions as you wish. MultiDisk places no limitations on your creativity which it comes to partitions. MultiDisk will create partitions **only** on **HFS** volumes.

To create a partition, follow these 8 easy steps:

1) Choose MultiDisk™ from the Apple menu.

The MultiDisk DA window will appear with the current startup disk as the current volume.

2) Click the Drive button until the volume on which you wish to create the partition becomes the current volume.
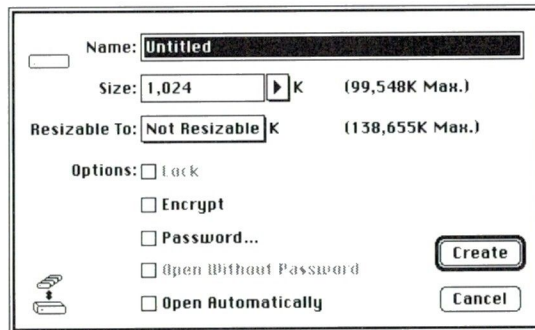
The name of the current volume is displayed immediately above the **Available Partitions** list.

Pressing the **tab** key is equivalent to clicking the **Drive** button.

NOTE ABOUT PARTITIONING PARTITIONS: MultiDisk has been specially designed to allow partitions to be partitioned. There is virtually no limit to the number of partitions that can be created inside of partitions.

3) Click the New button.

A dialog box like the one in Figure 4-3 appears.

Figure 4-3
Dialog for creating partitions

4) Name the partition by typing up to 27 characters on the line labeled "Name."

This name is used to identify the partition in the MultiDisk DA and on the Finder desktop. To avoid confusion, be sure to give partitions different names.

5) Select the line labeled "Size" and type the size of the partition.

The size is limited only by the amount of free space on the current volume. Directly to the right of the Size field there is a box containing a right-pointing triangle. Pressing this box displays a pop-up menu containing suggested sizes.

The current maximum size that the partition can be sized to (available free space) is displayed as the last item in the Size pop-up menu and to the far right of the Size field.

Choosing one of the sizes from the size pop-up menu places that size into the Size field. **You can, of course, still type a different size into the Size field.**

6) Press in the box labeled "Resizable to". Select from the pop-up menu the maximum size that the partition may be resized to.

This is the maximum size that the partition can be resized to without erasing the partition. The maximum value that can be selected is the total usable space on the parent volume. This maximum size is displayed as the last item in the Resizable To pop-up menu and to the far right of the Resizable To field.

Pressing on the Resizable To box displays a pop-up menu containing the allowable Resizable To values. **You can choose from "Not Resizable", 1, 2, 4, 8, and 16 megabytes in addition to multiples of 32 megabytes.** The total Resizable To values of all partitions can exceed the size of the parent volume.

Why is size so important? The smaller the Resizable To value you choose, the more efficient the Macintosh is at storing information within the partition. A partition resizable to 32 megabytes uses more partition space for the directory than a partition resizable to 8 megabytes. Therefore, new partitions of the same size will have different amounts of free space depending upon the value of this Resizable To field.

7) Click the check boxes of the options you wish to activate.

You may choose (activate) any of the following options:

❑ **Lock** - Activating this option will prevent the partition from being written to. This option is not available (dimmed) until the partition is created.

❑ **Encrypt** - Activating this option will encrypt the entire contents of the partition.

❑ **Password** - Activating this option will cause a dialog box to appear in which you can type a password of up to 21 characters for the partition. When typing, the characters are displayed as diamonds. After typing the password and clicking OK you will be asked to reenter the password for confirmation. **Please be careful when typing as upper-case characters are distinguished from lower-case.**

To change a password - click the Password check box and enter a new password.

To remove a password - click the Password check box and click OK once and then again to confirm.

WARNING: IF YOU FORGET THE PASSWORD, THERE IS ABSOLUTELY NO WAY TO RECOVER IT. YOU WILL LOOSE ALL INFORMATION IN THE PARTITION AND HAVE TO REINITIALIZE THE PARENT VOLUME TO RECOVER THE SPACE THE PARTITION OCCUPIES.

❑ **Open Without Password** - If this option is checked, the password will only be needed to modify or delete the partition. This is useful if you want to create a locked partition which anyone can read from but no one can write to. Without the password, they would be unable to unlock the partition. This option is not available (dimmed) until the Password option is activated.

❑ **Open Automatically** - Check this option if you want the partition to be opened automatically when the partition's parent volume is opened. Whenever password-protected partitions are opened automatically, a dialog box appears with a request to type in the password.

8) Click the Create button.

The partition is created and added to the **Available Partitions** list.

Opening Partitions

You must open a partition to be able to use it. To open a partition, follow these 4 easy steps:

1) Choose MultiDisk™ from the Apple menu.

The MultiDisk DA window appears with the current startup disk as the current volume.

2) Click the Drive button until the parent volume of the partition you wish to open becomes the current volume.

The name of the current volume will be displayed immediately above the **Available Partitions** list. The list should contain the partition you wish to open.

Pressing the **tab** key is equivalent to clicking the **Drive** button.

3) Select the name of the partition in the Available Partitions list. Click the Open button or double-click the partition name.

A solid diamond character proceeding the partition name indicates that the partition was created by either Hard Disk Partition from FWB Software, HD Partition which is part of SUM, or by MacServe from InfoSphere. When selected, a dialog box will appear giving you the opportunity to convert the partition into a MultiDisk partition. The converted partition will not be resizable.

If the partition is password protected, you will be prompted for the password before you can convert it. The password of the partition cannot exceed the 21 character limit of MultiDisk. MacServe passwords must be entered in UPPER-CASE. The conversion takes only a few seconds. It is recommended that the contents of partitions are backed up before they are converted.

WARNING: Once a partition is converted it will no longer be recognized by the utility that originally created the partition.

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NOTE ABOUT MFS PARTITIONS: Because MFS partitions created by Hard Disk Partition and MacServe are initialized incorrectly, they cannot be converted (it doesn't hurt if you accidentally try to).

4) **If a password is needed to open the partition, a dialog box will appear with an edit box in which you must type the correct password and then click OK.**

In a password, upper-case characters are distinguished from lower-case characters. If necessary, put the **caps lock** key in the up position.

Once a partition is opened, it is removed from the **Available Partitions** list and added to the **Open Partitions** list and its icon is added to the Finder desktop.

Closing Partitions

When you are finished using a partition, you may close it by following these 2 easy steps:

1) **Choose MultiDisk™ from the Apple menu.**

The MultiDisk DA window appears.

2) **Select the name of the partition you want to close in the Open Partitions list and click the Close button or double-click the partition name.**

If the partition is in use, it cannot be closed.

NOTE ABOUT CLOSING PARTITIONS: If you are in the Finder without MultiFinder, you MUST use the Trash to close a partition. **If you are in an application**, you can use the MultiDisk Close function in the MultiDisk DA.

Once a partition is closed, its name is removed from the **Open Partitions** list and its icon is removed from the Finder desktop.

Modifying Partitions

As promised, MultiDisk gives you the flexibility to change the size of your partitions depending upon changes in the way you work with your Macintosh.

If you want to erase, resize, rename, or change other attributes of a closed partition, follow these 9 easy steps:

1) **Choose MultiDisk™ from the Apple menu.**

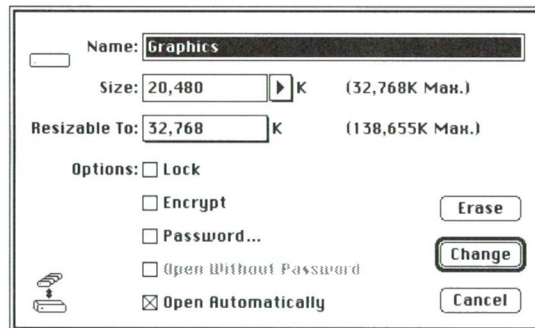   The MultiDisk DA window will appear with the current startup disk as the current volume.

2) **Click the Drive button until the parent volume of the partition you wish to modify becomes the current volume.**

   The name of the current volume will be displayed immediately above the **Available Partitions** list. The list should contain the partition you wish to modify.

   Pressing the **tab** key is equivalent to clicking the **Drive** button.

3) **Select the name of the partition in the Available Partitions list and click the Modify button.**

   A dialog box like the one in Figure 4-4 will appear..

Figure 4-4
Dialog for modifying partitions

4) **If you want to rename the partition, type in a new one or edit the old one on the line labeled "Name."**

   This name is used to identify the partition in the MultiDisk DA and on the Finder desktop.

5) To resize a partition, select the line labeled "Size" and type in a new size for the partition.

The size is limited only by the **Resizable to** attribute of the partition and the current amount of free space on the parent volume, whichever is smaller.

Directly to the right of the Size field, there is a box containing a right-pointing triangle. Pressing this box displays a pop-up menu containing suggested sizes.

The minimum size that the partition can be sized to will be displayed as the first item in the size pop-up menu. The minimum size is based on the amount of space used in the partition and where within the partition files are allocated. Optimizing a partition with DiskExpress ensures that the minimum size is the smallest possible value.

The current maximum size will be displayed as the last item in the size pop-up menu and to the far right of the size field.

Choosing one of the sizes from the size pop-up menu places that size into the size field. You can, of course, still type a different size into the size field. Partitions can be resized to be smaller or larger than their current size.

6) To change the maximum size that the partition can be resized, press in the box labeled "Resizable to" and select from the pop-up menu the new maximum size that the partition may be resized to.

WARNING: If this value is changed, the partition will be erased automatically.

This value is the new maximum size that the partition can be resized to without erasing the partition. The maximum value that can be selected is the total usable space on the parent volume. This maximum size is displayed as the last item in the Resizable To pop-up menu and to the far right of the Resizable To field.

Pressing on the Resizable To box displays a pop-up menu containing the allowable Resizable To values. **You can choose from "Not Resizable", 1, 2, 4, 8, and 16 megabytes in addition to multiples of 32 megabytes.** The total Resizable To values of all partitions can exceed the size of the parent volume.

Why is size so important? The smaller the Resizable To value you choose, the more efficient the Macintosh is at storing information within the partition. A partition resizable to 32 megabytes uses more partition space for the directory than a partition resizable to 8 megabytes. Therefore, new partitions of the same size will have different amounts of free space depending upon the value of this Resizable To field.

7) **Click the check boxes of the options you wish to change.**

You may change (activate) any of the following options:

❏ **Lock** - Activating this option will prevent the partition from being written to.

❏ **Encrypt** - Activating this option will encrypt the entire contents of the partition.

❏ **Password** - Activating this option will cause a dialog box to appear in which you can type a password of up to 21 characters for the partition. When typing, the characters are displayed as diamonds. After typing the password and clicking OK you will be asked to reenter the password for confirmation. Please be careful when typing as upper-case characters are distinguished from lower-case.

To change a password, click the Password check box and enter a new password. To remove a password, click the Password check box and click OK once and then again to confirm.

WARNING: IF YOU FORGET THE PASSWORD, THERE IS ABSOLUTELY NO WAY TO RECOVER IT. YOU WILL LOOSE ALL INFORMATION IN THE PARTITION AND HAVE TO REINITIALIZE THE PARENT VOLUME TO RECOVER THE SPACE THE PARTITION OCCUPIES.

❏ **Open Without Password** - If this option is checked, the password will only be needed to modify or delete the partition. This is useful if you want to create a locked partition which anyone can read from but no one can write to. Without the password, they would be unable to unlock the partition. This option is not available (dimmed) until the Password option is activated.

❏ **Open Automatically** - Check this option if you want the partition to be opened automatically when the partition's parent volume is opened. Whenever password-protected partitions are opened

ONLY

automatically, a dialog box appears with a request to type in the password.

8) To record any changes made to the partition, click the Change button.

If the **Encrypt** option was changed, there will be a delay while the partition is either encrypted or decrypted. MultiDisk requires about 6 to 7 seconds per megabyte to change the encryption. **It is recommended that the contents of partitions be backed up before they are encrypted/decrypted.**

9) To erase a partition, click the Erase button.

The ONLY way to erase a partition is to use this Modify function. If you attempt to use the Erase Disk command in the Finder, the partition will close itself and disappear from the desktop, but will not be erased.

WARNING: All files on the partition will be deleted.
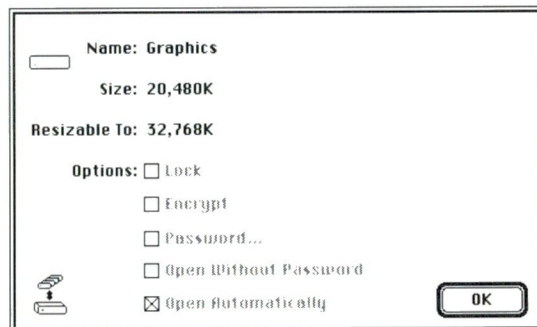
Viewing Partitions

An open partition's attributes cannot be modified; however, they can be viewed by following these 3 easy steps:

1) Choose MultiDisk™ from the Apple menu.

The MultiDisk DA window will appear..

2) Select the name of the partition you want to view in the Open Partitions list and click the View button.

A dialog box like the one in Figure 4-5 will appear.

Figure 4-5
Dialog for viewing open partitions

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This dialog details the following attributes a partition may have:

- ❏ **Name** - This is the name used to identify the partition in the MultiDisk DA and on the Finder desktop.

- ❏ **Size** - This is the current size of the partition.

- ❏ **Resizable to** - This is the maximum size that the partition can be resized to without erasing it.

- ❏ **Lock** - This option will be checked if the partition is locked. A locked partition cannot be written to.

- ❏ **Encrypt** - A check in this box indicates that the partition is encrypted.

- ❏ **Password** - This option will be checked if the partition has a password assigned to it. Information about a partition can be viewed without knowing its password.

- ❏ **Open Without Password** - If the option is checked, the partition's password is only needed to modify or delete the partition.

- ❏ **Open Automatically** - This option will be checked if the partition is opened automatically when the partition's parent volume is opened.

3) Click the OK button when you have finished viewing.

The dialog box disappears.

Deleting Partitions

You may delete a partition by following these 5 easy steps:

1) Choose MultiDisk™ from the Apple menu.

The MultiDisk DA window will appear..

2) Click the Drive button until the parent volume of the partition you wish to delete becomes the current volume.

The name of the current volume is displayed immediately above the **Available Partitions** list. The list should contain the partition you wish to delete.

Pressing the **tab** key is equivalent to clicking the **Drive** button.

3) **Select the name of the partition in the Available Partitions list and click the Delete button.**

   WARNING: Deleting a partition deletes all of the files within the partition. If what you really want to do is close a partition, follow the steps for closing in this chapter.

4) **If a password is needed to delete the partition, a dialog box will appear with an edit box in which you must type the correct password and then click OK.**

   In a password, upper-case characters are distinguished from lower-case characters. If necessary, put the **caps lock** key in the up position.

5) **In the next dialog box that appears, click Delete.**

   This dialog box is provided as insurance. You must confirm that you want to proceed, understanding that anything on the partition will be deleted.

Once a partition is deleted, its name is removed from the **Available Partitions** list and the space it occupied on its parent volume becomes free space.

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