

PlusOptimizer™

from

THE UTILITY COMPANY

The logo for Alsoft, featuring the word "ALSOFT" in a bold, black, sans-serif font. The letters are arranged in a single line and are set against a solid red rectangular background.

the makers of

**PlusMaker™, PlusMaximizer™,
DiskExpress® Pro, and MasterJuggler® Pro**

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Chapter 1

Introduction

Welcome to PlusOptimizer

Alsoft, The Utility Company

At Alsoft, we have been writing software for Mac OS computers since 1984. When we introduced DiskExpress in 1986, it was the first and only disk optimizer for the Macintosh. It has always been the safest, most reliable, and most powerful disk optimization package available for Mac OS computers. Our MasterJuggler Pro is the most comprehensive font management utility package on the market today. When Apple introduced their new disk format, known as Mac OS Extended format or HFS Plus, for Mac OS computers with the release of Mac OS 8.1 in January 1998, Alsoft simultaneously introduced PlusMaker to let you effortlessly convert your current disks to the new format. Our expertise is in providing useful and safe utilities. Who else would you expect to provide you with the first and safest disk optimizer for Apple's new disk format and Mac OS 8.1?

How Fragmentation Affects You and Your Computer

Each time you copy or save a file to a storage disk, the potential exists for the file to be broken into two or more fragments. A file is said to be fragmented when it is stored in noncontiguous allocation blocks (blocks not located next to each other – see Figure 1-1). Large amounts of contiguous free space cannot prevent file fragmentation.

Adding, deleting, copying, duplicating and modifying files are common tasks that will increase fragmentation and decrease the efficiency of a storage disk. To read an entire fragmented file, a disk must move its head from one disk location to another. The more fragmented a file becomes, the longer it takes to retrieve its information. As you continue to use your disks after installing Mac OS 8.1, your files and your disks will become more fragmented.

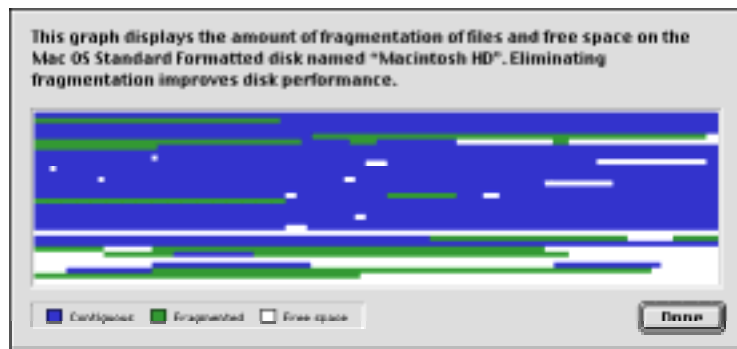


Figure 1-1
A Typical Fragmented Disk

How Will PlusOptimizer Help Me?

PlusOptimizer optimizes your disks by defragmenting your files and free space. By optimizing your disks with PlusOptimizer, your disk performance will improve as the necessity of disk head movement will decrease, and the elimination of free space fragmentation reduces the possibility of fragmentation of newly saved files.

We put the state-of-the-art technologies you expect from Alsoft in PlusOptimizer.

- Advanced “Verify Reads and Writes” technology protects your data
- Advanced Directory Diagnostics performed prior to optimization prevents data loss
- Designed to safely permit interruptions of any kind, including power outages
- Support for bad block sparing software
- Optimize disks as large as 2,000 gigabytes
- Full Mac OS compatibility
- File fragmentation information display
- Safe, one-file-at-a-time optimization

Basic Terms You Need To Know

This section explains some terms and concepts that are used throughout this manual.

Anchored File

An anchored file is a file that PlusOptimizer will not move during optimization. For more information on how anchored files affect optimization, refer to *A Note About Open Files and Anchored Files* on page 10, "Chapter 2: Using PlusOptimizer."

Application

An application is a tool your computer uses to manipulate information and perform a useful function for you. Applications include such products as ClarisWorks.

Block

The physical surface of a disk is comprised of many 512 byte storage areas called physical blocks. The larger the disk, the greater the number of physical blocks on the disk. An allocation block is a group of physical blocks treated as a single storage area by the Mac OS. The older Mac OS Standard format, or HFS, can only keep track of 65,535 storage areas per disk. Therefore, the larger the size of a disk, the greater the number of physical blocks in each allocation block so that the total number of storage areas on the disk does not exceed the maximum of 65,535. The newer Mac OS Extended format, or HFS Plus, can keep track of over 4 billion storage areas per disk. HFS Plus uses allocation blocks sizes ranging from 0.5 KB to 4 KB. The Macintosh filing system stores files by breaking them into allocation block-size pieces and writing them into unused allocation blocks wherever they are available.

Directory

The directory of a disk is a group of allocation blocks set aside by the Mac OS to store the number, name, location (which allocation blocks), and size of each file stored on the volume.

Disk

A disk is the medium on which information is stored. There are many types of disks including floppy disks, hard disks (like the one that is probably inside your Mac OS computer) and removable disks. A disk must be initialized before it can be used.

Document

A document is a type of file that you create with an application. Documents include the information you enter, modify, view or save to a disk.

Eligible Disk

To be eligible for optimization by PlusOptimizer, a disk must have been formatted as a Mac OS Standard (HFS) or Mac OS Extended (HFS Plus) disk. In addition, an eligible disk must not be a floppy diskette, it must be locally attached to a computer on which PlusOptimizer is running, it must not be write protected, and it must have some free



space available on it.

Note: A copy of PlusOptimizer running on your computer will not optimize any disk that you must access via a network. These disks are only eligible to another copy of PlusOptimizer running on the computer to which they are locally connected.

File

A file is a collection of information stored on a disk. Files can be system files, application files or document files.

File Server

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

Fragmented File

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

Fragmented Disk

A fragmented disk is a disk that contains fragmented files or fragmented free space. Free space is considered fragmented if the unused allocation blocks are noncontiguous (not all next to each other).

Free Space

The free space encompasses all the unused allocation blocks on a disk. 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.

Partitions

Many disks come with management utilities which allow you to divide a disk into additional disks called partitions. There is also independent system software, such as MultiDisk™ from Alsoft, which allows you to partition a disk.

Startup Disk

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



Chapter 2

Using PlusOptimizer

Installation of PlusOptimizer

Requirements

To optimize a Mac OS Standard (HFS) disk, PlusOptimizer requires a 68040 or PowerPC based Mac OS computer running Mac OS 7.1 or later. To optimize a Mac OS Extended (HFS Plus) disk, PlusOptimizer requires a 68040 or PowerPC based Mac OS computer running Mac OS 8.1 or later. There must be as much free space on the target disk as the size of the largest file to completely perform the optimization, and if you plan to optimize your startup disk, you should have another disk from which you can startup (such as a Mac OS system CD; refer to *Optimizing Your Startup Disk Using a CD Drive and a Floppy Drive* on page 15 in this chapter). The target disk must be locally connected.

Copyright Notice

As stated in the copyright notice in this manual, each Mac OS computer that will or could run PlusOptimizer will require a separately purchased copy of PlusOptimizer.

Before You Run PlusOptimizer

First make a backup

PlusOptimizer is not copy protected, so the Finder can be used to create a backup of the PlusOptimizer master diskette.

Be sure to register your purchase

If you received PlusOptimizer electronically, then you have already registered your purchase with us. If you received PlusOptimizer on a floppy diskette, then you should perform the following steps:

- 1) Note your PlusOptimizer serial number on the original diskette label.
- 2) Completely fill out the product registration card and mail it to Alsoft. Be sure to include the serial number.

If You Received PlusOptimizer Electronically

It is recommended that you put the folder containing the PlusOptimizer application and the other files on a floppy disk since PlusOptimizer cannot defragment open files such as running applications or open documents. You can also put this folder on a RAM disk; refer to *Optimizing Your Startup Disk Using One Removable Media Disk (PowerBooks)* on page 16 in this chapter.

Record the serial number you received in the e-mail that confirmed your purchase of PlusOptimizer. You will need this serial number the first time you run PlusOptimizer.

If You Received PlusOptimizer on a Floppy Diskette

PlusOptimizer can be run directly from the floppy diskette. This will allow you to optimize any mounted HFS or HFS Plus disks that PlusOptimizer can optimize as described in this chapter.

Determining Which Files Cannot Be Defragmented

PlusOptimizer can only defragment files as large as the total free space on the target disk. To determine which files cannot be defragmented, follow these steps:

- 1) Select the disk you wish to optimize in the Finder.**
Single-click the icon for the disk on the desktop.
- 2) Select the Get Info menu item from the File menu in the Finder.**
Alternately, press command - I, the keyboard shortcut for this item.
- 3) Note how much space the Info window says is “Available” on this disk.**
This amount is usually expressed in MB (megabytes) or GB (gigabytes).
- 4) Select the Find... menu item from the File menu in the Finder.**
Alternately, press command - F, the keyboard shortcut for this item, or Find File from the Apple menu.
- 5) Select the same disk as in step 1 above in the top pop-up menu of the Find File dialog.**
- 6) Select “size” in the left hand pop-up menu, and then select “is greater than” in the middle pop-up menu.**
- 7) Enter the amount of free space on the disk in the box on the right side of the dialog.**
The amount may need to be converted to KB, the units that Find File uses. To perform the conversion, if the amount is in MB, multiply it by 1024, or, move the decimal point three places to the right. If the amount is in GB, multiply it by 1048576, or, move the decimal point six places to the right.

8) Press the Find button.

If it reports that “No items were found,” then there are no files on this disk that are too large to be defragmented. Any files that Find File may list cannot be defragmented without additional free space.

This procedure only finds visible files. To find any invisible files that are too large to be defragmented, repeat the procedure to Step 7, then click the More Choices button.

Hold down the Option key and select “visibility” in the pop-up menu on the left side, which will default to finding invisible files. Along with the above procedure, you will have a list of all files that are too large to be defragmented.

A Note About Open Files and Anchored Files

PlusOptimizer cannot defragment files that are open. This includes open system files on the disk with the active System Folder, any running applications (including PlusOptimizer itself if the copy being run is the one on the disk being optimized), or any open documents. PlusOptimizer will temporarily mark these files as anchored during its optimization process. To ensure that as many files and as much free space as possible are defragmented, you should close any open applications, run PlusOptimizer from a different disk than the one you wish to optimize (such as a floppy, another hard disk, RAM disk, removable media cartridge), and if you wish to optimize your normal startup disk, you should startup from a different startup disk (refer to *Optimizing Your Startup Disk Using a CD Drive and a Floppy Drive* on page 15 in this chapter or refer to *Optimizing Your Startup Disk Using One Removable Media Disk (PowerBooks)* on page 16 in this chapter).

Anchored files are files which will not be moved by PlusOptimizer. PlusOptimizer anchors open files as described in the previous paragraph. A file may be anchored because some software relies on the file residing at a specific location on the disk. Also anchored are bad allocation blocks that have been “spared” by the Mac OS bad block sparing mechanism. These spared allocation blocks are bad blocks that have been discovered and locked out of the disk’s free space. When a disk with anchored files or anchored allocation blocks is defragmented, there is a possibility that other files or the free space will be fragmented around the anchored areas. Having anchored files or anchored allocation blocks does not represent an error.

Running PlusOptimizer

Viewing the Fragmented Files on Your Mac OS Disks

PlusOptimizer's Graph feature provides a method by which you can view the fragmented files and free space on both your HFS and HFS Plus disks. After starting PlusOptimizer, simply select a disk to view from the Disks pop-up menu and click the Graph button. You will be presented with a window that displays a graph of all the files on your disk that are contiguous, the files that are fragmented, and the free space. Defragmenting with PlusOptimizer will defragment the fragmented files.



Note: If you have selected an HFS Plus disk in the Disks pop-up menu, you must be running Mac OS 8.1 or later in order to view the graph or defragment the disk. If you select an HFS Plus disk while running an OS prior to Mac OS 8.1, the Graph button and the Optimize button will be disabled.

Optimizing Your HFS and HFS Plus Disks

Follow these steps to optimize your disks with PlusOptimizer:

1) Make a complete backup of your disks.

Before using PlusOptimizer it is a good idea to back up your disks to safeguard against any unforeseen disk malfunctions, directory damage, or incompatibilities with other programs running on your computer that may occur during the optimization.

2) Check your disk with a program such as Disk First Aid.

Depending upon the nature of the directory problems that might be present, PlusOptimizer may not be able to optimize the disk. Disk First Aid is included with Mac OS system CDs.

3) Restart your computer from a disk other than the target disk (recommended).

PlusOptimizer cannot defragment system files on the disk from which the Mac OS computer was started (refer to *Optimizing Your Startup Disk Using a CD Drive and a Floppy Drive* on page 15 in this chapter, or refer to *Optimizing Your Startup Disk Using One Removable Media Disk (PowerBooks)* on page 16 in this chapter), nor can it defragment any open files including running applications, such as PlusOptimizer itself. If you startup from a Mac OS system CD with Mac OS 8.1 or later, this will allow PlusOptimizer to optimize any HFS or HFS Plus disk locally connected to your Mac OS computer.



Note: If you are not starting up from a Mac OS system CD, start up with all extensions off.

4) Close all open applications.

Open files and applications cannot be defragmented.

5) Double-click the PlusOptimizer application.

This will start PlusOptimizer. If this is the first time you have run PlusOptimizer, you will be presented with several dialogs. Read each carefully and respond appropriately to each. You will then be presented with the PlusOptimizer main window from which you can optimize disks and graph their file fragmentation. Remember PlusOptimizer cannot defragment open files such as running applications, open documents, or system files such as the Finder, the System Suitcase, or extensions that run in the background.

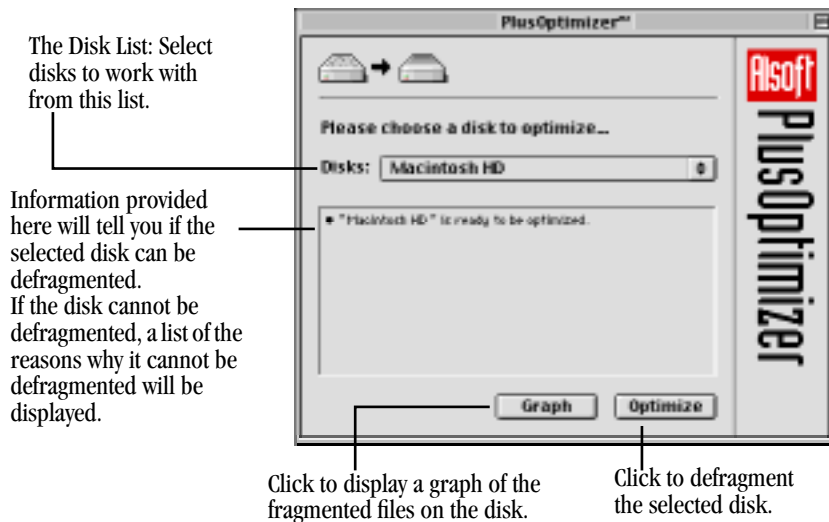


Figure 2-1
The PlusOptimizer Main Window



Note: If you have selected an HFS Plus disk in the Disks pop-up menu, you must be running Mac OS 8.1 or later in order to view the graph or optimize the disk. If you select an HFS Plus disk while running an OS prior to Mac OS 8.1, the Graph button and the Optimize button will be disabled.

6) Select the target disk from the Disks pop-up menu.

If you have problems finding the disk you want to optimize, refer to *Problem: The disk*

I want to optimize does not appear in the list. on page 18, "Chapter 3: Troubleshooting and Error Messages."

7) The lower portion of the main window will indicate whether the disk can be optimized.

If for some reason PlusOptimizer cannot optimize the disk, it will indicate the reasons the disk cannot be optimized. For more information on disk requirements for optimization, refer to *Requirements* on page 8 in this chapter. For methods to overcome the reasons a disk cannot be optimized, refer to *Disk Status Messages* on page 19, "Chapter 3: Troubleshooting and Error Messages."

8) Click the Optimize button.

PlusOptimizer will begin the optimization process on the target disk. It will first analyze the disk. This analysis can take anywhere from several seconds to several minutes or longer, depending on the number of files on the disk. If PlusOptimizer finds any problems, it will inform you of the nature of the problems and stop the optimization. For further information, refer to *Error Messages and Notifications* on page 21, "Chapter 3: Troubleshooting and Error Messages."

If PlusOptimizer doesn't find any problems during its analysis, it will proceed with the actual optimization. PlusOptimizer will optimize the disk and keep you updated with its progress. When PlusOptimizer is finished, it will display a dialog informing you that the optimization was successful. You can go back and repeat from step 6 for each appropriate disk.

PlusOptimizer Shortcuts - AppleScripting and Drag and Drop

Now that you fully understand the steps required to optimize your disks with PlusOptimizer, there are two other methods you can use to optimize your disks with PlusOptimizer. However, you should be aware of the following two caveats:

1. Make sure that you have entered in your registration information as described in step 5 above.
2. Any error messages will halt the operation of PlusOptimizer while it waits for your response.

If either of these occur while using PlusOptimizer as described below, no further progress will be made on any analysis or optimization that you expected PlusOptimizer to perform.

AppleScripts

PlusOptimizer is AppleScriptable. For more information, see the document “PlusOptimizer Read Me” that came with PlusOptimizer. There are sample AppleScripts on the PlusOptimizer web page at the Alsoft web site (www.Alsoft.com).

Drag and Drop

By simply dragging a disk in the Finder onto the PlusOptimizer application (or an alias of it), PlusOptimizer will begin optimizing the disk immediately. You can also drag a group of disks onto the PlusOptimizer application and PlusOptimizer will optimize them all sequentially.

Optimizing Your Startup Disk Using a CD Drive and a Floppy Drive

Your startup disk is the disk containing the current System Folder. Since the open system files on the disk containing the current System Folder cannot be defragmented, you need to start up from another disk to defragment these files and completely optimize this disk. If you do not have another hard disk with a System Folder, you can start up from your Mac OS system CD by following these steps.

1) Turn on your Mac OS computer.

2) Insert a Mac OS system CD in your internal CD drive.

You must use a Mac OS 7.1 or later CD in a drive from which you can start your Mac OS computer to graph and defragment Mac OS Standard (HFS) disks. To graph and optimize Mac OS Extended (HFS Plus) disks, the Mac OS system CD you are using must be Mac OS 8.1 or later.

3) Select Restart from the Special menu to restart your Mac OS computer.

On most Mac OS computers, you need to hold down the “c” key to start from a CD. Consult the documentation that came with your computer to determine what you need to do to start from the Mac OS system CD.

4) When the computer has completed starting up, insert the floppy disk with the PlusOptimizer folder in the floppy drive.

This is either a backup of the floppy disk you received from Alsoft, or the floppy disk you made as described in *If You Received PlusOptimizer Electronically* on page 8 in this chapter.

5) Continue with step 4 on page 12 in this chapter.

Follow the remaining steps in the preceding section of this chapter to optimize your startup disk.

Optimizing Your Startup Disk Using One Removable Media Disk (PowerBooks)

Your startup disk is the disk containing the current System Folder. Since neither the open system files on the disk containing the current System Folder nor open applications can be defragmented, you need to start up from another disk to defragment these files and completely optimize this disk. On some Mac OS computers such as PowerBooks, you can only use one disk besides the internal hard disk at a time (floppy or CD drive). You can completely optimize your internal hard disk by following these steps.

- 1) Turn on your Mac OS computer.**
- 2) Copy the folder containing PlusOptimizer to your internal hard disk.**

If you downloaded PlusOptimizer electronically, then it is likely that you already have this folder on your internal hard disk. If you received PlusOptimizer on a floppy, then you need to copy the contents of the PlusOptimizer floppy to your internal hard disk.
- 3) Insert a Mac OS system CD in your internal CD drive, or a Disk Tools disk in your floppy drive.**

You must use a Mac OS 7.1 or later CD in a drive from which you can start your Mac OS computer to graph and defragment Mac OS Standard (HFS) disks. To graph and optimize Mac OS Extended (HFS Plus) disks, the Mac OS system CD you are using must be Mac OS 8.1 or later.
- 4) Select Restart from the Special menu to restart your Mac OS computer.**

On most Mac OS computers, you need to hold down the “c” key to start from a CD. Consult the documentation that came with your computer to determine what you need to do to start from the Mac OS system CD.
- 5) When the computer has completed starting up, create a RAM disk using the Memory control panel.**

Open the Memory control panel in the system folder of your hard disk and create a RAM disk large enough to store the PlusOptimizer folder (1.4 MB or larger should suffice).
- 6) Copy the PlusOptimizer folder from your hard disk to the RAM disk.**
- 7) Continue with step 4 on page 12 in this chapter.**

Follow the remaining steps in the section *Optimizing Your HFS and HFS Plus Disks* in this chapter.

Chapter 3

Troubleshooting and

Error Messages

Troubleshooting

- ❑ **Problem: The disk I want to optimize does not appear in the list.**

PlusOptimizer cannot optimize a disk that is not locally attached, a floppy, nor one that is not HFS or HFS Plus.

- ❑ **Problem: The power to my Mac OS computer was disconnected, shut off, or otherwise interrupted while doing the optimization.**

PlusOptimizer was designed to permit interruptions. You should run Disk First Aid to repair any minor directory errors that can occur with any abnormal shutdown. Then simply run PlusOptimizer again to complete the optimization of the disk that was being optimized.

Disk Status Messages

These messages appear in the main window and describe the status of the selected disk.

- “disk name” is ready to be optimized.**

Click Optimize to optimize the selected disk.

- “disk name” is the startup disk and has files that are open. These files cannot be moved and a complete optimization may not occur.**

Your startup disk is the disk containing the current System Folder. The selected disk is the startup disk. To optimize this disk, refer to *Optimizing Your Startup Disk Using a CD Drive and a Floppy Drive* on page 15, "Chapter 2: Using PlusOptimizer."

- “disk name” cannot be optimized because an error occurred while attempting a previous optimization. (error number)**

An error occurred during a previous attempt to optimize this disk. A previous error message described the cause of the error. For more information on the error, refer to *Error Messages and Notifications* on page 21 in this chapter.

- “disk name” cannot be optimized because an error occurred trying to access the disk. (error number)**

This error message indicates that PlusOptimizer was unable to access this disk. This could be evidence of a bad block on the disk, a hardware defect, or problems with termination or cabling.

- “disk name” cannot be optimized because it is locked.**

This disk is not writable. You need to unlock the disk.

- “disk name” cannot be optimized. Starting from Mac OS 8.1 or later is required to optimize Mac OS Extended Format disks.**

For more information on PlusOptimizer operating system requirements, refer to *Requirements* on page 8, "Chapter 2: Using PlusOptimizer."

- ❑ **“disk name” cannot be optimized because it may be damaged.**

PlusOptimizer determined that there is a problem with this Mac OS Extended disk. You should run the copy of Disk First Aid that is supplied with Mac OS 8.1 or later to repair this disk.

Error Messages and Notifications

These are the messages you may receive while using PlusOptimizer.

- PlusOptimizer requires Mac OS 7.1 or later.**

For more information on PlusOptimizer operating system requirements, refer to *Requirements* on page 8, "Chapter 2: Using PlusOptimizer."

- PlusOptimizer requires a Mac OS compatible computer with a 68040 or PowerPC processor.**

For more information on PlusOptimizer hardware requirements, refer to *Requirements* on page 8, "Chapter 2: Using PlusOptimizer."

- A required resource is missing. PlusOptimizer may be damaged. Please reinstall PlusOptimizer.**

The copy of PlusOptimizer you are trying to run is corrupt. Make a new copy from the original. If the original is corrupt, contact Alsoft to obtain a new copy.

- PlusOptimizer encountered an unexpected error and cannot complete the current operation. If you report this error, mention the number (error number).**

This error message indicates that PlusOptimizer has encountered an unusual error. Make note of the error number (including whether the number was negative or positive) and then restart your computer. If you are not starting up from a Mac OS system CD, start up with all extensions off. If PlusOptimizer reports this error number again, please contact Alsoft Technical Support.

- The disk "disk name" cannot be optimized due to an unexpected error. If you report this error, mention the number (error number).**

This error message indicates that PlusOptimizer has encountered an unusual error. Make note of the error number (including whether the number was negative or positive) and then restart your computer. If you are not starting up from a Mac OS system CD, start up with all extensions off. If PlusOptimizer reports this error number again, please contact Alsoft Technical Support.

- The disk “disk name” cannot be graphed due to an unexpected error (error number).**

This error message indicates that PlusOptimizer has encountered an unusual error. Make note of the error number (including whether the number was negative or positive) and then restart your computer. If you are not starting up from a Mac OS system CD, start up with all extensions off. If PlusOptimizer reports this error number again, please contact Alsoft Technical Support.

- There is not enough available memory to complete the current operation.**

or

- The disk “disk name” cannot be optimized. There is not enough available memory to optimize (error number).**

Make sure any other applications are closed. If you are not running from a Mac OS system CD, make sure that you have started with extensions off. Do not, under any circumstances, increase the memory allocated to PlusOptimizer in its Get Info dialog.

- The disk “disk name” is not eligible for optimizing (error number).**

For more information on what disks are eligible for optimization, refer to *Requirements* on page 8, "Chapter 2: Using PlusOptimizer."

- The disk “disk name” cannot be optimized because it cannot be found (error number).**

The disk selected for optimization was ejected or removed from the desktop. It must be returned to the desktop before it can be optimized.

- The disk “disk name” cannot be optimized. A disk read/write error occurred (error number).**

This error message indicates that PlusOptimizer was unable to read or write a portion of the disk during the optimization. This could be evidence of a bad block on the disk, a hardware defect, or problems with termination or cabling.

You should back up the data on this disk and test it with a disk utility. You may need to reformat this disk to “spare” the bad blocks.

- The disk “disk name” cannot be optimized due to an error in the directory.**

or

- The disk “disk name” cannot be optimized due to directory damage. Use Disk First Aid to repair the damage (error number).**

PlusOptimizer has encountered an error while inspecting the directory during the optimization. If PlusOptimizer finds an error in a directory then the directory must be repaired or recreated. Disk First Aid is the directory repair utility that is supplied with the Mac OS. Use it to examine and repair any directory errors reported by PlusOptimizer.

Unfortunately, Disk First Aid cannot repair or even detect every error reported by PlusOptimizer. It may report that there is no repair necessary despite the presence of errors. If Disk First Aid reports that it completed the repair then attempt the optimization again.

If Disk First Aid fails to repair the directory, then the directory must be recreated. Follow these steps to recreate the disk directory:

1) Make a complete backup of the disk.

2) Erase the disk.

Use the Finder’s Erase Disk command. Dragging all of a disk’s files to the Trash does not erase the disk.

3) Restore all of your files from the backup to your disk.

- The disk “disk name” could not be optimized completely and an error occurred when attempting to display a dialog detailing the reasons (error number).**

This error message indicates that PlusOptimizer has encountered an unusual error. Make note of the error number (including whether the number was negative or positive) and then restart your computer. If PlusOptimizer reports this error number again, please contact Alsoft Technical Support.

- An error occurred while saving the text to a file (error number).**

The text describing the reasons why a disk cannot be optimized could not be saved to a file. Make

sure you have enough free space on the disk where you are trying to save the file, and make sure the disk is not locked.

- PlusOptimizer cannot be run from a locked disk. Please unlock the disk and then open PlusOptimizer again.**
- The disk “disk name” cannot be optimized. It contains special directory files.**

For future expansion, Mac OS Extended format allows the creation of special directory files. Currently, these files are unused by the Mac OS and therefore are unsupported by PlusOptimizer.

- The disk “disk name” has files that are open. These files cannot be moved and a complete optimization cannot occur.**

For more information about how PlusOptimizer handles open files, refer to *A Note About Open Files and Anchored Files* on page 10, "Chapter 2: Using PlusOptimizer."

- The disk “disk name” has (number) files that are larger than the amount of free space. These files cannot be moved and a complete optimization cannot occur.**

To find out which files are too large to be defragmented, refer to *Determining Which Files Cannot Be Defragmented* on page 9, "Chapter 2: Using PlusOptimizer."

- Optimization of the disk “disk name” was stopped. The disk was modified by another application.**

Make sure any other applications are closed. If you are not running from a Mac OS system CD, make sure that you have started with extensions off. If your computer is part of a network, it is possible that another computer on the network modified your disk.

- The optimization of the disk “disk name” was stopped.**

The Cancel or Stop button in the progress dialog was pressed during the optimization. To optimize this disk, select it in the PlusOptimizer main window and click the Optimize button.

- The disk “disk name” was successfully optimized.**

The disk has been successfully optimized.

Anchored Files List

After the optimization is completed, if there are any anchored files that needed to be moved on the disk being optimized, PlusOptimizer will display a window that lists the names of all the files that are anchored (files that PlusOptimizer will not move during optimization), along with explanations of why they are anchored. You can save this list to a file by clicking the Save button at the bottom of the window, or dismiss it by clicking the Done button.

For more information about how PlusOptimizer handles anchored and open files, refer to *A Note About Open Files and Anchored Files* on page 10, "Chapter 2: Using PlusOptimizer."

- The file “file name” with creator “creator” and type “type” is anchored because it occupies bad blocks.**

A file that contains bad blocks is anchored because moving the file would allow other files to be moved to or created in known bad blocks. For more information about bad blocks, refer to *A Note About Open Files and Anchored Files* on page 10, "Chapter 2: Using PlusOptimizer."

- The file “file name” with creator “creator” and type “type” is always anchored.**

When a file is reported as always anchored, the file will be anchored whether it is in use or not. This is because the file can be used without opening it or the file must reside at a specific location on the disk.

- The file “file name” with creator “creator” and type “type” is anchored because it is invisible and its creator and type are unknown to PlusOptimizer.**

When a file is being reported as anchored because it is invisible and its creator and type are unknown, the file is being anchored for safety purposes but may not need to be anchored.

Future releases of PlusOptimizer will correctly classify unknown invisible files. To help us classify these files, print this log and mail it to Alsoft Tech. Support, P. O. Box 927, Spring, TX 77383 or e-mail it to Tech.Support@Alsoft.com.

- The file “file name” with creator “creator” and type “type” is anchored because it is in use (open).**

When a file is reported as anchored because it is in use, closing the file will allow it to be optimized.

- The file “file name” with creator “creator” and type “type” is anchored because it is larger than the free space on the disk.**

When a file is reported as anchored because it is larger than the free space, making more free space will allow the file to be optimized.

To find out which files are too large to be optimized, refer to *Determining Which Files Cannot Be Defragmented* on page 9, "Chapter 2: Using PlusOptimizer."

- The directory is anchored because it is always in use.**

The directory is always in use and cannot be moved. Normally it is not necessary to move the directory but the directory on this disk is fragmented.