Apple RAID Software Version 1.0.1 Read Me (11/94)

Article Created: 21 October 1994
Article Reviewed/Updated: 17 November 1994

TOPIC -----

This article is the Apple RAID 1.0.1 ReadMe file.

DISCUSSION -----

Apple RAID Software Read Me

This document contains important additions to the Apple RAID Administrator's Guide. The Read Me includes the following sections:

Locating the Apple RAID Software Files on Your Startup Disk

The Apple RAID Software program is installed in the Apple Menu Items folder in the System Folder on the startup disk. The Apple RAID Monitor is installed in the Extensions folder in the System Folder on the startup disk. The Apple RAID Software Read Me (this document) and the SimpleText text-processing program are installed in an Apple RAID folder in the top-most directory of your startup disk.

Initializing Disks With Apple RAID

Initializing a Disk and Using the Finder

Do not initialize a disk while it is in active use by the Finder, such as during a copy. Wait until the Finder operation has completed or, if possible, click the Cancel button in the progress dialog box.

Losing Power During Initialization

If a disk loses power while you are initializing it, your server might crash immediately, and your server might also crash upon startup until the disk is properly initialized. If you experience these problems, start up your server with the offending disk switched off. Switch the disk on while the Finder is active and initialize the disk with a non–Apple RAID disk utility. If the initialization is successful, reinitialize the disk with Apple RAID.

Initializing Apple RAID Disks With Other Disk Utilities

Delete or unmount the Apple RAID volumes before reinitializing an Apple RAID–formatted disk with Apple HD SC Setup or a third-party disk utility. Non-Apple RAID disk utilities may not be able to unmount Apple RAID volumes during initialization.

Back Up Your Data

Apple RAID mirrored volumes will not protect you from all types of data loss. Equipment theft or natural disasters such as fire or flooding, for example, can result in data loss. Therefore, make sure you continue to back up all your data, including data residing in Apple RAID mirrored or striped volumes.

Extra Disk for Faster Recoveries

An extra disk that is initialized for Apple RAID, connected to the server, and switched on will reduce the time required to recover an Apple RAID volume from a failed disk. Having such an extra disk on hand is a recommendation and not a requirement for using Apple RAID.

Apple RAID and Third-Party SCSI Cards

Apple RAID supports built-in SCSI buses only; it has not been tested with third-party SCSI accelerator cards. You may experience difficulties if Apple RAID is installed on a server with a third-party SCSI card.

Apple RAID and Virtual Memory

Apple RAID makes extensive use of direct memory access and may not work with virtual memory turned on. Make sure that virtual memory is turned off on your server.

Deleting Volumes With Apple RAID

Do not delete a volume that is in active use by the Finder, such as during a copy. Wait until the Finder operation has completed or, if possible, click the Cancel button in the progress dialog box.

Mirror Failures During Finder Operations

If a mirror failure occurs during a Finder operation, allow the operation to complete before rebuilding the mirror. When rebuilding the mirror be sure to set the rebuild rate slide bar to less than 75% of maximum.

Handling Spontaneous Mirror Failures

Sometimes a mirrored volume may fail for no apparent reason. The volume will rebuild with no problem and disk test utilities will show no defects. In most cases the disk that failed will develop a media failure within a few weeks. If a disk begins to cause spontaneous mirror failures, consider replacing the disk before it fails completely.

Using Thousands or Millions of Colors

Using thousands or millions of colors on a server may degrade performance and cause problems with Apple RAID. If you experience problems creating new volumes with Apple RAID, make sure that your server is set to 256 colors or less in the Monitors control panel. You can also try an alternative method for creating new volumes: instead of Shift-clicking disks in the Disks column and dragging them to the Volumes column in the Setup window, use the Apple RAID menu commands for creating a new volume, as explained in Chapter 3 of the Apple RAID Administrator's Guide.

Choose Screen Savers Carefully

There are many screen savers that can be used to prevent screen burn-in on Workgroup Servers. Some screen savers are quite elaborate and perform many complex calculations to draw a single picture on the screen. Since the calculations require significant amounts of CPU time, the more complex screen savers will reduce the performance of your Workgroup Server. Choose the screen saver that interferes the least with your Workgroup Server.

Some screen savers or their modules are not compatible with Apple RAID and can cause your Workgroup Server to crash or hang. Before purchasing or using a screen saver, check with the screen saver's manufacturer to determine if the screen saver will work properly with your Workgroup Server.

Using Apple HD SC Setup With Apple RAID

A message indicates an Apple RAID disk has no initialized volumes

When scanning for disks in the Apple HD SC Setup program, Apple RAID–initialized disks might display the message, "This disk contains no initialized Macintosh volumes." The current version of Apple HD SC Setup does not recognize Apple RAID mirrored or striped volumes and will display the above message if the disk does not contain an Apple RAID standard (HFS) volume.

Updating the driver on Apple RAID–formatted disks

Apple HD SC Setup version 7.3 allows you to update the driver on any Apple disk, including disks formatted with Apple RAID. Regardless of the instructions for installing new versions of system software, do not update Apple RAID–formatted disks with Apple HD SC Setup. Use the Install Driver command of the current version of Apple RAID or contact your support representative for a driver that supports new system software releases.

If the driver of an Apple RAID–formatted disk is updated with Apple HD SC Setup, it can be repaired if the Apple RAID partition map is intact. Start the Apple RAID program, select the disk, and choose "Install Driver" from the Disk menu. If this option is not enabled, the Apple RAID partition map has been damaged and no recovery is possible; you need to reinitialize the disk.

Failures During Retrospect Backups

If you are using Retrospect to back up files and receive either a mirror failure or a damaged catalog file error, try turning off Snapshot mode in Retrospect.

Restoring Volumes With Retrospect

The Retrospect backup software allows you to select the option "Restore Entire Disk." This option overwrites all files on the destination volume, including the invisible file that contains the Apple RAID icons. Next time you start up the server, the Apple RAID volume icon will appear as a generic document icon.

To recover the Apple RAID mirrored, striped, or standard volume icons:

1) Select an Apple RAID volume of the same type (mirrored, striped, or standard).

2) Choose Get Info from the File menu and click on the icon.

3) Choose copy from the Edit menu.

4) Select the Apple RAID volume with the missing icon and choose Get Info from the File menu.

5) Click on the generic document icon and choose Paste from the Edit menu.

The icon will be restored.

Using the Microsoft Mail Backup Utility With Apple RAID

Due to the way in which the Microsoft Mail Backup Utility shuts down the system, the automatic backup feature of Microsoft Mail causes mirrored volumes to become

out of sync. The best way to back up your Microsoft Mail Server is to follow the instructions for a manual backup in the Microsoft Mail documentation.

Slow Startup With 2-Gigabyte Drives

Some 2-gigabyte disks take a long time to reach full speed. Apple RAID will wait for such disks to spin up, which may increase the time it takes to start up your server if a 2-gigabyte drive is attached.

Use Shielded SCSI Cables

Make sure all SCSI cables are shielded. You might experience I/O errors when adding additional disks to the SCSI chain if the cables aren't shielded. A shielded SCSI cable is thicker and stiffer than an unshielded SCSI cable. Check with the manufacturer if you're unsure whether the cable is shielded. All Apple SCSI cables are shielded.

Remove Switched-Off Devices From the SCSI Bus

Apple recommends that you remove SCSI devices that are switched off from the SCSI bus. Make sure all SCSI devices are switched on and remove them if they aren't. This avoids signal strength problems for the remaining devices on the bus.

Do Not Use SCSI-1 Devices in a SCSI Bus Containing SCSI-2 Devices

Older disks, usually under 200 megabytes in size, cause trouble when connected to a SCSI bus containing SCSI-2 devices. Most older disks are only SCSI-1–compliant and are not always compatible with a bus using SCSI-2 devices.

Rebuilding Mirrored Volumes While Running AppleShare

When rebuilding a failed or out-of-sync mirrored volume while AppleShare is running, set the AppleShare Remote User Activity slide bar to less than 50%. If AppleShare is under particularly heavy use, set the slide bar to an even smaller percentage of the processor's time. These settings ensure that Apple RAID will receive the necessary processing time to perform the rebuild. (See your AppleShare documentation for details about setting the Remote User Activity slide bar.)

Installing a Driver While Rebuilding a Mirrored Volume

Apple recommends that you do not update the Apple RAID driver on a disk on which a mirrored volume is currently being rebuilt.

Restarting Stalled Rebuilds

If there appears to be no disk activity during a rebuild, the rebuild may be stalled. Restarting the system should cause the rebuild to continue.

Dealing with Rebuild Failures

If a rebuild failure occurs check that all devices on the SCSI bus are properly

attached, terminated, and powered on. Retry the rebuild with the rebuild rate slide bar set to less than 75% of maximum.

Article Change History:
17 Nov 1994 - Updated article to release Read Me File.

Keywords: supt

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19960215 11:05:19.00
Tech Info Library Article Number: 16574