Tech Info Library

Apple RAID Software 1.0.2 Read Me (7/95)

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TOPIC --------------------

This article is the Apple RAID Software, version 1.0.2, ReadMe file.

DISCUSSION --------------------

This Read Me contains important additions to the Apple RAID Software Administrator's Guide, and includes the following sections:

- 4 GB Volume Support
- Locating the Apple RAID Software Files on Your Startup Disk
- Reinstalling Apple RAID Software
- Back Up Your Data
- Initializing Apple RAID Disks With Other Disk Utilities
- Losing Power During Initialization
- Using Apple HD SC Setup With Apple RAID
- Extra Disk for Faster Recoveries
- Apple RAID and Third-Party SCSI and PDS Cards
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- Restarting Stalled Rebuilds
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4 GB Volume Support

Apple RAID now supports volumes as large as 4 GB (rather than 2 GB as stated in the manual).

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 Simple Text text-processing program are installed in an Apple RAID folder in the top-most directory of your startup disk.

Reinstalling Apple RAID Software

The files for reinstalling Apple RAID are on the Workgroup Server Software CD-ROM disc (not on the Apple RAID Software CD-ROM disc as stated in the manual.

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.

Initializing Apple RAID Disks With Other Disk Utilities

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

Losing Power During Initialization

If a disk loses power while you are initializing it with Apple RAID, it may cause your server to crash immediately or later when the system starts up. If you suspect that your server is crashing due to this problem, start up your server with the offending disk switched off. Turn the disk on while the Finder is active and initialize the disk with Apple HD SC Setup or a third-party disk utility. If this initialization is successful, then reinitialize the disk with Apple RAID.

Using Apple HD SC Setup With Apple RAID

- Updating the Driver on Apple RAID–formatted Disks

Always use the "Install Driver" command on the Disk menu in Apple RAID if you need to update the driver file on Apple RAID-formatted disks. Never use Apple HD SC Setup to update the driver on an Apple RAID-formatted disk, even though version 7.3.4 of Apple HD SC Setup allows you to do this, and the instructions for installing new versions of system software instruct you to do this. If you

use Apple HD SC Setup instead of Apple RAID to update the driver file, you will lose all data contained in the RAID volumes on the disk. However, you can retrieve your data 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.

• 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.

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 mirror volume from a failed disk. (The extra disk must be large enough to hold the mirror volume.) Having such an extra disk on hand is recommended but not required for using Apple RAID Software.

Apple RAID and Third-Party SCSI and PDS 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 that contains a third-party SCSI card. The same is true for SCSI PDS cards.

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.

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, set your server to 256 colors or fewer 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 Software 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 such calculations require significant amounts of CPU time, more complex screen savers

reduce the performance of your Workgroup Server. Choose a screen saver that interferes least with your Workgroup Server, such as a screen saver built-in to an application that you run.

Some screen savers or their modules are not compatible with Apple RAID Software 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 and with Apple RAID.

Restoring Volumes with Retrospect

If your Apple RAID volume icon appears as a generic hard disk icon after you restore with Retrospect, you can recover the Apple RAID volume icon as follows:

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

2) Choose Get Info from the File menu, click on the icon, and choose Copy from the Edit menu.

3) Select the Apple RAID volume with the generic icon.

4) Choose Get Info from the File menu, click on the 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 might 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 from the SCSI bus, SCSI devices that are switched off and unncessary for your work. Removing unused devices 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.

Handling Spontaneous Mirror Failures

Sometimes a mirror 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.

Rebuilding Mirror Volumes While Running AppleShare

When rebuilding a failed or out-of-sync mirror 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 Mirror 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.

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