



Workgroup Server Software Update

Information About New Server Software

November 1994

For Sales Personnel Only

Apple RAID Software

Product Description

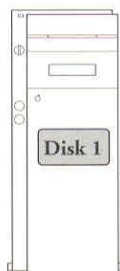
Apple® RAID Software version 1.0.1 provides RAID (Redundant Array of Independent Disks) technology to Apple's PowerPC™ processor-based Workgroup Servers. RAID technology offers a means of maximizing hard disk storage capacity, protecting data, and improving performance—capabilities increasingly demanded by organizations. More specifically, Apple RAID is a software application that provides RAID Level 1 and 0 capabilities. Data mirroring (RAID Level 1) increases data reliability by creating a redundant copy of the data on a separate hard disk. Data striping (RAID Level 0) provides potential performance gains through the storage of data across two to four hard disks on one or two SCSI buses.

Positioning

Apple's easy-to-use software solution for increased data reliability or potentially increased performance in a Workgroup Server-based LAN (local area network).

Key Selling Points

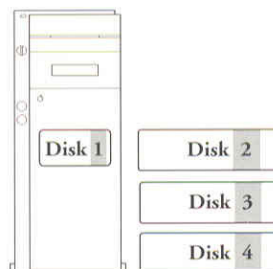
- **Improved data reliability.** The data mirroring enabled by Apple RAID greatly improves the data reliability (also referred to as data availability) of Workgroup Servers. Data is written to two separate hard disks, so if one disk fails, users can still access the remaining disk without data loss. Apple RAID also enables users to easily rebuild a mirrored volume. Data mirroring is important for organizations that cannot afford downtime or data loss from a failed hard disk. These organizations use applications—such as database services, document publishing, and educational applications—that require continuous access to on-line data. (*Note: Data mirroring does not eliminate the need to make regular backups. Server crashes can still cause data corruption.*)



Use mirroring when...

- You need guaranteed access to files and cannot afford downtime.
- You have enough disk space for duplicate data.

- **Enhanced performance.** Data striping enables the server to store successive units of data across multiple hard disks. This procedure allows a collection of disks to store larger amounts of data. The data is stored in parallel on several hard disks, potentially increasing performance for applications that can benefit from faster data transfer rates. Striping is most likely to be utilized by organizations such as publishers and graphic arts firms, whose work involves the creation and distribution of large files and volumes.



Use striping when...

- You need faster access to large files.
- You want to use a few smaller disks to store one large volume.

- **Ease of use and management.** Apple RAID is designed to be easy to learn and use. Installation of Apple RAID requires reformatting of hard disks by the application, but once Apple RAID is installed on a disk, the creation of mirrored, striped, or standard Macintosh® HFS volumes is a simple matter of clicking the mouse and dragging folders and icons. And the intuitive graphical interface provided by the software makes it easy to keep track of the volumes that users create and the disks they use.

Prospects

Because Apple RAID comes bundled with the PowerPC processor-based Workgroup Servers, prospects for both the software and the hardware are the same: organizations looking for powerful, reliable servers. These customers include traditional file/print server buyers, as well as a growing number of organizations that are making use of applications-based servers in such areas as publishing, education, and databases. The bundling of Apple RAID will improve the reliability of these servers, which is important for organizations that cannot afford any downtime or data loss from a failed hard disk.

Q&A

Why is Apple RAID important to Workgroup Servers?

Organizations are increasingly looking for greater hard disk storage capacity, improved data reliability, and enhanced performance from their servers. RAID technology is a widely accepted technology to support those needs. The existence of a bundled, Apple-branded solution makes our PowerPC processor-based Workgroup Servers much more competitive in this marketplace—as well as specifically more attractive to organizations that cannot afford downtime or data loss resulting from hard disk failure. It also helps to differentiate the Workgroup Server line from our high-end desktop computers.

How do I get Apple RAID? What if I have already bought a Workgroup Server?

Apple RAID is provided, free of charge, with the Workgroup Server 6150, 8150, and 9150, and with PowerPC logic board upgrades for the Workgroup Server 60 and 80. Users who purchased any of these servers or upgrades before the software was available can obtain it through Apple's free fulfillment program by returning the registration card that was included with their product materials.

Who should use Apple RAID? And when are mirroring and striping appropriate?

In general, organizations with a client/server setup are looking to RAID technology to improve data reliability and performance. More specifically, system administrators who manage servers with mission-critical information that must be constantly accessible will be attracted to the data mirroring capabilities of Apple RAID. Data striping will be more appropriate for applications that demand the use of large volumes and faster access to connected hard disks.

How do regular backups and use of Apple RAID complement each other in a client/server environment?

With its data mirroring capabilities, Apple RAID makes disk failure survivable. Administrators are notified of a disk failure, and can rebuild the affected volumes while still enabling users to access the data on the surviving mirrored disk. However, a number of circumstances may affect an entire server, including data corruption resulting from malfunctioning applications and an actual server crash. To protect against such potentially catastrophic occurrences, regular server backups are still recommended.

What other RAID solutions are on the market today, and how does Apple RAID compare?

Other third-party RAID products for servers that run the Mac® OS include RAID software products from FWB, Micronet, Conley, and Trillium. These products are not certified by Apple. Many Apple customers specifically requested a bundled, Apple-branded RAID solution. The features of Apple RAID are comparable to those of the competition in most areas, while its user interface offers clear advantages. Our position is that Apple RAID is a convenient, easy-to-use, bundled solution designed to meet the needs of most of our customers. For customers requiring other RAID levels or RAID expansion towers, several third-party solutions are available; however, Apple is not responsible for the quality or reliability of these products.

What types of hard disk drives are compatible with Apple RAID?

Apple RAID was designed to work with standard SCSI hard disk drives. More specifically, Apple recommends SCSI hard disks with a capacity of at least 200 megabytes that support the SCSI-2 command set and are compatible with Apple's SCSI Manager 4.3. Apple has worked with leading third-party storage vendors; however, Apple does not certify third-party hard disk drives or storage vendors.

Does Apple RAID work with Macintosh System 7.5?

Currently, Apple RAID is compatible only with System 7.1.2, which is the certified system software for the first generation of Apple's PowerPC processor-based Workgroup Servers. System 7.5 compatibility is being investigated for the future.

Is Apple RAID localizable?

The current version is available in English only. Localization for other languages is being investigated for the future.