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NEWS

RAIDs Getting Bigger, Smarter

Latest Disk Arrays Boost Performance, Capacity and Security for Broadcasters

by Robert Brilliant

SAN FRANCISCO

RAID, a catchy acronym for Redundant Array of Independent (or Inexpensive) Disks, is a technology rapidly moving from peripheral to “peer” status in the broadcast and streaming media world. Once considered add-on hardware, RAID systems are now essential to many on-air video servers, providing broadcasters with expandable program storage through low-cost disk drive arrays and record/playback protection through disk redundancy.

And now RAID manufacturers are designing their new products with the software and controller smarts that will provide even better performance, wider applications and lower costs to an industry that craves all three.

RAID IN A NUTSHELL

RAIDs consist of groups of off-the-shelf magnetic disk drives assembled within a chassis and running in parallel. Redundancy is achieved through the use of “parity” data, often stored on a dedicated drive, that can reconstruct data from any drive in the event a drive fails. Even if one drive is physically removed from the chassis, the remaining drives and the parity drive can retrieve all the missing data, often on the fly with no apparent performance degradation.

Depending upon need and configuration, a data file can be striped (written across several

disks so that all disks can perform read and write functions simultaneously) or mirrored (in which a redundant file copy is created). Most RAID systems are managed with a controller component that sits “in front” of the disks and communicates with the disks and the server.

Different RAID architectures, such as RAID 3 and RAID 5, vary the distribution of content and parity data across the disk array to meet particular performance requirements.

PERFORMANCE AND SECURITY

RAIDs provide broadcasters with two important commodities: performance and security. Performance relates to a RAID’s ability to record large data files and then play those files back with millisecond recall. Security relates to the fact that these operations can run flawlessly, even in the face of drive failure.

“Performance and security in a RAID are linked together,” said Jason Mancebo, senior technology manager of the Media Industries Division at SGI, a leading server and RAID manufacturer. “Even a one frame data loss is unacceptable in an on-air playback because that’s a blank screen at home, while a frame-long failure during file writing can make an entire feed useless.”

The current line of SGI RAID products, the TP 9100 and TP 9400 storage arrays, are available with disk drives of up to 73 GB capacity with a 181 GB drive shipping soon. “Broadcast-



SGI’s TP9400 will soon ship with an expanded 181 GB drive.

ers typically aren’t interested in ‘gigabytes’ as a spec,” said Mancebo. “Hours of storage is the spec they care about. So when we tell them that the 73 GB drive costs 20 percent more than the 36

