

D2D And Tape Face Off

▲ Will D2D (disk-to-disk) technology become a viable competitor and possible replacement for tape backup technology?

by Jay McCall

Traditionally, tape backup systems have been the unquestionable choice for enterprises ranging in size from mom-and-pop shops to Fortune 500 giants. Over the past year, however, we have begun hearing claims of a new way of protecting our data — D2D (disk-to-disk). It's not really that D2D is so new, but its advocates claim that new technology has enabled prices to be lowered. That makes D2D a viable competitor to tape backup.

For Peri Grover, director of product marketing for tape libraries at Exabyte (Boulder, CO), D2D poses no threat in the near future. "Tape media is the primary choice for data backup," says Grover. "It continues to be the most cost-efficient, high-capacity, high-performance data storage medium." The only competition Grover sees in the tape backup arena is among new tape technology. For example, Super DLT (digital linear tape), AIT (advanced intelligent tape), LTO (linear tape open), and Mammoth are tape technologies that compete with one another. One tape media may boast more compressed storage capacity, while another

offers faster data throughput and cheaper TCO (total cost of ownership). With so many enterprises using these various tape technologies in a SAN (storage area network) environment, it seems certain that tape technology is not just here to stay; it's here to dominate.

D2D — A Better Way To Back Up?

According to Diamond Lauffin, executive VP, worldwide for Nexsan Technologies (Los Angeles), tape technology will soon take a hard fall to D2D technology. "It used to be that disk backup technology was very expensive and used by only a select few large enterprises such as Merrill Lynch, Chase Manhattan Bank, and MCI," says Lauffin. "Today, however, because of new technology and economies of scale D2D is an overall better choice for backing up data than tape." Lauffin predicts that the only area tape will maintain its niche in the near future is

archival storage. But as far as backing up enterprise data, accessing nearline data, and disaster recovery initiatives, he sees D2D taking over within the next few years.

"One significant reason for D2D's viability is ATA (advanced technology attachment) disk drives," says Lauffin. "ATA drives use all the same main components used in a Fibre drive while at the same time exploiting the cost disadvantages of a Fibre drive." Nexsan's chip technology enables Nexsan to provide disk storage at less than 1.7 cents a megabyte. The other benefit of the ATA product is that it automatically recognizes the operating system without the necessity of middleware or programming to accomplish this task. "This is a key area where enterprises can start to see the cost savings with a D2D solution versus a traditional tape solution," says Lauffin. "When companies quote a price for a tape backup solution, there are a lot of hidden costs that don't come to light until the time of the implementation. For instance, it costs \$10,000 for a typical tape library with an additional cost of \$2,500 for tape, and an additional \$2,400 to \$8,000 for the middleware, which will allow it to be managed by the host system."

Additional costs are added with training and even more with technical support. Using the aforementioned example, a 12-tape library with 600 GB of native storage would average \$20,000. According to Lauffin, D2D's TCO is 25% to 45% cheaper per MB than tape backup by eliminating such issues as tape media rotation or replacement due to wear and no capacity expansion costs traditionally associated with tape backup software. "With D2D, files can be accessed directly just like any disk system, unlike tape solutions which must first load a tape and perform a linear search and retrieval of a file," says Lauffin. "Additionally, D2D eliminates the backup window. Because disks are random access devices, the D2D system was designed as an event-based system on a 24-hour window. Therefore, backups can be performed in as few as one minute intervals as documents are being modified, versus the tape backup alternative which typically happens after the work day." Not only does this eliminate the possibility of losing a day's worth of data, it eliminates storing unnecessary document revisions. "Most tape backup solutions incorporate what's called a grandfather, father, and son technique with daily incrementals, which creates up to 30 copies of a single file within the monthly backup cycle," says Lauffin. "With direct file overwrite capability, users can choose exactly how many revisions are correct for their environ-



Diamond Lauffin, executive VP, worldwide, Nexsan Technologies



Peri Grover, director of product marketing for tape libraries, Exabyte

▼	Technology Update
▲	Tape Backup
▼	D2D (disk-to-disk)

ment based on a file, folder, workstation, workgroup, or server level. Because D2D technology communicates directly at the application level, each incremental change can be backed up within a short period and users can retain just one or as many versions as they want.”

Competition Is Always A Good Thing

Compared to the 2 million new tape backup installations performed in 2001, D2D is barely on the radar screen at this point. But, if Lauffin’s predictions come true, the pendulum is going to be swinging in the D2D direction very soon. No matter whose prediction comes true, however, the added competition in the mass storage arena will further fuel lower prices for storing data. With that in mind consumers can stand by the sidelines and cheer both tape backup and D2D on to victory. □

THE RESOURCE LINK **STORAGE BACKUP SOLUTIONS**

Cybernetics

CY-8050 AIT-2 drive

www.cybernetics.com

Exabyte

X200 tape library

www.exabyte.com

Fuji Photo Film U.S.A., Inc.

LTO Ultrium 1 - 100 GB cartridge

www.fujifilm.com

Nexsan Technologies

InfiniSAN D2D

www.nexsan.com

Overland Data

DLT Neo Series LXN2000

www.overlanddata.com

Qualstar

AIT-3, LTO, and SuperDLT tape libraries

www.qualstar.com

Quantum ATL

TLS-8000 tape library systems

www.atp.com

Spectralogic

Spectra 64000 tape libraries

www.spectralogic.com

StorageTek

StorageTek L700e tape library

www.storagetek.com