EMC Disk Library Capabilities Change the Economics of Disk Backup vs. Tape Backup

De-duplication, new LAN-attached platforms, Spin Down option, and low power drives help accelerate tape replacement, eliminate competitive differentiators, create new market opportunities

Overview

EMC will publicly announce new Disk Library family platforms, software, and functionality on May 19, 2008 at EMC World. These capabilities lower backup costs, reduce energy requirements, and simplify backup, allowing EMC to take the initiative in moving more tape customers to disk, gain greater share of backup from tape in existing Disk Library environments, and eliminate "feature company" differentiators.

This announcement includes:

- **New LAN-attached platforms with data de-duplication.** New DL3D 1500 and DL3D 3000 models compete directly with Data Domain. The models provide policy-based data de-duplication, Five-9s (99.999 percent) availability, and advanced replication, offering an attractive alternative to tape in LAN-based environments.
- **Data de-duplication for DL4000 series.** Available with new or installed systems, the 3D 4000 add-on option provides policy-based data de-duplication that reduces storage capacity requirements, has no impact on backup performance, lowers energy consumption, and reduces replication costs.
- **Spin Down option and low power drives for DL4000 series.** Disk drive Spin Down and new low power 1 TB SATA drives for the DL4000 series deliver up to 47 percent savings in disk-related power and cooling costs, making the DL4000 series the industry's most energy-efficient virtual tape libraries.
- **New Disk Library V3.2 software.** Required for disk-drive Spin Down and management of new de-duplication capabilities across the entire DL4000 series, it also provides new security and ease-of-use enhancements.

Product Details

DL3D 1500 and DL3D 3000

The EMC DL3D 1500 and DL3D 3000 are new LAN backup-to-disk libraries with data de-duplication, targeted at midsize, LAN-based environments. Based on the CLARiiON CX3-10 (DL3D 1500) and CX3-40 (DL3D 3000) platforms, these new models offer midsize customers an affordable price point, policy-based de-duplication, Five-9s storage availability, and replication and connectivity choices.

These systems are comparably priced to Data Domain models. They support LAN connectivity and do not require a SAN. The DL3D 1500 provides up to 36 TB of usable capacity while the DL3D 3000 provides up to 148 TB of usable capacity. Both systems use 1 TB SATA disks with RAID 6 protection and include optional Fibre Channel ports for SAN connectivity.

All data de-duplication is policy-based, and can take place during the backup process or be shut off for a defined time period to speed ingest rates. This enables customers to tailor de-duplication policy by application. Replication of de-duplicated data using IP replication is supported to enable offsite protection and recovery. Before replication to a remote site, these models provide a de-duplication check to ensure only unique data is replicated, providing a differentiator over Data Domain and further lowering bandwidth costs.

3D 4000 Add-On Option—Data De-duplication for DL4000 Series

The 3D 4000 option adds policy-based data de-duplication to the DL4000 series. Suitable for either new or installed DL4000s, 3D 4000 will be available for ordering in the July release of Channel Express.

The 3D 4000 policy-based data de-duplication option allows DL4000 series customers to maintain performance service levels for backups, while reducing backup storage growth and lowering the costs of backup data residing on disk. The new option provides a replication capability using IP connectivity, reducing replication costs and making the elimination of tape more practical.

Disk Drive Spin Down and Low Power 1 TB Drives for DL4000 Series

Available in June 2008, the new Spin Down option for the DL4000 series is a no-charge item that enables customers to reduce their overall power and cooling costs by putting idle drives in sleep mode. The Spin Down option for existing DL4000 series customers requires an upgrade to the new V3.2 software and applies to the DL4000 RAID 6 systems only. Also new are the low power 1 TB SATA drives available for new and existing DL4000 series platforms. Since the drives spin at 5,400 rpm, they require less energy than the 7,200 rpm drives.

Adding Spin Down can help reduce drive-related power requirements for a typical environment by up to 19 percent. Adding the low power drives can reduce power by up to 32 percent. Combining Spin Down with the low power drives can reduce power by up to 47 percent.

EMC Disk Library V3.2 Software

In addition to being required for the 3D 4000 and Spin Down options, the EMC Disk Library V3.2 software adds security and ease-of-management features, supporting the Lightweight Directory Access Protocol (LDAP) and Microsoft Active Directory (AD). This enables users to log on to the Disk Library Console application using their corporate login and password, thereby supporting centralized access rights management. This software is applicable to the DL4000 series only.

Messaging and Positioning

EMC provides the most comprehensive backup portfolio of software, hardware, and services in the industry. This announcement expands EMC's backup portfolio advantage, adds new differentiators, and delivers de-duplication as a feature in the Disk Library family.

The introduction of the new LAN-based DL3D 1500 and DL3D 3000 provides an attractive offering for midsize customers and creates new backup-to-disk opportunities in tape environments. These offerings compete directly with Data Domain and are sharply differentiated by their superior, policy-based de-duplication capabilities, including de-duplication checks between local and remote sites, better scalability, Five-9s availability, and unmatched service and support.

The DL4000 series is targeted at environments that require the speed of virtual tape library backup for larger SAN environments. The new capabilities introduced for the DL4000 series drive significant benefits by reducing…

- Storage and replication costs with data de-duplication
- Disk-related power and cooling requirements by up to 47 percent over previous DL4000s without Spin Down and low power drives
- Energy and cooling requirements further through data de-duplication—fewer drives means less power

These capabilities mean that the DL4000 series—already the industry-leading, open systems virtual tape offering—is now the industry's most energy-efficient virtual tape library as well. This will resonate with customers who face the challenges of running out of power and cooling capacity for their data centers. The energy-efficiency improvements will also improve disk-backup total cost of ownership compared to tape.

De-duplication Ratios for Disk Library

Each de-duplication offering in the market will make a claim about the amount of de-duplication it can provide—normally called the de-duplication ratio. The key point about de-duplication ratios, for both competitive and EMC products, is that the actual amount of de-duplication achieved will vary based on factors such as retention policies, data change rates, data types, and type of de-duplication (file-based, sub-file, etc.). Here's how four variables impact de-duplication:

1. **Retention period—longer retention period equals a higher de-duplication ratio**. The longer a backup is held, the higher the odds that the same content will be backed up more than once.
2. **Ratio of full backups to incremental—more fulls equal a higher de-duplication ratio**. The more full backups your customer does, more redundant data is being repeatedly backed up.
3. **Change rate—less change equals a higher de-duplication ratio**. If the content in an application changes just a small amount, there is a lot of duplication in subsequent backups.
4. **Data type—less unique data equals a higher de-duplication ratio**. Data from natural sources (sounds, images, scans, etc.) is unique, but user-generated data (documents, presentations, personal folders, etc.) generally have high duplicate content.

For Disk Library family de-duplication, leverage EMC's de-duplication analyzer tools to determine individual customer ratios and help accurately assess and size the right backup offering.