FAST, RELIABLE DATA PROTECTION FROM DELL AND COMMVAULT

By Sanjeet Singh

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Dell and CommVault have teamed up to create a next-generation disk-based backup system that combines leading-edge Dell™ hardware with innovative CommVault® data protection software. The new state-of-the-art Dell PowerVault™ DL2000 – Powered by CommVault integrates disk-based backup and recovery with de-duplication technology to help deliver fast, reliable data protection.

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Faced with exponential data growth, many IT organizations are struggling with the amount of critical information they must store, manage, administer, and protect on a daily basis. At the same time, they are also seeking solutions to help increase backup reliability, decrease data protection costs and complexities, and meet stringent compliance and e-discovery service-level agreements (SLAs).

For example, a 30 percent annual data growth rate would mean that the amount of data that backup and recovery systems must support would more than double in the next three years. Because organizations may experience annual growth up to or exceeding 60 percent, backing up and restoring vital data within acceptable time frames can become increasingly difficult. To help increase reliability and streamline the process, many organizations have looked beyond traditional tape-based backup to disk technologies, which are typically both faster and more reliable than tape. According to a Gartner user survey analysis on storage management software usage driven by replication, de-duplication, and virtualization, the overall trend toward backup to disk continues, with 48 percent of the survey's respondents stating that their first-line backup is to disk compared with only 35 percent backing up directly to tape.[1]

To help meet the backup needs of organizations of all sizes, Dell has worked with two leading backup software companies, CommVault and Symantec, to introduce two new backup-to-disk appliances: the Dell PowerVault DL2000 – Powered by CommVault and the Dell PowerVault DL2000 – Powered by Symantec Backup Exec.[2] The new Dell PowerVault DL2000 – Powered by CommVault is a next-generation disk-based backup solution that combines high-performance Dell hardware with advanced CommVault data protection software. It provides a state-of-the-art solution that integrates disk-based backup and recovery with de-duplication technology to help provide fast, reliable data protection in a cost-effective way.

INCREASING STORAGE EFFICIENCY WITH DE-DUPLICATION

Disk-based backup has generally been available in two primary forms: traditional backup software written to disk, and virtual tape libraries (VTLs). VTLs, which use disks to emulate tape drives, gained popularity for their ability to create multiple libraries and

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[1] "User Survey Analysis: Storage Management Software Usage Driven by Replication, Deduplication and Virtualization," by Alan Dayley, Gartner, Inc., March 4, 2008.

[2] For more information on the Dell PowerVault DL2000 – Powered by Symantec Backup Exec, see "Simplified Data Protection with Disk-Based Backup from Dell and Symantec," by Sanjeet Singh and Charles Butler, in *Dell Power Solutions*, November 2008, DELL.COM/Downloads/Global/Power/ps4q08-20080444-Symantec-M.pdf.

write multiple streams of data simultaneously. Many VTLs are compatible with leading backup software and function as plug-and-play appliances, which can be deployed easily in data centers and remote locations.

Although VTLs are adequate short-term resolutions to backup and recovery bottlenecks, they are separate systems that can result in disjointed silos of isolated data that end up being managed as disparate point solutions. For administrators at midsize organizations, VTLs can also lack sufficient capacity, neither scaling well nor taking advantage of the true random I/O nature of native disk technology.

The introduction of innovative data de-duplication technologies has accelerated the migration to disk-based backup and recovery. Data redundancy is a major contributor to ever-increasing data sprawl. For example, if a single file is created and shared with 10 people, the environment now contains 10 extra copies of that file. These 10 copies may then be backed up to disk, resulting in a total of 20 extra copies, and then replicated, increasing the total to 30 extra copies. Over time and multiplied by all the data generated by an organization, these extra copies can begin consuming a large amount of storage resources—requiring organizations not only to purchase, deploy, and maintain the necessary storage hardware, but also to pay for the power, cooling, and other infrastructure to support that hardware. De-duplication is designed to eliminate these redundancies to help accelerate backups, reduce hardware costs, and reduce recovery times while alleviating the administrative burden of managing duplicate data.

As with VTLs, however, not all de-duplication solutions are equally effective. Common deployment challenges are related to performance, increased management complexity, and islands of de-duplication. Block-based de-duplication can affect recovery times because each file must be reassembled, generating high processing overhead during a recovery

window that is often short. It can also be difficult for administrators to extract data from a de-duplication system for long-term retention on tape or other storage media—information can become trapped inside the system, forcing a continuous cycle of adding proprietary hardware or software that must then be managed, increasing administrative complexity.

Finding and eliminating redundant data with high-end, server-based de-duplication can be expensive. Fortunately, the far-reaching benefits of de-duplication are now within the reach of midsize organizations seeking high-performance, simplified, cost-effective solutions.

DEPLOYING NEXT-GENERATION DISK-BASED BACKUP

Unlike traditional backup systems and VTLs that focus on short-term goals such as accelerated backups, the Dell PowerVault DL2000 – Powered by CommVault is a comprehensive backup and recovery platform that uses storage policies to move data copies to the optimal storage device—including tape—automatically. This turnkey solution also provides automated storage policy setup and centralized management, which can ease many aspects of backup,

recovery, and de-duplication. Organizations can also seamlessly integrate advanced add-on features such as archiving and replication to help scale and increase functionality as demands dictate.

The PowerVault DL2000 – Powered by CommVault is designed for simple, powerful, integrated disk-based backup, recovery, and de-duplication. Setup and operation do not require separate software or devices; instead, administrators can manage their data protection through a centralized console to help unify administration across an entire enterprise. The backup software also comes integrated with dynamic disk provisioning, which is designed to set up un-configured disks and put them into immediate use (see Figure 1). The addition of application-aware, file-based de-duplication helps ensure rapid data recovery, improved storage efficiency with streamlined manageability, and high performance.

The system is available in two cost-effective configurations designed to help meet the needs of midsize Microsoft® Windows®, Novell® NetWare®, Linux®, or UNIX® OS–based physical or virtualized server environments. Both configurations include a Dell PowerEdge™ 2950 server,
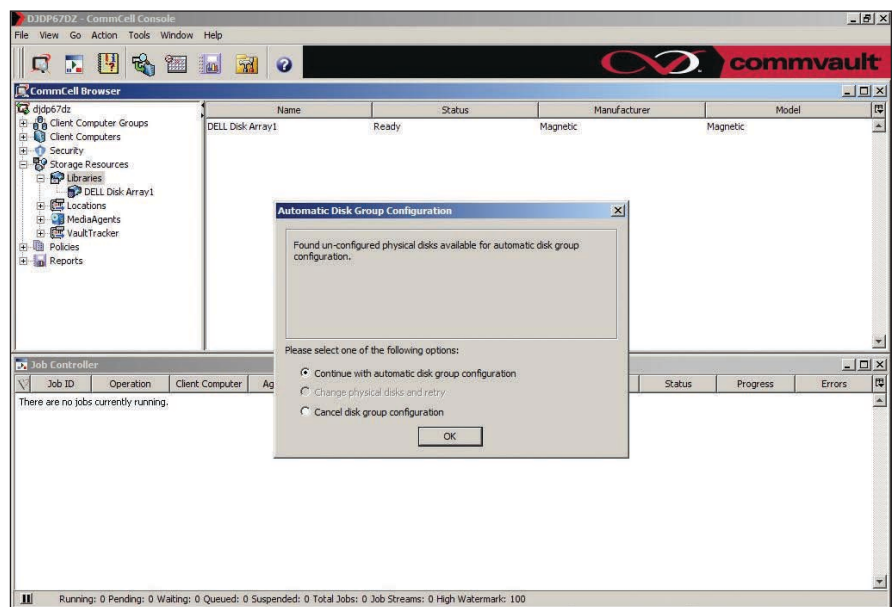

Figure 1. *The PowerVault DL2000 – Powered by CommVault can automatically recognize and set up the RAID configuration for new disks and put them into immediate use*
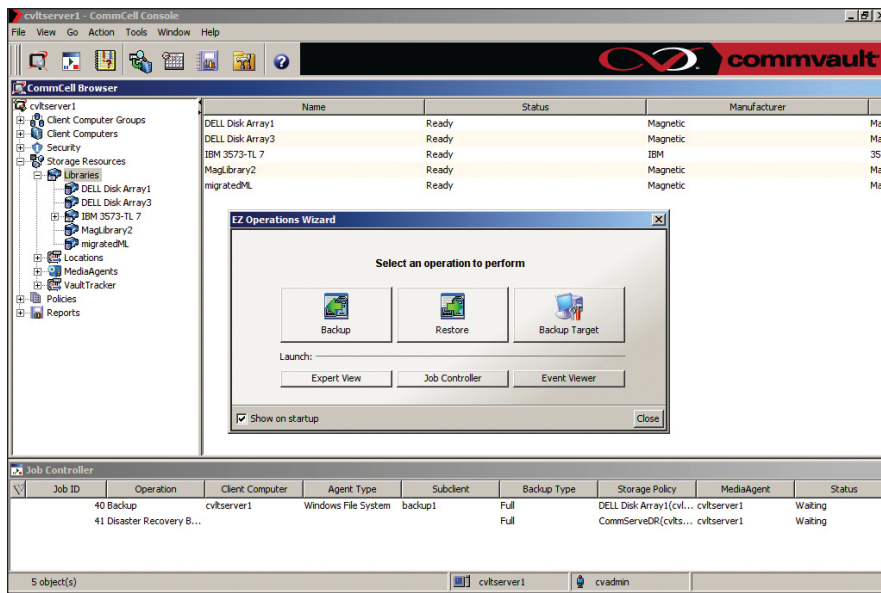
Figure 2. *An easy-to-use wizard helps administrators manage backup and restore operations*

a Dell PowerVault MD1000 disk expansion enclosure, and the Microsoft Windows Server® 2008 OS with CommVault software consisting of CommServe® and MediaAgent software, a disk-to-disk license for 3 TB of capacity, and five client agents with the CommVault Data Classification Enabler. The advanced configuration adds file de-duplication to help reduce redundant data copies during backup and archive jobs. Additional application agents are available for systems running Microsoft Active Directory®, Microsoft Exchange, Microsoft Office SharePoint® Server, Microsoft Windows SharePoint Services, Microsoft SQL Server®, Oracle® Database, IBM® Lotus® Notes, and Novell GroupWise® software to help deliver granular attribute, e-mail, or document recovery. File and e-mail archiving agents are also available for removing stale data from a primary disk while still leaving stubs for recalls.

The PowerVault DL2000 – Powered by CommVault can also provide a variety of other benefits, including the following:

- Simplified backup operations, including built-in reporting, single-console management, and an auxiliary copy feature, which can move data copies from disk to disk or disk to tape automatically without affecting the host (see Figure 2)
- Host software compression to help reduce network traffic and increase storage efficiency
- Minimized downtime because of the ability to recover a single file, e-mail, or document
- Flexibility to de-duplicate data across backup, archived, and replicated data, helping reduce storage requirements by up to 15 times compared with tape
- Reduced network loads when replicating backup data to a centralized environment, helping reduce the need for IT resources in branch offices
- Scalability that can grow from a few to thousands of servers without requiring expensive hardware upgrades
- Seamless integration with advanced functionality, including archiving to manage primary and e-mail storage growth as well as replication to help safeguard remote office data
- Ability to assist and accelerate upgrades of Windows, Exchange, and SharePoint by restoring items from previous versions to updated versions (for example, Exchange Server 2003 items can be restored directly to Exchange Server 2007)

- 64-bit-optimized CommVault solution designed to take full advantage of the PowerVault DL2000 and Windows Server 64-bit architectures

PROVIDING FAST, RELIABLE DATA PROTECTION

The combination of Dell hardware and CommVault software in the new Dell PowerVault DL2000 – Powered by CommVault can help organizations overcome the challenges of increasing data growth in their environments. By providing a simplified platform for backup and recovery and taking advantage of de-duplication technology to help eliminate redundant data, this system is designed to increase storage efficiency, reduce backup and recovery windows, and help IT administrators meet SLAs while enhancing overall manageability. ⏻

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