



By Sanjeet Singh
Charles Butler

SIMPLIFIED DATA PROTECTION WITH DISK-BASED BACKUP FROM DELL AND SYMANTEC

Combining high-performance Dell™ hardware with market-leading Symantec® Backup Exec™ software, the new Dell PowerVault™ DL2000 – Powered by Symantec Backup Exec can help organizations of all sizes deploy simplified, cost-effective data protection—helping accelerate backup and recovery, enhance media reliability, reduce total cost of ownership, and minimize the need for IT staff intervention and management.

As backup windows shrink and system availability requirements increase, IT organizations must find ways to protect and manage their ever-growing data with limited staff and hardware resources. Tape has been the traditional media of choice for backup and recovery, but it comes with a variety of disadvantages, including a lack of flexibility and time-consuming data recovery. Although cost-effective disk technology has been available for some time, only recently has it become practical to implement disk-based backup as part of an overall data protection strategy in enterprise IT environments.

To help meet the backup needs of organizations of all sizes, Dell has worked with two leading backup software companies, Symantec and CommVault, to introduce two new backup-to-disk appliances: the Dell PowerVault DL2000 – Powered by Symantec Backup Exec and the Dell PowerVault DL2000 – Powered by CommVault.¹ The new Dell PowerVault DL2000 – Powered by Symantec Backup Exec provides flexible, cost-effective disk technology to support simple, manageable data protection. Combining high-performance Dell hardware and market-leading Symantec backup and recovery software, this appliance helps accelerate backup and recovery, enhance media reliability, lower

total cost of ownership, and minimize the need for IT staff intervention and management.

TAPE- AND DISK-BASED BACKUP

Although tape has made significant improvements in throughput and capacity, its sequential-access nature typically makes it inflexible compared with disks. Because the raw throughput of disk is typically faster than tape, in most cases, backing up to and restoring from disk is faster than using tape—disk drives can begin transferring files instantly, whereas tape drives require that the tape be loaded, accessed, and sequentially written. Disk volumes, especially RAID volumes, can have very fast read performance, rivaling the throughput of even the newest tape drives. Disk snapshot technology, meanwhile, enables disk backups and restores to be virtually instantaneous. Importantly, these high levels of performance and efficiency enable administrators to schedule frequent backups, helping reduce the risk of data loss, while high levels of flexibility mean that, unlike tape, disks can support simultaneous backup, restore, and duplication operations.

Backing up multiple sources to a single tape drive requires a technology called multiplexing, or interleaving, which helps increase tape device efficiency

Related Categories:

- Backup
- Backup to disk
- Continuous data protection (CDP)
- Data consolidation and management
- Dell PowerVault storage
- Storage
- Symantec

Visit DELL.COM/PowerSolutions for the complete category index.

¹ For more information on the Dell PowerVault DL2000 – Powered by CommVault, see “Fast, Reliable Data Protection from Dell and CommVault,” by Sanjeet Singh and Jeff Echols, in *Dell Power Solutions*, November 2008, DELL.COM/Downloads/Global/Power/ps4q08-20080393-CommVault.pdf.

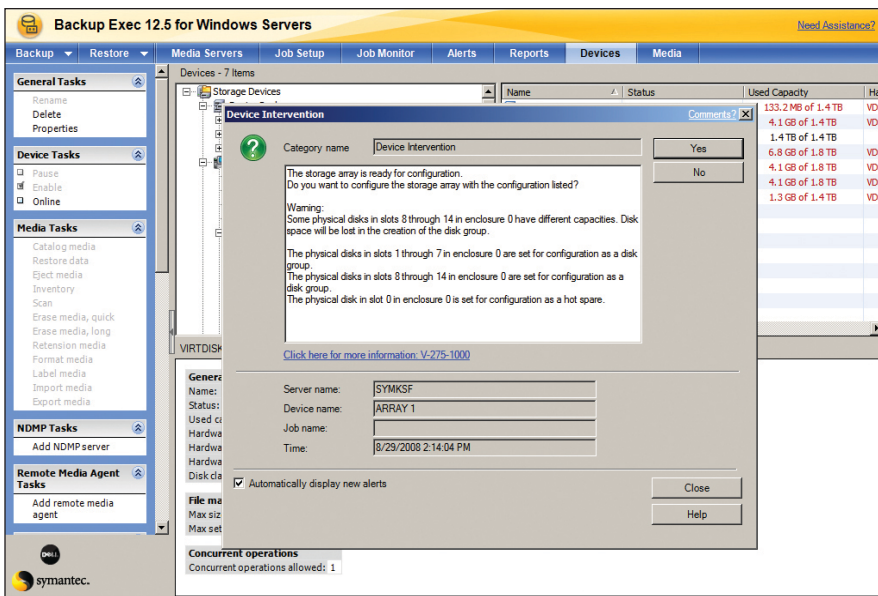


Figure 1. Symantec Backup Exec can automatically recognize new storage devices and help simplify setup

but also increases the time for restore operations. Using disks helps eliminate the need for multiplexing because disks are inherently random-access devices, designed to write multiple backup jobs simultaneously to individual backup files (one file per job)—helping provide both exceptional performance and storage granularity that even tape solutions with sophisticated multiplexing and multithreading cannot provide.

For some types of data protection, disks are also typically more reliable than tape drives and tape libraries, which can cause delays or failures in backup and restore operations. Using disks as a high-frequency, short-term data protection medium—and tape as an archival medium—can help minimize these problems.

The speed and random-access capabilities of disk media can also provide the foundation for continuous data protection, helping protect data in real time as changes to data occur. Continuous data protection not only enhances the overall level of protection, but also helps reduce the administration and complexity associated with traditional data protection practices. For example, it can help eliminate the need for full, incremental, or differential backups currently in place, helping

protect data immediately and continuously by backing it up to disk.

Despite these advantages, however, successful deployment of disks as part of a data protection solution does present several challenges for IT administrators, including the following:

- **Lack of familiarity:** Backup administrators may be unfamiliar with configuring and managing disks, and must rely on server administrators to help select the appropriate disk technology and configure, set up, and diagnose problems.
- **Complex management:** Administrators typically manage tape devices through a backup application. Adding disk hardware to this environment may require introducing a separate application, increasing management complexity.
- **Disparate solutions:** Organizations typically purchase server hardware, backup hardware, and backup software from separate vendors. When a problem arises, it may be unclear which product is causing the problem, or which vendor backup administrators should contact to help resolve it.
- **Proprietary solutions:** In the past, virtual tape libraries have been deployed to take advantage of disk capabilities by

emulating tape devices. However, these devices may present a shortcoming—they must act like tape, which prevents backup applications from taking advantage of disk capabilities.

INTEGRATED DATA PROTECTION

To help organizations deploy simplified, cost-effective disk-based backup, Dell and Symantec have partnered to develop the Dell PowerVault DL2000 - Powered by Symantec Backup Exec. This appliance, based on the Dell PowerEdge™ 2950 server, the Dell PowerVault MD1000 disk expansion enclosure, the Microsoft® Windows Server® 2008 OS, and Symantec Backup Exec 12.5 for Windows Servers, can provide a variety of key benefits:

- **Integrated solution:** The appliance provides an integrated disk backup solution that also supports backing up to tape. Dell and Symantec have created and tested the components as part of a solution designed to be ready for deployment right out of the box.
- **Simplified setup:** The appliance comes factory installed with Symantec Backup Exec as well as automated wizards that guide administrators through the process of configuring the system name, login credentials, appliance IP address, and other items—helping them quickly get the system up and running.
- **Simplified disk management:** Integrated hardware and software management capabilities provide a simplified way to manage disk resources alongside backup and restore operations. Backup Exec can automatically discover, provision, manage, and enable disk resources as targets for backup and restore operations (see Figure 1).
- **Central management console:** A single management console serves as the launch point for appliance operations. The console is designed for simplicity, centralizing key tasks such as backup and restore functionality, configuration utilities, and management in a single location rather than burying them in

sub-folders—which can be especially important for managing data protection in remote offices with limited IT resources.

- **Disk usage analysis:** The appliance can use statistical information based on previous backup performance to predict disk space needs and help ensure the necessary space is available to complete backup operations. If additional space is needed, the system can notify administrators in advance and provide suggestions to help remedy the situation without affecting future backups.
- **Simplified alerting:** Administrators no longer need separate interfaces to evaluate component health—instead, a single console provides integrated alerting for backup destinations (see Figure 2). The system can send alerts when available disk space reaches each of three thresholds administrators can specify for a virtual disk. These alerts help prevent jobs from failing because of low disk space on a virtual disk.

COMPREHENSIVE PROTECTION WITH SYMANTEC BACKUP EXEC

The Dell PowerVault DL2000 – Powered by Symantec Backup Exec includes Symantec Backup Exec 12.5 for Windows Servers, the latest release of Symantec backup technology. This software provides comprehensive disk-to-disk-to-tape backup and recovery for Microsoft Windows® OS-based physical and virtual systems, including those running Windows Server 2008. Patent-pending Granular Recovery Technology (GRT) and the continuous data protection provided by Continuous Protection Server (CPS) can deliver reliable point-in-time recovery for critical Microsoft applications and enable the rapid recovery of individual Microsoft Exchange e-mails, Microsoft Office SharePoint® Server 2007 documents, and Microsoft Active Directory® user profiles.

Agent for VMware Virtual Infrastructure

Data protection software has typically treated virtualized environments as physical

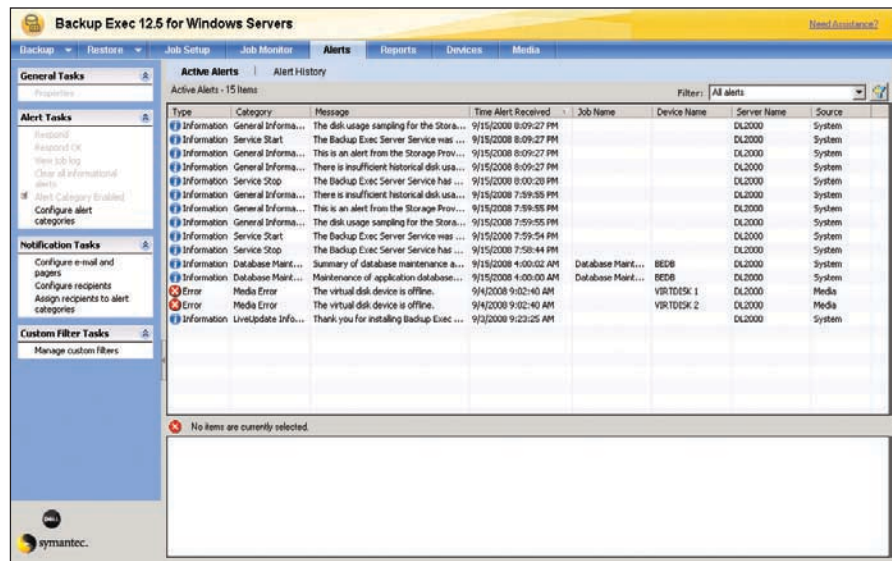


Figure 2. Integrated alerting helps administrators easily monitor backup and restore operations

environments, with agents often loaded onto each virtual machine (VM) and backups performed over the LAN. Although this paradigm was sufficient for a physical environment, it typically could not meet backup and recovery objectives for virtualized systems, often resulting in performance degradation and missed backup windows.

For environments based on VMware® virtualization software, Backup Exec can now utilize the Agent for VMware Virtual Infrastructure, which supports data protection for an unlimited number of VMs on an individual VMware ESX host. In addition, Backup Exec is designed to use numerous VMware technologies to enhance backup and recovery in virtualized environments. For example, it uses VMware VirtualCenter to automate discovery and presentation of VMware ESX servers and VMs as part of the backup environment. Administrators can also use VMware Consolidated Backup (VCB) to help minimize impact on VMs by taking advantage of the VCB framework to perform off-host VM backups—VCB scripting is no longer required, and an agent need not be loaded into the virtualized environment to perform backups. Finally, GRT enables the recovery of individual files and folders from VCB image backups.

For environments based on Microsoft virtualization software, Backup Exec can now also utilize the Agent for Microsoft Virtual Server, which supports data protection for an unlimited number of VMs on an individual host server. In addition, the agent supports both Microsoft Virtual Server and Microsoft Hyper-V™ technology. GRT enables the recovery of individual files and folders from full VM backups.

Granular Recovery Technology

Critical applications can present their own specific backup and recovery requirements. Recovery objectives, for example, often dictate the ability to restore both a full application and individual objects within each application. As a result, organizations might choose from a variety of methods for protecting applications—methods that often consist of backing up each application with a full database-level backup and then performing a separate backup of the individual items in these databases. Because two or more backups may be required to meet recovery objectives, this approach can double the amount of data and time required for backup operations.

Backup Exec provides GRT for key Microsoft applications, including Exchange,

Active Directory, SharePoint Server, and Windows SharePoint Services—providing administrators with a simplified approach to quickly recovering granular data from a single-pass backup:

- **Microsoft Exchange:** Exchange is not only a critical application for many organizations, but can also generate a huge amount of data that must be immediately available and protected. Even a single lost message can reduce productivity or disrupt operations. GRT enables the recovery of both databases and individual items such as public folders and mailboxes. Administrators can also recover granular objects from individual mailboxes such as specific e-mail messages, calendar items, folders, attachments, and notes.
- **Microsoft Active Directory:** As the standard foundation for organization and management in Windows-based environments of all sizes, Active Directory also requires comprehensive data protection and quick recovery. GRT enables the recovery of both databases and individual objects and attributes without an authoritative or non-authoritative full restore, and without requiring a reboot.
- **Microsoft Office SharePoint Server:** SharePoint Server is becoming a vital link for internal communications, and a lost or corrupted component could cause a major disruption. GRT enables the recovery of both databases and content databases, sites, subsites, lists, and individual documents.

Continuous Protection Server

CPS is designed to eliminate the need for full, incremental, or differential backups by protecting data immediately and then continuously backing it up to disk. This continuous data protection helps eliminate backup windows, accelerate backups, and enhance backup reliability, and features an innovative Web-based end-user file retrieval interface. Designed

specifically for disk, it integrates with Backup Exec for Windows Servers to deliver a comprehensive disk-to-disk-to-tape solution, helping increase data protection, reduce the administrative complexity associated with traditional data protection practices, and reduce the cost of the media used through efficient block-level data protection. End users can restore their own files without contacting IT departments, which can help improve service levels without increasing the number of IT staff or administrative costs.

GRT-enabled backups help protect Exchange at the level of both storage groups and mailbox stores while providing granular recovery of individual mailboxes, messages, and private and public folders from a single-pass backup. Many organizations run these traditional full or incremental backups of Exchange databases nightly using Backup Exec. However, as Exchange has become increasingly important to many organizations, the need for frequent Exchange data recovery beyond daily backups has also increased. The Backup Exec Continuous Protection of Exchange feature uses the same GRT-enabled technology for full database or granular recovery, but extends it by supporting frequent backups to help ensure quick recovery of recent data. Administrators can use the Backup Exec console to create GRT-enabled recovery points for Exchange at specified intervals to help meet their requirements.

Using this approach to continuous protection, administrators would typically perform a full backup each week or each month. Backup Exec can then provide continuous data protection for Exchange transaction logs, automatically consolidating them into easily managed recovery points to help ensure that the Exchange databases are protected up to the latest complete transaction log. When administrators enable recovery points to run at intervals between the weekly or monthly full backups, they can restore individual mailboxes, messages, and folders of

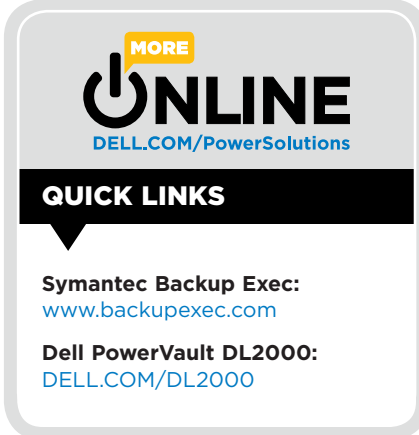
Exchange components, including embedded objects and attributes, to a time when the recovery point was created. This approach helps ensure that Exchange database and transaction logs are protected and can be recovered quickly in a disaster recovery situation, helping provide comprehensive protection for the Exchange environment.

SIMPLIFIED DATA PROTECTION FROM DELL AND SYMANTEC

The Dell PowerVault DL2000 - Powered by Symantec Backup Exec is designed to meet the backup and recovery needs of organizations of all sizes, including those running Microsoft applications and operating systems, Oracle® databases, Linux® and UNIX® operating systems, and VMware virtualization software. Integrating high-performance disk-based technology from Dell and market-leading backup and recovery software from Symantec, this appliance can help organizations deploy simplified, cost-effective data protection to help accelerate backup and recovery, enhance media reliability, lower total cost of ownership, and minimize the need for IT staff intervention and management. 

Sanjeet Singh is a senior global product marketing manager in the Dell Enterprise Storage Group.

Charles Butler is a technical director in the Data Protection Group at Symantec.



MORE ONLINE
DELL.COM/PowerSolutions

QUICK LINKS

Symantec Backup Exec:
www.backupexec.com

Dell PowerVault DL2000:
DELL.COM/DL2000