Eliminating the Backup Window
Symantec Backup Exec 12 for Windows Servers — the Off-host Backup Solution for Hitachi Simple Modular Storage 100

White Paper

By Rudy Castillo

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Introduction

Microsoft® e-mail and transactional database applications, such as Microsoft Exchange and Microsoft SQL Server, are mission critical components in today’s business environment. IT administrators need to ensure that access to data and e-mail communications for employees, customers and partners is maintained 24 hours a day, 7 days a week. The greater reliance on all forms of electronic communication raises the potential of quickly escalating into a business disaster when any event causes mission critical e-mail and database data to become unavailable.

An even greater urgency is expressed around daily protection needs since many IT executives claim that the volume of data they have to back up is so overwhelming that it disrupts business operations. According to recent survey results published by InfoWorld magazine1:

Backup volumes in many organizations have grown so large that they are causing business disruption by tying up systems, storage and network capacity and hogging valuable IT resources. More than half (59 percent) of IT executives said that the volume of data they are forced to back up is disrupting business operations or will do so eventually, according to a survey of 472 IT executives in the U.K. and North America. And the problem is not going away, with 93 percent saying that their routine backup volumes are continuing to increase.

The problem is consuming IT resources for long periods, with 37 percent [of IT executives] admitting that daily backups of primary data now take them more than nine hours, while 19 percent said it took them more than 12 hours.

More than two-thirds (84 percent) of those polled felt they could benefit by reducing the volume of data they routinely back up. Among the chief advantages highlighted were:

- Less IT time devoted to backup and other business continuity processes (69 percent)
- Reduction in the impact of backup and replication on network utilization and capacity (60 percent)
- A reduction in disk resources devoted to data snapshotting, replication and mirroring (58 percent)
- Reduced disruption to the live application environment (45 percent)

The business problem here is that these organizations are not in the backup or recovery business, and performing these activities is distracting.

Wanted: Off-host Backup Solution for Microsoft Environments

For Hitachi Data Systems, data protection is about optimizing operational resilience and operational efficiency through uniquely differentiating solutions. As leaders in worldwide Windows data protection and recovery, Symantec and Hitachi Data Systems have partnered to deliver the Backup Exec 12 for Windows Servers — Off-host Backup Solution for Hitachi Simple Modular Storage 100.

This jointly certified solution integrates Symantec Backup Exec 12 for Windows Servers and the Advanced Disk-based Backup Option with Hitachi ShadowImage® Replication software and the Microsoft Volume Shadow Copy Service (VSS) hardware provider to create a solution that eliminates backup windows, reduces the performance load on application servers and quickly brings applications back online.

This solution leverages Microsoft’s prescribed VSS technologies built into Microsoft Exchange Server 2007 and 2003, Microsoft SQL Server and Microsoft Windows Server 2003 to perform backup operations on supported Hitachi Fibre Channel and iSCSI storage systems and storage area networks. For a complete list, please see the Backup Exec Hardware Compatibility List: http://support.veritas.com/menu_ddProduct_BEWNT_view_CL.htm.

Off-host Backup Answers Key Challenges

Today’s IT administrators are faced with the daunting task of ensuring business continuity by protecting company data. Backup operations are becoming increasingly complex due to mixed environments, as well as the need for increased application availability that requires those applications to be backed up even while in use. Three key challenges facing IT administrators during backup operations are:

• **Incomplete backups.** According to a survey conducted by Strategic Research Corporation, open files cause 97 percent of incomplete backups. One measurement of a quality backup is that all files are backed up completely, enabling a point-in-time recovery. In the event that a recovery is needed, the ability to recover all files at the point in time ensures data consistency.

• **Minimal or no backup window.** Today’s fast-paced, competitive business environment requires networks to be operational around the clock. Web sites, e-mail systems and other databases must be available 24 hours a day, 365 days a year. This means that it is unacceptable to bring down a system or the entire network to perform backup operations.

• **Application performance and availability.** Traditional backup processing degrades the performance of other applications running on the server, and it frequently requires a dedicated window of time when the system is unavailable to end users. Off-host technology allows the backup to run against a copy of the production data on a different server. This removes the performance overhead of backup processing from the production server and eliminates the need for a backup window.

By processing the backup operation on a Backup Exec media server instead of on the application server, the Symantec Backup Exec 12 for Windows Servers — Off-host Backup Solution for Hitachi Simple Modular Storage 100 virtually eliminates backup windows and the network bandwidth consumption associated with backup processing on the protected application server (see Figure 1). To accomplish this offloading, one Advanced Disk-based Backup Option is licensed and installed on the Backup Exec media server to perform off-host backup of each protected server. One Backup Exec agent for Microsoft Exchange or SQL Server is required for each protected application server as well. Off-host backups for NTFS volumes that use the full, incremental and differential backup methods are also supported.

2 www.sresearch.com
After installation, simple configuration of a checkbox during backup job setup of an Exchange Server enables use of the Backup Exec Granular Recovery Technology (GRT) for restore of individual mailboxes, messages and public folders from Exchange Information Store backups.

The combined performance benefits of off-host backup and rapid granular recovery of individual objects dramatically increases data availability in comparison to products that consume host resources during standard backup and require multiple separate backup jobs to support recovery of a mailbox or object.

**Figure 1. Symantec Backup Exec 12 for Windows Servers — the Off-host Backup Solution for Hitachi Simple Modular Storage 100 eliminates backup windows, reduces the performance load on application servers and quickly brings applications back online.**

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**Solution Components, Options, Requirements**

For users deploying a new complete solution, Symantec Backup Exec 12 for Windows Servers — the Off-host Backup Solution for Hitachi Simple Modular Storage 100 brings a revolutionary backup approach for the Small and Medium Business (SMB).

**Hitachi Storage and Preinstalled Software**

Hitachi Simple Modular Storage 100 ships with single or dual controllers and includes 6, 8 or 12 hard disk drives (HDDs) — high-performance SAS (serial attached SCSI) or cost-effective SATA II — in a RAID-6 (dual parity) configuration for industry-leading data protection. Each model has patented “repair slots,” which allow disk drives to be replaced by the organization in the rare event of a drive failure. After replacing the drive, the system will automatically rebalance data across all drives. The Simple Modular Storage 100 can be installed quickly and run nonstop for several years without intervention. A replacement product can be installed quickly and all data copied to the new unit automatically to quickly recover in the event of a problem.

Simple Modular Storage 100 ships with all the Hitachi software needed for this industry-leading solution preinstalled. The new Hitachi Storage Navigator Modular 2 software has been developed for the SMB administrator who is not a storage expert and does not aspire to become one. The easy-to-use graphical user interface (GUI) includes installation, maintenance and configuration wizards. This eliminates the need for onsite
engineer visits as well as simplifies all provisioning, management and backup. Hitachi Copy-on-Write Snapshot software is included with all dual controller models for quick copies of all changes. Simple Modular Storage 100 is fully integrated with Microsoft Windows 2003, Microsoft XP, Microsoft Windows Vista, Microsoft Exchange and Microsoft SQL Server, as well as all major Linux, most UNIX, and other servers.

SMBs employing this solution with Simple Modular Storage 100 will need to:

- Obtain a Hitachi ShadowImage® Replication software license
- Choose a single or dual controller model with SAS or SATA II HDDs and 6, 8 or 12 HDDs in a RAID-6 configuration

For the best possible customer experience, it is recommended that SMBs order the Hitachi Simple Modular Storage 100 in a dual controller configuration. Additional information on the Simple Modular Storage 100 can be found at http://www.hds.com/products/storage-systems/simple-modular-storage.html.

**Symantec Solution Options**

SMBs with an existing Symantec Backup Exec installation consisting of a Backup Exec 12 Media Server and the appropriate Backup Exec Agents for Exchange or SQL, can purchase separately from their Symantec reseller the Backup Exec 12 Advanced Disk-based Backup Option (ADBO) for each Backup Exec media server performing off-host backups. The Backup Exec ADBO option is certified for Hitachi Simple Modular Storage 100 systems so that customers can quickly and easily add this joint solution to their existing environment and enjoy the immediate benefits.

Note that users of backup solutions other than Backup Exec can purchase Symantec Backup Exec competitive upgrade SKUs from their Symantec reseller at significant discounts in order to take advantage of this technology.

**Microsoft Requirement**

Users must be running the supported versions of Microsoft operating systems and applications, such as Microsoft Windows Server operating system with the latest supported service pack, and supported versions of Exchange and SQL Server. For a complete list, see the Symantec Web site at http://support.veritas.com/docs/286600.

**Backup Operations Capabilities and Benefits**

**Off-host Backup Benefits** (see Figure 2)

- Minimal or no backup window
- No performance load on application server
- Backup server can back up at iSCSI and Fibre Channel speeds
- No LAN performance impact

**Works with Hitachi Market-leading Storage Systems**

- Hitachi Simple Modular Storage 100
- Hitachi Adaptable Modular Storage

**Easy to Purchase and Deploy**

- Leverages existing Backup Exec installations
Leverages Established Industry Standards

- Microsoft Volume Shadow Copy Services (VSS) Architecture
- Microsoft Windows Server 2003 and higher
- Microsoft Exchange Server 2003 and 2007
- Microsoft SQL Server 2000 and 2005

*Figure 2. Traditional backup processing degrades the performance of other applications running on the server, and frequently requires a dedicated window of time when the system is unavailable to end users. Off-host technology allows the backup to run against a copy of the production data on a different server. This removes the performance overhead of backup processing from the production server and eliminates the need for a backup window.*

Employing Hitachi ShadowImage Replication software for off-host backup requires minimal overhead and does not interfere with normal system operations. As a result, administrators can schedule snapshots frequently, minimizing potential data loss during a disaster. Off-host backup, as enabled by the Symantec Backup Exec 12 for Windows Servers — the Off-host Backup Solution for Hitachi Simple Modular Storage 100, is a particularly good solution for organizations with stringent high-availability requirements and large amounts of data.
Click here to download the VSS hardware provider software for the Hitachi and Symantec Backup Exec solution:
http://www.hds.com/partners/technology-partners/symantec.html

Click here to view the Foothill DeAnza Community College Police Department success story video:

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