

# VADP Advances VMware - based Data Protection

*"Hitachi data protection solutions for VMware support VADP"*

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### From VCB to VADP

Backup and recovery of IT systems, applications, and data has always been a core IT requirement for enterprises of all sizes. As a result, enterprises already have established backup and recovery processes. While storage administrators may not be happy with their ability to backup all data within the enterprise that requires at least some degree of protection, functional processes are in place. Enter VMware.

Backup and recovery of physical servers and their associated data stores can be reasonably straightforward when compared to delivering the same level of protection to virtualized servers. VMware forces storage administrators to at least modify these processes and to do things in new ways in order to extend the data protection umbrella to virtualized servers.

Not only is there the requirement to backup an entire virtualized server, one also has to address backup and restore objectives—recovery time objectives (RTOs) and recovery point objectives (RPOs)—for each individual virtual machine (VM) and/or application running within each VM. The ease and speed at which new VMs can be deployed can quickly add complexity and cost to protecting mixed physical and virtual server environments. The importance of data resilience for virtualized apps is increasing as more business important (tier 2) and mission critical apps (tier 1) are virtualized.

Over the last few years, both VMware and a growing list of storage hardware and software vendors have stepped forward to address the rising cost and complexity introduced by VMware into the data protection and recovery functions. To its credit, VMware understood early on that it had to deliver help. For backup and recovery assistance, it delivered the VMware Virtual Consolidated Backup (VCB) framework that worked with established backup and recovery solution to provide a centralized data protection environment for VMware-hosted applications and data. However, while VCB was a good first step, VMware has now refined and improved upon the original intent of VCB with the recent introduction of VMware vStorage APIs for Data Protection (VADP).

### Hello VADP, Goodbye VCB

VADP enables backup and recovery solutions to perform centralized, LAN-free backup of vSphere VMs; it replaces the VCB framework of earlier VMware versions. It also provides the ability for storage vendors to more deeply integrate their data protection solutions with VMware.

With VADP, no backup processing within VM guests is required as there was with VCB, nor is there the need on the part of the backup solution vendor to deploy agents. Nor is there the requirement to download and install additional VMware software. VADP supports a single-step, source to target, copy process—no proxy required. Whereas VCB only supported backup of an entire ESX server, VADP supports incremental VM backups using change block tracking. Incremental and full restoration of VMs is also supported.

VADP is an example of a continuing effort by VMware to develop APIs for the VMware storage environment (vStorage) that enable supporting storage vendors to make VMware storage faster, more efficient, and more manageable. The release of VAAI in vSphere v4.1 can also be seen in this light.<sup>1</sup>

### **Backup and recovery software vendors and Hitachi partners are already supporting VADP and VAAI.**

For example, Hitachi partners CommVault and Symantec both support VADP. CommVault announced support for VADP with the release of Simpana 8 and recently added new functionality with Simpana 9. Symantec provides VADP support with NetBackup 7. Hitachi resells Simpana under the Hitachi Data Protection Suite label.

### **Hitachi Data Protection Solutions for VMware.**

Hitachi's Data Protection portfolio for VMware environments supports VADP. The portfolio, which consists of Hitachi Data Protection Suite (CommVault Simpana) and Symantec NetBackup, integrates backup and recovery, archiving, and storage resource management tools into a common data protection and archiving platform for VMware environments.

These VADP-enabled products provide:

- Auto-discovery of new VMs
- Data deduplication (when Hitachi arrays are used as backup targets and/or content archival storage)
- Block-level incremental backup
- Restore granularity—server, VM disk (VMDK), file and ability to assign RTOs
- Synchronous and asynchronous local, metro and remote replication

The result is a more efficient, easier to manage, and more fully integrated backup and restore environment for VMware. Both Symantec and CommVault also provide enhanced data protection capabilities for VMware such as enabling enhanced VM load balancing, remote office protection, network bandwidth optimization and recovery.

### **Beyond Data Protection to Automated Data Recovery**

As mentioned, VMware has taken a holistic approach to business continuance and disaster recovery by supporting the integration of its automated application failover and data recovery facility (SRM) with solutions from outside storage vendors. SRM allows vCenter administrators to automate the failover and recovery of virtual machines using data replication features supplied by participating storage vendors. VMware offers adapters to these vendors that essentially allow them “plug-in” storage-based replication solutions to VMware vCenter SRM. As a result, a vCenter administrator can automate a VM

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<sup>1</sup> For more information on Hitachi and VAAI see Evaluator Group paper entitled “Storage Performance for Virtualized Tier One Applications”, August 2010.

recovery by restoring a VM image directly using a supported storage array-based replica without having to coordinate the process with an array-based management console.

The values to IT administrators of vCenter SRM integration with the supporting storage environment are twofold:

1. The number of manual, error-prone tasks associated with VM recovery is greatly reduced if not eliminated.
2. The ability to deliver cost effective disaster recovery and business continuance capabilities to the enterprise by IT administrators is greatly enhance because the solution leverages functionality already built-in to VMware and supporting storage arrays.

Hitachi Storage Replication Adapter, available at no additional charge from VMware, provides management integration of Hitachi TrueCopy, Hitachi TrueCopy Extended Distance, and Hitachi Universal Replicator with SRM such that a vCenter administrator using SRM can manage Hitachi's synchronous and asynchronous data replication solutions between Hitachi storage arrays supporting VMware-based applications. This adapter is offered for Hitachi Adaptable Modular Storage 2000 Series, Hitachi Universal Storage Platform V and VM.

## Conclusion

We fully expect that VMware will continue to develop and refine its vStorage APIs, including VADP and VAAI, to help supporting storage and software vendors to add their own value to the protection and manageability of the VMware environment. By supporting these APIs, Hitachi has so far demonstrated both proficiency in integrating its storage-based value-add services with VMware facilities and those of partners, as well as its commitment to continue to build on its solid working relationship with VMware. We therefore expect that Hitachi will continue to integrate their solutions with management platforms like vCenter, and develop unique VMware-centric solutions as a result of their partnership.