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SOLUTION SUMMARY

Top Five Business Reasons to Use Hitachi Enterprise Storage in Virtualized Server Environments

While selecting the right storage system is important in nonvirtualized environments, it is essential in virtualized server environments, especially as these environments evolve to include tens, hundreds or even thousands of virtual machines and business critical applications.

As virtualized server deployments scale, capacity and management issues can quickly spiral out of control.[1] In fact, what were once "manageable" issues can become business inhibitors, keeping organizations from meeting service level agreements (SLAs) and cost cutting objectives as well as minimizing the very benefits gained from server virtualization.

Hitachi Data Systems understands the importance of a virtualized IT infrastructure, and the key role it plays in today's IT environments. With the storage virtualization ready Hitachi Universal Storage Platform® V and Universal Storage Platform VM, thousands of organizations worldwide have already optimized their environments by using this storage to pool heterogeneous storage systems for maximum business and IT benefit. But the value does not end there — it extends across the data center from storage to servers.

Top 5 Reasons — At a Glance

1. Improved performance, management and efficiency
2. Data center–wide virtualization
3. Investment protection
4. Improved business resilience
5. Foundation for cloud computing

Following are the top five business reasons organizations are choosing the Hitachi Universal Storage Platform V and Universal Storage Platform VM for their virtualization environments, to drive efficiencies across their data centers.

Reason 1: Improved Performance, Management and Efficiency

Enterprises require high capacity and high performance storage that can handle high volumes of traffic, workload surges and intensive disk access. In addition, these systems should be easily scalable, with no degradation in performance as capacity increases. But management and efficiency of enterprise storage systems should also be top priorities, as efficient allocation of assets and operating costs can both become significant cost factors for organizations over time.

The Hitachi Universal Storage Platform V and Universal Storage Platform VM are high performance and scalable intelligent storage platforms that are equally efficient in virtualized and nonvirtualized operating system environments.

Selecting the Right Storage Is Essential in Virtualized Environments.

Hitachi enterprise storage systems provide dynamic, automatic load balancing and path resolution, requiring a fraction of the setup and configuration of other storage systems. In addition, Hitachi Dynamic Provisioning software, automated disk performance optimization and central storage management all reduce administrative workloads, increase storage utilization and can help improve performance. Because Hitachi Universal Storage Platforms are built to best optimize server virtualization, administrators spend less time configuring and reconfiguring storage as virtual machine workloads, applications or storage capacity demands change.

Hitachi Dynamic Provisioning software enables administrators to allocate only the storage that is needed for a given virtual machine, rather than relying on machine templates that may overallocate or underallocate storage. This thin provisioning saves disk space and disk purchases, as well as reducing energy and rack space requirements. Hitachi storage software will also alert administrators when volume storage is running low in time to allocate storage before application performance is adversely affected.

The Hitachi Storage Command Suite centrally manages all storage functions, including provisioning, storage virtualization, migration and replication in one application, cutting management costs by streamlining storage administration.

Reason 2: Data Center–wide Virtualization

Hitachi does for storage virtualization what Microsoft® Hyper-V™ and VMware do for server virtualization. It is that simple.

In an Infrastructure Virtualization Brief from the Enterprise Storage Group, analyst Mark Bowker states, “Server virtualization, data center consolidation, and IT efficiency all act as catalysts for the highly virtualized next generation data center. As companies look to make capital investments, they need to consider how they can quickly see a return on their assets and adopt a broader view of how virtualization will deliver benefits across the entire infrastructure.” Data center-wide virtualization is an important means toward this end.

Besides the obvious advantage of enabling organizations to consolidate even more resources by virtualizing both server and storage devices, data center-wide virtualization enables customers to more effectively deploy and manage their IT environment, respond to business requirements more easily and cost effectively and, importantly, deploy more comprehensive business resilience solutions. When both servers and storage devices are virtualized, companies can implement business resilience solutions that cover and protect more data and more applications (in both physical and virtualized environments), while optimizing virtual machine performance.

Reason 3: Investment Protection

As more and more applications are virtualized, storage from consolidated servers may be going to waste: it may be overallocated or unused. As a result, organizations should consider solutions that enable them to *preserve* their existing storage investments.

With Hitachi Universal Storage Platform V and Universal Storage Platform VM storage systems, organizations are able to virtualize internal and externally attached heterogeneous storage into a single storage pool. Unused space on existing storage can then be used by allocating it to virtual machines as needed. Over time, this saves both management costs and capital investment in storage devices. Universal Storage Platforms coupled with Hitachi Storage Command Suite software give administrators a single point of management for all enterprise storage — regardless of vendor. Externally attached storage inherits the same advanced attributes as internal storage, further extending the life of existing investments. Externally attached storage with lower performance may also be used for lower tier storage, enabling optimized deployment of storage assets.

Additionally, Hitachi offers powerful data migration capabilities for virtualized and physical environments, which allow for the easy movement of data among heterogeneous storage platforms. This can have significant cost savings from both operational and capital standpoints, and it reduces risks in data migration.

Reason 4: Improved Business Resilience

Many organizations are now moving to storage virtualization as a means to implement more cost effective and thorough disaster recovery and business continuity solutions for their virtualized data centers.

But many enterprises have not yet extended full data protection, disaster recovery and business continuity solutions to their virtualization environments with one cohesive resilience strategy. Some still rely on disparate point solutions that have a direct impact on virtual machine performance or handle protection in a piecemeal fashion.

What enterprise virtualization infrastructures need is a comprehensive, easy to manage business resilience solution that provides high availability and disaster recovery without degrading the performance of their virtualized environments.

Hitachi has developed a suite of solutions specifically for data protection, disaster recovery and business continuity in VMware and Microsoft® Hyper-V™ virtualization environments. Hitachi Universal Storage Platform V and Universal Storage Platform VM — both with system-based replication software — serve as core components of these solutions.

Reason 5: Foundation for Cloud Computing

Server and storage virtualization are two important enabling components of a cloud computing environment. In an October 2009 *ServerWatch* article, a Gartner industry analyst states that the move to virtualization is a driving force toward private cloud computing.[2] In fact, developing and maintaining a private cloud infrastructure is not feasible without a solid, proven storage and server virtualization combination.

Hitachi Universal Storage Platform V and Universal Storage Platform VM, with built in virtualization capabilities, "bridge" these two worlds (server and storage virtualization), providing the foundation for a cloud computing infrastructure. Importantly, these platforms also provide the necessary scalability and feature/function sets (such as Hitachi Dynamic Provisioning, etc.) to meet the needs of virtualized server environments as they grow to include hundreds and thousands of virtual machines.

The Bottom Line

The Hitachi Universal Storage Platform V and Universal Storage Platform VM storage platforms are optimized for virtualized environments, providing cost effective, scalable capacity and performance. System-based storage virtualization capabilities can help organizations make maximum use of existing heterogeneous storage resources and, importantly, drive efficiencies across the data center with the highest availability and best reliability.

With years of experience working with VMware and Hyper-V, Hitachi Data Systems service specialists can assist organizations in selecting the storage solutions and business resilience applications that best fit their specific business requirements.

For more information on Hitachi Data Systems virtualization solutions, visit www.hds.com.

[1] "Virtual servers drive storage consumption," Shurr, Amy, *Network World*, March 3, 2009. http://www.networkworld.com/newsletters/itlead/2009/030209itlead1.html

[2] "Gartner's Virtual Predictions," Larry Barrett, *ServerWatch*, October 22, 2009. http://www.serverwatch.com/news/article.php/3845186/Gartners-Virtual-Predictions.htm

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