INFRASTRUCTURE
VIRTUALIZATION
BRIEF

Hitachi Data Systems Helps Users Realize Maximum Benefits from Virtualization

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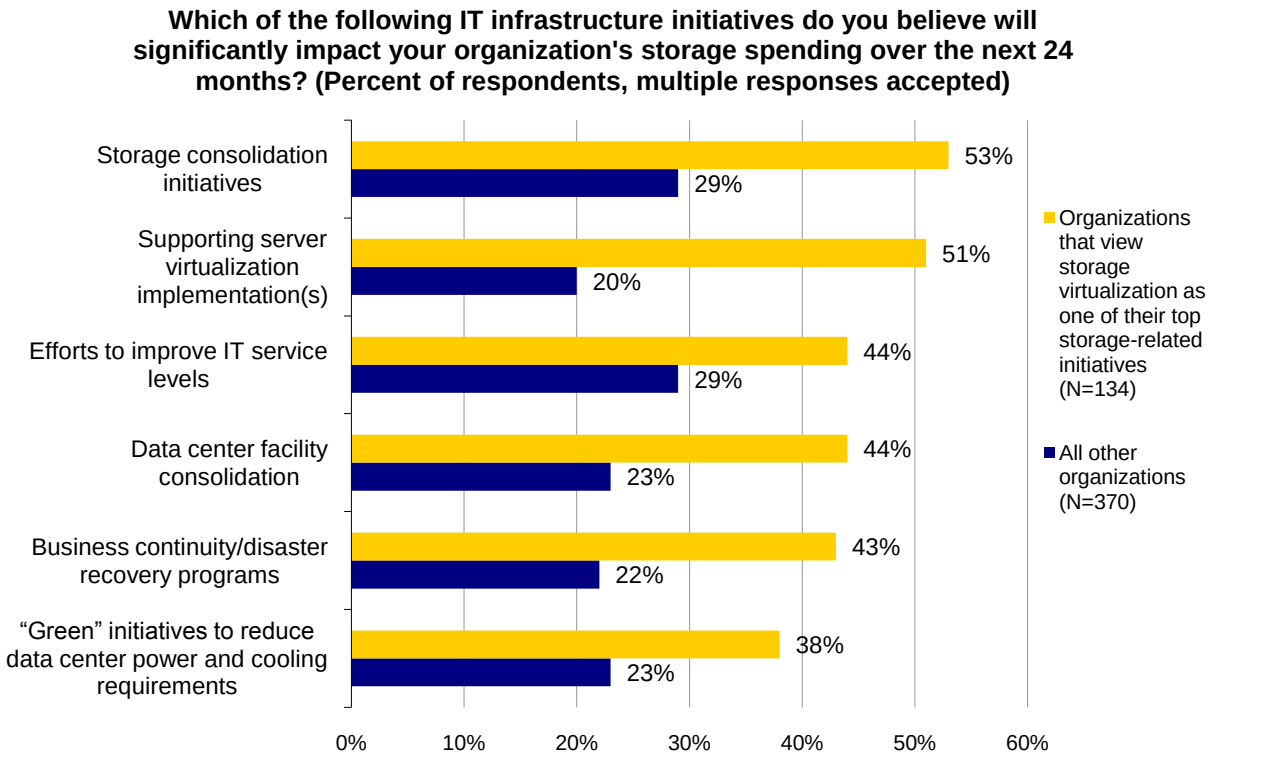
Abstract: Hitachi is helping customers extend the benefits of virtualization to include servers and storage systems. With the introduction of Hitachi Storage Cluster for Microsoft Hyper-V and Hitachi Storage Replication Adapter 2 for VMware vCenter Site Recovery Manager, Hitachi not only demonstrates this end-to-end capability but also its ability to integrate across virtualization platforms. Customers want to see the value of virtualization extended throughout the IT infrastructure. Hitachi's advances in business continuity and disaster recovery helps customers quickly reach beyond basic consolidation.

The Value of Virtualizing Servers and Storage

In a recent ESG survey, 51% of enterprise IT staffs identifying storage virtualization as one of their top storage-related initiatives cited server virtualization as an IT infrastructure initiative that will significantly affect storage spending, as opposed to only 20% of all other organizations—demonstrating the close alignment of server and storage virtualization (see Figure 1).

FIGURE 1. THE ALIGNMENT OF SERVER AND STORAGE VIRTUALIZATION INITIATIVES



Source: ESG 2008 Enterprise Storage Systems Survey, November 2008.

The next generation data center is a highly virtualized environment created by extending the benefits of server virtualization across all systems and platforms. Widespread virtualization enables IT organizations to gain leaps in

efficiency, streamline IT operations, and rapidly respond to business demands—users in these environments are truly taking a step closer to achieving dynamic IT. Companies that implement virtualization at all levels quickly see significant improvements in utilization of assets, new operational efficiencies, and longer lifespans of existing assets—all of which ultimately result in improved ROI.

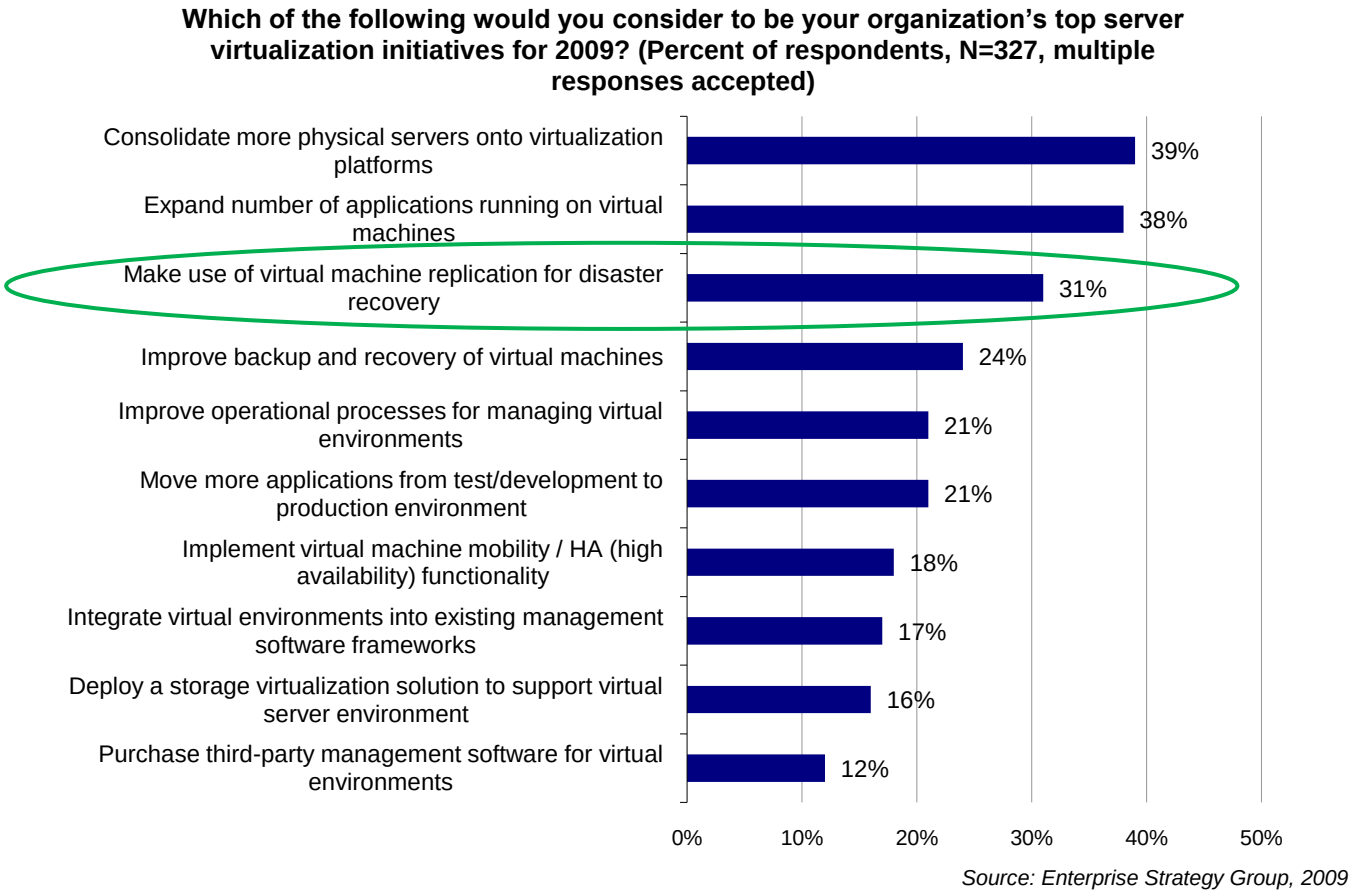
But the storage infrastructure can make or break virtualization goals. Companies that get it right from the beginning—and, importantly, understand the benefits end-to-end virtualization (server and storage) can provide—will be positioned for optimal results.

Business Continuity and Disaster Recovery Rank High on IT Priority Lists

Improved resource utilization and consolidation are well understood benefits of virtualization, but what really drives companies to accelerate deployment are improved application availability and disaster recovery—specifically, the ability to expand protection of more workloads in the event of a local or site-wide service interruption.

In fact, using virtual machines for disaster recovery ranked third in terms of virtualization priorities in a recent ESG survey, with 31% of respondents citing it as top priority (see Figure 2).[1] Virtualization simplifies the disaster recovery process and extends protection to a new set of applications—historically, these tasks have been too complex and costly to justify using traditional disaster recovery technologies. The fact that respondents to ESG's survey viewed business continuity—with particular focus on disaster recovery—as such a high priority indicates that it is a driver of virtualization adoption and is immune to a degree from IT budgetary pressures.

FIGURE 2. TOP SERVER VIRTUALIZATION INITIATIVES FOR 2009



Source: Enterprise Strategy Group, 2009

Server virtualization is changing the disaster recovery and data protection landscape. It enables organizations to get entire systems operational rapidly—with their applications, operating environments, and data intact—while

[1] Source: ESG Research Report, *2009 Data Center Spending Intentions Survey*, March 2009.

remaining agnostic with respect to underlying server hardware. Architecting and implementing a highly virtualized environment with complementary virtualized server infrastructure and highly virtualized storage enables IT to reach new levels of efficiency in the data center.

Hitachi Extends the Value of Server Virtualization

Hitachi offers both virtualized and non-virtualized storage systems for customers to leverage in the creation of their next generation data center infrastructure. The company provides advanced storage functionality that creates a foundation for achieving today's virtualization goals while aligning to the goals of the highly virtualized 'cloud' data center of the future. Aside from a depth in storage functionalities, customers should be aware of Hitachi's ability to:

- **Store data on the right storage tier at the right time, for the right price**. This capability mimics the value of server virtualization and is clearly a great benefit to IT operations and overall IT consolidation efforts.

- **Rescue stranded capacity** from underutilized storage arrays that could be delivering a better return on investment. Hitachi's storage virtualization capabilities could actually rescue enough stranded capacity from other storage arrays to begin server virtualization implementations without the need to purchase additional disk capacity.

- **Scale on demand** to keep pace with virtualization initiatives. Once companies start deploying virtual machines, it's typical for them to gain confidence and want to quickly ramp deployment efforts. Hitachi storage systems are able to rapidly and transparently scale to meet performance, capacity, and efficiency demands.

Hitachi also draws upon its expertise and deep roots in the physical world to provide business continuity and disaster recovery offerings for the leading server virtualization solutions.

Hitachi Storage Cluster

Hitachi Storage Cluster allows customers to leverage the benefits of Hitachi storage systems with Microsoft clustering. Early server virtualization adopters that deployed virtual machines with Windows Virtual Server 2005 R2 used clustering technology for high availability and local business continuity. With the introduction of Microsoft Hyper-V to the market, customers now want to extend the benefits of virtualization and local availability to build clusters that extend outside the data center to protect against local site failures. In order to make this vision a reality, Hitachi Storage Cluster for Microsoft Hyper-V combines the value of virtualization and clustering to create disaster recovery solutions for a mass pool of applications.

HSC for Hyper-V can fail over and fail back virtual machines and all the associated data from one environment to the other. The integration of Microsoft failover clustering, HSC, and Hitachi TrueCopy or Hitachi Universal Replicator enables IT organizations to deliver improved service to application and business owners. Hitachi Global Solution Services will help customers accelerate BC/DR initiatives in a Microsoft Hyper-V environment and assist in determining the ideal match of availability. Some customers may be scared away by the complexity of clustering, but Microsoft has made major improvements to help simplify the setup and administration of clusters and Hitachi is working close with Microsoft and its customers to ensure success.

Hitachi Storage Replication Adapter 2

The Hitachi Storage Replication Adapter 2 (SRA 2) supports both Hitachi AMS series and USP V/VM storage platforms for VMware vCenter Site Recovery Manager. SRA2 leverages Hitachi TrueCopy, Hitachi TrueCopy Extended Distance, and Hitachi Universal Replicator to provide automated site failover on a VMware environment. The SRA2 is available as a free download that plugs into vCenter Site Recovery Manager to help administrators build DR processes for the virtual machine environment. Businesses can also create a non-disruptive test recovery plan that creates copies of data utilizing Hitachi's replication products and the data to test the DR plan.

The Bottom Line

Businesses are going to purchase storage to meet growing demands of the data center and the rapid expansion of data. 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.

Hitachi storage systems, with their native sets of features and functionality, combined with BC/DR capabilities in a virtualized environment, enable customers to accelerate the adoption of virtualization and improve IT's service to the business. Hitachi is a proven leader in the storage industry with an opportunity to demonstrate the benefits of virtualization beyond the server. Customers are anxious to get started and expand their current virtualization deployments; they need technology leaders like Hitachi to help them avoid common pitfalls and prepare them to quickly scale. Virtualization needs to happen at all layers if businesses are to truly achieve the highly dynamic and automated IT delivery center that is on the horizon.