

# Storage Consolidation for Growing Environments

Unify Data Management to Reduce Costs and Improve Application Performance



## Is Data Growth Overrunning Your Business?

Around the world, companies are wrestling with the common problem of explosive data growth.

Each day, businesses gather, store and replicate more data. Rapid growth in e-mail and many other applications is driving massive new storage requirements and management challenges. The same holds true for new regulatory mandates that require businesses to retain certain types of data for many years.

These challenges are aggravated by a proliferation of islands of storage dedicated to different systems or applications. If your storage is tied directly to certain servers, you can't easily share your storage assets among different applications. So what do you do when you need to support new business services? Chances are you buy

more servers and more storage, even if you have open capacity on other systems.

Plus, as your business grows, you might find you are dealing with an unwieldy proliferation of servers, operating systems and storage solutions, each requiring its own management tools and interfaces. This can lead to poor backup and restore performance, excessive management requirements, application availability problems, system downtime and the inability to share data effectively.

Do any of these challenges sound familiar? If so, it's time to take a look at consolidation solutions that centralize and simplify data storage.

## Meet Today's Challenges with Storage Consolidation

### Unify Storage Management

Storage consolidation allows your organization to unify storage management on a high-performance storage area network (SAN) or

network attached storage (NAS) platform. With the right storage consolidation solutions, you can more easily deploy, manage and scale storage configurations to accommodate increasingly complex business needs. Rather than managing disparate islands of storage, you can focus your attention on a single pool of storage resources that supports diverse applications and systems.

### Increase Storage Utilization

Consolidating storage into a single centralized resource can bring about significant improvements in storage utilization. This can help you reduce your need to buy and manage new storage systems. In a consolidated environment, investment in increased capacity becomes driven by the combined needs of many servers and applications, rather than the needs of individual servers that are running out of disk space. If the storage pool needs enlarging, extra capacity can be easily added.



### **Improve Backup Performance**

The use of a shared storage platform can help free your system administrators from the constraints of the ever-shrinking backup window. And in many cases, the use of a SAN or NAS platform will allow faster throughput for data replication and backup and restore operations. This can help you improve the overall performance of backup operations, even as data volumes grow.

### **Increase Storage Flexibility**

When you have a single pool of storage, capacity can be allocated to any server as it is needed. If an application's need for additional storage is permanent, you can acquire and install additional physical storage in less time, while reducing the need to take critical applications offline. If the need is temporary, the additional storage can later be returned to the pool and used by other servers. These are just some of the many benefits of a shared storage model.

### **Meet Compliance Requirements**

Across the globe, new regulatory requirements are placing greater demands on businesses. The data impacted by these regulations is often located outside of the data center, but it still needs to be protected, secured and accessed globally. U.S. regulations such as SEC 17a-4, Sarbanes-Oxley section 404 and HIPAA are driving the need for new storage strategies into every organization. This means that your servers, and the storage that supports those servers, need

data protection and management capabilities that are often associated with a consolidated storage environment.

## **How Hitachi Data Systems Meets Your Needs**

Hitachi Data Systems has all of the resources in place to help you plan, deploy and operate a high-performance consolidated storage environment. Shared storage offerings include both SAN and NAS platforms.

Hitachi SAN solutions are ideal for block storage databases, messaging systems, replicated storage environments and other applications that involve large amounts of structured data. Hitachi NAS solutions, in turn, are a great choice for file-based storage, e-mail repositories and other applications that involve large amounts of unstructured data.

Both SAN and NAS solutions can be ideal for companies with rapidly expanding heterogeneous applications and storage infrastructures. They provide unified storage management on a high-performance networked platform to help you increase availability, scalability and protection.

Here are some of the specific ways that your organization can benefit from Hitachi Data Systems Solutions for Storage Consolidation:

### **Unify Storage for Increased Return on Investment**

Hitachi Data Systems Solutions for Storage Consolidation leverage high-performance,

cost-effective storage systems to streamline storage management with enterprise functionality. Powerful, single-point management tools hide system complexities to reduce administrative time and lower operating expenses. Versatile configuration options and simplified upgrades optimize existing hardware and software assets and permit quick, cost-efficient expansion to accommodate system growth.

### **Increase Utilization with Storage Virtualization**

Hitachi Data Systems offers virtualized storage solutions that help you simplify your storage infrastructure and dramatically improve utilization by managing all storage assets as a single pool via a single interface.

Enterprise-class SAN solutions from Hitachi Data Systems leverage the Hitachi Universal Storage Platform™ V and Universal Storage Platform VM, with Hitachi Dynamic Provisioning software for thin provisioning of storage capacity. Dynamic Provisioning software enables you to allocate virtual disk storage based on your anticipated future needs without having to dedicate physical disk storage up front — eliminating the waste of allocated but unused disk capacity.

In addition, the Hitachi High-performance NAS Platform, powered by BlueArc®, offers advanced virtualization and data movement capabilities that can help you significantly increase the utilization of a NAS environment. This platform enables your organization to consolidate NAS devices

or file servers to simplify IT infrastructure, reduce management complexity and lower your total cost of ownership.

### **Increase Efficiency, Reduce Operating Costs**

A single, easy-to-use graphical interface provides a universal view of your entire shared storage infrastructure. Simplified installation, monitoring, provisioning and capacity planning provide greater control over more systems with fewer staff.

Networked pools of storage are accessible to all applications, enabling efficient storage allocation that more fully utilizes valuable equipment and keeps long-term hardware acquisition costs to a minimum.

### **Reduce Risk for Critical Business Applications**

Consolidated storage management capabilities enable faster backups and shorter recovery time and recovery point objectives. Backups and restores are transparent to users. Reliable local and remote replication, failover features and simplified methods for quick disaster recovery protect critical systems and help facilitate corporate and governmental data compliance requirements. Security features include user authentication and role-based access controls.

### **Enable High Performance and Availability**

Features such as application optimized cache partitioning and dynamic, nondisruptive data migration help you increase uptime and enable applications to consistently meet service level expectations. Transparent firmware, component upgrades and capacity expansion keep applications online during both routine and major maintenance. Efficient diagnostic tools enable effective, systemwide planning and easy, timely adjustments to prevent disruptions. In addition, data throughput is significantly improved for backups and restores.

## **Solution Components**

Hitachi Data Systems offers not just parts of the solution, but rather all the pieces you need to solve your storage challenges. Key building blocks of Hitachi Data Systems Solutions for Storage Consolidation include:

### **Hitachi Universal Storage Platform V and Universal Storage Platform VM**

The Hitachi Universal Storage Platform V allows you to attach, combine, migrate, replicate and universally manage as much as 247 petabytes (PB) of external, heterogeneous storage at rates that exceed 4 million I/O operations per second (IOPS). The Hitachi Universal Storage Platform VM provides up to 96PB of virtualized external capacity.

### **Hitachi High-performance NAS Platform**

The Hitachi High-performance NAS Platform is an advanced and integrated NAS solution that Hitachi Data Systems co-brands with BlueArc. It is a powerful solution for NAS or file server consolidation, data protection and general-purpose NAS workloads. It consolidates and manages up to 4PB of data in a single storage pool.

### **Hitachi Adaptable Modular Storage and Hitachi Workgroup Modular Storage Systems**

These shared storage systems offer broad choices, simplified scalability and optimal performance at modular storage system prices. They provide a flexible, modular foundation for best-in-class, all-in-one storage solutions that are easy to install, maintain and expand.

### **Fibre Channel or iSCSI-based SAN or NAS Components**

Hitachi Data Systems Solutions for Storage Consolidation offer broad connectivity support to help you make better use of your existing resources. These solutions support native Fibre Channel SAN, iSCSI or NAS workloads on high-performance Fibre Channel disk drives or cost-effective Serial ATA (SATA) disk drives.

### **Hitachi Data Protection Suite**

To help protect your data, Hitachi Data Systems offers the fully tested, disk-to-disk, backup-optimized Hitachi Data Protection Suite, powered by CommVault®. This software suite integrates backup and recovery, point-in-time replication, archiving and storage resource management technologies under a unified, easy-to-use graphical user interface.

### **Hitachi Storage Management Suite**

This suite of software enables data sharing, movement, security, availability, and performance. It includes Hitachi Device Manager software, Hitachi Dynamic Link Manager software and Hitachi Modular Volume Migration software (a component of the Hitachi Resource Manager™ utility package).

### **Switches and Host Bus Adapters**

Hitachi Data Systems Solutions for Storage Consolidation include Fibre Channel and iSCSI switches and host bus adapters (HBAs) for Fibre Channel or IP interface iSCSI networks. Hitachi supports all major switch and HBA vendor equipment.

### **Professional Services**

You can look to Hitachi Data Systems and Hitachi TrueNorth™ Channel Partners for knowledgeable professional services to help you evaluate your needs and then plan, install and operate your storage environment.

## **Why Hitachi Data Systems?**

Hitachi Data Systems is committed to helping organizations of all sizes reduce IT cost and complexity, manage risk and increase operational efficiency. These are among the benefits of Hitachi Data Systems Solutions for Storage Consolidation, which closely align your storage infrastructure with your business requirements.

Look around the market and make your own assessment. We think you will agree that Hitachi Data Systems is uniquely positioned to turn islands of storage into a high-performance, consolidated SAN or NAS environment that helps you manage rapid data growth in a cost-effective manner.

Whether it's a SAN or NAS platform, Hitachi Data Systems Solutions for Storage Consolidation deliver enterprise functionality and easy-to-use management tools to unify cross-platform storage today and provide for future growth and change.

## Additional Resources

To learn more about Hitachi Data Systems Solutions for Storage Consolidation, explore any of the following resources.

### Web Sites

[www.hds.com/corporate/resources.html](http://www.hds.com/corporate/resources.html)

[www.hds.com/solutions/mid-sized-organizations/storage-consolidation.html](http://www.hds.com/solutions/mid-sized-organizations/storage-consolidation.html)

### White Papers

“Overview: Hitachi Universal Storage Platform,” Hitachi Data Systems:

[www.hds.com/assets/pdf/universal-storage-platform-usp-consolidation.pdf](http://www.hds.com/assets/pdf/universal-storage-platform-usp-consolidation.pdf)

“Hitachi High-performance NAS Provides a Powerful Platform for Massive-scale Storage Consolidation,” Hitachi Data Systems:

[www.hds.com/assets/pdf/high-performance-nas-storage-consolidation.pdf](http://www.hds.com/assets/pdf/high-performance-nas-storage-consolidation.pdf)

“Simplifying Storage for Mid-Sized Enterprises,” IDC:

[www.hds.com/assets/pdf/simplifying-storage-for-midsized-enterprises-wp.pdf](http://www.hds.com/assets/pdf/simplifying-storage-for-midsized-enterprises-wp.pdf)

“Storage Consolidation: Considerations When Utilizing Modular Storage Systems,” Hitachi Data Systems:

[www.hds.com/assets/pdf/whp\\_storage\\_consolidation\\_239-00.pdf](http://www.hds.com/assets/pdf/whp_storage_consolidation_239-00.pdf)

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