

The background of the entire page is a photograph of a person's hand, likely a patient, with a pulse oximeter sensor attached to the index finger. The hand is resting on a blue surface, possibly a hospital gown. The image is slightly blurred, creating a sense of depth. Overlaid on the lower portion of the image is a white line graph resembling a heartbeat or an ECG, and a horizontal band of binary code (0s and 1s) in a light gray font.

THE BOOK

PORTFOLIO GUIDE

WELCOME

to The Book — Portfolio Guide.

Hitachi Data Systems believes there is a way to give you seamless access to information:

- Available and searchable from anywhere and at any time
- Independent of the infrastructure and the application
- Accessible, searched, managed and governed securely and cost-effectively — forever

By transforming your traditional data centers into information centers, you can solve your most pressing challenges:

- IT must manage exponential data growth with limited resources.
- Business information will outlive generations of applications and storage technologies.
- Information is now a competitive and strategic asset and must not sit in storage silos.
- In 2010, almost 65% of the content created was unstructured: emails, files, etc. It's going to be 80% soon.
- In 2010, 100 trillion files were created and stored. About 60% of unstructured data has not changed in a year, yet it is backed up once a week, clogging up IT operations.

This portfolio guide helps you begin your transformation to seamless access to information with enhanced efficiencies and cost savings each step of the way. Turn the page and let's see where Hitachi Data Systems can help first.

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DATA DRIVES OUR WORLD — AND INFORMATION IS THE NEW CURRENCY.

Send it. > Receive it. > Store it. > Manage it. > Process it. > Protect it. > Use it.

Information has become our most valuable asset. The challenge for businesses lies in making it available and secure. Hitachi Data Systems solutions help you transform raw data into valuable information, applying our vision that IT must be virtualized, automated, cloud-ready and sustainable.

We don't just sell storage. We give you solutions to make business better on every level.

- > Manage data growth.
- > Collect and connect data to create valuable information.
- > Cut costs and reduce operational complexity.
- > Empower people to access, share and secure information.
- > Innovate, collaborate and grow.

Our solutions and services can enhance and change lives. They incorporate the industry's best people, products, tools and methodologies to maximize your return on IT investments and minimize total cost of ownership.

Our customers trust Hitachi Data Systems to protect their data, the raw resource that lies at the heart of their businesses. Whether you are in financial services, healthcare, media, education, retail, manufacturing, government or any other industry, your business is transformed by the value and importance of your data and the information you gain from it.

Hitachi Data Systems provides information infrastructure and solutions that let your company turn data into currency to propel your business.

WE VIRTUALIZE IT

Our virtualization solutions let IT manage information more easily.



WE AUTOMATE IT

Our systems help IT deliver new business applications faster.



WE SUSTAIN IT

Our innovation helps you build and run eco-friendly data centers.



WE MAKE IT CLOUD-READY

Our technology lets you adopt cloud services at your own pace.



BUSINESS AND APPLICATION SOLUTIONS

A complex technology and application environment supports today's business — and the data that drives it all. It's about the management, sharing, protection and movement of data inside, outside and across the company to enable maximum business benefit.

With the right technologies and tools, data moves efficiently, transparently and securely among applications, users and customers, and the value of data is maximized. But with the wrong tools, it is hindered and its value deteriorates.

Hitachi Data Systems offers the right combination of hardware, software and services to run your business and application environment at its best. These solutions combine technologies from leading application vendors, such as Microsoft, Oracle, SAP, Symantec and VMware. Hitachi Data Systems in concert with its alliance and



value-added partners worldwide delivers these solutions. Additionally, Hitachi Data Systems works closely with vertical application providers, including McKesson, on targeted solutions for healthcare, finance and government.

Scalable, Heterogeneous and Flexible

We offer a broad portfolio of business and application solutions to meet the specific, dynamic business and IT requirements of medium to very large organizations.

Hitachi Data Systems solutions are:

- **Scalable.** Grow when you need, at your own pace and without replacing your infrastructure.
- **Flexible.** Mix and match them with server, storage and networking technologies.
- **Cost-effective.** Pool and tier data depending on your requirements and resources.

As the world leader in storage virtualization, Hitachi Data Systems is uniquely able to provide organizations with end-to-end, server-to-storage virtualization. While our heritage is storage, we understand the bigger picture and constantly strive to spread efficiencies across the data center. We also provide end-to-end business continuity and disaster recovery solutions for virtualized server environments. We have the solutions to help you build your business.

PARTNERSHIPS IN ACTION

Oracle, Hitachi, Ltd., and Hitachi Data Systems have a collaborative alliance that leverages our leadership positions in enterprise-class storage solutions and Internet-enabled databases and applications. Most recently, we have been working together to innovate in the areas of “just-in-time” database and storage provisioning, cloning and replication.

The Hitachi companies have numerous partnerships with **SAP**, focused on the sales, integration and implementation of SAP solutions. Hitachi Data Systems and SAP work together to certify integrated offerings that give our mutual customers industry-leading consolidation, availability, scalability and performance for their critical corporate information.

Symantec, Hitachi, Ltd., and Hitachi Data Systems have a multilayer alliance that includes deep, joint development, rich interoperation at multiple architectural touch points, robust qualifications and more. This is to address demands for security, availability, compliance and performance. Together, we are building powerful and pragmatic solutions.

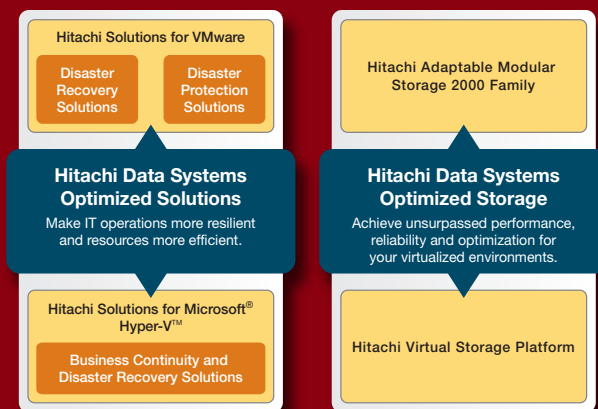
ADVANCED SOLUTIONS FOR VIRTUALIZED DATA CENTERS

Organizations worldwide are enthusiastically adopting server virtualization because of its tremendous business benefits. Hitachi Data Systems employs virtualization in our business and application solutions for Microsoft and VMware environments to:

- Enable data center transformation, providing the performance, resilience, management and scale virtualized business applications require
- Help organizations accelerate server virtualization and cloud deployments, virtualize Tier 1 applications faster and improve overall business agility
- Deliver benefits from the depth of our product portfolio, our unique approach to server and storage virtualization and our deep partnerships that make us a leading force in the industry

Overcome the Challenges of Virtualization

Hitachi understands the challenges of managing large-scale, virtualized environments and has developed a portfolio of solutions that address the common challenges of virtualized environments. These solutions not only deliver the necessary scalability as more business applications are virtualized, but they also provide a stable foundation for tomorrow's computing.



Our solutions for VMware and Microsoft Hyper-V environments allow you to choose what's right for your environment (hypervisor, storage, backup software, networking, etc.).

Server Virtualization with Microsoft Hyper-V

Research shows that business continuity and disaster recovery are key drivers of server virtualization adoption today. These drivers let many organizations deploy simpler, more cost-effective, reliable and expansive business continuity and disaster recovery plans.

Hitachi Storage Cluster for Microsoft® Hyper-V™ with Live Migration marries the virtualization and clustering platform capabilities of Microsoft Windows environments with proven Hitachi hardware and system-based replication software. This improves business continuity and availability as it optimizes and expands disaster recovery in Microsoft Hyper-V environments.

Additionally, when deployed with Hitachi Universal Storage Platform® V and VM, Hitachi Storage Cluster for Hyper-V enables industry-differentiated server-to-

VIRTUALIZATION



storage virtualization, which helps further increase efficiencies across the data center. With more than 12,500 Universal Storage Platform V and VM systems installed, Hitachi is the market leader in storage virtualization: bar none.

Server Virtualization with VMware

The Hitachi Data Systems solutions built for VMware offer proven performance, efficiency and scalability. They:

- Support availability and reliability needed for today's critical applications and a scalable foundation for tomorrow's information center
- Provide native VMware integration to achieve new levels of scale, reliability and efficiency, plus investment protection, thanks to lower capital and operational costs
- Accelerate and optimize VMware performance, management and protection; virtualize critical

applications faster and with confidence; and improve overall business responsiveness

- Work with proven Hitachi storage virtualization solutions to enable end-to-end virtualization, accelerate VMware deployment and efficiency across the data center and serve large, virtualized application environments

Hitachi Data Systems and VMware have been strategic partners since 2002. Today, Hitachi is an Elite Partner in VMware's Technology Alliance Partner program and participant in VMware Ready Partner programs for Storage Infrastructure Services.

With 99.999% guaranteed uptime and no single point of failure, Hitachi solutions are the very definition of reliability. Through our industry-differentiated feature set, including our platforms, products and native VMware integration, Hitachi provides a complete solution for today's rapidly expanding VMware environments.

STORAGE VIRTUALIZATION WITH HITACHI ENTERPRISE AND MODULAR STORAGE

It's a virtualized world now. Virtual servers are just one component of an optimized, fully virtualized infrastructure. Virtualized storage and networking complete the infrastructure and enable data center transformation. Hitachi virtualized storage will:

- Reduce total storage investments (CAPEX).
- Reduce operational challenges and costs (OPEX).

- Reduce data management and data protection complexity.
- Improve business and IT agility.

Hitachi Virtual Storage Platform, Hitachi Universal Storage Platform® V and Hitachi Universal Storage Platform VM

Hitachi enterprise storage combined with VMware or Microsoft Hyper-V extends the benefits of virtualization across your entire business.

Hitachi Virtual Storage Platform, the industry's only

3D scaling storage platform designed for all data types, makes management easier and more cost-effective. Hitachi Command Suite with Virtual Storage Platform gives you end-to-end visibility of the virtualized server and storage environment, simplifying management and transforming the data center so that IT is more agile.

With any of these 3 platforms, you can apply the higher efficiencies of server-to-storage virtualization across your organization. You can also gain greater operational resilience.

Hitachi Adaptable Modular Storage 2000 Family

The Hitachi Adaptable Modular Storage 2000 family works with leading virtual server technologies to enable highly resilient and efficient virtualized environments. With vStorage API for Array Integration (VAAI) the 2000 family helps provide greater virtual machine density, faster provisioning and improved performance and scalability in VMware environments. Adaptable Modular Storage systems offer advanced, enterprise-class features for virtualization at an affordable price.

THE TOP 5 BUSINESS REASONS TO USE HITACHI ENTERPRISE STORAGE IN VIRTUALIZED SERVER ENVIRONMENTS

TOP
5

- Improve performance, management and storage efficiency of virtual machines.
- Extend virtualization across the data center.
- Simplify storage configuration, sizing and administration for virtual machines.
- Improve business resilience and data protection for virtual machines.
- Lay the foundation for a cloud computing infrastructure.

THE TOP 5 BUSINESS REASONS TO USE HITACHI MODULAR STORAGE IN VIRTUALIZED SERVER ENVIRONMENTS

TOP
5

- Improve performance, management and storage efficiency of virtual machines.
- Extend virtualization to departmental or distributed applications.
- Simplify storage configuration, sizing and administration for virtual machines.
- Get enterprise-class features at an affordable price.
- Improve efficiency and lower OPEX.



SUPPORT AN EFFICIENT, HIGH-PERFORMING MICROSOFT EXCHANGE ENVIRONMENT

The Hitachi Adaptable Modular Storage 2000 family provides high-performance, cost-effective and scalable storage to support and optimize Microsoft Exchange environments. The family's industry-differentiated feature set includes active-active Hitachi dynamic load balancing controllers, Hitachi Dynamic Provisioning and native multipathing. It is an ideal platform for current and future Exchange projects, ensuring high availability, high performance and optimal storage utilization.



Hitachi offers a tightly integrated portfolio of solutions that address today's Exchange issues, such as management, availability and scalability. Each helps organizations further optimize their environments for maximum business and IT benefit tomorrow. Hitachi solutions combine best-in-class information technologies, including Hitachi hardware, software and services.

Hitachi Modular Storage Eases Management, Scales and Virtualizes

Continuous replication technology deployed with Hitachi Adaptable Modular Storage 2000 family storage systems ensures maximum uptime and timely data restoration. The Adaptable Modular Storage 2000 family is a platform your administrators can build upon to ensure stability, availability and acceptable response times, and address server and storage consolidation initiatives. They can also

manage recent or planned transitions or migrations to Exchange, and manage growth and changes in the Exchange environment.

Hitachi Software Delivers End-to-end Performance, Capacity and Archiving

Hitachi software supports efficient, effective Exchange environments:

- **Hitachi Command Director** software centralizes application-to-storage reporting across Hitachi Command Suite to properly monitor and ensure compliance to application-specific storage service levels, including Microsoft Exchange.
- **Hitachi Tuning Manager** software monitors and analyzes storage network resources from the application to the storage device. It gives end-to-end visibility to isolate and diagnose performance bottlenecks in your Exchange environment.
- **Hitachi Content Platform** (hardware platform and software) is a robust and highly scalable solution for Exchange archiving requirements. It either serves as a direct target for Exchange journaling or works in concert with Hitachi email archive software partners.

ADDITIONAL RESOURCES

-  **Hitachi Storage Solutions for Microsoft® Exchange 2010: Solution Profile**
-  **Deploying 68,800-user Microsoft Exchange 2010 Environment with Hitachi Adaptable Modular Storage 2500 and Hitachi Dynamic Provisioning: Reference Architecture Guide**
-  **Deploying Microsoft Exchange 2010 on Hitachi Virtual Storage Platform with Hitachi Dynamic Tiering: Reference Architecture Guide**
-  **Deploying Microsoft Exchange 2010 with Hyper-V on Hitachi Virtual Storage Platform: Reference Architecture Guide**
-  **Deploying 48,000-user Microsoft Exchange 2010 Environment with Hitachi Adaptable Modular Storage 2500 and Hitachi Compute Blade 2000: Reference Architecture Guide**
-  **ESG Performance Review of Hitachi Adaptable Modular Storage in Microsoft Exchange Environments**
-  **Take Disaster Recovery to the Next Level: Live Migration over Distance Using Hitachi Storage Cluster for Microsoft Hyper-V: Solution Profile**

TECHNOLOGY AND TRANSFORMATION SOLUTIONS FOR IMPROVEMENT, SOLUTIONS FOR CHANGE

As global businesses strive to ensure their most valuable asset — information — is both available and secure, their focus turns to the data center. In your organization, you may be asking questions like these: Is it time to move forward with our virtualization strategy? Is our information infrastructure agile and ready to react quickly to changes? Will that big data center migration project soar or sink? Can our IT staff costs be reduced through automation? Is de-duplication an optimal choice?

Hitachi Data Systems provides technology and transformation solutions that answer these questions in the areas of Storage Economics, virtualized tiered storage, storage management and data resilience.



STORAGE ECONOMICS

Uncertain economic times require new approaches and strategies to reduce the cost of storage. With a squeeze on capital and credit, many organizations face increased demands to do more with their new and existing infrastructure investments. At the same time, they must continue to keep their data available and secure to drive their business.

Hitachi Data Systems has discovered that significant expenses can be eliminated from IT budgets, including costs for labor, software licenses, power, cooling, wasted capacity and migration. Storage Economics is our suite of methodologies, tools and services that help organizations identify, isolate and measure the total cost of ownership (TCO) of storage. Total cost is more relevant today than ever before, as the price of acquisition is only 20% of the TCO. Storage Economics from Hitachi Data Systems has specific methods to map and characterize the remaining 80% of storage costs.

Understanding your storage requirements from a business perspective and the true costs associated

with storage ownership is the first step towards creating a lean, dynamic storage environment. Storage Economics can help you come to terms with 1 or more of the following pain areas:

- Embarking on a cost- and time-intensive data migration project
- Stripping out capital and operational expenditure from an organization
- Dealing with high data growth environments in industries such as oil and gas, and healthcare, to provide lower costs of growth
- Reclaiming wasted storage; doing more with what you already have
- Experiencing consistently poor storage utilization rates and low levels of return on assets
- Refreshing aging storage but struggling to justify the investment
- Wanting to implement advanced technology, such as virtualization, dynamic tiering, thin provisioning and active archiving

THERE HAS NEVER BEEN A BETTER TIME TO REVIEW YOUR STORAGE INFRASTRUCTURE COSTS

“Price does not equal cost. Acquisition costs constitute only 20% of storage TCO. Hitachi Data Systems has documented some 34 different types of costs that can help drive cost reduction initiatives.”

David R. Merrill, Chief Economist
Hitachi Data Systems

Gain more Storage Economics insights in his blog at <http://blogs.hds.com/david>.

Storage Economics in Action

Hitachi Data Systems consultants have been offering tactical and strategic services for economic planning and cost reduction for a decade. More than 800 economic analyses have been delivered for large and small organizations around the world.

With our proven Storage Economics methodology, Hitachi Data Systems has worked within enterprises across industries, understanding specific needs and developing the technical knowledge to address them. We assess granular cost categories in our analyses, spanning the breadth of the storage environment. Our Storage Economics approach in action incorporates 34 different types of cost that can be used in creating total cost of ownership (TCO) baselines and maps them to investments and strategies to systematically reduce those costs.

The value of our Storage Economics methodologies is seen in the results of our customers. For example:

- Head of Infrastructure at Bouygues Telecom, Pascal Picchiottino reports: “The Storage Economics approach of Hitachi Data Systems has allowed us to measure the reality of our storage and unleash all its power. Today, we have integrated the concept of governance in our data storage, and can count on a storage infrastructure agile and reliable enough to help in developing new services that will make the difference on the market.”
- Lancaster University used the Storage Economics metrics to measure the TCO of the storage infrastructure and look at ways to reduce this significantly. This was critical to making the final decision, explains Database Systems Team Leader Malcolm Baldwin: “We selected the Hitachi Data Systems solution primarily because it offered far better performance for the price. Over 5 years, the solution worked out to be much cheaper, based on operating costs over time as well as the initial investment.”

ECONOMICS


“The need to understand the overall financial impact of a large-scale storage solution has rarely been more pressing, but it remains a challenge for many users. Incomplete or inaccurate information about the user’s cost structure can compromise the analysis and force a return to a simplistic assessment based on cost per gigabyte or other considerations based primarily on the initial outlay.

The Hitachi Data Systems approach helps IT managers overcome these challenges and allows stakeholders to consider the financial benefits of a multitiered, thinly provisioned and virtualized storage architecture, which hitherto would have been a significant undertaking for some users.”

Storage Economics: Assessing the Real Cost of Storage
IDC



ADDITIONAL RESOURCES

-  **Storage Economics: Four Principles for Reducing Total Cost of Ownership: White Paper**
-  **The Economic Evolution of Enterprise Storage: White Paper**
-  **The Economics of Hitachi Command Suite: White Paper**
-  **How to Apply Storage Economics with AMS 2000 Family: White Paper**

VIRTUALIZED TIERED STORAGE

Unprecedented data growth, new application demands, data archiving regulations and greater business continuity needs are straining IT budgets and exposing inefficiencies in conventional storage architectures. One of the most pressing issues facing organizations today is the need to reduce storage costs.

By implementing a virtualized tiered storage architecture, your IT organization can dramatically improve storage capacities and lower capital and operational expenses. Our unique virtualization capability is based on Hitachi Virtual Storage Platform, Hitachi Universal Storage Platform® V and Universal Storage Platform VM storage systems. It masks

complexity by presenting all your Hitachi and 3rd-party storage capacity as a single pool. You can control and optimize this pool simply and centrally, using the powerful Hitachi Command Suite of management tools.

Virtualized tiered storage from Hitachi Data Systems provides the basis for a sustainable storage architecture: one that protects, grows and lasts for optimal return on your storage investment.

Counter Escalating Storage Demand and Cost Challenges with Virtualized Tiered Storage

Meeting the need for enhanced data protection, greater regulatory compliance and escalating

demand for application storage inevitably requires unprecedented levels of storage capacity and drives up the cost of storage. Combining virtualization and tiered storage addresses this demand and helps drive costs down.

The Hitachi virtualized, tiered storage architecture consolidates heterogeneous storage from various vendors into a single pool. This allows a single, unified view to ease management and it helps you fully leverage your storage investments. Virtual Storage Platform, Universal Storage Platform V and Universal Storage Platform VM virtualized tiered storage solutions are complementary to Hitachi NAS Platform, powered by BlueArc®, as well as Hitachi Content Platform archiving capabilities and our data resilience products. In Virtual Storage Platform, dynamic tiering automates mobility of data across virtual storage tiers for block, file and content data.

Hitachi storage virtualization technologies create logical views that are not tied to physical assets. This forms a storage architecture that provides the required cost, performance, reliability and availability for your applications. Within a single virtualized pool of storage, IT administrators can establish

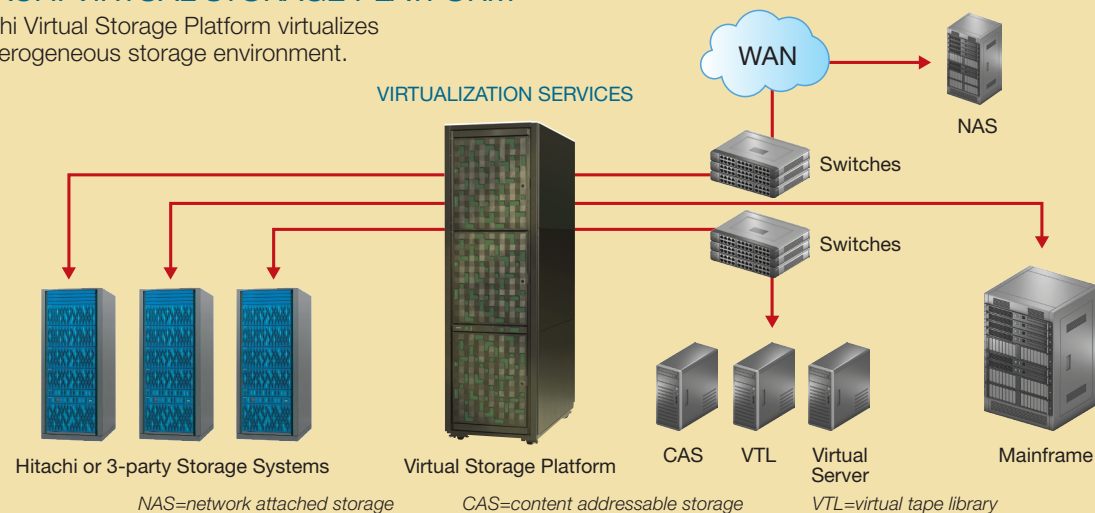
By implementing Hitachi Universal Storage Platform and a tiered storage infrastructure, the University of Utah Health Sciences Center was able to reap financial savings of more than US\$1.1 million.

different storage tiers and costs, depending on the criticality of your data and access to it. This means administrators can strategically align their storage infrastructure with their business requirements.

For example, you may have mission-critical data such as new product design that you will put on Tier 1 high-performance storage to ensure high availability. Last year's product launch, including dated email, may reasonably be placed on Tier 2 storage, which operates at a lower cost and offers good availability, but may take longer to recover should an outage occur. For information that can be archived, such as most email storage, you can employ Tier 3 cost-efficient midrange storage that uses SATA disk and offers online access but with lesser performance.

HITACHI VIRTUAL STORAGE PLATFORM

Hitachi Virtual Storage Platform virtualizes a heterogeneous storage environment.



“We’ve gone from an enterprise storage system that was at the end of its service life and becoming expensive to maintain, to a tiered approach that is more efficient and cost-effective to run.”

Andrew Crabb, Chief Information Officer
TelstraClear

INTELLIGENT TIERED STORAGE BENEFITS





Business Benefits

- Capital expense savings and lower operational costs
- Centralized management and better storage visibility
- Increased utilization
- Higher availability
- Reduced application service interruptions
- Flexible storage infrastructure that aligns with business requirements
- Greater use of lower cost storage resources

Technical Benefits

- Management simplicity through the use of common storage services in a heterogeneous storage infrastructure
- Asset value protection achieved by virtualization of heterogeneous storage systems from leading vendors
- Precise storage service-level management
- Nondisruptive data migration
- Enhanced performance and automated performance optimization
- Thin provisioning for improved storage performance levels and management simplifications
- Improved security from logical partitioning, role-based access, audit logging and more

ADDITIONAL RESOURCES

-  **Dynamic Storage Tiering: The Integration of Block, File and Content: White Paper**
-  **Virtualized Tiered Storage Solutions: Solution Profile**
-  **Tiered Storage Design Guide: Best Practices for Cost-effective Designs: White Paper**
-  **Tiered Storage Solutions: Flash Demo**

STORAGE MANAGEMENT

Escalating storage demands mean that organizations must simultaneously increase capacity, support rapid access to enterprise information and maintain 24/7 operations. All this must be accomplished without further straining budgets or head count. Most IT organizations struggle to manage diverse, heterogeneous storage assets across multiple platforms and locations. Managing and delivering the right service levels for mission-critical business applications can be both time consuming and complex.



HITACHI COMMAND DIRECTOR DASHBOARD

Hitachi Command Suite presents graphical overviews of the service levels provided to your critical business applications and ensures the health of your storage environment.

Hitachi Data Systems can help organizations address these challenges by simplifying data management needs with improved storage operations, provisioning, performance and utilization. Hitachi Command Suite uses a 3D management approach to reduce storage infrastructure complexity, costs and risk to enable dynamic alignment of storage resources to changing business needs. This management methodology ensures the availability

HITACHI COMMAND SUITE

Integrated management framework simplifies management and lowers operational costs.



and performance of critical business applications and enables their dependent IT resources to be managed with a common set of management tools.

Hitachi Command Suite

Hitachi Command Suite provides unified management of the entire virtual infrastructure, which comprises virtual machines, host servers, networks and storage systems. It monitors the infrastructure and service levels from a variety of perspectives, not only from a storage viewpoint but also from business application views, across all data types. For example, Hitachi Command Director (part of Command Suite) presents graphical overviews of the service levels provided to your critical business applications in real

time dashboards to help ensure the health of your storage environment.

You can establish common storage management processes, such as allocating storage with intelligent wizards to streamline the required provisioning steps while incorporating best practices rules. Hitachi Command Suite leverages an integrated task management framework to organize administrative tasks for improved operational workflow and efficiency to properly scale management operations for the largest data centers.

Hitachi Command Suite consolidates the management of heterogeneous storage resources by eliminating

administrative interfaces required to manage multivendor storage assets. By enabling the rapid deployment of the latest storage technologies offered by Hitachi Virtual Storage Platform, such as Hitachi Dynamic Tiering, storage tier management can be automated, placing the right data at the right place and at the right time. This builds future-proof infrastructures that incorporate leading storage technologies to continue to lower costs and maximize return on IT investments.

Hitachi Command Suite delivers the integrated management that transforms the data center so IT is more agile while reducing operational costs and increasing storage utilization efficiency.

ADDITIONAL RESOURCES



[Hitachi Basic Operating System and Basic Operating System V Software Packages for Hitachi Virtual Storage Platform: Datasheet](#)



[Hitachi Command Director Software: Datasheet](#)



[Hitachi Device Manager Software: Datasheet](#)



[Hitachi Tuning Manager Software: Datasheet](#)



[Hitachi Tiered Storage Manager Software: Datasheet](#)



DATA RESILIENCE

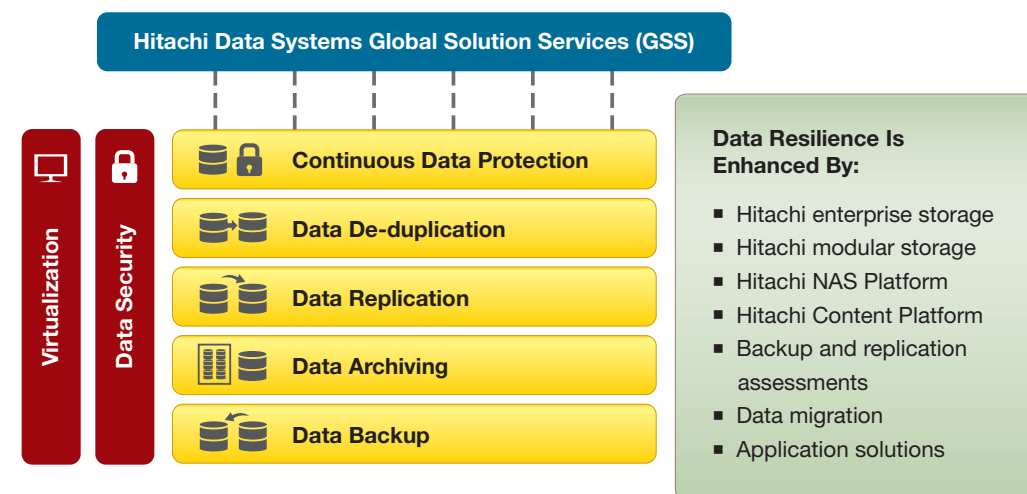
The challenge of today's always-on business climate is that your customers expect fast, continuous and secure access to goods and services. At the same time, offenders have new areas of opportunity to exploit security vulnerabilities.

At Hitachi Data Systems, our approach to data resilience means first understanding your key business challenges and requirements. We assess and evaluate your business risk exposure, time pressures, data or application access requirements, regulatory compliance, appropriate best practices and more. From here, we scope solutions that help to protect you against loss of access to data and breaches of security, while enabling business continuity and providing operational efficiency.

Hitachi Data Systems data resilience solutions protect and secure your business data within physical and virtual data storage environments through the combination of 3 key technology areas:

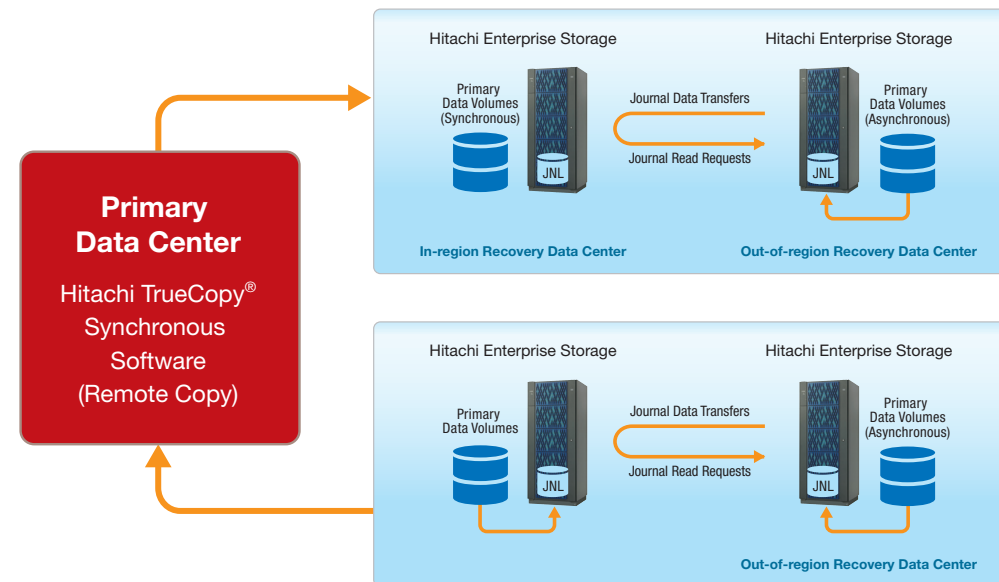
- **Data Replication, Recovery and Management** includes solutions for replicating and recovering data within and between Hitachi storage systems, locally or remotely. It also includes central management products and value-added professional services. Its components can be targeted for open systems-based or mainframe-based environments.

- **Data Protection and Management** includes technologies and services for continuous data protection, availability, de-duplication, archiving and backup, and its components can also be targeted at open systems-based or mainframe environments.
- **Data Security** incorporates offerings for data confidentiality, data integrity, traceability, secure partitioning, data sanitization, secure management and secure cloud.



Hitachi Data Systems helps you select the right mix of technologies and services to meet your business and technical requirements. These might include recovery time and recovery point objectives, backup and maintenance windows, data security and capacity optimization.

4 DATA CENTER MULTITARGET AND CASCADE



Hitachi Data Systems offers data resilience solutions with these features:




- **Competitive Advantage.** Continuous uptime and application availability reduce competitive exposure, helping you to put your best foot forward with your customers.
- **Scalability, Flexibility and Security.** You have assurance that your data resilience processes are running smoothly, you are achieving your service level agreements (SLAs) and your data is secure.
- **Comprehensive Solutions to Your Data Complexity Challenges.** Reduced manual scripting and integration work lets you apply resources to your other business initiatives.
- **The Best Bottom Line.** Complete data resilience solutions for the physical and virtual storage ecosystem lower your capital and operational expenses.
- **World-class Consulting and Implementation Services.** Hitachi Data Systems Global Solution Services experts deliver services to assist in all areas of solution deployment.

THE 5 WHATS

WHEN EVALUATING DATA RESILIENCE SOLUTIONS, ALWAYS ASK YOURSELF:

- What are my primary sources of data risk today?
- What are the business impact costs for my data at risk?
- What are the time requirements for recovery point or length of recovery time in the event of an outage?
- What are my service-level requirements and SLAs for internal operations?
- What will be the total cost of ownership for my data resilience solution?

ADDITIONAL RESOURCES

-  [Optimize the Data Center through Operational Efficiency and Data Resilience: Solution Profile](#)
-  [Take Disaster Recovery to the Next Level: Hitachi Storage Cluster for Microsoft Hyper-V Delivers Live Migration over Distance: Solution Profile](#)
-  [Data Security at Hitachi Data Systems: Datasheet](#)

TECHNOLOGY AND TRANSFORMATION CONVERGED DATA CENTER SOLUTIONS

Hitachi converged data center solutions enable the creation of a cloud foundation — or infrastructure cloud — and let you adopt cloud at your own pace. The solutions use tightly integrated, shared components, including storage, compute and data networking. The convergence of these components presents significant advantages in enterprise-class reliability, deployment speed, performance and management compared to loosely coupled solutions that have not been optimized for integration.

Hitachi Converged Data Center Solutions

A growing collection of solutions includes:

- **Hitachi solutions built on Microsoft® Hyper-V™ Cloud Fast Track.** Solutions combine Hitachi storage and compute products with networking as well as Microsoft Windows Server 2008 R2 Hyper-V and System Center for high-performance private cloud infrastructures. This creates an avenue for further automation and orchestration.
- **Hitachi Converged Platform for Microsoft® Exchange 2010.** This pre-tested application-specific converged solution is engineered for rapid deployment. It is tightly integrated with Exchange 2010's powerful new features for resilience, predictable performance and seamless scalability, supported by Hitachi Data Systems Global Services and delivered in an easy-to-order package.

■ Hitachi Unified Compute Platform (UCP).

A critical element of the Hitachi Data Systems converged data center strategy, UCP centralizes and orchestrates the management of servers, storage and networking as business resource pools from a simple yet comprehensive interface.

Hitachi Compute Blade is integrated with Hitachi storage and provides the compute capability for all of the converged data center solutions. Hitachi Compute Blade 2000 and Hitachi Compute Blade 320, with logical partitions (LPAR) technology, are the leading X86 enterprise-class blade servers to offer mainframe functionality. Hitachi LPAR technology is a breakthrough, embedded virtualization feature that builds virtualization right into a blade server's hardware.

HITACHI SOLUTIONS BUILT ON MICROSOFT® HYPER-V™ CLOUD FAST TRACK

Reap the benefits of private cloud solutions quickly, with predictable performance, faster deployment and less risk.






Hitachi solutions built on Microsoft Hyper-V Cloud Fast Track give you pre-validated reference architecture and guides to combine Hitachi compute and storage with network infrastructure as well as Microsoft Windows Server 2008 R2 Hyper-V and System Center software.

Create building blocks for a cloud environment that is reliable, scalable, multitenant and multitiered. Hitachi solutions for Hyper-V Cloud give you flexibility to scale quickly, as needed, with known results. It's all based

on industry-leading Hitachi storage and servers so you can quickly address current business needs. Leverage them as a foundation for future converged data center solutions with increasing automation and orchestration.

- Predictable, repeatable, reliable results with pre-validated reference architectures, guides and services as well as a high-availability infrastructure
- Exceptional performance with high-density computing and throughput, and optimized I/O balancing and concurrency
- Fast time to value of quick solution deployment and process automation

ADDITIONAL RESOURCES

-  **Microsoft and Hitachi Data Systems Brief on Hyper-V Cloud Fast Track: Brochure**
-  **Building Virtualized Datacenters and Private Clouds: IDC Analyst Report**
-  **Hitachi Solutions Built on Microsoft® Hyper-V™ Cloud Fast Track: Datasheet**
-  **Hitachi Solutions Built on Microsoft® Hyper-V™ Cloud Fast Track: Solution Profile**
-  **Hitachi Solutions Built on Microsoft Hyper-V Cloud Fast Track: Demo**

HITACHI CONVERGED PLATFORM FOR MICROSOFT EXCHANGE 2010

Take advantage of industry-leading Hitachi storage and server solutions for predictable, enterprise-grade reliability, availability and scalability. Rest assured that all are pretested, optimized and validated with the entire set of ordered components.

Hitachi Converged Platform for Microsoft Exchange 2010 solution significantly reduces your total cost of ownership with:

- Lower operational and management costs with Hitachi virtualization and dynamic provisioning solutions
- Lower complexity with integrated package for ease of deployment
- Quicker time and lower risks to problem resolution through Hitachi global support and solutions

ADDITIONAL RESOURCES



Hitachi Storage Solutions for Microsoft® Exchange Server 2010: Solution Profile



Hitachi Adaptable Modular Storage 2500 Dynamically Provisioned 68,800 User Exchange 2010 Resiliency Storage Solution: Reference Architecture Guide



Deploying a 48,000-user Exchange Server 2010 Environment with the Hitachi Compute Blade 2000 and the Hitachi Adaptable Modular Storage 2500: Reference Architecture Guide



Deploying an 8,000-user Exchange Server 2010 Environment with Hitachi Compute Blade 2000 and the Hitachi Adaptable Modular Storage 2300: Reference Architecture Guide

HITACHI UNIFIED COMPUTE PLATFORM

Evolving beyond current offerings, Hitachi Data Systems brings you Hitachi Unified Compute Platform, which quickly capitalizes on cloud benefits and ensures the consistency and control required for critical environments. This robust platform centralizes and orchestrates the management of servers, storage and networking as business resource pools. Its comprehensive and simplified management significantly reduces time to market and operational costs, and increases efficiency. The resulting improved agility and predictability make possible dynamic, cost-effective data centers that can quickly respond to business needs.

Hitachi Unified Compute Platform is an integrated, scalable solution combining storage, servers and networking with orchestrated management. Unlike other offerings, this open platform supports multiple

servers and storage systems, and provides a roadmap for multi-hypervisor support. This solution facilitates:

- Predictable reliability of a robust private cloud platform aligned to business service levels
- Improved agility through quick deployment of new applications and services to respond to changes in business needs, and through integration into current environments
- Reduced complexity and management cost with coordinated comprehensive provisioning and administration of private cloud
- Increased operational efficiency and resource utilization by aligning business processes to IT execution
- Simplified and improved service availability and business continuity

ADDITIONAL RESOURCES



Hitachi Unified Compute Platform: Solution Profile



IDC Analyst Report: Building Virtualized Datacenters and Private Clouds



TECHNOLOGY AND TRANSFORMATION PRODUCTS AND SERVICES THAT MAKE INFORMATION VALUABLE



Hitachi Data Systems solutions help organizations transform raw data into valuable information by delivering on our vision that IT must be virtualized, automated, cloud-ready and sustainable. Our solutions aim to make your business better on every level. From storage systems and file and content offerings to data networking tools, each one contributes to technology and transformation solutions that keep your information available and secure.

FILE AND CONTENT SOLUTIONS

Today, unstructured data files, such as email attachments, Microsoft Office documents, MP3 files and medical images typically comprise 80% of the data in an organization. Most of it is stale and static data, scattered across disparate storage silos (including expensive Fibre Channel or SAS drives) and forces unnecessary backup. The demand for greater capacity proliferates storage, creates “accidental architectures” and results in high management costs.

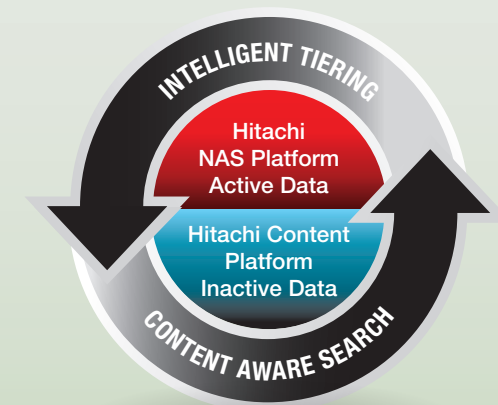
Hitachi Data Systems offers a unified, integrated storage family to store and manage all block, file and content data. For enterprises, it leads to significant cost savings, operational efficiencies and risk mitigation for legal discovery. Dynamic tiering, active archiving and content-aware search capabilities simplify unstructured data management, automatically move data to more cost-effective tiers and reduce backup volumes. These collective capabilities lower the total cost of storage ownership across all industries, from healthcare and telecommunications to manufacturing, energy and utilities.

An Integrated Solution

Hitachi Data Systems file and content solutions integrate the following products:

- **Hitachi NAS Platform**, powered by BlueArc®, offers best-in-class performance and scalability, intelligent file tiering, single namespace, high-speed pointer-based snapshots and clones, remote object-based replication, large 256TB volumes and up to 16PB of usable capacity.

A SINGLE INTEGRATED SOLUTION FROM HITACHI



- **Hitachi Content Platform** offers up to 40PB of virtualized object-level storage for active archiving, regulatory compliance, content compression, de-duplication and backup reduction. For cloud infrastructure, it can securely segregate data within multitenant and multiple namespace environments.
- **Hitachi Data Ingestor** provides a dedicated cloud on-ramp optimized for Hitachi Content Platform. It is an edge-to-core, seemingly bottomless and backup-free storage solution for distributed IT environments.
- **Hitachi Data Discovery Suite** does federated search across disparate file servers and file systems within an enterprise. Search queries can be content aware and support e-discovery requirements. Search results can also be used to trigger automatic data movement across tiers.

FILE AND CONTENT STORAGE	
Business Challenges	Solution Capabilities
Cost <ul style="list-style-type: none">■ Poor utilization due to storage silos■ Increased spending on power, cooling, space and high-priced Fibre Channel or SAS drives	Integrated File, Block and Content <ul style="list-style-type: none">■ Convergence of file, content and block services: one platform for all data■ Virtualized storage pool and dynamic provisioning
Complexity <ul style="list-style-type: none">■ NAS and file server proliferation due to performance or scalability bottlenecks■ Multiple management points of storage islands	Intelligent Tiering <ul style="list-style-type: none">■ Policy-based, content-aware data movement across tiers■ Multiple NAS consolidated to fewer Hitachi NAS Platform systems or Hitachi Content Platform systems
Risk <ul style="list-style-type: none">■ Inability to find data across storage silos■ Failure to locate information, which can lead to penalties and fines for limited regulatory compliance or e-discovery	Content-aware Search <ul style="list-style-type: none">■ Federated search across Hitachi NAS Platform, Hitachi Content Platform, NetApp and other file servers■ Search results that can be used to trigger data movement across tiers
Backup <ul style="list-style-type: none">■ Stale data stored on Tier 1 disk and backed up unnecessarily■ Lack of dynamic tiering to manage data based on its business value	Reduced Backup <ul style="list-style-type: none">■ Inactive data archived, which reduces active data storage■ Reduced active data, which addresses backup bloat

HITACHI VIRTUAL STORAGE PLATFORM PROVIDES INCREASED FILE AND CONTENT CAPABILITIES

As the only 3D scaling storage platform designed for all data types, Hitachi Virtual Storage Platform is the only storage architecture that flexibly adapts data storage infrastructures for performance, capacity and multivendor storage. It does this to give the highest return on storage assets. It brings to our file and content solutions unique, fine grain, page-level tiering, which gives dynamic mobility to data across virtual storage tiers for block, file and content data.

File and Content Storage Business Benefits

Lower Storage Cost

- Consolidate to save power, cooling and space.
- Reduce up to 40% of storage capacity costs.
- Reduce up to 65% of required backup capacity.

Simplify Management

- Use a single management interface for all data: block, file and content.
- Work with fewer silos, footprints and management points.

Increase Return on Assets

- Increase utilization with 1 large virtual storage pool.
- Tier more user data to lower cost SATA, less to Fibre Channel or SAS.
- Move inactive data to archive to free space and reduce backup capacity needs.

Optimize Storage

- Employ policy-based data movement across tiers based on business value.
- Compress and de-duplicate inactive data.
- Reduce backup volumes due to less active and inactive data.





Simplify from Edge to Core

- Integrated replication and tiering solution reduces storage costs at the edge.

Mitigate Legal Risk

- Meet requirements for long-term retention and government regulatory compliance.
- Use single federated query to search and index across NAS and archive.
- Employ accelerated e-discovery collection and culling.

ADDITIONAL RESOURCES

-  The Big Five Benefits of One File and Content Storage Family: E-guide
-  The Economics of Hitachi Data Systems File and Content Solutions: White Paper
-  Hitachi Edge-to-core Storage Solves the Unstructured Data Dilemma for Distributed IT and Cloud Deployments: White Paper
-  Hitachi Data Systems Object Storage Solutions: Solution Profile

FILE AND CONTENT STORAGE AT RENEWDATA

“We were literally walking terabytes of data between several hundred machines every day, logging each touch point, reprovisioning LUNs as they moved, deleting almost 100TB an hour, hammering throughput. Now our process is entirely flexible and automated.”

Doyal Alexander, Chief Technology Officer
RenewData

STORAGE AND SUSTAINABILITY

Various estimates show that storage accounts for 30% to 40% of the power used in data centers. Virtually all organizations generate and handle increasing amounts of data that is critical to their business. With energy costs rising and the potential for energy surcharges, this issue is rapidly becoming a top business concern.

Hitachi Data Systems offers sustainable storage management solutions across the information lifecycle. We can help your business accommodate data growth and extend the life of your existing investments. More specifically, we help you to:

- Achieve energy efficiency without compromising the reliability, availability or security of your IT infrastructure.
- Centralize and consolidate data management and data protection to lower your total cost of ownership (TCO) and power consumption.
- Design, develop and deliver a blueprint that helps your organization move towards a more sustainable IT infrastructure.

The Hitachi Storage Sustainability Advantages

Reduce Data Center Operating Costs

- Hitachi Virtual Storage Platform reduces total cost of power, cooling and space, up to 50% versus competing enterprise storage products.
- High-density architecture stores more capacity per square foot to save you space.

Implement Virtualization Strategies

- Hitachi virtual storage controllers can manage the most capacity behind a single storage controller to offer important power, cooling and space advantages.
- It is estimated that Hitachi Data Systems virtualization and logical partitioning help reduce energy and cooling costs by 30% to 50%.

Consolidate Storage

- Hitachi Command Suite software makes possible a robust consolidation platform with industry-leading multidimensional virtualization, reliability and stability.
- Hitachi NAS Platform, powered by BlueArc®, uses only 1/3 to 2/3 of the energy of alternative offerings.



“ITCentrix’s analysis of market leading high-end storage solutions shows that for an I/O-intensive configuration of 134TB, competitive solutions consume from 30% to 64% more budget for power, cooling and space than a comparably configured Hitachi Universal Storage Platform® V using virtualization and dynamic provisioning.”

Dave Vellante, President and CEO
ITCentrix

DEPLOY SERVICES TO HELP DESIGN THE RIGHT INFRASTRUCTURE






- Storage Economics Strategy Service focuses on the environmental costs of storage technology to improve power efficiency, support more economic cooling systems and reduce real estate requirements.
- Hitachi Consulting Environmental Sustainability Solutions Practice can help define a green data center strategy and implement the required infrastructure to help reduce energy usage.

ENVIRONMENTAL TRACK RECORD

- Hitachi Data Systems has a long history and proven track record of supplying environmentally friendly storage solutions.
- The Hitachi Data Systems 3-fold strategy is designing, manufacturing and supporting

environmentally friendly storage infrastructures throughout their entire lifecycles, including end-of-life disposal.

ADDITIONAL RESOURCES

-  **Strategies for Greater Sustainability in the Data Center: White Paper**
-  **Hitachi Data Systems Sustainable Solutions: Web**
-  **IDC Analyst Report: IT Efficiency: Shades of Green**
-  **The Many Shades of Green (Hitachi Virtual Storage Platform): Video**
-  **Environmental Management in a Society that Recycles: Video**

ECO-FRIENDLY

HITACHI ENTERPRISE STORAGE

Hitachi enterprise storage helps your IT organization do more with less. Hitachi provides the only storage and information infrastructure for virtualizing heterogeneous storage environments. It is proven to reduce costs and increase asset utilization in global organizations in every industry.



Hitachi Virtual Storage Platform

With Hitachi Virtual Storage Platform, Hitachi Data Systems offers the only 3D scaling storage platform designed for all data types. It is the only storage architecture that flexibly adapts data storage infrastructures for performance, capacity and multivendor storage to optimize return on storage assets. It demonstrates the

Hitachi commitment to solving real-world challenges in the most demanding customer environments.

3D scaling allows for optimal infrastructure growth in all dimensions.

- **Scale up** to meet increasing demands by dynamically adding processors, connectivity and capacity in a single unit. This gives you optimal performance for open systems and mainframe environments.
- **Scale out** to meet demands by dynamically combining multiple units into a single logical system with shared resources. Support increased needs in virtualized server environments and ensure safe multitenancy and quality of service through partitioning of cache and ports.
- **Scale deep** to extend the advanced functions of Hitachi Virtual Storage Platform to multivendor storage through virtualization. Offload less-critical data to external tiers in order to optimize the availability of the Tier 1 resources.

Virtual Storage Platform allows host-transparent migration to greatly reduce outage windows. A highly efficient design delivers the best performance and capacity combined with lower power and cooling requirements. Unique dynamic tiering mobilizes block, file and content data across virtual storage tiers. Hitachi Virtual Storage Platform with Hitachi Command Suite management software transforms the data center to make your IT group much more agile.

“Virtualization, convergence and an explosion in data are all reshaping how organizations use information and run their data centers. Hitachi Data Systems expansion of its business vision beyond technology and storage products to delivering efficient, scalable and information-enabling IT solutions will allow it to better serve its customers in their IT transformation efforts.”

Richard Villars, Vice President, Storage and IT Executive Strategies
IDC

* See: www.storageperformance.org/results/benchmark_results_spc2#b00036

ADDITIONAL RESOURCES

-  **Hitachi Virtual Storage Platform Resource Center: Web Portal**
-  **Hitachi Virtual Storage Platform: Web Video**
-  **Hitachi Virtual Storage Platform: Datasheet**
-  **Multiple Facets of Data Center Transformation: White Paper**
-  **The 3D Scaling Advantage: How 3D Scaling Drives Ultimate Storage Efficiency: White Paper**
-  **Hitachi Virtual Storage Platform: Architecture Guide**
-  **Hitachi Virtual Storage Platform: 3D Demo**



HITACHI MODULAR STORAGE

Businesses of all sizes have 4 main challenges in managing their data: managing growth, controlling costs, keeping their data secure and protected, and minimizing downtime. The Hitachi Adaptable Modular Storage 2000 family meets each of these challenges.

The Adaptable Modular Storage 2000 family has a scalable architecture that manages growth in capacity, performance and connectivity. It does away with situations where adding capacity or servers to a system reduces its performance. The result is investment protection in a system that won't be overwhelmed by expanding business requirements.

The operational costs of managing midrange storage systems can be several times the purchase price of the system. The Adaptable Modular Storage 2000 family addresses this by automating many of the complex and time-consuming tasks that

“We’ve been nothing but impressed with our Adaptable Modular Storage 2000 [systems]: the reliability, great performance, ease of use and operational savings are bar none when it comes to modular systems.”

Matt Stroh, SAP Basis Administrator
Industrial Electric Wire & Cable

MODULAR

administrators typically handle. It eliminates duties such as assigning controller ownership for every LUN and ensuring that the server-to-storage data paths are set correctly. Hitachi Dynamic Provisioning software makes it easier than ever to provide storage for your applications.

Unauthorized access to data can be catastrophic to any organization. Not only does the Adaptable Modular Storage 2000 family have system management authentication capabilities, but management communications to the system are also encrypted to the highest security standards. Stored data can be secured and made tamperproof through our





write once, read many (WORM) technology.

Storage systems are only as valuable as their uptime and the Hitachi Adaptable Modular Storage 2000 family leads the industry with 99.999% data availability. Complete system redundancy with hot-swappable components all but eliminates unplanned downtime, and online microcode updates keep planned downtime to a minimum.

The Adaptable Modular Storage 2000 family is a flexible storage platform that helps organizations achieve key business benefits. These include meeting service level agreements, performing

cost-effectively and operating non-disruptively, while realizing better administrative efficiencies and investment protection.

ADDITIONAL RESOURCES

-  [Hitachi Adaptable Modular Storage 2000 Family: Overview](#)
-  [Top Five Business Reasons to Use Hitachi Modular Storage in Virtualized Server Environments: Solution Summary](#)
-  [Symmetric Active-Active Controllers; Optimizing Dynamic Workloads: Application Brief](#)
-  [Why SAS Matters: Cost-effective Performance with SAS Technology from Hitachi Data Systems: White Paper](#)

HITACHI DATA SYSTEMS CLOUD COMPUTING

Cloud computing is not a product. It's a way to deliver IT services in an on-demand, rapid, flexible and scalable fashion. Hitachi lets you choose the best possible delivery method, deployment model and underlying infrastructure to address your particular cloud needs, all at your own pace. If you are considering cloud within your own IT organization, with an online storage service provider, or as an online storage service provider, we can help. In fact, the Hitachi Data Systems portfolio of cloud solutions can simplify and accelerate the adoption of private, hybrid or public cloud environments. We have the industry's most integrated set of computing resources to create a single pool of virtualized block, file and content storage. This supports diverse uses and lets you build a cloud environment that best addresses your



particular needs. Our unique approach consolidates and dynamically automates IT resources to ensure security, elasticity and reliability. It is scalable and cost-effective, and it builds on the investments your IT organization has in place today.

Hitachi Data Systems lets you build a very large storage foundation based on a modular and highly scalable storage architecture. Our portfolio of cloud solutions allows you to deploy a cloud environment that is reliable, scalable, secure and multitenant. It ensures privacy among various constituents within a shared infrastructure, which can be managed from

a single interface. These cloud offerings allow you to rapidly provision or de-provision a service and grow and shrink storage resources in concert with business needs to minimize capital expenses and improve operational efficiencies.

With support for a variety of protocols and 3rd-party technologies, you can further leverage existing investments in hardware and






software, and allow legacy devices to inherit cloud attributes. This keeps your cloud from becoming just another silo and eliminates the need for a complete refresh or rewrite of applications. As a result, Hitachi Data Systems cloud solutions enable you to choose the best possible technologies to address your challenges at your desired pace and within your budget. By delivering an integrated set of cloud solutions, Hitachi Data Systems delivers an agile cloud infrastructure that helps you:

- Reduce expense with a flexible architecture and delivery models.
- Improve utilization and operational efficiency.
- Gain IT agility and speed time to market and time to value.
- Mitigate risk with a secure, highly available infrastructure.
- Meet service level agreements with enterprise-class hardware and software capabilities.
- Populate the cloud from multiple sources within existing environments, without disrupting applications or users.

“Hitachi’s enterprise and midtier storage met our requirements to create a scalable, multitiered environment for our increasing demand to provide content to multiple platforms.”

Diane Tryneski, Senior Vice President of Studio and Broadcast Operations
HBO

ADDITIONAL RESOURCES

-  **Hitachi Cloud Services: Instant IT from Hitachi Data Systems: Web Video**
-  **ESG Analyst Report — Hitachi Data Systems’ Silver Lining: HDS Enables a Flexible, Fluid Cloud Storage Architecture**
-  **Hitachi Data Systems Cloud Solutions: Datasheet**
-  **Hitachi Cloud Services for Private File Tiering: Solution Profile**
-  **Separating Hype from “How To”: A Practical Guide to Understanding and Deploying Cloud for the Enterprise: White Paper**

NETWORKING

IT professionals trust Hitachi Data Systems to protect their data, the raw resource that lies at the heart of their information and their businesses. Amid shifting business and market needs, Hitachi Data Systems works with its networking partners to bring you technologies that maximize the value of data and ensure company information is available anywhere, anytime.

Our technology partners offer networking technologies that complement products and solutions from Hitachi Data Systems. Together, we deliver options ranging from leading-edge solutions that address specific problems to robust management of entire IT infrastructures. Our relationships with the top networking partners, including Brocade, Cisco, Emulex and QLogic, foster the creation and delivery of integrated solutions that meet the high quality and reliability you expect from Hitachi Data Systems.

BROCADE

Get 1st-class Results from Brocade and Hitachi Data Systems

Brocade and Hitachi Data Systems have worked together for more than 9 years, with successful installations worldwide:

- More than 800,000 SAN ports installed
- More than 900 directors installed

Both companies boast a strong history of product innovation and engineering excellence for mission-critical environments. In fact, 90% of the total Fibre Channel storage area network (SAN) market is composed of Brocade customers.



SAN Solutions from Brocade and Hitachi Data Systems

- Optimize server and storage utilization through:
 - Advanced SAN technology from Brocade Communications
 - Optimized storage solutions from Hitachi Data Systems
- Reduce total cost of ownership by minimizing downtime and reducing power consumption
- Improve overall network performance and data availability
- Span small business and departments through midsize companies to large enterprises
- Simplify file data management

Achieve Real Business Benefits with Brocade and Hitachi Data Systems

SAN Solutions	Business Benefit	Hitachi Data Systems — Brocade Solution Example
Storage Consolidation	Consolidation of storage resources using SANs: <ul style="list-style-type: none">■ Enables your storage to be shared across all servers■ Increases storage utilization and reduces or eliminates isolated and unused dedicated storage	Large enterprises: <ul style="list-style-type: none">■ 2 Brocade DCX or DCX-4S Backbones with Hitachi Virtual Storage Platform and Hitachi Universal Storage Platform® V Midsized enterprises: <ul style="list-style-type: none">■ 2 Brocade 8Gb/sec switches (e.g., 5300, 5100) with Hitachi Universal Storage Platform VM and Hitachi Adaptable Modular Storage
Data Resilience	SANs facilitate replication to remote facilities: <ul style="list-style-type: none">■ Remote sites can be within a metro area or 100s or 1,000s of miles away	At each location: <ul style="list-style-type: none">■ Hitachi Virtual Storage Platform, Hitachi Universal Storage Platform V or Hitachi Adaptable Modular Storage with Hitachi TrueCopy® Synchronous and Hitachi Universal Replicator software■ Brocade Director or Switch with 8Gb/sec (e.g. Brocade DCX or 5300, 5100 or 300)■ Brocade Fibre Channel Router (e.g. 7800)■ Disaster recovery for VMware and Microsoft Hyper-V environments■ Encryption
High Availability	SANs provide: <ul style="list-style-type: none">■ Dynamic failover protection■ Automatic traffic re-routing■ Network throughput improvement	Hitachi Universal Storage Platform V: <ul style="list-style-type: none">■ Brocade DCX with Brocade DCFM

For more information visit www.brocade.com.

CISCO

Data Center 3.0: Discover Breakthrough Business Advantages

Cisco's Data Center 3.0 architecture provides an evolutionary path from the server-centric model to one that allows shared infrastructure resources to be dynamically and securely provisioned, efficiently managed and protected. The Cisco strategy is to bring transparency to virtualization with an open intelligent network platform that offers you visibility across technology islands within your data center, enabling automation and dynamic provisioning across the entire infrastructure.

Cisco and Hitachi Data Systems offer joint solutions that support the Data Center 3.0 architecture and provide extraordinary value for your organization.



Data Resilience

Cisco offers a broad range of data resilience solutions, delivering Fibre Channel, FCIP and iSCSI protocols in a single integrated system and allowing cost-effective, high-performance storage transport over wide area and metropolitan area networks.

Cisco I/O Accelerator software provides SAN-based traffic acceleration services that dramatically reduce I/O latency between data centers, thereby increasing the distance and improving bandwidth utilization for your Hitachi TrueCopy® Synchronous replication solutions.

For more information visit www.cisco.com.

End-to-end Virtualization

Cisco virtual storage area network (VSAN) technology extends the virtualization capabilities of Hitachi storage platforms into the network. When combined with a server virtualization product, such as Microsoft Hyper-V or VMware, end-to-end virtualization is achieved.

VSANs and inter-VSAN routing allow your administrators to logically and functionally partition a single physical SAN fabric or switch into multiple virtual networks, each with its own security policies and fabric services.

Cost Savings through Unified Fabric

The consolidation of multiple SANs and LANs into a single unified fabric represents a tremendous opportunity for data centers to lower costs and reduce complexity. The Cisco Nexus 5000 switch lets you smoothly migrate from the current network architecture to a unified fabric that supports all data center I/O, reducing quantities of adapters, cables, optics, switches, rack space, power and cooling.

Cisco Data Center Interoperability Lab (D-CIL)

The Cisco D-CIL lab is outfitted with more than US\$5 million in Hitachi storage systems and tests interoperability for all Cisco and Hitachi products. The D-CIL

lab has dedicated engineering staff who are knowledgeable with Hitachi storage systems as well as TrueCopy Synchronous and Hitachi Universal Replicator software for data replication.

Highest Performance 1RU Fabric Switch

The Cisco MDS 9148 Multilayer Fabric Switch sets the standard for performance and port density in a 1RU form factor, and consumes the lowest power per port in its class. With no hidden software charges, the MDS 9148 can be a cost-effective standalone SAN for small and medium businesses, as well as an edge switch in the data center.



EMULEX

Hitachi Data Systems relies on Emulex award-winning host bus adapters (HBAs) to build reliable, scalable and high-performance storage solutions.

With your enterprise expanding and resources shrinking, you know that many of today's practices won't do the job tomorrow. You need less complexity and greater control.

If you are considering a next-generation data center, consider this: Emulex, a leader and catalyst for innovation, enables infrastructure virtualization today.

The latest Emulex server, fabric and storage virtualization technologies can facilitate and accelerate the process, allowing you to move, manage and maintain information faster and more efficiently than ever.



Hitachi Product	Speed/Feed/Ports			Enterprise	Midrange	Small and Medium Enterprise
Storage	Link Speed	Bus	Ports	Microsoft Windows/Linux/Sun Solaris	Windows/Linux	
Hitachi Virtual Storage Platform, Hitachi Universal Storage Platform® V, Hitachi Universal Storage Platform VM	10Gb/sec	PCIe 2.0	Dual	OCe10102-FM (Optical)		
			Dual	OCe10102-FX (Copper)		
	8Gb/sec	PCIe 2.0	Single	LPe12000-M8		
			Dual	LPe12002-M8		
	4Gb/sec	PCI-X 2.0, PCI-X, PCI	Single	LP11000-M4-H	LP1150-F4-H	
			Dual	LP11002-M4-H		
		PCIe	Single	LPe11000-M4-H	LPe1150-F4-H	
			Dual	LPe11002-M4-H		
Hitachi Adaptable Modular Storage 2000 Family	10Gb/sec	PCIe 2.0	Dual	OCe10102-FM (Optical)		
			Dual	OCe10102-FX (Copper)		
	8Gb/sec	PCIe 2.0	Single	LPe12000-M8		
			Dual	LPe12002-M8		
	4Gb/sec	PCI-X 2.0, PCI-X, PCI	Single	LP11000-M4-H	LP1150-F4-H	
			Dual	LP11002-M4-H		
		PCIe	Single	LPe11000-M4-H	LPe1150-F4-H	LPe111-H
			Dual	LPe11002-M4-H		

For more information visit www.emulex.com.

QLOGIC

Stay successful with Hitachi Data Systems and QLogic, market leaders in storage and data networking technologies, including Fibre Channel over Ethernet (FCoE).

- End-to-end SAN solutions: host bus adapters (HBAs), switches, stackable chassis switches, FCIP and iSCSI routers

■ Reduced risk and reliability: consistent market leader in HBAs

■ Superior price performance: lower total cost of ownership and return on investment
- Environmentally sensitive: low power consumption and designed for zero airflow

■ Virtualization optimized: high performance for maximum consolidation benefits

■ Interoperable: full support for Hitachi Data Systems solutions

■ Simplified management: easy to install with Quick Tools



Enterprise Solutions at 8/4/2Gb Fibre Channel (FC), 10 Gigabit Ethernet (GbE) Fibre Channel over Ethernet (FCoE) and 1Gb iSCSI			
Hitachi Storage	Stackable FC Switches	FC and 10/1GbE Routers	FC, FCoE and iSCSI Adapters
Virtual Storage Platform, Universal Storage Platform® V and Universal Storage Platform VM	SB5802V-08A SB5802V-20A8 SB5602Q-08-02 SB5602Q-16-02 SB5602Q-20-02	6250-C12-B-HD-S 6250-B10-N-HD-S iSR6140-HDS-SP iSR6142-HDS-SP	QLE2560/2-CK QLE2460/2-CK QLE8140/2-SR-CK QLE8150/2-CU-CK QLA4060/2-CK
Midrange to Large Solutions at 8/4/2Gb FC, 10GbE FCoE and 1Gb iSCSI			
Hitachi Storage	Stackable FC Switches	FC and 10/1GbE Routers	FC, FCoE and iSCSI Adapters
Adaptable Modular Storage 2100, 2300 and 2500	SB5802V-08A SB5802V-20A8 SB5602Q-08-02 SB5602Q-16-02 SB5602Q-20-02	6250-C12-B-HD-S 6250-B10-N-HD-S iSR6140-HDS-SP iSR6142-HDS-SP	QLE2560/2-CK QLE2460/2-CK QLE8140/2-SR-CK QLE8150/2-CU-CK QLA4060/2-CK
Small and Medium Business (SMB) Solutions at 8/4/2Gb FC and 1Gb iSCSI			
Hitachi Storage	FC Switches	FC and 1GbE Routers	FC and iSCSI Adapters
Adaptable Modular Storage 2100	SB3810-08A SB3810-08A8 SB5602Q-08-02 SB5602Q-16-02 SB5602Q-20-02	iSR6140-HDS-SP iSR6142-HDS-SP	QLE2560/2-CK QLA4060/2-CK

For more information visit www.QLogic.com.

INDUSTRY SOLUTIONS



While data is universal, its designations and transformations vary by industry. Healthcare may need to ensure secure archiving of medical imaging files. Financial services may need to preserve records of ATM transactions. Government agencies may need to record and track deeds, while educational organizations must maintain records and resources. But in all cases, raw data must be stored, protected and delivered in its useful form: information.

Hitachi Data Systems helps make the most of your data with solutions that meet the specific challenges of various industry segments, including:

- Health and Life Sciences
- Telecommunications
- Government, Aerospace and Defense
- Financial Services and Insurance
- Manufacturing and High Tech
- Education
- Energy and Utilities

Hitachi Data Systems answers these industry-specific storage challenges with optimization solutions for object storage, file and content, virtual tiered storage, storage management, data protection and data centers. While each of these solutions can serve all of the aforementioned industry segments, the following is a sampling of how our solutions address specific industry needs.

In the Healthcare Data Center: PROTECT AND ECONOMIZE

Health and life sciences organizations experience unmatched data growth. Causes include stringent regulations for data retention and retrieval, such as the U.S. Health Insurance Portability and Accountability Act (HIPAA) and European Union Data Protection Directive (EUDPD). It is also driven by widespread adoption of electronic health records (EHR), and the larger-than-ever files of medical imaging applications. Pharmaceutical and genetic research also produce large data sets to be stored.

All of this data is generated by a multitude of applications across multiple storage silos and increases management complexity and storage inefficiency. IT administrators in healthcare data centers are challenged to protect and intelligently manage this while cost-effectively improving patient care decisions.

Data Protection Solutions

Healthcare data is critical to patient safety, treatment outcomes and research success. Hitachi Data Systems data protection solutions offer advanced protection for applications and data, with capabilities that go far beyond basic backup. They include de-duplication, archiving, data management, replication, continuous data protection and remote office data protection in physical and virtual environments. In combination with our data security offerings, this Hitachi Data Systems portfolio of products and services is a complete data resilience solution.

“Hitachi Clinical Repository gives us the flexibility to easily integrate any kind of clinical system into a facility-wide archive, creating a foundation to offer information for all clinical and administrative use cases and provide much better patient care.”

Elmar Flamme, CIO
Klinikum-Wels-Grieskirchen

File and Content Solutions

To cost-effectively store massive amounts of healthcare data, IT managers need intelligent, automated tiering, which matches their retrieval or archival requirements to the appropriate storage technologies. Hitachi Data Systems file and content solutions portfolio offers active archiving, NAS consolidation, intelligent tiered storage, simple replication and back-up reduction. These capabilities help IT to reduce file management costs by 10% to 40%.

Intelligent Storage, Access and Clinical Utilization

Providers must navigate through large, disparate information silos within a healthcare institution to make the best patient care decisions possible. Hitachi Clinical Repository creates interoperable clinical data among different information systems, including associated metadata that can then be consolidated, intelligently searched and securely accessed through EHR or portal applications.

In the Financial Services Data Center:

CHOOSE SOLUTIONS THAT DRIVE CUSTOMER RETENTION, SIMPLIFY RISK MANAGEMENT AND MODERNIZE IT OPERATIONS



As every sector of the financial services industry, from commercial and investment banks, to insurance companies, to brokerage and investment firms, emerges from the economic downturn, they face new challenges. They also face an unprecedented opportunity to drive competitive advantage. Storage systems and solutions from Hitachi Data Systems help financial firms to expand during these uncertain times by making the data center virtualized, automated, cloud-ready and sustainable. We help you transform your data center. We help you keep data continually available to drive business growth, centralize storage management to support risk management and regulatory compliance, and protect valuable

information for maximum business resilience.

Hitachi Data Systems provides a broad range of storage solutions that can help financial firms address both existing and emerging challenges. Enterprise-level storage management solutions deliver unified management of the entire storage infrastructure, so firms can manage data growth more efficiently, improve IT agility and reduce the storage total cost of ownership. Most importantly, Hitachi Data Systems solutions help financial services companies address the 3 market drivers that are now shaping the future of the industry: customer acquisition and retention, risk management and regulatory compliance, and core system modernization.

EFFICIENCY



“We are already enjoying the benefits of Hitachi Data Systems solutions. We have been able to increase the speed of data access and data availability by 40%. We cut our infrastructure management costs by 50% and we grew our productivity by 100%.”

Wilfredo Soto, Vice President of IT
Banco Leon

Object Storage Solutions

Gartner identifies customer service as a key driver for financial firms looking to differentiate themselves from competitors. Today's customer service efforts face increased customer demands. For example, customers in mature markets such as North America and Europe are demanding more customized services or they'll quickly move to competitors who provide them. Customers in emerging growth markets such as Latin America, Africa and Asia are looking to new banking services, such as mobile access where branches are not available.

To meet these demands, Hitachi Data Systems provides a variety of enterprise solutions that:

- Ensure high availability and business continuity through real time storage synchronization.
- Prevent failure of customer-facing services through robust, high-availability storage platforms.
- Respond faster to customer demands through systematic electronic document management systems.

Manage Risk and Regulations

A key outcome of the global financial crisis has been a growing number of government regulations, such as Sarbanes-Oxley (SOX) and SEC Rule 17a-4 in the United States, Basel III internationally, Japan's Financial Instruments and Exchange Law (FIEL) and Australian Prudential Regulation Authority (APRA). To increase transparency and ensure compliance, firms must integrate risk management with broader corporate objectives. Hitachi Data Systems helps firms:

- Comply with continually evolving industry and legal data storage regulations.
- Streamline backups and speed recoveries by protecting less-active content separately from new and changing data.
- Improve reporting, trending and forecasting with advanced storage solutions.
- Provide retention and disposal management services to automatically govern how long content is kept and how it is deleted.

In the Telecom Data Center: ENSURE DATA RESILIENCE AND END-TO-END MANAGEMENT

For telecom companies, fast and continuous access to applications and data is essential for success. IT professionals in telecom organizations know that system software malfunctions, security breaches and human error are the most likely events to disturb operations. Even short interruptions in service can aggravate customer churn, and replacing such customers can be very expensive. There is also the direct financial impact of lost billing records or other customer or operational data. Finally, there can be severe and expensive consequences for the breach of telecom-specific regulations, such as the U.S. Federal Communications Commission (FCC) mandate for 7-year retention of call data records (CDR). The same is true of general business data protection and retention regulations such as Sarbanes-Oxley (SOX) in the United States and the European Union Data Protection Directive (EUDPD).

IT Infrastructure and Core Systems Modernization

Today, firms are returning to core modernization projects to increase agility, transparency and cost-efficiency, and to compete more effectively during the growth ahead. "Big data," or data sets that are too big and awkward to work with standard data management tools,



is driving infrastructure transformation in many organizations. Modernized core systems are imperative for meeting the challenges of big data with institutional asset management systems, lending systems, retail core systems, and treasury and trading systems. A modernized core system can impact payment products and services that are critical to relationships with consumers, merchants and corporate customers.

Hitachi Data Systems offers a variety of solutions that can support the modernization of core systems and help financial services firms:

- Improve data protection and management with a common virtualized storage platform.
- Centralize management of distributed storage environments with highly granular control.
- Improve infrastructure optimization through virtualization, dynamic provisioning and other advanced solutions.

- Increase application and data mobility through online migration between storage tiers.
- Reduce cost of multiple, stove-piped infrastructures and applications with a common virtualized platform for all data.
- Enable use of core systems as a utility or service model.

Virtualized Tiered Storage Solutions

As today's telecommunications organizations work to reduce storage costs, their efforts are often hampered by single vendor management tools and isolated pools of storage that fragment the infrastructure. By implementing a virtualized tiered storage architecture, a telecom organization can dramatically improve storage capacities and lower capital and operational expenses (CAPEX and OPEX). Virtualized tiered storage better aligns data to storage resources by letting you efficiently match storage attributes with the service-level and regulatory needs of individual applications.



"The storage platform from Hitachi Data Systems offers us maximum flexibility in supporting the organization, which is essential in the dynamic telecom market."

Peter de Boer, Manager of Core Systems
Ziggo

In the Public Sector Data Center: CONSOLIDATE, PROTECT AND SHARE

Government agencies and education organizations are facing increasingly complex management and protection issues coupled with relentless data storage growth. Perhaps the largest concern is meeting regulatory mandates. For example, digital imaging of public documents is growing to ensure compliance with the Freedom of Information Act (FOIA) in the United States, European Union Regulation 1049/2001 and similar public-access legislation. Organizations must also comply with regulations on data retention, privacy and e-discovery [e.g., Department of Defense (DoD) 5015.2-STD and National Archives 36 CFR Part 1222 in the United States, European Union Data Protection Directive (EUDPD) and Japan Personal Information Protection Act (JPIPA)].

The difficulty of determining what data can be purged in accordance with data retention regulations can

lead to a “keep everything” policy. This includes video surveillance records, e-learning records and e-books in education. As more data demands more attention, IT staff costs increase, management becomes more complex, and protection and risk avoidance become prime concerns.

File and Content Solutions

Data centers at government and education organizations handle mostly unstructured data, such as public document images or emails and attachments, which are often stored across multiple storage silos. Our integrated approach to intelligently managing data across these silos can reduce file management costs by 10% to 40%. Hitachi Data Systems file and content solutions provide intelligent tiered storage, consolidation, active archiving and search capabilities. These capabilities simplify data management,

allow you to migrate data to appropriate tiers and reduce backup volumes to decrease storage costs. IT administrators can consolidate disparate storage islands with industry-leading NAS solutions, dynamically move static data from higher-level to lower-level storage tiers, compress and de-duplicate static data to reduce data size and employ replication capabilities to reduce the need for backup.

Data Protection Solutions

Data centers for government and education organizations are typically heterogeneous and distributed, which makes protecting valuable information assets a challenge. To provide advanced protection for today's applications and data, Hitachi Data Systems solutions for data protection offer innovative data protection and management capabilities to help government and education organizations meet their data recovery objectives. These solutions go far beyond basic backup to include de-duplication, archiving, data management, replication, continuous data protection and remote office data protection in physical and virtual environments. In combination with Hitachi Data Systems data replication and data security offerings, this portfolio of solutions helps provide a complete data resilience solution.



“The Hitachi archival software makes our hardware clusters appear as a single archive. That means we don’t have to manage different applications with separate interfaces ... which greatly expedites the way we’re able to monitor and access content.”

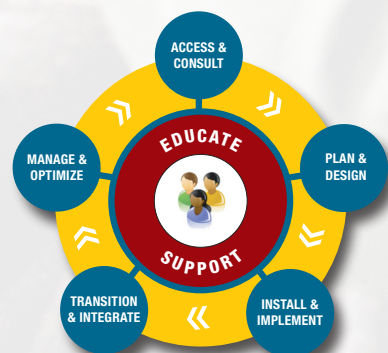
Curt Tilmes, Computer Scientist
NASA



GLOBAL SERVICES

The mission of Hitachi Data Systems Global Services is to increase value and service levels to your business, while reducing costs and risks. Global Services is composed of 3 service divisions to help transform your current environment into a more virtualized, automated, sustainable and cloud-ready infrastructure.

- **Global Solution Services** (GSS) presents a portfolio of professional services.
- **Customer Service and Support** (CS&S) offers maintenance, installation and software support services.
- **Academy** provides programs to accelerate learning, increase productivity and minimize exposure to risk.



The Global Services end-to-end service methodology is enabled through our Global Services value chain.

GLOBAL SOLUTION SERVICES

Hitachi Data Systems GSS offers market-leading storage consultants, proven methodologies and a comprehensive professional services portfolio to help you effectively manage your storage infrastructure. We will help you realize the best return on investment (ROI) from our products to meet your business needs and promote your ongoing success.

More than 500 expert GSS consultants deliver our broad spectrum of professional services offerings globally. We optimize the performance and utilization of your storage infrastructure through frameworks, such as the Information Technology Infrastructure Library (ITIL) tools, and Hitachi Data Systems best practices. With our proven, end-to-end methodology, we provide services in the following areas:

Assess and Consult

We evaluate IT environments for successful technology adoption, including cloud, business continuity, storage management, tiered storage and virtualization. Our consultants assess your storage infrastructure to improve operational efficiencies and lower risk.

Plan and Design

Our consultants have the expertise and proven methodologies to plan and design an IT solution that is right for any business need.

Transition and Integrate

Whether you are migrating data for data center consolidation, for system upgrades or to increase

KEY BENEFITS OF HITACHI DATA SYSTEMS GLOBAL SERVICES

- Ensure success and lower risks with new technology adoption.
- Reduce time and cost in technology design, deployment, integration and operation.
- Improve asset utilization and increase return on assets.
- Increase staff productivity and efficiency.
- Optimize storage management processes and procedures.
- Fill key staff, skill and experience gaps.

service levels to the business, we remove the risks of a migration initiative. Our comprehensive approach encompasses the most appropriate people, processes and technology. This helps to accelerate, integrate, enable and support your solution. It cuts costs, accelerates return on assets (ROA), reduces risk and increases solution adoption.

Manage and Optimize

We help you run your information infrastructure through cost-effective remote or onsite management, from zoning and storage allocations to 24/7 monitoring and fully managed support. Lower risk, reduce operational costs, fill critical staff or skill set gaps, improve operational efficiencies, meet service level objectives and optimize your technology investment.



CUSTOMER SERVICE AND SUPPORT

We know your needs extend beyond standard support offerings, especially for storage solutions that are mission critical. Hitachi Data Systems offers an unmatched portfolio of preventive maintenance services, including Weekday Basic, Standard and Premium options, and installation and support services to address your unique requirements. Flexible and tiered, our remote or onsite maintenance offerings provide access to our experts whenever and wherever you need them, for any problem that must be solved with fast, consistent and transparent support.

Select Care Program

The Select Care Program addresses business-critical requirements proactively through a synergistic

combination of accelerated response times, greater access points to Hitachi Data Systems resources and personalized processing that complements existing maintenance services. By leveraging extensive Hitachi Data Systems resources and technology expertise, the Select Care Program offers unparalleled advantages in the industry.



ACADEMY

The Hitachi Data Systems Academy provides an extensive catalog of training courses to accelerate learning, implement the latest technology, increase productivity and help minimize your exposure to risk.

Our education consultants work with you to identify and implement strategic learning engagements that focus on learning paths, certification programs, training needs assessment and mentoring.

The Academy offers:







- More than 100 product, technology, solutions and certification courses
- 47 training centers worldwide with robust lab environments
- Industry-leading certified professional program offering 10 expert credentials
- More than 300 classroom, virtual or on-demand courses offered annually
- Courses delivered in 5 languages



“Comprehensive remote storage management capabilities, such as those offered by Hitachi Data Systems Remote Storage Management Services, are increasingly in demand as customers seek to reduce operational costs while still meeting stringent and growing requirements in the data center.”

Brad Nesbit
IDC Storage Services

ADDITIONAL RESOURCES

-  **Migration Services from Hitachi Data Systems: Datasheet**
-  **Hitachi Data Systems Certified Professional Program: Enhance and Validate Your Storage Skills: Datasheet**
-  **Hitachi Data Systems Academy Training Solutions: Datasheet**
-  **Transformation Services from Hitachi Data Systems: Datasheet**
-  **IDC Analyst Report: IT Transformation: Extending Value with Holistic Services**
-  **ESG Analyst Report: Transitioning to a Dynamic Data Center**

NEXT STEPS

At Hitachi Data Systems, we don't sell just storage. We offer solutions that make your business better at every level: solutions that manage data growth, cut costs and complexity, mitigate risk, drive business growth, increase efficiencies and transform your data center.

For more information on how we can help you access, share and secure your data as you innovate, collaborate and grow, please contact your Hitachi Data Systems representative or your Hitachi authorized reseller, or visit www.hds.com for more information.

Hitachi Data Systems

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