

Hitachi Virtual Storage Platform for Microsoft Applications



Storage Systems, Software and Expertise for Consolidating Microsoft® Applications

Hitachi Virtual Storage Platform enables IT organizations to meet cost and performance requirements while consolidating multiple enterprise Microsoft applications on a single storage system. It provides the industry's first and only 3D scaling hardware architecture, working with Hitachi Dynamic Provisioning, Hitachi Dynamic Tiering and the Hitachi Command Suite v7 software. With these tools, organizations can optimize data performance and availability in a multiapplication environment, even as storage needs continue to grow.

Overview

Data storage requirements are soaring as IT organizations embrace the need to make data of all types readily and securely available to meet business needs. Vast increases in email, shared internal documents and customer data mean that storage needs are growing much more dramatically than the business as a whole. The use of enterprise Microsoft applications, including SQL Server®, Exchange, and SharePoint®, drives much of this growth.

Data-driven, I/O-intensive Microsoft applications place a significant strain on storage systems, with many users making frequent small requests for data. Manually ensuring data availability at a high level of performance requires management attention in the form of constant monitoring and frequent tuning. Further, manual efforts to make data available faster are frequently based on what has happened in the past, rather than what is happening in the present. The result is inefficient use of storage, with overprovisioning and intensive management adding to the cost. As storage needs grow, costs grow even faster.

Configuring and deploying new storage systems to address data growth is expensive and can result in overprovisioning of storage and reduced performance. Because all of these applications are in constant use, it is a complex undertaking to achieve efficient data tiering that meets the unique performance demands of each application for traditional storage platforms. To effectively manage storage costs and IT resources as data requirements grow, organizations need a solution that combines hardware, software and expertise for full support of Microsoft application storage requirements.

Hitachi Virtual Storage Platform enables organizations to significantly improve the performance and efficiency of enterprise Microsoft applications, either running natively or in virtualized data center environments. Hitachi Dynamic Tiering software automatically positions data within the Hitachi Virtual Storage Platform to optimize performance in consolidated Microsoft application environments. Hitachi Storage Command Suite v7 enables organizations to manage storage by easily configuring and monitoring storage systems across the organization from a single location.

These innovative products, in addition to best practices and implementation guides from Hitachi Data Systems, provide the necessary tools to design, implement and manage a comprehensive data storage system for an agile organization with growing storage requirements. Combining hardware, software and deep expertise in storage architectures, Hitachi Data Systems addresses the burden and complexity of scaling storage systems with the growth of enterprise data.

Delivering on the Promise of Flexible Infrastructure

Hitachi Data Systems understands the critical role Microsoft applications play in today's organizations. Effectively managing data growth across these applications while also hitting performance targets is a complex challenge. Hitachi Data Systems realizes that organizations need to manage large amounts of data from multiple Microsoft applications. Our Hitachi Virtual Storage Platform meets

this requirement with unique and powerful technology and software combined with Hitachi enterprise expertise. In addition, our technology and expertise also meet the price/performance goals required of cost-conscious IT operations.

At the heart of these solutions is the Hitachi Virtual Storage Platform. It is the only 3D scaling storage architecture that increases your return on storage assets by combining high performance, capacity and the ability to virtualize Hitachi and third party storage. This architecture provides both unmatched performance and capacity to support any workload or type of data, whether block, file or content, on a single system. In combination with its flexible storage tiering and storage virtualization capabilities, the Virtual Storage Platform enables automated tiered storage deployment, which can extend to externally attached storage. This means organizations can preserve their existing investments in storage infrastructure and extend the value and life of those investments. And the platform is powered by an innovative storage architecture that uses specialized storage nodes coupled with new high performance data accelerators for greater efficiency.

IT executives envision the design and creation of enterprise data centers that are fully virtualized, highly automated, cloud-ready and sustainable in their carbon footprint. Enterprise Microsoft applications play a large role in any data center design and operation. Because these applications create, store and retrieve large amounts of data at a high frequency, they require storage systems that both scale and perform as data requirements grow. Hitachi Virtual Storage Platform provides a superior approach to delivering these needs.

Dynamic Tiering Automatically Optimizes Application Performance

In an effort to align the business value of data to the cost of storing and managing it, many organizations use a data tiering approach to manage application performance. They provision out storage to several storage systems with different performance and cost characteristics. Using this approach, data specialists typically look to past usage patterns to determine how to manually configure tiering, making these systems unable to effectively

respond to dynamic and rapidly changing application and data use. If usage patterns change rapidly, manually tiered storage systems and the applications they support will produce less than optimal results.

Hitachi Dynamic Provisioning provides an innovative tiering technology that takes the guesswork and complexity out of organizing data on different tiers of a storage system. Administrators can make use of virtualization and data mobility tools to nondisruptively move, or re-provision, the volume to any other pool or tier. These operations may be based upon data promotion or demotion, consolidation or migration, performance or cost change. This dynamic architecture optimizes the effectiveness of the storage system while providing the high level of performance needed to support multiple data-driven Microsoft applications, even as data requirements grow.

Hitachi Dynamic Tiering automatically moves data on pages within virtual volumes to the most appropriate media according to workload. This maximizes service levels and application performance and minimizes total cost of storage ownership. After an initial setup process, Hitachi Dynamic Tiering monitors data access in real time and makes decisions on moving data between the available storage tiers based on actual use and policies. Using this approach, Hitachi Dynamic Tiering helps to improve both the availability and performance of the storage system and the applications using that storage.

Managing the Storage Infrastructure

Effective storage management is essential for a truly agile data center. Hitachi Data Systems lets administrators manage the data center as storage needs expand using the Hitachi Command Suite. In addition to managing tiered storage, Hitachi Command Suite provides an integrated approach to storage management that brings together all of the tools needed to understand and make decisions about storage systems, infrastructure and data.

The Hitachi Command Suite user interface has been significantly upgraded and simplified, supporting both novice and expert users in managing the storage infrastructure.

The user interface incorporates integrated use case wizards with best practice defaults to enable administrators of all skill levels to perform common actions while ensuring proper configuration.

Hitachi Command Suite centralizes storage configuration with common management across all Hitachi storage systems. Through agentless host discovery and management, administrators can more easily manage and maintain distributed storage environments. This efficient management tool also helps prepare the enterprise for migration to the cloud by enabling storage administrators to deliver storage as a service within a private cloud.

Hitachi Command Suite provides the tool set necessary to understand, configure and manage the storage infrastructure at a detailed level. This provides a high degree of flexibility for setting up and configuring Microsoft applications as a part of a virtualized storage environment or in a native, nonvirtualized environment.

Built-in Expertise Gives IT a Head Start

Hitachi Data Systems provides organizations with clear and actionable guidance on architecting, implementing and managing dynamically tiered storage systems to reduce costs and improve performance. This guidance begins with the Microsoft scale-up reference architecture, a blueprint for organizations seeking to design, implement and manage multiple Microsoft applications in a virtualized data center environment on a single storage system.

This enables organizations to benefit from designing and testing Hitachi Virtual Storage Platform and Hitachi Dynamic Provisioning under the data requirements of multiple enterprise Microsoft applications. By using this reference architecture as a starting point for internal implementations, organizations gain valuable insights that can save the time and effort needed to execute a storage strategy and implementation.

Hitachi Data Systems also provides a set of best practices that combine its expertise in data storage architectures with extensive experiences in a wide variety of

THE 3D SCALING ADVANTAGE: HOW 3D SCALING PROVIDES THE ULTIMATE STORAGE INFRASTRUCTURE EFFICIENCY AND BUSINESS VALUE

Hitachi Virtual Storage Platform helps organizations transform data centers into information centers. As the only 3D scaling storage platform, it flexibly adapts data for performance and capacity and extends to multivendor storage environments.

3D scaling is a unique architecture with the capability to:

- *Scale up* to meet increasing demands for both open systems and mainframe environments
- *Scale out* to meet multiple demands for adapting to evolving server needs and capacity
- *Scale deep* to extend value to multivendor storage for an optimal return across all storage assets

3D management increases automation and efficiency for storage, compute and virtual infrastructures. Data mobility reduces business impact when adapting to change and puts the right data in the right place at the right time. The improved operations increase data center efficiency and flexibility.

environments. These best practices provide roadmaps and guidelines for organizations, enabling them to enhance the reference architecture to meet their unique data needs and circumstances.

Summary

Enterprise IT must address the need to better manage data for cost and performance as storage requirements continue to grow. The pressure of shrinking or flat budgets along with restricted head counts and staff cuts means IT groups have to do more with less.

Hitachi Data Systems provides a unique combination of hardware, software and architecture recommendations that enable organizations to meet the performance and scalability requirements for their enterprise Microsoft applications. Hitachi Data Systems is the only vendor that can provide a single, virtualized and scalable data management architecture.

Hitachi Virtual Storage Platform, the only 3D scaling storage solution designed for all data types, provides the ability to scale up as data needs grow. Hitachi Dynamic Provisioning and Hitachi Dynamic Tiering enable the storage infrastructure to automatically move the data to the appropriate storage tier in

response to rapidly changing organizational needs, ensuring that the most valuable and frequently used data is accessed most quickly. This serves to align the business value of data to the cost of storing it. Finally, Hitachi Command Suite provides a high level of manageability with the ease of use needed to quickly and easily maintain the architecture over its lifecycle.

Hitachi Data Systems provides reference architectures and documented best practices guides to ensure that organizations have access to the expertise and insights necessary to effectively architect and deploy complex storage systems. You can use the reference architecture as a starting point for system design and deployment in data centers, and employ the best practices as a roadmap to enhancing these systems for your unique storage requirements.

These storage technologies can be fully virtualized and easy to deploy and use with no additional technologies required to enhance and simplify storage management for Microsoft applications. Hitachi Virtual Storage Platform is fully tested and supported 24/7 for Microsoft technologies. It is fully certified for Windows Server® Operating System environments with complete Hyper-V™ Live

Migration virtualization support for Microsoft clustered and standalone configurations using industry standard servers, adapters and networking hardware. For organizations running multiple enterprise Microsoft applications, Hitachi Data Systems delivers the most comprehensive data storage and management solution available today.

For More Information

To learn more about how Hitachi Data Systems can help you with your data architecture, storage system implementation, dynamic tiering and management for multiple Microsoft data-driven applications, visit www.hds.com or contact your local sales representative. Explore an engagement that will result in the optimal solution for your data architecture, dynamic tiering and management needs.

SCALING UP MICROSOFT APPLICATIONS WITH A HITACHI DATA SYSTEMS SOLUTION OFFERS IMMEDIATE BENEFITS

- Take advantage of an industry leading vision of the transformed data center that is virtualized, automated, cloud-ready and sustainable
- Save storage costs and reduce complexity by consolidating multiple Microsoft applications onto a single storage system, with full data protection
- Improve flexibility in a virtualized data center by enabling data scalability across Microsoft applications
- Use Hitachi Dynamic Provisioning and Hitachi Dynamic Tiering to optimize storage and meet Microsoft application performance goals while reducing overall cost of storage and management
- Manage Microsoft applications with Hitachi Storage Command Suite v7, an integrated software environment for managing complex storage systems
- Design, implement and manage storage infrastructure easily and quickly with Microsoft scale-up reference architecture and best practices

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