Solution Brief
**Intel® Xeon® Processors**
**Hitachi Virtual Storage Platform***
Software-defined Storage

# Hitachi Virtual Storage Platform

**Software-defined Storage for Business Agility**

HITACHI
Inspire the Next

Hitachi Virtual Storage Platform*, powered by Intel® Xeon® processors, helps IT groups support fast-changing business needs and rapid data growth while controlling cost and simplifying storage management.

Today's IT groups must respond swiftly to diverse, rapidly changing business demands while maintaining operational performance and application availability. At the same time, they're under pressure to control operating costs as they manage an increasingly complex environment.

A software-defined data center environment helps IT groups meet these challenges. It provides greater infrastructure agility to meet fast-changing business needs, while reducing management complexity and helping IT hold down operational costs.

**Hitachi Virtual Storage Platform*.** The benefits of software-defined storage, including enterprise-class storage virtualization, are available to any organization. Businesses can choose the right entry point based on size and price, and expand as their needs grow.

## Hitachi Virtual Storage Platform

Software-defined storage—which Hitachi defines as virtualized storage resources that deliver consistent, automated data services to all applications—plays an essential role in enabling an efficient software-defined data center. Now, with Hitachi Virtual Storage Platform* (Hitachi VSP), the benefits of software-defined storage, including enterprise-class storage virtualization, are available to any organization.

Hitachi VSP comprises a family of compatible software-defined storage solutions, from mid-range to scalable enterprise systems. Powered by Intel® Xeon® processors, all systems run the same software based on Hitachi Storage Virtualization Operating System* (Hitachi SVOS), so they all provide the same management, virtualization, migration, and data protection features. This means businesses can choose the right entry point based on size and price, and expand as their needs grow.

With Hitachi VSP, IT groups can:

- Increase overall agility while reducing operational cost and untangling management complexity.
- Quickly deliver automated services including storage virtualization, tiering, and high availability.
- Simplify administration and increase utilization with unified management of all storage assets, including systems from multiple manufacturers.
- Accelerate deployment of virtualized infrastructure through integration with leading business applications and server virtualization software.

## Hitachi Storage Virtualization Benefits

Storage virtualization delivers a highly available, automated, and agile virtual storage environment, helping IT respond more quickly new business needs. It hides the complexity of networked storage by unifying multiple storage devices, including external storage from other manufacturers, so they appear to be a single pool of capacity. This reduces hardware costs by extending the useful life of existing storage and improving utilization; it also makes it easier to integrate disparate systems and migrate data between them.

In addition, storage virtualization provides the foundation for a wealth of advanced, automated capabilities across the storage environment, including unified management, high availability, and data replication.

**Centralized, unified management.** Storage virtualization simplifies and automates storage management, and allows those benefits to be applied across the entire storage environment—including platforms from multiple manufacturers. With Hitachi management software, IT can centrally manage workloads on all storage platforms using a single interface. This reduces management complexity and effort, while allowing administrators to apply advanced automation capabilities to older legacy storage.

**Non-disruptive migration.** Migrating data from legacy systems allows businesses to reduce maintenance and software licensing costs.

Hitachi SVOS enables automated, non-disruptive data migration. Because data is migrated in the background by the storage controller rather than by host systems, IT can move data between systems more quickly with no application performance impact or downtime requirement.[1]

**Data protection and high availability.** Hitachi VSP provides enterprise-class data protection, including local and remote replication, to reduce business risk and meet service-level agreements. It also supports business continuity with active-active high availability, synchronizing data between two data centers without the need for an additional external appliance.[2]

**Automated tiering and thin provisioning.** IT groups can take advantage of advanced capabilities that increase storage efficiency and reduce capital expense while optimizing performance. Thin provisioning uses tiered pools of storage that can be more efficiently shared among applications, reducing the need to purchase more storage capacity.

Automated tiering increases application performance and reduces operating costs by automatically moving data between storage tiers based on criteria such as access frequency. Hitachi VSP instantly responds to changes in workload by moving the most active data to Hitachi Accelerated Flash* storage to improve response time, while less-frequently used data is moved to lower-cost media to minimize cost. Automation also reduces administrative effort and cost by eliminating the need for hands-on management.

**Primary file data deduplication.** Hitachi primary file data deduplication increases utilization by reclaiming space, using an automated process that requires little or no configuration, tuning, or scheduling.

**Integrated block and file access.** Hitachi VSP integrates both block and file storage, so IT groups can support all use cases across the business from a single management view.

## TOP 10 HITACHI VIRTUAL STORAGE PLATFORM* BENEFITS

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|---|---|
| 1 | **Single operating system across the entire product line.** Reduces IT costs because all systems provide the same management, virtualization, migration, and data protection features. |
| 2 | **Solutions from mid-range to scalable enterprise.** Makes the benefits of software-defined storage available to any organization. Businesses can choose the right entry point based on size and price, and expand as their needs grow. |
| 3 | **Unified management.** Provides simpler administration and faster delivery of automated services across the entire data storage environment, including platforms from multiple manufacturers. |
| 4 | **Storage virtualization.** Simplifies management and reduces capital expense by extending the useful life of legacy storage and improving utilization. |
| 5 | **Hitachi Accelerated Flash*.** Provides extremely high performance to improve response time for applications that are performance-centric or experience sudden workload fluctuations. |
| 6 | **Non-disruptive data migration.** With no performance impact, accelerates technology refresh and reduces effort while eliminating application outage. |
| 7 | **Continuous operations.** Offers active-active high availability between geographically dispersed data centers, without requiring an external appliance. |
| 8 | **Advanced data protection features.** Includes controller-based encryption and local and remote replication. |
| 9 | **Primary file deduplication and automated tiering.** Benefits include higher utilization, reduced capital expense, and optimized performance with little or no need for hands-on management. |
| 10 | **Integration with leading applications and virtualization platforms.** Offers faster deployment of virtualized infrastructure. |

## Hitachi Virtual Storage Platform Advanced Features

Because systems in the Hitachi VSP product line are compatible and interoperable, businesses can scale up or add more powerful systems as needs grow, while maintaining consistent service levels across the storage environment.

The performance and I/O throughput of Intel Xeon processors enable compute-intensive intelligent storage capabilities, such as automated tiering and data replication, to be implemented in Hitachi SVOS without requiring specialized custom hardware. Because new features are implemented in software, they can be made available more quickly across the entire product line.

Hitachi VSP also takes advantage of features in Intel Xeon processors that are specifically designed to accelerate storage performance and increase data protection, such as Intel® QuickData Technology, Asynchronous DRAM Refresh (ADR) to protect data during power disruptions, and PCIexpress* Non-Transparent Bridging (NTB).

Other built-in platform features include encryption of data at rest, which provides additional protection without performance impact.

Hitachi VSP provides unique options for combining storage tiers to optimize performance and cost, including:

- Flash-optimized storage with up to 2 PB of Hitachi Accelerated Flash storage in all-flash systems, delivering up to 1.4 million IOPS.[3]
- A combination of 2.5" and 3.5" hard drives and solid-state drives for cost-effective tiered storage.
- Third-party storage management with Hitachi Command Suite*.

## Conclusion

Hitachi Virtual Storage Platform brings the benefits of software-defined storage to organizations of all sizes, enabling IT to meet fast-changing business demands by increasing agility, reducing management complexity, and controlling cost.

- Faster delivery of automated, consistent services across the storage environment, resulting in quicker response to business needs.
- Lower operational costs and management complexity through central management of all storage platforms, including those from multiple manufacturers.
- Reduced capital costs due to increased utilization and extended life of existing storage assets.

With the advanced storage virtualization features of Hitachi Virtual Storage Platform, IT groups can solve their most critical storage challenges.

For more information on Intel Xeon processor-based storage, visit **www.intel.com/go/storage**.
Learn more about Hitachi Virtual Storage Platform at **www.hds.com**.

[1] Separately licensed features. Global active device feature available after initial release.

[2] Separately licensed features. Global active device feature available after initial release.

[3] Based on internal Hitachi test results using small block size 100% random reads. Actual performance may vary.