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## Hitachi Command Suite

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## 3D Management: Manage Up, Manage Out and Manage Deep

Hitachi Command Suite is an integrated software suite for efficient management of virtualized storage and server infrastructures that lowers capital and operational costs. With new levels of usability, workflow, performance, scalability and private cloud enablement,

The virtualization capabilities of the Hitachi Virtual Storage Platform with Hitachi Dynamic Tiering software raise storage automation to new heights. Hitachi Dynamic Tiering automates data placement across internal, external and multivendor storage media for higher performance and lower costs. By analyzing usage patterns, following user defined policies and automating page-level placement of data across storage tiers, it can place the right data in the right place at the right time, with no performance degradation.

Hitachi Command Suite lets IT organizations build sustainable infrastructures with leading storage technologies. It helps you flexibly align with changing business requirements and maximize return on IT investments.

### 3D Management

The Hitachi Command Suite delivers unique 3D management in support of the Hitachi Virtual Storage Platform, the only 3D scaling storage platform designed for all data types, and all other Hitachi storage systems.

3D management simplifies operations and lowers costs with three distinct dimensions:

- **Manage up** to scale with the largest infrastructure deployments.
- **Manage out** with breadth to manage storage, servers and the IT infrastructure.

- **Manage deep** with the integration required to manage the multivendor resources of today's complex data centers.

### 3D Management Benefits

3D management delivers several benefits for your infrastructure, including:

#### Reduce Infrastructure Costs

Proper management practices lower your total cost of ownership by improving storage and IT resource utilization and deferring additional purchases. By aligning IT costs with the appropriate application requirements and data value, the correct shared IT resources can be matched to business application requirements.

- Deploy premium IT resources only for critical business application data.
- Automatically move less critical application data to lower cost storage tiers.

#### Reduce Administrative Costs

With a simplified, easily managed infrastructure, IT staff can manage greater volumes of data effectively, quickly deploy new applications, optimize application performance, and take advantage of new technology advances.

- Manage more data and resources with a common set of tools, including heterogeneous storage systems.
- Use agentless approaches for basic storage management.

#### Improve Application Performance

Optimal configurations improve the performance and availability of mission-critical business applications while ensuring adherence to application-specific service level agreements. Application users will experience faster response times and fewer outages, resulting in improved business productivity.

- Easily match shared resources to application availability and performance requirements.
- Monitor and enforce pre-defined application service level objectives.

## Hitachi Command Suite

A seamlessly integrated management software suite, the Hitachi Command Suite is composed of the following software products:

**Hitachi Basic Operating System**, including Hitachi Device Manager, provides centralized management of distributed storage environments with highly granular control for individual Hitachi storage systems.

**Hitachi Basic Operating System V**, including Hitachi Universal Volume Manager, adds virtualization of Hitachi and third party storage attached externally to Hitachi enterprise storage for an effective, integrated tiered storage platform.

**Hitachi Dynamic Link Manager Advanced** offers robust path failover and load-balancing SAN multipathing capabilities with integrated path management to improve the application's access to its data.

**Hitachi Dynamic Provisioning** provides virtual storage capacity to simplify the administration of adding new storage and improve performance and capacity utilization.

**Hitachi Dynamic Tiering** simplifies tiered storage management by automating the page-based movement of data to the most appropriate storage media according to workload and usage patterns. This automates management, maximizes service levels and minimizes storage costs.

**Hitachi Command Director** streamlines the reporting and management of Hitachi storage systems based on business applications and functions to ensure their service level objectives are met.

**Hitachi Storage Capacity Reporter**, powered by APTARE®, provides agentless, heterogeneous storage capacity reporting from application to disk for improved end-to-end storage capacity utilization and planning.

**Hitachi Tiered Storage Manager** matches application quality of service (QoS) requirements to heterogeneous storage assets and tiers, moving data volumes without disruption to match data requirements.

## HITACHI COMMAND SUITE SUMMARY

### Business Benefits

- Reduce storage capital costs by increasing utilization and deploying automated tiered storage infrastructures.
- Reduce operational costs by centralizing management and using common administrative tools.
- Ensure IT infrastructure is properly aligned with application and business requirements.
- Improve application data access, availability and performance.
- Simplify data infrastructures with management practices that consider future growth.

### Technical Benefits

- Simplify management with an unified set of storage management tools covering the full range of Hitachi storage systems and multivendor storage assets.
- Scale to address the largest data center infrastructures with agentless approaches to virtual storage and server management.
- Employ automated tiered storage management with page-based movement of data to the most appropriate storage media.
- Share and use logical group constructs across the Hitachi Command Suite.
- Exercise unique service level management with application views.

**Hitachi Tuning Manager** monitors performance metrics, from the application to the storage device, enabling storage performance reporting, analysis and optimization.

**Hitachi Virtual Server Reporter**, powered by APTARE®, offers agentless, customizable storage reporting for VMware virtual server environments across heterogeneous storage assets.

## Global Solution Services

Hitachi Data Systems Global Solution Services (GSS) incorporates the industry's best people, products, tools and methodologies to help you transform your data center and reach your critical enterprise milestones. GSS consultants can help you plan, design, install, implement, transition, integrate, manage and optimize storage infrastructure solutions that meet your needs.

## Simplified Management

Hitachi Command Suite unifies management of the entire virtual data infrastructure, comprised of virtual machines, host servers,

networks and storage systems. It manages the infrastructure from a variety of perspectives — not only from a storage view but also from business application views across all tiers of data.

At the foundation, IT administrators can now establish common storage management processes. They can allocate storage with intelligent wizards that streamline the required steps, incorporate best-practice rules and enable the creation of logical group constructs for use throughout Hitachi Command Suite. An integrated task framework organizes administrative tasks for improved operational workflow or for execution during non-peak hours. With improved scalability and efficiency, Hitachi Command Suite can properly scale to the largest data centers to lower operational costs.

Hitachi Command Suite consolidates management of virtualized, heterogeneous storage resources by eliminating administrative interfaces and simplifying multivendor storage resource management. Virtualized external storage can be grouped into tiers

based on availability, performance and cost as if it were internal storage. The Hitachi Command Suite actively tunes and balances the workloads within this common storage pool, and lets administrators manage and move data across the entire storage pool, including third party storage systems.

Agentless technologies can be leveraged for basic storage management practices while only requiring host based agents for more advanced storage management practices. With integrated visibility and correlation with virtual servers, shared storage resource contention can be reduced to accelerate the expansions of virtual server farms. Multitenant segregation combined with policy based service level management comprise

the necessary components for delivering storage as a service that enables private cloud deployments of block based storage.

Hitachi Device Manager manages common storage elements with an intuitive, graphical user interface for robust provisioning and management functions. This simplifies logical unit (LUN) creation, LUN security, storage system cache control and more. Basic reporting shows administrators which assets are available and how they are being used all without the need for host agents. This lets you effectively manage existing storage resources and optimize the deployment of new business applications. Hitachi Command Director software consolidates management reporting and operations across the Hitachi

Command Suite, letting users group, report and manage shared storage resources by business applications and policies. At the same time, it ensures their respective service level requirements are being met.

Hitachi Command Suite offers a 3D management software framework to lower costs and efficiently manage all data types. With end-to-end reporting and simplified management of the virtual data infrastructure, you can maximize the utilization of IT assets and improve application data access, availability and performance. Hitachi Command Suite capabilities will help you properly align the right management practices needed for your infrastructure today and plan appropriately for future growth.

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