Integrated Management Suite Helps Automate Your Data Infrastructure

Key challenges to today’s IT organizations include the cost and effort to support growing volumes of data combined with flat IT budgets. IT organizations must simplify their infrastructure management to accelerate application deployments and ensure service levels for their mission-critical business applications are met. Most IT organizations struggle to manage diverse storage assets across multiple platforms and locations that require 24/7 operations, which could place critical data at risk.

Hitachi Command Suite simplifies administrative complexities and increases operational efficiencies for growing storage infrastructures. Command Suite delivers unified management for global storage virtualization environments. It performs across all Hitachi storage platforms, including Hitachi Virtual Storage Platform G1000, Hitachi Virtual Storage Platform midrange family and Hitachi NAS Platform. It manages block, file and object data, and covers key management aspects of storage configuration, service level, storage analytics, data mobility, data protection and automation.
With a single set of management tools for administrators, Command Suite establishes a common management framework for Hitachi virtualized storage and server environments. This framework enables IT organizations to build a software-defined infrastructure, powered by Hitachi, for managing their growing storage needs and delivering on application service levels.

**Common Management Framework**

Hitachi Command Suite simplifies management, which allows you to take full control of your data infrastructure and optimize availability, capacity utilization and service levels. Command Suite consolidates management across all Hitachi storage systems to easily align storage resources to business application needs. At the same time, it centralizes administration for device configuration, performance optimization, data mobility and replication management.

Hitachi Command Suite provides an integrated management framework that encompasses six strategic management pillars:

- **Control**: Unifies management across all Hitachi storage systems and data types, whether block, file or object based, and facilitates customized storage configurations to support new business application deployments.
- **Analyze**: Evaluates key metrics that enable critical insight into application usage to improve storage performance and capacity utilization, and avoid problems.
- **Optimize**: Increases tiered storage efficiency and performance by aligning business application data with the right storage tier.
- **Intelligence**: Enables application-based storage service level management to ensure that application and file server service levels are met.
- **Protect**: Improves business continuity and high availability, reduces risks.
- **Automate**: Provides best practice provisioning workflows to automate repetitive storage provisioning tasks.

**Hitachi Command Suite Management Benefits**

**Improved Application Performance and Availability**

Optimal storage and server configurations improve the performance and availability of mission-critical business applications and ensure adherence to application-specific service level agreements. Global storage virtualization provides always-on operations with application users experiencing lower response times and fewer outages that result in improved business productivity.

- Easily match virtualized storage resources to application availability and performance requirements.
- Monitor and enforce storage service level objectives for applications and file servers.

**Reduced Infrastructure Costs**

With improved storage and IT resource utilization and deferred capital purchases, structured management practices can lower total cost of ownership. By aligning IT costs with application data value, shared IT resources can be matched to business application requirements.

- Efficiently use flash storage to ensure premium storage investments are fully utilized.
- Automatically move less critical application data to lower-cost storage tiers.

**Reduced Administrative Costs**

A sustainable administrative foundation that can be automated allows greater volumes of data to be managed effectively to enable the rapid deployment of new business applications and technology advances.

**Hitachi Command Suite**

Hitachi Command Suite includes the following software products:

- **Hitachi Automation Director** enables storage infrastructure self-service with integrated storage provisioning workflows to standardize and automate the deployment of storage resources for common business applications.

- **Hitachi Data Center Analytics** provides a highly scalable analytics solution for fast discovery and analysis of multiple data management statistics across the entire data center. The collected statistics are stored in an optimized database with comprehensive analytic reporting capabilities.

- **Hitachi Device Manager** forms the base of Hitachi Command Suite. It is included with Hitachi Storage Virtualization Operating System and Hitachi Base Operating System to provide common management and administration for multiple Hitachi storage systems, on which advanced management capabilities are built.

- **Hitachi Dynamic Link Manager** Advanced offers robust SAN path management capabilities, including load balancing, path failover and integrated path management, to improve an application’s access to its data.

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

- **Hitachi Dynamic Tiering** simplifies tiered storage management with page-based movement of data to the most appropriate storage media, according to workload and usage patterns. It simplifies storage management, maximizes service levels, improves performance and minimizes storage costs. Active flash mode, a new feature of Hitachi Dynamic Tiering, delivers ultra-tier performance or lower response times for rapidly accessed data by responding to the most active data within seconds to subseconds.
Hitachi Compute Systems Manager manages, configures and monitors Hitachi server hardware as well as the physical and virtual hosts that compose it.

Hitachi Command Director provides collective and comprehensive reporting of Hitachi storage environments based on business applications and functions to storage service level objectives.

Hitachi Replication Manager provides management capabilities to configure, manage and monitor Hitachi replication products for in-system or distance replication.

Hitachi Tiered Storage Manager matches application quality of service (QoS) requirements to storage tier characteristics and enables nondisruptive data volume movement.

Hitachi Tuning Manager provides end-to-end performance management by monitoring performance metrics, from the application to the logical storage device, enabling storage performance reporting, analysis and optimization.

Simplified Management

Hitachi Command Suite provides key management and automation practices required to support growing storage infrastructures. It provides a better understanding of your particular environment and empowers end users to efficiently configure and optimize Hitachi storage systems. Hitachi Command Suite manages not only from a storage view, but also from a business application view, for application-centric visibility of your storage environment. This visibility helps to ensure return on your storage investments today, while improving effectiveness for the future.

Administrators can establish common management processes for use across shared storage resources to facilitate advanced management functions, such as data mobility, replication and service level management. Implement intelligent, automated workflows to quickly configure and provision storage that automatically optimizes placement for new storage capacity requests. With shared logical group constructs used throughout Hitachi Command Suite, end users can scale their management practices across the data center. They can organize, manage and report on storage resources based on storage classes, business applications or business entities.

Hitachi Command Suite offers a broad range of management applications. It helps organizations take full advantage of the virtualization and provisioning capabilities of Hitachi storage platforms and improves their ability to manage ever-increasing pools of storage. As demands increase and infrastructure becomes more complex, Hitachi Command Suite can expand to manage these data-intensive environments and help to increase the amount of storage managed per administrator.

Hitachi Tiered Storage Manager can properly align business application requirements to the right storage tier and costs with optimal storage tier policies. As changes occur over time, data volumes can be moved between storage tiers, nondisruptively, to the application. Use Hitachi Dynamic Tiering to automatically move data across storage tiers to place the right data in the right place at the right time.

Comprehensive analytics continuously monitor the environment to help you optimize and maintain the health of the infrastructure. Hitachi Command Director provides end users with storage service level management for their mission-critical business applications to ensure that their unique service level requirements for performance and capacity are met. If application availability or performance problems do arise, end-to-end performance monitoring and storage system health monitoring provided by Hitachi Tuning Manager can help. Tuning Manager quickly identifies whether an application performance issue is storage-related to speed its resolution.

Through predefined service templates and use of industry best practices, Hitachi Automation Director provides advanced levels of management automation. Automation Director delivers efficient storage provisioning for common business applications. It abstracts the storage infrastructure and selects the right storage pool resources based on capacity and performance analysis. It improves the reliability and speed of the storage provisioning process.

Hitachi Command Suite enables a continuous cloud infrastructure that configures, provisions and monitors virtual storage machines within a global storage virtualization environment. Virtual storage machines provide a virtual abstraction of physical storage system resources within a single Hitachi Virtual Storage Platform G1000, Virtual Storage Platform midrange system, or a global-active device across multiple systems that may be located up to 100km apart. This abstraction is seen and managed by attached servers and hosts as a single device. It creates an always-on infrastructure that effectively eliminates availability and workload limitations associated with single physical storage system.

Virtual storage machines can be moved nondisruptively between storage tiers within or across Virtual Storage Platform G1000 systems as workload demands change. A nondisruptive data migration workflow, available within Hitachi Command Suite, empowers users to perform self-service data migrations that are transparent to the application. These new levels of availability and agility help to quickly adapt your storage infrastructure to rapidly changing business needs.

Key Hitachi Command Suite Use Cases

The following are the key use cases Hitachi Command Suite delivers to establish efficient management practices for your environment.

- **Centralized Management**: Simplifies global storage virtualization management with a common framework for configuration, mobility, performance, service level and replication. You can reduce the complexity, costs and risks for your storage investments with consolidated management operations.

- **Inventory Management**: Combines asset discovery and management across virtualized storage resources to administer and deploy storage infrastructures.

- **Efficient Storage Provisioning**: Unifies management to consolidate storage provisioning and configuration across all Hitachi storage systems and data types. With simplified storage provisioning, you can accelerate the deployment of new business applications and reduce the risks associated with manual storage management processes.
Separately licensed feature available for Hitachi Virtual Storage Platform midrange family after initial release. Ask your HDS representative or partner for more information.

Hitachi Command Director and Hitachi Tuning Manager are included in Hitachi Command Suite Analytics software package available for Hitachi Virtual Storage Platform G1000.

Hitachi Dynamic Tiering and Hitachi Tiered Storage Manager are included in Hitachi Data Mobility software package available for Hitachi Virtual Storage Platform family.

Shared Resource Optimization:
- Maximizes storage performance and return on investment by aligning business applications with defined storage tiers and policies. Define storage tier policies by application workloads and move application data to the optimal storage tier.

Optimized Tiered Storage:
- Automates tiered storage management with self-managed and self-healing storage pools. Based on usage patterns, Hitachi Dynamic Tiering automatically moves active data nondisruptively to the highest performing storage tier while moving less active data to a lower-cost tier.

Service Level Management:
- Allows centralized management and monitoring of service level requirements for business applications to ensure that mission-critical applications are meeting their required storage service levels.

Maximize Storage Performance:
- Monitors and analyzes application and storage system performance with wide-ranging performance metrics, ensuring optimal storage system utilization.

Shared Resource Optimization:
- Employs health monitoring and troubleshooting with best practices to quickly resolve storage resource contention, eliminate bottlenecks and efficiently optimize utilization of shared storage resources.

HITACHI COMMAND SUITE BENEFITS

- Eliminates management complexity to accelerate deployment of storage resources for new business applications.
- Reduces storage capital costs with efficient use of tiered storage and increases utilization for existing storage assets.
- Reduces operational costs by simplifying administration using a common management framework. Unifies and centralizes management across all Hitachi storage systems and data types.
- Ensures that storage is properly aligned to business application requirements.
- Improves business application data access, availability and performance.
- Provides comprehensive management of virtual storage machines for rapid deployment of global storage virtualization infrastructures.
- Automates storage provisioning for new business applications, reduces overprovisioning and eliminates errors.
- Ensures customized storage service level requirements for critical business applications are met.
- Allows proper planning for future capacity needs by analyzing actual storage usage with historical trends.
- Analyzes all storage-related resources on the application’s data path to improve utilization and performance as well as quickly troubleshoot performance bottlenecks.

Hitachi Command Suite offers a complete management framework to lower costs and unify management of all data types. With simplified, end-to-end views of your storage environment, you can build a software-defined infrastructure to maximize the utilization of your IT assets. Hitachi Command Suite helps you with the right management practices today and helps you plan for future growth.

Hitachi Data Systems Global Services Solutions

Hitachi Data Systems Global Services Solutions (GSS) incorporates the industry’s best people, products, tools and methodologies to help you transform your data center and reach your social innovation, cloud and software-defined infrastructure milestones. GSS consultants can help you assess, plan and design solutions so GSS transition teams can install, implement, transition, migrate, integrate, manage and optimize your storage infrastructure solutions.

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

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