Unify and Simplify Management Operations

The data center of today is transforming. Its responsibilities are evolving from the storage of data to the management of information. With Hitachi Command Suite, Hitachi Data Systems presents an integrated framework for unified management of your data infrastructure. It provides comprehensive management capabilities, enabling IT and storage administrators to manage and optimize their storage, their application data and their information.

IT professionals face demanding requirements of data growth and complex management challenges to support enterprise applications for optimal performance and capacity utilization. Hitachi Command Suite simplifies these management complexities to help you properly control your data growth and costs. Command Suite facilitates the efficient management of Hitachi storage systems to easily align storage resources to your changing business application needs.

Reduce Administrative Costs
Hitachi Command Suite provides the required visibility along the data path, from individual applications through the servers to the storage system. It provides end-to-end application-to-storage views to enable proficient storage management practices. Effectively replacing manual procedures, it unites administrative tasks under a unified management framework.

- Use a common set of management tools and practices for simplified management of more data and storage resources.
- Employ host-to-storage views using agentless approaches for basic storage management.
Manage multiple storage systems and virtualized storage environments from a single, centralized point of control.

Reduce Infrastructure Costs
Common management practices across virtualized storage lower your total cost of ownership by improving storage and IT resource utilization, deferring additional purchases, and lowering ongoing operational costs.

Improve Application Performance
Optimal configurations improve the performance and availability of mission-critical business applications while ensuring adherence to application-specific service level objectives. Shared storage resources are easily matched to application availability and performance requirements. Application users experience faster response times and fewer outages, resulting in improved business productivity.

Increase Business Agility
By enabling the nondisruptive movement of data volumes across a virtualized storage environment, Hitachi Command Suite provides an efficient tiered storage management solution. It eliminates the underlying complexities of data migrations to help you get the data when and where it is needed most. You can easily and interactively match application-driven cost, performance and availability requirements to storage tier characteristics and facilitate data movement when application requirements change over time. Managing storage tiers can be further automated by utilizing Hitachi Dynamic Tiering on its business (by department and its applications), it simplifies provisioning, management and reporting. This is because the same logical group and LUN label filters can be used as selection criterion by Hitachi Device Manager to provision storage volumes. They can also be used by Hitachi Replication Manager to build an application set of those volumes in order to form a copy group for replication purposes.

Applying LUN labels further identifies the individual volumes that belong to each logical group. The combination of using logical groups and LUN labels enables administrative scalability for users to manage more storage with existing IT staff resources. It also reduces the risk of manual errors as it relates to heterogeneous storage provisioning, volume migration and remote replication.

Virtual Server Management
Hitachi Command Suite provides an ideal storage management framework to complement virtual server environments, such as VMware and Microsoft Hyper-V. Command Suite provides end-to-end visibility and correlation from application to virtual machine to individual logical devices on the Hitachi storage system.

For VMware, Command Suite uses VMware’s vCenter management application to identify and associate virtual servers and virtual machines to logical storage devices on the Hitachi storage system. Using this information about the VMware ESX server and its data stores allows Hitachi Device Manager to properly configure and manage storage for each virtual machine. In addition, the correlation from virtual machine and data store to storage resources allows Hitachi Tuning Manager to properly analyze capacity and performance information about each virtual machine. With this analysis, Tuning Manager can identify and troubleshoot the root cause of most storage performance issues. Similarly, Hitachi Command Director provides more advanced storage service level management and analytics for critical business applications running on virtual machines.

Application Support
Hitachi Command Suite supports host server and application-specific views for storage configuration and performance information. Support for Oracle and Microsoft SQL Server, SharePoint and Exchange is included with Hitachi Tuning Manager for performance and

**BENEFITS**

**Business Benefits**
- Reduce operational costs with centralized management and common administrative tools.
- Monitor and enforce application-specific service level objectives for storage.
- Improve application data access, availability and performance.
- Employ virtual server visibility so virtualized applications can be properly aligned to the appropriate storage resources.

**Technical Benefits**
- Unified management across all data types and virtualized storage systems.
- Service-level-based storage management with business application views.
- Common graphical user interface, command line interfaces, data repositories, task management and operational workflows.
- Reduced management headaches with agentless approaches.
- Logical group constructs that can be shared and used across Hitachi Command Suite products.
capacity monitoring in addition to problem troubleshooting. And Hitachi Replication Manager provides application-specific support for simple, fast and automated online storage-system-based backups and disaster recovery.

**Built-in Intelligence Simplifies Management**

Built-in intelligence incorporates Hitachi best practices for storage management into the Command Suite menus and task wizards. For example, when creating a Hitachi Dynamic Provisioning pool, only appropriate volumes are displayed. Also, when adding capacity to an existing pool, the menu defaults to selected volumes with the same RAID level as in the existing pool volumes (a Hitachi Data Systems Global Solution Services recommended best practice). In this manner, Command Suite helps to guide administrators to use the most efficient and effective storage management practices. Of course, these are just guidelines. Experienced storage administrators can use advanced settings to override defaults based on their experience or if they have specific requirements different than the defaults presented.

**Hitachi Command Suite**

An integrated management software suite, Hitachi Command Suite provides software solutions that can benefit your Hitachi Unified Storage VM system:

- **Hitachi Device Manager** software is included with Hitachi Base Operating System for Hitachi Unified Storage VM. Device Manager simplifies storage management and gives you full control of your Hitachi storage systems. It features a fast, intuitive graphical user interface, a customizable dashboard (see Figure 1), and a complete command line interface to centrally manage your Hitachi storage systems. Device Manager gives multiple management views, including physical, logical, host, NAS head and virtual server views, for provisioning and storage pooling for both primary and secondary storage. It manages multiple levels of security for disks, ports and administrators, and reports capacity analysis based on server, application or physical storage class usage.

- **Hitachi Dynamic Link Manager** is included with Hitachi Base Operating System for Hitachi Unified Storage VM. Dynamic Link Manager Advanced provides SAN multipathing capabilities that include robust path failover, load balancing and centralized SAN path management. It improves an application’s access to data and availability of storage by distributing the load across multiple paths and transferring from one path to another in the event of a path failure.

- **Hitachi Tuning Manager** is included with Hitachi Command Suite Analytics package for Hitachi Unified Storage VM. Tuning Manager provides integrated performance analysis within Hitachi Command Suite to quickly identify and isolate storage performance issues.

With detailed monitoring of performance metrics from the application to the storage device, Hitachi Tuning Manager enables storage performance reporting, optimization and problem alerting and analysis. Tuning Manager features extensive instrumentation and built-in reporting capabilities, including VMware, Oracle, Microsoft Exchange and SQL Server application-specific support. Its end-to-end visibility for physical and virtual servers enables you to identify, isolate and diagnose storage performance bottlenecks.
Through a complementary, intuitive, web-based interface, Tuning Manager software facilitates predictive trending that properly forecasts storage performance requirements to meet your specific objectives. Tuning Manager improves performance and capacity management across all Hitachi storage systems.

**Hitachi Command Director** is included with Hitachi Command Suite Analytics package for Hitachi Unified Storage VM. Command Director enables storage analytics and centralized management reporting across the Hitachi Command Suite products. It consolidates and simplifies storage service level management for your mission-critical business applications. With management views based on your business applications and functions, Command Director provides new insights into how your storage can be optimized for your business environment. At the same time, it ensures that your applications and file servers are meeting their specific service level requirements. This helps to increase resource utilization, improve storage service levels, and yield a higher return on your storage investment.

**Hitachi Tiered Storage Manager** is included with Hitachi Command Suite Mobility package for Hitachi Unified Storage VM. Tiered Storage Manager enables transparent and nondisruptive data volume movement between storage tiers and virtualized storage systems that eliminates application interruptions during data migrations. By managing the movement of data based on performance, capacity and cost requirements, Tiered Storage Manager delivers efficient data management solution that increases data mobility and simplifies tiered storage management. Combined with Hitachi Dynamic Tiering, Hitachi Command Suite Mobility package enables you to get the data when and where it is needed most, while optimizing performance and costs.

**Hitachi Replication Manager** is included with Hitachi Local Protection package for Hitachi Unified Storage VM. Replication Manager interfaces storage-system-based replication with popular Microsoft applications and enables easy centralized control of storage-system-based backup and disaster recovery operations across all Hitachi platforms. Replication Manager enables assignment of pair volumes, configuration of replication method, and implementation commands for pair operations, all via an intuitive topology view interface.

**Summary**

Hitachi Command Suite enables organizations to align business applications to the necessary IT resources according to business-related objectives, such as quality of service, shared resource optimization and just-in-time delivery. The suite helps to fully leverage IT investments, reduces operational costs with less complexity, and increases storage asset utilization and efficiency. Thus, Hitachi Command Suite enables your organization to properly align the right management practices needed today for your unique infrastructure environment, while properly planning for future growth.

For More Information

Hitachi Data Systems provides a wide range of storage software to allow your business to take advantage of all the benefits of Hitachi Unified Storage. From the smallest environments to the largest, most demanding environments, Hitachi Data Systems has the tools to help you simplify and “right size” your storage environment now and in the future.

To see why Hitachi is the true leader in trusted, productive and intelligent storage contact your local Hitachi Data Systems sales representative today.

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