By simplifying tiered storage management, Hitachi Data Mobility software delivers the highest storage performance for the most frequently accessed data. At the same time, it lowers costs by automatically optimizing data placement.

Hitachi Data Mobility

Automate Tiered Storage Management

Where business application data is stored and accessed can greatly impact its performance, efficiency and costs. Most data is accessed once and never accessed again, so it is cost-effective to move this data to less-expensive storage tiers. However, determining what data to move and how to move it without affecting the business application can be challenging.

Hitachi Data Mobility software provides complete data movement capabilities. It combines two leading data mobility technologies with Hitachi Dynamic Tiering and Hitachi Tiered Storage Manager software. The combination enables intelligent placement of data within virtualized Hitachi storage environments while optimizing business application service levels.

Hitachi Dynamic Tiering\(^1\) automates data placement and access in a tiered storage environment. It dynamically moves the most active data to the highest-performing storage tiers while moving less frequently accessed data to lower tiers. New Hitachi Dynamic Tiering active flash\(^2\) mode moves suddenly active data via synchronous promotion to higher-performing tiers in real time. In seconds to subseconds, active flash\(^2\) responds to workload demands based on current I/O activity. Active flash\(^2\) proactively preserves flash endurance by monitoring and demoting pages that exceed thresholds for heavy write I/O.

Dynamic Tiering simplifies the complexities typically associated with planning and implementing data life-cycle management practices. Dynamic Tiering employs 1 to 3 storage tiers using any storage media type available, such as solid-state disks (SSDs) or externally attached virtualized storage assets. Data is moved to the application, efficiently and transparently. It moves, at a sub-LUN or page level, to the most appropriate storage performance tier, based on I/O activity or an I/O heat index. This automatically maximizes performance for the most frequently accessed data while fully utilizing the top-performing storage tiers.

Hitachi Tiered Storage Manager\(^3\) enables administrators to proactively match business application price, performance and availability characteristics to storage resource attributes. Administrators can proactively create and pool different storage classes to maximize operational and cost efficiency and easily align them to specific business application needs. As storage service levels change over time, Tiered Storage Manager facilitates nondisruptive data migration between storage tiers and externally virtualized storage resources to match new application requirements. Through custom data management policies, Tiered Storage Manager helps you to properly monitor and control the automated and active behavior of Hitachi Dynamic Tiering.

Automated Tiered Storage

Hitachi Dynamic Tiering storage pools automate sub-LUN or page relocation, moving data pages up or down according to I/O activity. Self-managing and self-healing storage pools improve storage performance and utilization while eliminating the need for labor-intensive capacity provisioning and planning. The most active data is dynamically moved to the highest-performing storage tier. This approach optimizes Hitachi Accelerated Flash as a data accelerator and maximizes return on high-performance storage tiers.

Easily Align Data to Business Applications

Hitachi Tiered Storage Manager facilitates storage tier definitions and custom policies that help maximize performance of application workloads in shared storage pools. User-defined policies can automatically move application data to the optimal storage tier to align with business application needs and increase storage use.

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\(^1\)Hitachi Dynamic Tiering software is available for Hitachi Virtual Storage Platform family and other Hitachi storage systems; refer to product specifications for a complete list.

\(^2\)Some features may be available after initial release.

\(^3\)Hitachi Tiered Storage Manager software is available for Hitachi Virtual Storage Platform family and other Hitachi storage systems; refer to product specifications for a complete list.
Adjust Performance to Business Timing

With user-defined I/O monitoring profiles, Dynamic Tiering behavior can be customized to meet special performance requirements during expected periods of high demand. For example, a policy can be set for the accounting application workload. During the month-end accounting cycle, when performance demands peak, the workload can be automatically moved to a higher-performing storage tier. Afterward, the workload can be automatically moved back to its normal storage tier.

Simplify Data Migration

Streamline migration tasks with nondisruptive data migrations that can accelerate storage consolidation and technology refresh projects. Hitachi Tiered Storage Manager manages the complete migration process between storage tiers and virtualized storage assets. It reduces the complexity and risks while eliminating business application downtime during data migration operations.

Business Benefits

Optimize Performance and Availability

- Automatically optimizes data placement for performance using an I/O-based heat index.
- Provides highest granularity and efficiency through page-based data movement.
- Simplifies the task of optimizing storage infrastructures to satisfy specific application requirements.
- Eliminates business application interruption and downtime during data migrations.

Reduce Storage Costs

- Reduces costs via self-managed and self-optimized storage tiers.
- Automates optimal data placement to increase storage utilization by up to 50%.

- Maximizes the storage utilization and investment return for Hitachi Accelerated Flash.
- Eliminates the need for manual classification.

Simplify Management Efficiency

- Automates the movement of data based on storage attributes of costs, performance and data protection.
- Reduces the underlying complexity of tiered storage management.
- Enables data migrations using a graphical user interface with built-in migration controls to eliminate errors.
- Saves storage administrative time and effort.

HITACHI DATA MOBILITY FEATURE HIGHLIGHTS

- Automatically moves the most active data to the highest-performing storage tier.
- Shifts suddenly active data to top-performing tiers in real time with active flash mode.
- Moves data pages up or down for optimal data placement, based on I/O patterns.
- Automatically adjusts to dynamic workload requirements.
- Provides nondisruptive volume movement across storage tiers and virtualized storage resources that are transparent to the application.
- Easily realigns application storage allocations with changing workload requirements.
- Provides extensive search functionality to easily identify source and target for migration tasks.
- Manages volume migration through the use of custom tiering.
- Utilizes Hitachi Dynamic Provisioning and its advantages, such as simplified provisioning, space efficiency and cost savings.
- Integrates with Hitachi Tuning Manager to provide performance data analysis for improved monitoring, decision-making and planning.
- Supports SSD-class performance for data stored largely on less-expensive tiers by automatically moving the most accessed data to the highest-performing storage tier.
- Uses custom policies to align data to business applications, directing a percentage of data to a storage tier.
- Provides repeatable data placement profiles to save user-defined settings, which can be used as templates to automate data placement.
- Enables automatic provisioning of volumes according to tier specifications.
- Provides an easy-to-use graphical user interface to enable a centralized view and control of the entire tiered storage environment.
- Simplifies tiered storage administration and operations.

Services and Training

Hitachi Data Systems Global Services offers market-leading storage consultants, proven methodologies and a comprehensive portfolio of services to help you align storage to your business requirements. Our assessment, planning and design, installation, management and support services help manage and automate your data mobility and management practices.

For more information about Hitachi Data Mobility visit www.HDS.com.

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DS-336-B DG April 2015