

Hitachi Basic Operating System and Basic Operating System V Software for Hitachi Universal Storage Platform® V and VM

Hitachi Basic Operating System and Basic Operating System V software are integrated tools that simplify storage management. They let you take full advantage of the partitioning and virtualization capabilities of the Hitachi Universal Storage Platform® V and Universal Storage Platform VM.

Unify and Simplify Storage Tasks for Optimized Operational Efficiency and Storage Usage

Hitachi Basic Operating System and Basic Operating System V are ideal for enterprises seeking simpler ways to manage their storage, either for a single Hitachi system or for multiple heterogeneous storage systems. They enable hands-on management, delivering more efficient utilization, automation and control of your storage assets.

Basic Operating System features a set of management tools that cover the full range of Hitachi storage systems, including Hitachi Device Manager, Hitachi Virtual Partition Manager and required storage system utilities.

Basic Operating System V is an upgrade to the Basic Operating System that:

- Adds the unique ability to virtualize externally attached storage systems to the Hitachi Universal Storage Platform systems
- Expands virtual partitions by employing up to 32 Hitachi virtual storage machines and 32 cache partitions (Universal Storage Platform V) and up to eight virtual storage machines (Universal Storage Platform VM)

Hitachi Basic Operating System Software: Centralized, Simplified, Cost-effective Storage Management

The primary Basic Operating System interface, Hitachi Device Manager software, has an easy-to-use and intuitive graphical user interface to centrally manage all Hitachi Universal Storage Platform V and Hitachi Universal Storage Platform VM systems, along with Sun StorageTek 9900/9990 systems. A complete command line interface is included. Device Manager software allows user, logical, physical and host management views for provisioning and storage pooling for primary and secondary storage. It offers multiple levels of security for disks, ports and administrators. Its reporting capabilities enable capacity analysis based on server, application or physical storage class usage.

Business Benefits

Integrate Operations

- Consolidates, rationalizes storage and storage management points; uses a single Device Manager server to manage all Hitachi storage

- Configures storage system for mixed Microsoft®, UNIX, Linux and IBM® main-frame environments; simplifies administration; enables storage consolidation
- Improves IT productivity through consistent administrative operations across storage and operating systems
- Supports business continuity and disaster recovery by configuring Hitachi replication software
- Integrates Hitachi storage with management systems through CIM/SMI-S or SNMP

Align Storage Assets with Business Functions

- Easily deploys storage resources
- Provides immediate view of available storage classes and current use with rapid allocation of more storage; improves storage utilization
- Defines logical groups for reporting and management with meaningful group names

- Organizes, manages and reports on storage based on applications, departments and storage classes; generates reports by storage system or logical group with HTML or CSV output

Optimize Storage System Performance

- Ensures storage service levels to individual servers or applications
- Balances workload and troubleshoots performance
- Allows tuning to minimize unnecessary I/Os, logical device contention and operating system queuing
- Ensures tunable performance per server via cache logical partitions and per port bandwidth reservation

Automate Storage Management Processes

- Automates repeated tasks via CLI or XML requests to reduce administrative expense and manual error

Feature Highlights

Hitachi storage management capabilities included in the Basic Operating System set are:

- **Device Manager** is the primary control point (pane of glass), with single point management for all Hitachi physical and virtual storage; it is the open systems interface for integration with other systems.
- **Storage Navigator**, used by Device Manager, shows individual physical storage system configuration and status information and sends administrative commands to a Universal Storage Platform.
- **Virtual Partition Manager** enables the logical partitioning, up to four partitions, of ports, cache and disk (parity groups) into independently managed virtual storage machines on the Universal Storage Platform.

- **Performance Monitor's** intuitive, graphical interface assists with performance management information in capacity and configuration planning, workload balancing, analyzing and optimizing storage system performance.

- **LUN Manager/LUN Expansion** lets administrators define, configure, add, delete, revise and reassign LUNs to specific paths without system rebooting. Its infrastructure supports alternative path failover, path load balancing and clustered servers.

- **Logical Unit Size Expansion (LUSE)** creates virtual expandable LUs out of physical groups.

- **Virtual LVI/LUN Manager**, also called Customized Volume Size, lets administrators create custom-sized logical volumes. It better utilizes physical capacity and boosts remote copy performance by eliminating the need to copy large volumes of partially used information.

- **Volume Port Security and Volume Security Port Option** secure SAN environments by denying access to unauthorized users at the port level.

- **Server Priority Manager** ensures specific servers and applications get needed storage bandwidth.

- **Cache Residency Manager and Cache Management Host Agent** allow users to "lock" and "unlock" data into cache in real time to optimize access to the most frequently accessed data.

- **Data Retention Utility for Open Systems and IBM z/OS®** provides virtual disk-based "write once, read many" (WORM) capability. Archived data can be nonerasable and nonrewritable for prescribed periods, facilitating regulatory compliance.

- **Volume Shredder** erases sensitive data after the prescribed retention period.

COMPLEMENTARY SOLUTIONS

The following Hitachi software modules complement the capabilities of Basic Operating System and Basic Operating System V:

- Hitachi Command Director
- Hitachi Dynamic Provisioning
- Hitachi Tuning Manager
- Hitachi ShadowImage® Heterogeneous Replication
- Hitachi Universal Replicator
- Hitachi Replication Manager

- **SMI-S Provider, SNMP Agent and Microsoft Volume Shadow Copy Service (VSS)** support provides standards-based integration with enterprise management systems.

Basic Operating System V is an upgrade to the Basic Operating System that:

- Expands **Virtual Partition Manager** partitions from a maximum of four up to 32 partitions
- Adds **Universal Volume Manager** software to virtualize multitiered storage systems of heterogeneous devices into a common storage pool and provides a common storage management, data migration and lifecycle management tool

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