

Hitachi Basic Operating System and Basic Operating System V Software



Unify and Simplify Storage Tasks with Hitachi Basic Operating System and Hitachi Basic Operating System V software.

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

The Hitachi Basic Operating System and Basic Operating System V software packages are deeply integrated tools that both simplify storage management and let you take full advantage of the partitioning and virtualization capabilities of the Hitachi Universal Storage Platform™ V. They are ideal for enterprises seeking simpler ways to manage their storage, either for a single Hitachi system or for larger installations composed of multiple heterogeneous storage systems. They enable effective hands-on management, delivering more efficient utilization and control of your storage assets, and also include interfaces for automating your storage management processes.

Basic Operating System features:

- **One set of common management** tools that cover the full range of Hitachi storage systems is included. These tools include everything formerly included in Hitachi Device Manager, Virtual Partition Manager, and Server Priority Manager software and Resource Manager utility package.
- **Virtual Partitions** are dynamically changeable cache and storage logical partitions. You can create up to four virtual storage systems on a Universal Storage Platform V so that shared storage can be securely compartmentalized where needed. You can create up to four virtual cache partitions to control and adjust the quality of service (QoS) of your most critical applications based on changing business needs or fluctuations in workloads.

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

- **Adds the unique ability to virtualize externally attached storage systems** to the Universal Storage Platform V, creating a single heterogeneous pool of tiered storage. This enables simplified storage management, increases utilization, increases efficiency, improves service levels, simplifies data migration and helps meet compliance demands.
- **Expands Virtual Partitions**—up to 32 storage and 32 cache partitions.

The Hitachi Basic Operating System software was created to deliver the storage return on investment, security, and QoS

to applications that companies require. And the Basic Operating System V software enables the unique embedded virtualization capabilities of the Universal Storage Platform V and allows organizations to take advantage of Hitachi storage management and data mobility capabilities—within a single system or across an entire heterogeneous storage pool.

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

Operationally, Basic Operating System software's Performance Monitor feature provides a fundamental view of the performance data provided by the storage system components, including physical disks, channel processors, and storage processors. The data helps you to make informed decisions regarding storage tuning and load balancing.

Business Benefits

Operations Integration

- Consolidates and rationalizes storage and storage management points; uses a single Device Manager server to manage all Hitachi storage; enables access from anywhere using secure protocols
- Configures storage system for mixed Microsoft®, UNIX, Linux, and IBM® mainframe environments, simplifying administrative work and enabling storage consolidation
- Improves IT productivity through consistent administrative operations across storage and operating systems; simplifies everything else, including data replication, migration, and storage tiering
- Supports business continuity and disaster recovery capabilities by configuring Hitachi ShadowImage™

Heterogeneous Replication software and Hitachi Universal Replicator remote replication software

- Integrates Hitachi storage with other management systems through SNMP or CIM/SMI-S

Align Storage Assets with Business Functions

- Enables easy deployment of storage resources to meet business and application needs
- Provides immediate view of all classes of available storage and current use coupled with an easy way to rapidly allocate more storage; enables improved utilization of enterprise storage assets
- Defines Logical Groups for reporting and management purposes; allows you to use group names that are “meaningful” to you.
- 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
- Allows workload balancing and performance troubleshooting
- Accelerates application performance by locking key data into cache in real time
- Allows tuning to minimize unnecessary I/Os, logical device contention, and operating system queuing
- Ensures tunable performance on a per-server basis 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 risk of error from manual processes

Feature Highlights

Hitachi storage resource management software capabilities included in the Basic Operating System set are, in detail:

- **Device Manager software** is the primary control point “single pane of glass” for Basic Operating System, providing single point management for all Hitachi physical and virtual storage and acting as the open systems interface for integration with other systems.
- **Storage Navigator program** is used by Device Manager and shows individual physical storage system configuration and status information, and sends administrative commands to the Universal Storage Platform V.
- **Virtual Partition Manager software** enables the logical partitioning of controllers, ports, and cache on the Universal Storage Platform V.
- **Performance Monitor** feature provides an intuitive, graphical interface to assist with performance management information in capacity and configuration planning, workload balancing, and analyzing and optimizing storage system performance.
- **LUN Manager/LUN Expansion** lets administrators define, configure, add, delete, revise, and reassign LUNs to specific paths without having to re-boot the system. LUN Manager can assign multiple paths to a single LUN, providing the necessary infrastructure to support alternative path failover, path load balancing, and clustered servers.

- **Logical Unit Size Expansion (LUSE)** allows LUN expansion by creating virtual expandable LUs out of groups of physical ones.
- **Virtual LVI/LUN Manager, also called Customized Volume Size**, lets administrators create custom-sized logical volumes. It enables better utilization of the storage system’s 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** help ensure security in SAN environments by denying access to unauthorized users at the port level.
- **Server Priority Manager** ensures specific servers and applications get the storage bandwidth they need.
- **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. Administrators can make archived data, non-erasable and non-rewritable for prescribed periods, facilitating regulatory compliance.
- **Volume Shredder software** enables the shredding of sensitive data once the prescribed retention period ends.
- **Volume Shadow Copy Service (VSS) hardware provider** supports direct storage system-based point-in-time copies for Microsoft VSS-enabled applications using the Hitachi In-System Heterogeneous Replication software bundle or the Hitachi TrueCopy® Heterogeneous Remote Replication software bundle.
- **SNMP Agent** provides MIBs that enable the reporting of status and alerts to enterprise management systems.
- **NDMP agent** supports the open standard Network Data Management Protocol for enterprise-wide backup of heterogeneous network-attached storage.

Basic Operating System V is an upgrade package that adds:

- **Virtual Partition Manager software** which enables the logical partitioning of ports, cache, and disk (parity groups) into independently managed virtual machines on the Universal Storage Platform V.
- **Universal Volume Manager software** virtualizes multitiered storage systems of heterogeneous devices into a common storage pool and provides common storage management, data migration, and lifecycle management tools.

Complementary Solutions

- Hitachi Dynamic Provisioning™ software and services
- Hitachi Tuning Manager software and services
- Hitachi Storage Services Manager software and services
- Hitachi ShadowImage Heterogeneous Replication software
- Hitachi Universal Replicator software and services
- Hitachi Replication Monitor software and services

System Requirements and Support Matrix

<http://www.hds.com/go/hicommandrequirements>

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DISK-630-00 DG May 2007

