The Hitachi Universal Storage Platform® V delivers proven enterprise-class functionality — advanced virtualization of externally attached storage, logical partitioning, thin provisioning and universal replication — with the industry’s most reliable, scalable and highest performing storage services platform.

**Enterprise-class Functionality with Common Storage Services**

As legal and regulatory requirements for long term data protection and retention intensify, many enterprises face escalating data growth. Simultaneously, they must improve application performance, availability, business continuity and backup windows, while simplifying the management of increasingly complex infrastructures.

Hitachi Universal Storage Platform V, powered by the Hitachi Universal Star Network™ massively parallel crossbar switch architecture, executes the Services Oriented Storage Solutions approach to storage management by Hitachi Data Systems. The platform enables common storage services, including virtualization, thin provisioning and business continuity across storage assets from Hitachi Data Systems and other providers — whether file, object or block based.

The Universal Storage Platform V further extends the enterprise-class capabilities introduced with the Hitachi Universal Storage Platform. With Hitachi Dynamic Provisioning software, it supports both internal and external virtualized storage, simplifies storage administration, improves performance and helps reduce overall power and cooling costs.

**Business Benefits**

**Simplify — Save Time and Money**

- Improve utilization and flexibility of legacy systems by aggregating internal storage and externally attached Hitachi and third party storage systems into a single, flexible storage pool.
- Increase efficiency through massive consolidation or aggregation of storage platforms, including those from other vendors.
- Reduce management complexity with optimized storage services managed from a centralized user console and a common set of software tools across storage assets connected to the Universal Storage Platform V.
- Continuously run operations during storage expansion activities with Dynamic Provisioning software — allocating virtual storage capacity without interrupting critical business applications, requiring fewer physical disks and adding disks only when physical pool size is exceeded.

**Maximize Availability and Performance — Improve Support to End Users**

- Count on the unique and proven fourth-generation parallel crossbar switch architecture to meet demanding workloads.
- Ensure application quality of service by partitioning storage resources with Hitachi Virtual Storage Machine™ technology. Independent Virtual Storage Machines offer a synergistic linkage of disk, cache and ports for creation of virtual storage systems to simplify asset tracking and for chargeback purposes.
- Match application requirements to storage attributes to improve storage cost effectiveness.

**Business Solutions**

Hitachi Data Systems and its Hitachi TrueNorth Channel Partners offer industry leading solutions to help organizations of all sizes meet their unique requirements for business continuity, regulatory compliance and data recovery. Together, we provide cost effective storage products and solutions that leverage world renowned Hitachi global R&D resources to deliver performance, availability and scalability — supporting business critical applications and strengthening competitive advantage.

**Complementary Solutions**

- Hitachi Basic Operating System V software
- Hitachi Storage Command Suite
- Hitachi In-System Heterogeneous Replication software bundle
- Hitachi Adaptable Modular Storage and Hitachi Workgroup Modular Storage
Protect Your Business
Facilitate Regulatory Compliance —

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environments through tiered storage
storage for open systems and mainframe
Enable cost effective, large scale data
SATA-based storage systems.

Lower costs by archiving mainframe
data to either internal high capacity SATA hard
drives or to virtualized, externally attached
SATA-based storage systems.

Enable cost effective, large scale data
storage for open systems and mainframe
environments through tiered storage
implementations.

Ensure business continuity by simplifying
and unifying data protection and replication
between storage systems.

Facilitate Regulatory Compliance —
Protect Your Business

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Meet regulatory compliance and corporate
governance requirements with industry
leading data protection and storage secu-
rity services that guarantee data availability
and tamperproof long term data retention.

Build the foundation of a complete data life-
cycle management solution by enabling the
dynamic, nondisruptive movement of data
between different storage tiers.

Optimized Data Center Environment

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Offers industry leading availability, perfor-
mance and connectivity

Allows deployment of applications within a
new framework for tiered storage, business
continuity and/or storage simplification

Enables consolidation of open systems and
mainframe data onto fewer physical storage
devices to minimize maintenance costs and
lower software license fees, capital expendi-
tures and environmental costs

Protects investments and reduces total
cost of ownership

Extends the life of existing storage systems

For details on Hitachi Universal Storage
Platform V capabilities, visit www.hds.com.

Feature Highlights

Universal Storage Platform V Specifications

Frames (Cabinets)
Integrated Control/Drive Group Frame and 1 to 4 optional
Drive Group Frames

Universal Star Network™ Crossbar Switch
Number of switches 8
Aggregate bandwidth (GB/sec) 106
Aggregate IOPS Over 4 million

Cache Memory
Number of cache modules 1-32
Module capacity 8 or 16GB
Maximum cache memory 512GB

Control/Shared Memory
Number of control memory modules 1-8
Module capacity 4GB
Maximum control memory 28GB

Front End Directors (Connectivity)
Number of Directors 1-14
Fibre Channel host ports per Director 8 or 16
Fibre Channel port performance 4Gb/sec
Maximum Fibre Channel host ports 224
Virtual host ports 1,024 per physical port
Maximum IBM® FICON® host ports 112
Maximum IBM ESCON® host ports 112

Logical Devices (LUNs) — Maximum Supported
Open systems 65,536
IBM z/OS® 65,536

Disks
Type: Flash 73, 146 and 200GB
Type: Fibre Channel 146, 300, 400 and 450GB
Type: SATA II 1TB
Number of disks per system (min/max) 4-1,152
Number spare disks per system (min/max) 1-40

Maximum Internal Raw Capacity
Maximum (1TB disks) 1,134.5TB

Maximum Usable Capacity — RAID-5
Open systems (1TB disks) 986.0TB
z/OS-compatible 1TB disks) 931.7TB

Maximum Usable Capacity — RAID-6
Open systems (1TB disks) 845.0TB
z/OS-compatible (1TB disks) 796.4TB

Maximum Usable Capacity — RAID-1+
Open systems (1TB disks) 565.3TB
z/OS-compatible (1TB disks) 527.4TB

Other Features
Maximum internal and external capacity 247PB
Virtual Storage Machines 32 max
Back end directors 1-8

Operating System Support
Mainframe — Fujitsu: MSP; IBM z/OS, z/OS.e, z/VM®, z/VSE®, TPF; Red Hat: Linux for IBM S/390® and zSeries®; SUSE: Linux Enterprise Server for System z.
Open systems — HP: HP-UX, Tru64 UNIX, Open VMS; IBM: AIX®; Microsoft® Windows Server: 2000, 2003, 2008; Novell: NetWare; SUSE Linux Enterprise Server;
Red Hat: Enterprise Linux; SGI: IRIX, Sun Microsystems: Solaris; VMware: ESX.

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