

## Hitachi Universal Storage Platform™ VM

The Hitachi Universal Storage Platform™ VM delivers proven enterprise-class functionality—virtualization of externally attached storage, logical partitioning, thin provisioning and universal replication in flexible, cost-effective configurations.

### Hitachi Universal Storage Platform VM—Delivering Industry-leading Enterprise-class Functionality

As pressure from government and regulatory agencies for long-term data protection and retention intensifies, many enterprises are confronted with escalating data growth. They are also challenged to improve application performance and availability, business continuity and backup windows, as well as to simplify the management of increasingly complex infrastructures. Hitachi Universal Storage Platform VM, powered by the Hitachi Universal Star Network™ massively parallel crossbar switch architecture, further extends the enterprise-class functionality and performance—virtualization of external storage, logical partitioning and universal replication—introduced with its predecessor, the Hitachi Universal Storage Platform. Plus, with Hitachi Dynamic Provisioning™ software this system further assists storage managers in their mission to simplify storage administration, improve performance and reduce overall power and cooling costs.

### Business Benefits

#### Simplify Management—Save Time and Money

- Improve utilization and flexibility of legacy systems by aggregating internal storage and externally attached Hitachi and third-party storage systems (EMC, HP, IBM, Sun and others) into a single, flexible virtual pool.
- Reduce management complexity via a single console and a common set of software tools to manage any storage resources connected to the Universal Storage Platform VM.
- Increase efficiency (improved use of personnel and technology) through consolidation and aggregation of heterogeneous storage platforms.
- Keep operations running with Hitachi Dynamic Provisioning software—allocate virtual storage capacity with fewer physical disks required and add disks only when needed, without interrupting critical business applications.

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

- Count on the unique and proven, fourth-generation, massively parallel, crossbar switch architecture to meet the needs of the most demanding workloads.

### 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 for the Universal Storage Platform VM include:

- Hitachi Content Archive Platform
- Hitachi High-performance NAS Platform, powered by BlueArc®
- Hitachi Adaptable Modular Storage and Hitachi Workgroup Modular Storage, ideal as externally attached tiered storage

- 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, each with its own Virtual Serial Number for asset tracking and chargeback purposes.
- Match application requirements to storage attributes, improve storage cost-effectiveness and respond quickly to evolving business needs.
- Ensure business continuity by simplifying and unifying data protection and replication between heterogeneous storage systems.

### Facilitate Regulatory Compliance—Protect Your Business

- Meet regulatory compliance and corporate governance requirements for tamper-proof, long-term data retention.
- Build the foundation of a complete data lifecycle management solution by enabling the dynamic, nondisruptive movement of data between different tiers of storage.
- Lower costs by archiving mainframe data to virtualized, externally attached SATA-based storage systems.

## Feature Highlights

### Optimized Data Center Environment

- Offers industry-leading availability and reliability in a fully integrated universal storage and data services platform
- Allows deployment of applications within a new framework, whether for tiered storage, for business continuity, or to simplify the storage infrastructure
- Enables the consolidation of open systems and mainframe data onto fewer physical storage devices to minimize maintenance costs and lower software license fees, capital expenditures and environmental costs
- Helps protect investments and reduce total cost of ownership by extending the useful life of existing storage systems

For details on Hitachi Universal Storage Platform VM capabilities, please go to [www.hds.com](http://www.hds.com).

## Universal Storage Platform VM Specifications

Controller		Hard Disks (GB)	
Basic platform packaging unit: 1 Control Frame and 1-4 optional Disk Chassis		Type Fibre Channel	73, 146, 300
Universal Star Network Crossbar Switch		Number (minimum/maximum)	0/240
Number of switches	2	Spare drives per system (minimum/maximum)	1/16
Aggregate bandwidth (GB/sec)	13.3	<b>Internal Raw Capacity</b>	
Aggregate IOPS	1.2M	Minimum (73GB disks)	146GB
<b>Cache Memory</b>		Maximum (300GB disks)	72TB
Boards	8	<b>Maximum Usable Capacity—RAID-5 (TB)</b>	
Board capacity (GB)	4 or 8	Open systems	56.5
Maximum (GB)	64	z/OS-compatible	53.0
<b>Control Memory</b>		<b>Maximum Usable Capacity—RAID-6 (TB)</b>	
Boards	4	Open systems	48.4
Board capacity (GB)	4	z/OS-compatible	45.2
Maximum (GB)	16	<b>Maximum Usable Capacity—RAID-1+ (TB)</b>	
<b>Front-end Directors (Connectivity)</b>		Open systems	34.0
Boards	3	z/OS-compatible	32.7
Fibre Channel host ports per board	8 or 16	<b>External Storage Support</b>	
Fibre Channel port performance	4Gbit/sec	Maximum internal and external capacity	96PB
Maximum Fibre Channel host ports	48	<b>Virtual Storage Machines</b>	
Virtual host ports	1,024 per physical port	<b>Standard Back-end Director</b>	
Maximum IEM® FICON® host ports	24	<b>Operating System Support</b>	
Maximum IEM ESCON® host ports	24	Mainframe: IBM OS/390®, MVS/ESA™, MVS/XA™, VM/ESA®, VSE/ESA™, z/OS, z/OS.e, z/VM®, z/VSE™; Red Hat Linux for IBM S/390® and zSeries®	
<b>Logical Devices (LUNs)—Maximum Supported</b>		Open systems: HP (HP-UX, Tru64, Open VMS), Sun Solaris, IBM AIX®, Microsoft® Windows (2000, 2003 Server), Novell NetWare, Red Hat and SuSE Linux, VMWare ESX	
Open systems	65,536		
IBM® z/OS®	65,536		

### Compliments of:

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