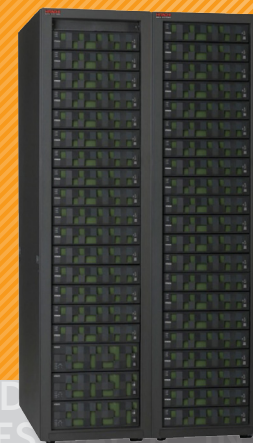


Meet your data growth requirements and service levels for multiple data types while reducing costs and complexities. Hitachi Unified Storage 100 family provides the only midrange platform storage that can consolidate and manage block, file and object data on a central platform.



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## Hitachi Unified Storage 100 Family: Unify Without Compromise

### Unified Redefined: Block, File and Object Data on One Platform

Hitachi Unified Storage (HUS) 100 family is an evolution in universally managing block, file and object data (with Hitachi Content Platform), without compromising performance, scalability or cost efficiency. A highly efficient unified architecture allows organizations to satisfy growth requirements and meet business goals while simplifying operations. They can reduce the total cost structure and quickly adapt to changing storage environments. When combined with Hitachi Command Suite management software, HUS enables optimized and agile data infrastructure.

HUS 100 family provides a balanced approach to scalability that extends investments further. Capacity of a single system can grow to nearly 4PB, while performance can increase linearly and to industry-leading heights. Scale the capacity of data sets with megaLUNs up to 128TB and file systems up to 256TB. Remotely copy all data without limits.

HUS 100 family provides the fastest mid-range storage systems available today for both block and file access, enabling

organizations to achieve performance goals at the lowest possible price. High-end storage functionality, such as autotiering, is available with HUS to facilitate automated placement of data for the highest performance at the lowest cost. Thin provisioning and data deduplication are included for proven capacity optimization solutions.

Now all data can be provisioned, managed and archived throughout its lifecycle, consistently and efficiently. HUS promotes faster and easier provisioning of storage for both block and file requirements within virtualized environments, and it provides application-aware data protection for both virtualized and nonvirtualized server environments.

Block storage is accomplished through high-performance, dynamic virtual controllers that simplify provisioning, path management and performance optimization. HUS uses Hitachi Dynamic Provisioning to pool file and block storage with maximum flexibility. File storage relies on a unique, hardware-accelerated, object-based file system. It uses custom FPGAs, which support intelligent file tiering and migration, and virtual NAS functionality, without impeding performance or scalability.

HUS is built on legendary Hitachi reliability for at least 99.999% data availability

requirements, with complete system redundancy, hot-swappable parts, outstanding data protection and dynamic virtual controllers. Intelligent automation for failover, load balancing, tiering and migration keeps storage operations up and running at optimal performance. Additional data recovery and protection tools allow for application-aware recovery, simpler backup, restore, failover and consistency across copies, reducing business risk, downtime and migration concerns.

HUS supports myriad operating systems, data types and storage and server environments. It provides integrated solutions for Microsoft®, VMware and Oracle environments.

### Business Benefits

#### Keep Ahead of Data Growth Demands

- Scale system capacity to nearly 4PB without affecting performance.
- Meet performance requirements with a lower investment in storage.
- Automatically correct performance issues and provision more quickly with dual dynamic virtual controllers.
- Use Hitachi Dynamic Provisioning to pool and grow file and block storage for maximum flexibility without capacity limitations.

- Leverage 256TB file systems and a single namespace to reduce administrative effort.
- Deduplicate data to reclaim 30% to 90% of capacity.
- Migrate data to the cloud by policy.

## Lower Total Cost Structure

- Control rising capital and operational costs with efficient unified architecture.
- Consolidate file, block and object data for extensive cost savings.
- Simplify operations for all data types with one interface and consistent workflows.
- Streamline administration with integrated setup and management.
- Defer storage purchases by increasing capacity efficiencies.
- Increase density of virtual machines.

## Meet Service Level Agreements (SLAs)

- Meet SLAs with 99.999% data availability and advanced management tools.
- Maximize performance with all SSD configurations.
- Automate data placement for higher performance at lower cost with Hitachi Dynamic Tiering software. Deploy up to 3 tiers of storage in as little as 1 tray.
- Manage storage from an application management portal.
- Perform system maintenance without interrupting host I/Os.

## Reduce Downtime and Business Risk

- Dynamically manage replication and backup.
- Meet data security compliance regulations at an affordable cost.
- Utilize crash-consistent snapshots for application-aware backup, recovery and failover.

## HITACHI UNIFIED STORAGE (HUS) 100 FAMILY

	HUS 110	HUS 130	HUS 150
<b>Capacity</b>			
Maximum Number (Max. No.) of Drives	120 LFF/120 SFF	360 LFF/360 SFF	960 LFF/960 SFF/480 FMD
Max. Raw Capacity	480TB (3.5" SAS) 144TB (2.5" SAS) 48TB (2.5" SSD)	1,440TB (3.5" SAS) 432TB (2.5" SAS) 144TB (2.5" SSD)	3,840TB (3.5" SAS) 1,152TB (2.5" SAS) 845TB (FMD) 384TB (2.5" SSD)
Large Form Factor (LFF) 3.5" SAS Drives Supported	4TB, 7200 rpm 3TB, 7200 rpm 2TB, 7200 rpm	4TB, 7200 rpm 3TB, 7200 rpm 2TB, 7200 rpm	4TB, 7200 rpm 3TB, 7200 rpm 2TB, 7200 rpm
Small Form Factor (SFF) 2.5" SAS Drives Supported	300GB, 15k rpm 1.2TB, 10k rpm 900GB, 10k rpm 600GB, 10k rpm 300GB, 10k rpm	300GB, 15k rpm 1.2TB, 10k rpm 900GB, 10k rpm 600GB, 10k rpm 300GB, 10k rpm	300GB, 15k rpm 1.2TB, 10k rpm 900GB, 10k rpm 600GB, 10k rpm 300GB, 10k rpm
Flash Drives Supported	400GB SSD 200GB SSD	400GB SSD 200GB SSD	1.6TB FMD, 400GB SSD, 200GB SSD
Disk Expansion Trays	2U: 24 SFF (2.5") 2U: 12 LFF (3.5")	2U: 24 SFF (2.5") 2U: 12 LFF (3.5") 4U: 48 LFF (3.5") 5U: 84 LFF (3.5")	2U: 24 SFF (2.5") 2U: 12 LFF (3.5") 4U: 48 LFF (3.5") 5U: 84 LFF (3.5") 2U: 12 FMD
<b>Block Module</b>			
Height	2U	2U	3U
Controller Cards	2	2	2
Internal Drives	24 SFF (2.5"), 12 LFF (3.5")	24 SFF (2.5"), 12 LFF (3.5")	N/A
Host Interfaces (FC = Fibre Channel)	FC: 8Gb/sec iSCSI: GbE or 10GbE	FC: 8Gb/sec iSCSI: GbE or 10GbE	FC: 8Gb/sec iSCSI: 10GbE
Host Connections per Module	8 FC, 8 FC + 4 iSCSI, 4 iSCSI	16 FC, 8 FC, 8 FC + 4 iSCSI	16 FC, 8 FC, 8 FC + 4 iSCSI, 8 iSCSI
Max. Cache per Module	8GB	32GB	32GB
Max. LUN Size	128TB	128TB	128TB
Max. No. of LUNs	2048	4096	4096
RAID Supported	RAID-0, RAID-1, RAID-1+0, RAID-5, RAID-6	RAID-0, RAID-1, RAID-1+0, RAID-5, RAID-6	RAID-0, RAID-1, RAID-1+0, RAID-5, RAID-6
Max. RAID Groups	50	75	200
<b>File Module<sup>1</sup></b>			
Recommended File Module	4040	4060	4080
Height	3U	3U	3U
Nodes per Cluster	1-2	1-2	1-4
Max. Usable Capacity per Cluster	4PB	8PB	16PB
Random I/O (estimate) <sup>2</sup>	~130,000	147,957	205,519
Max. File System Size	256TB	256TB	256TB
Max. File Systems (single/cluster)	128/125	128/125	128/125
Max. Concurrent Users	24,000	42,000	42,000
Max. Open Files	72,000	126,000	126,000
Max. Snapshots	1024 per file system	1024 per file system	1024 per file system
Cache per Node	32GB	46GB	46GB
Protocols	NFS, SMB, FTP, HTTP, SSL, SNMP	NFS, SMB, FTP, HTTP, SSL, SNMP	NFS, SMB, FTP, HTTP, SSL, SNMP
Ethernet Ports	6 x 1Gb	4 x 10Gb	4 x 10Gb

<sup>1</sup>File module specs are per node unless otherwise indicated. <sup>2</sup>Dual node values based on SPECsfs\_2008 NFS benchmarks.

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