

Virtual Tape Library (VTL) with Clustered Deduplication

SCALABLE HA CLUSTERED GATEWAYS FOR HITACHI UNIFIED STORAGE (HUS)

FalconStor® Virtual Tape Library (VTL) and FalconStor® Single Instance Repository (SIR) cluster gateways integrate with Hitachi Unified Storage and Hitachi servers¹ to provide a backup and deduplication solution that is unmatched in performance and scalability. FalconStor VTL with clustered deduplication enables design flexibility, scalability, high availability (HA), and global deduplication for SAN environments. Unlike single-function grid architectures, this cluster gateway is the only solution that scales HA backup nodes and HA cluster deduplication nodes independently, offering the flexibility to add VTL gateways to handle larger data sets and tighter backup windows, or add cluster deduplication nodes to increase performance and data retention. Scaling to over 2PB of shared usable storage with seamless global deduplication across all nodes, FalconStor VTL with clustered deduplication eliminates individual deduplication silos. This helps IT departments meet stringent data requirements and service level agreements (SLAs) while containing the cost associated with explosive data growth.

MULTIPLE OPTIONS

FalconStor VTL with clustered deduplication includes four scalable configurations with one or two FalconStor VTL nodes and one to four active deduplication nodes. Cluster shared storage is designed around the HUS 130 or 150 active/active storage controllers, starting at 80TB of usable RAID 6 repository in the HDS-FS-VTL-H130 and scaling to 2,012TB of usable RAID 6 repository in the HDS-FS-VTL-H150-L. Additionally, the N+1 FalconStor SIR standby node is included for automatic failover. All models are fully tested, cabled, and integrated into a rack with all required FC and Ethernet switches, KVM and management stations.

Highlights

Global deduplication

- Up to 95% data reduction
- Minimizes costs: power, cooling, floor space, IT resources
- Extends local disk retention for fast data recovery
- Flexible policies: Inline, post-process, concurrent, or no deduplication

8Gb FC and 1/10GbE iSCSI

- Accelerates data protection operations, reducing the backup window
- Boosts recovery performance without backup or process changes

Best-of-breed tape management

- Bridges disk and tape for physical tape creation
- Policy-based to meet retention and long-term archive requirements

Over 2PB usable capacity*

- Protects up to 40PB* of original data
- Scalable node expansion for growth

Mixed environments

- Enhances deduplication efficiency
- Open systems (Microsoft Windows, UNIX, Linux)
- IBM System i (iSeries), NDMP

WAN-optimized replication

- Reduces network requirements by 90% or more
- Eliminates tape transport
- Enables tape consolidation at disaster recovery (DR) site
- Supports Fibre Channel (FC) for high-performance disaster recovery
- Optimized multi-threaded architecture for increased scalability and resilience

256-bit AES encryption

- Secures data in flight
- Enhances corporate security through tape encryption and shredding

Symantec OpenStorage (OST) integration

- Transparent data replication
- Copy-to-tape
- Catalog consistency
- Optimized Symantec OST APIs
- Supports up to 250,000 images

HA cluster architecture

- Independently scales up to 8 HA VTL nodes and 4 HA global deduplication nodes
- Deduplicates data across multiple nodes without predefined node/controller designation

Implementation services

- Hitachi Global Solution Services (GSS) and FalconStor Professional Services
- Accelerated deployment aligned with business objectives
- Includes appliance deployment, IP replication, tape caching, Symantec OST integration
- Custom services include FC replication, backup assessment and optimization, and data migration

HITACHI GLOBAL SOLUTION SERVICES: OPTIMIZING BACKUP AND DEDUPLICATION IMPLEMENTATIONS

Hitachi Global Solution Services experts provide deployment services aligned with customers' backup environments and business requirements. Our experienced consultants optimize the implementation experience, streamlining deployment time while minimizing risks and downtime. Services include:

- Deployment of FalconStor software-based appliances
- Standard deployment services including IP replication, tape caching, and Symantec OST integration
- Custom consulting services including FC replication, backup assessment and optimization, and data migration

SPECIFICATIONS

HDS-FS-VTL-H130

HDS-FS-VTL-H150-S

HDS-FS-VTL-H150-M

HDS-FS-VTL-H150-L¹

Physical Characteristics				
Deduplication usable storage capacity	80-140TB	160-280TB	284-568TB	492-2,012TB
Sustained performance (inline)	6TB/hr	10TB/hr	10TB/hr	20TB/hr
Disk type	SAS	SAS	SAS	SAS
# of FalconStor VTL servers	2	2	2	4
# of FalconStor SIR servers	2+1	4+1	4+1	4+1
HUS model	130	150	150	150
# of HUS units	1	1	1	2
Total cache in HUS unit	16GB	32GB	32GB	32GB
Number of HDS racks (42U)	1	1-2	2-3	3-5
Total rack space used	22-30U	41-57U	73-113U	87-175U
HDS rack dimensions (WxHxD)	20.2 x 78.8 x 39 in (51.2 x 200.1 x 99 cm)			
Power supply	Redundant hot-plug auto-switching 800W			Redundant hot-plug auto-switching 870W
Host Connections				
Ethernet support - 1GB/s	8 ports		16 ports	
Ethernet support - 10Gb/s	Optional		Optional	
FC support - 8Gb FC target ports	4 ports		16 ports	
Symantec OST (FC)	Included		Included	
Advanced Features				
VTLs/drives/cartridges	128/1,024/250,000			
Software compression	Included		Included	
ACSLs shared library	Optional		Optional	
IBM System i (iSeries) support	Optional		Optional	
IBM 3494 library support	Optional		Optional	
Additional features	NDMP, email alerts, import/export, WAN-optimized replication w/ encryption & compression, Secure Tape, tape management (shredding, stacking, caching, duplication, consolidation)			
Environmental Requirements				
Voltage	100–120 VAC ± 10% (50/60 Hz), 200–240 VAC ± 10% (50/60 Hz)		90 - 264 VAC, autoranging (47-63 Hz)	
Temperature	50°F to 95°F (10°C to 35°C)			
Relative humidity	20% to 80% noncondensing			

¹The HDS-FS-VTL-H150 model uses a FalconStor-supplied server with Hitachi Unified Storage to support environments larger than 568TB.

²All capacity and performance numbers are based on a 20:1 deduplication ratio.

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