

Hitachi NAS Platform (HNAS) 4000 series offers enterprise-level performance and scalability for file server consolidation, primary deduplication, remote replication and disaster recovery of commercial application data.

DATASHEET

Hitachi NAS Platform 4000 Series

Petabyte-Scale File Sharing Challenges

Enterprise organizations are looking for better ways to handle the massive and growing amount of file-based data and applications, whether human or machine generated. Rising costs, data protection complexities, and difficulties meeting service level agreements are obstacles to success. Data centers must become more efficient, more cost-conscious and more reliable to successfully win these challenges. In today's environments, organizations need efficient, highly scalable and high-performance storage systems, but at a lower total cost of ownership.

Business Benefits

Hitachi storage systems were designed to deliver performance at scale, with capacity efficiencies and superior economics. As your file share requirements evolve, Hitachi NAS Platform 4000 series products will scale to your business and technology needs to improve productivity, drive revenue, increase quality and speed time to market.

HNAS 4000 series uses a hardware-accelerated hybrid-core architecture. This architecture efficiently consolidates capacity across multiple applications and simplifies storage management for enterprise environments, without compromising performance and scalability.

At the same time, multiple levels of virtualization overcome the complexities of large-scale file system management and support popular commercial applications like Oracle and SAP, especially within VMware and Citrix environments.

Features

Hitachi NAS Platform 4000 series presents a standards-compliant object-based file system interface that is feature rich, reliable and very flexible. Key features include:

- Hardware-accelerated network protocols support up to 2GB/s throughput per node and up to 1.2 million NFS operations in an eight-node cluster, with Hitachi Virtual Storage Platform G1000 systems and Hitachi Accelerated Flash.¹
- Scalability supports up to eight nodes with 32PB usable capacity, 1PB pools, large single namespace up to the maximum usable capacity, and up to 64,000 concurrent connections per node.
- System memory is 112GB on HNAS 4100, and 50GB on both HNAS 4080 and HNAS 4060.
- Primary data deduplication using hardware-based SHA-256 calculation engines provides high performance and up to 90% capacity savings, depending on data types. Auto-throttling of the dedupe process enables uncompromised performance during high file-sharing workload periods.

- Intelligent file tiering and automated migration enables dynamic policy-based hierarchical storage management (HSM).
- Advanced enterprise virtualization framework delivers thin provisioning and virtual server capabilities.
- Concurrent support for NFS, SMB3, Fibre Channel and iSCSI eliminates storage silos.
- Unlimited file clones are available to enable writable snapshots while efficiently using capacity.
- Object-based remote replication over WAN is provided.
- Hitachi Content Platform allows active archiving, data deduplication and content-aware compression, and it is the foundation for our cloud infrastructure offering.

See Tables 1 and 2 for further technical specifications.

Summary

Hitachi NAS Platform 4000 series systems were designed to deliver scale, performance, efficiencies and economics. As your file share requirements evolve, HNAS 4000 series products scale to your business and technology needs. They help you improve productivity, drive revenue, increase quality and speed time to market.

¹ Estimated SPECsfs_2008 NFS v3 Benchmark for 8-node Clustered HNAS 4100

TABLE 1. HITACHI NAS PLATFORM 4000 SERIES: TECHNICAL SPECIFICATIONS

Network Interfaces	
Management interfaces	1Gb/s Ethernet RJ-45
Data interfaces	File serving: 10Gb/s SFP+, SW, LW, SFP+CU Twin-AX Fibre Channel: SFP+ SW Interconnect: 10Gb/s SFP+, SW, LW, SFP+CU Twin-AX
Port interfaces	Port-independent configuration; multiple IP addresses; 256 IP addresses per cluster (32 max. per EVS)
Module diagnostics	Module status LEDs
Data Migration/Tiering Options	
Internal over Fibre Channel	Data migrator and cross volume links
External over IP	Hitachi NAS Platform universal migrator for NFSv3 (migration), data migrator to cloud (external Tiering) to Hitachi Content Platform, Amazon S3, Microsoft Azure, IBM® Cloud Storage
NDMP Backup Attributes	
NDMP support	NDMP v2, v3 and v4, LAN or SAN
NDMP features	Direct access recovery, three-way backup and restore
System Management Attributes	
Standard management features	RPC and ICAP AV Support, SMB and NFS File Auditing, SNMP v1,v2,v3, Syslog and email alerting, CEF Administrative Auditing, Hitachi Device Manager
Management interfaces	GUI-based – - HTTP, HTTPS; remote console (CLI) via SSH; SSC script interface
Secure management access	SSL, SSH
Management access control	Local user/password authentication; Microsoft Active Directory integration, role-based access
Protocols Supported	
Network protocol support	Server Message Block (SMB) 3.0, 2.0, 1.0; Network File System (NFS) v4,v3,v2; Network Data Management Protocol (NDMP) v4, v3 and v2; File Transfer Protocol (FTP); iSCSI

SM (singlemode), MM (multimode)

TABLE 2. HITACHI NAS PLATFORM 4000 SERIES: TECHNICAL SPECIFICATIONS

Model	Maximum Files	IOPS* per 2-Node Cluster	Throughput per 2-Node Cluster**	Maximum Capacity	File System Size	Ethernet Ports	Fibre Channel Ports	Maximum Nodes per Cluster
Hitachi NAS Platform 4060	16 million per individual directory***	147,957	Up to 2,000MB/s	8PB	1PB file system size; 1PB max pool; 8PB single namespace	4 x 10 gigabit Ethernet (GbE) data, 2 x 10GbE clustering (per node)	4 x 8, 4 or 2Gb/s ports (per node)	Up to 2 nodes
Hitachi NAS Platform 4080	16 million per individual directory***	209,519	Up to 3,000MB/s	16PB	1PB file system size; 1PB max pool; 16PB single namespace	4 x 10GbE Data, 2 x 10GbE clustering (per node)	4 x 8, 4 or 2Gb/s ports (per node)	Up to 4 nodes
Hitachi NAS Platform 4100	16 million per individual directory***	293,128	Up to 4,000MB/s	32PB	1PB file system size; 1PB max pool; 32PB single namespace	4 x 10GbE data, 2 x 10GbE clustering (per node)	4 x 8, 4 or 2Gb/s ports (per node)	Up to 8 nodes

* Estimated SPECsfs_2008 NFS v3 ops/sec

** NFS and SMB mixed workloads (70% read and 30% write)

*** Maximum files per file system is limited only by the available capacity of the file system, itself

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