

Hitachi High-performance NAS Platform, Powered by BlueArc®: Hardware



The Hitachi High-performance NAS Platform, powered by BlueArc®, provides an intelligent, services oriented architecture that allows organizations to gain new levels of storage performance, scalability and reliability.

Simplify Data Reorganization, Classification, Movement and Protection

The Hitachi NAS Platform offers scalable solutions for enterprise-class consolidation and high performance applications as well as effective file server consolidation solutions and advanced feature sets for midsize organizations.

Superior NAS Consolidation with Advanced Data Management

With industry leading scalability, the Hitachi NAS Platform consolidates and manages up to 16PB¹ of Fibre Channel and SATA storage capacity, which can be connected to external archive devices. In addition, the Hitachi NAS Platform is designed for highly efficient content indexing and “intelligent file tiering,” which enable policy-based migration of data and content among storage and archive tiers.

The combinations of features, storage capacity and performance scalability available in the 3100 and 3200 systems make the 3000 Series ideal for applications. Capabilities range from supporting NAS or file server consolidation to high performance storage for virtual machine environments and high performance computing applications. The 3100 system is an effective file server consolidation solution

for midsize companies, and the 3200 system is a scalable solution for enterprise-class consolidation and high performance applications. Both systems offer enhanced high availability as well as intelligent file tiering features and advanced content management integration, which simplify data reorganization, classification, movement and protection.

Feature Highlights

- Intelligent file tiering, enabling policy-based Hierarchical Storage Management (HSM) within Hitachi NAS Platform and to the Hitachi Content Platform
- Hardware accelerated network storage with up to 1600MB/sec throughput for sequential workloads and up to 200,000 IOPS
- Data scalability with up to 16PB¹ of usable storage capacity
- Hitachi Data Discovery Suite integration for efficient indexing and content search
- Rolling upgrades, faster failover times; reduce planned and unplanned downtime
- Active-active clustering of up to eight nodes with near linear performance scalability

- Read caching for scalable read-intensive NFS workloads
- Cluster Name Space for unified directory structure
- Up to 16 million objects per directory
- Up to 1024 snapshots, one per second per file system
- Dynamic file system and storage pool expansion
- Up to 64 virtual servers with unique AD, LDAP or NIS authentication

Hardware Specifications

- Chassis: 4U 19 in., four slots, backplane bandwidth 40Gb/sec (full duplex)
- System memory: 3200 max. 60GB, 4GB NVRAM; 3100 max. 34GB, 2GB NVRAM
- Clustering: interfaces, 10GbE; high availability, active-active cluster up to eight nodes; dual ports for redundancy, XFP connectors
- Mean Time Between Failure: system — 500,000 hours
- Thermal rating (server): 1689 BTU/hr (max. 495 Watts); 1433 BTU/hr (typical 420 Watts)

TECHNICAL SPECIFICATIONS AND COMPONENTS

Network Interface Module (NIM)

User interface type	Gigabit Ethernet, IEEE 802.3z; full duplex support, IEEE 802.3x; link aggregation (LAG), IEEE 802.3ad; jumbo frame support (up to 9,180 bytes); VLAN tagging IEEE 802.1Q; 10Gb/sec Ethernet, IEEE 802.3ae
Number of ports	Six 1GbE ports; two 10GbE ports
Data interfaces	10GBASE-SR (300m Optical), XFP; 10GBASELR (10–25km Optical), XFP; 10GBASE-ER (40km Optical), XFP; 1000 Base-SX (500m Optical), SFP; 1000 Base-TX (100m Copper), SFP
Port configuration	Port-independent configuration; multiple IP addresses; 2048 IP addresses per node (32 IP x 64 EVS)
Module diagnostics	Module status LEDs

NDMP Backup Attributes

NDMP support	NDMP v2, v3 and v4
Tape library system	Support for SAN and LAN connectivity
NDMP features	Direct access recovery (DAR), three way backup and restore

System Management Attributes

Standard management features	Manage up to 8 nodes; replication management; automated system configuration and backup; role-based management; enhanced system monitoring; anti-virus support; out-of-band Ethernet management network
Management interfaces	GUI-based — HTTP, HTTPS; CLI-based — Telnet, Serial; Scripting — SiCtrl
Secure management access	SSL, SSH
Management access control	User/password authentication; management port definition; management access method; Access Control Lists (ACLs); NIS, Active Directory and LDAP

Group File System Modules

File System Module A (FSA)	General purpose file system module (top module)
File System Module X (FSX)	Accelerated file system module giving a boost with CIFS clients. This module is optional with the 3100 and mandatory on the 3200
File System Module B (FSB)	File system NVRAM module

Protocols Supported

Network protocol support	Common Internet File System (CIFS); Network File System (NFS) with UDP v2 and v3 or TCP v2, v3 and v4; NDMP v2, v3 and v4; File Transfer Protocol (FTP); iSCSI
Management and other protocols	HTTP, SSL, SSH and SNMP v1; v2c, NIS, DNS, WINS, NTP; email alerts

Storage Interface Module (SIM)

User interface type	Fibre Channel, SFP connectors
Number of ports	4 ports blade on the 3100; 8 ports blade on the 3200
Fibre Channel port interfaces	2Gb/sec or 4Gb/sec

File System Attributes

File system	Silicon File System (SiliconFS); hardware-accelerated file system
Multiprotocol support	Simultaneous CIFS and NFS
Maximum volume size	256TB, dynamically scalable
Maximum storage supported	Up to 16PB ¹
Maximum files per directory	Up to 16 million or more objects

Model	File System Object	IOPS	Throughput	Scalability (in petabytes)	File System Size (in terabytes)	Ethernet Ports	Fibre Channel Ports	Number of Nodes/Cluster
3100	16 million per directory	~96,428	Up to 880MB/sec	8PB ¹	256TB	6 x 1 Gigabits (Gb)	4 x 4/2/1Gb Ports	Up to 8 Nodes
3200	16 million per directory	194,909	Up to 1600MB/Sec	16PB ¹	256TB	2 x 10Gb	8 x 4/2/1Gb Ports	Up to 8 Nodes

- Power attributes: 4.1A (max.) @ 110VAC, 450 W (US) optional; 2.2A (max.) @ 208VAC, 450 W (US); 2.0A (max.) @ 230 VAC, 450 W (UK)

Complementary Solutions

Hitachi Data Systems Global Solution Services (GSS) group understands the tremendous challenge of today's storage infrastructures. To ensure your solution is properly installed for your storage

environment, GSS provides design, implementation and data migration services to support the Hitachi NAS Platform and the entire suite of Hitachi storage products.

¹When used with the Hitachi Adaptable Modular Storage 2000 family systems

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