

## Hitachi High-performance NAS Platform, Powered by BlueArc® 3000 Series: Hardware

Hitachi High-performance NAS Platform, powered by BlueArc® 3000 Series, the next generation of intelligent platform for file services, is designed to meet the expanding requirements of sophisticated enterprise data centers and high-performance applications. With its intelligent service oriented architecture, organizations gain new levels of storage performance, scalability and reliability.

### Advanced NAS Consolidation, File Services Capabilities, Hardware-accelerated Architecture

Hitachi High-performance NAS Platform is the first network attached storage (NAS) solution that consolidates and manages up to four<sup>(1)</sup> petabytes (PB) of data in a single storage pool. It also offers a Cluster Name Space option that creates a unified directory structure that supports Common Internet File System (CIFS) and Network File System (NFS) connectivity with seamless extensibility, up to eight nodes in a cluster. Built on hardware-accelerated architecture, the High-performance NAS Platform offers enterprise-class data management, virtualization and data protection for file services.

### Feature Highlights

- Hardware-accelerated network storage with up to 1600MB/sec throughput for sequential workloads and up to 200,000 IOPS — demonstrating excellent generation scalability from 2000 series
- Data scalability with up to 4PB<sup>(1)</sup> in a single storage pool and file systems up to 256TB
- Active-active clustering of up to eight nodes with near linear performance scalability
- Simplified NAS and SAN management

- Cluster Read Caching for scalable read-intensive NFS workloads
- File System Module X (FSX) to boost performance in CIFS environment
- Cluster Name Space for unified directory structure
- Policy-based Hierarchical Storage Management (HSM) feature
- Transparent data migration
- Grow and shrink virtual volumes
- Up to four million files 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
- Integrated with the Hitachi Data Discovery Suite for file search and index

### Hardware Specifications

- Modules:
  - Network Interface Module (NIM) with 6x1 Gigabit Ethernet (GbE) or 2x 10GbE on models 3100 (optional) and 3200 (default), or 4x1 Gigabit Ethernet (GbE) for 2000 series
  - File System Module A (FSA) only on 3100

<sup>(1)</sup> Require storage LUN size greater than 2TB. Current LUN size of Hitachi storage supports 1PB capacity.

### Business Solutions

Hitachi Data Systems and its Hitachi TrueNorth™ Channel Partners offer industry-leading technology 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.

Now, as an integrated, unified strategy for networked storage, High-performance NAS Platform hardware supports a multitiered approach that provides different levels of data protection, data management or virtualization depending on the needs of the business.

### Complementary Solutions

Hitachi Data Systems Global Solution Services (GSS) group understands the tremendous challenge of today's storage infrastructures. GSS provides design, implementation and data migration services to support the High-performance NAS Platform and the entire suite of Hitachi storage products.

# 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; 10Gbit/sec Ethernet, IEEE 802.3ae
Number of ports	6GbE ports; two 10GbE ports
Data interfaces	10GBASE-SR (300m Optical), XFP; 10GBASE-LR (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. Only available on the 3200
File System Module B (FSB)	File System NVRAM module (Bottom Module)

## Protocols Supported

Network protocol support	Common Internet File System (CIFS); Network File System (NFS) with UDP v2 and v3, or TCP v2 and v3; 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; e-mail alerts

## Storage Interface Module (SIM)

User interface type	Fibre Channel, SFP connectors
Number of ports	4 ports blade with 2000 and 3100. 8 ports blade on the 3200.
Fibre Channel port interfaces	2Gbit/sec or 4Gbit/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 4PB <sup>(1)</sup>
Maximum files per directory	Up to 4 million or more files

<sup>(1)</sup> Require storage LUN size greater than 2TB. Current LUN size of Hitachi storage supports 1PB capacity.

- File System Module B (FSB)
- File System Module X (FSX) only on 3200
- Storage Interface Module (SIM) with 4 ports on 3100 and 8 ports on 3200
- Number of slots: four-slot chassis
- Chassis backplane bandwidth: 40Gbit/sec (full duplex)
- System memory: scalable up to 32GB
- Power supplies (PSU): dual (load sharing) hot-swappable power supplies
- Server diagnostics: status, power LEDs
- PSU diagnostics: AC, battery status LEDs
- Cooling: hot-swappable N+1 fan assembly
- Clustering: cluster interfaces, 10GbE; high availability, active-active cluster of up to eight nodes; dual ports for redundancy, XFP connectors
- Dimensions: height, 4U (7 in., 17.8cm); width, 19 in. IEC rack-compliant (48.4mm); depth, 25 in. (63.3cm); weight, 114 lbs (52kg)
- Mean Time Between Failure: system — 500,000 hours
- Management interface: Ethernet interface — server status, power LEDs; serial interface — AC, battery status LEDs; Ethernet port diagnostics — port status, LEDs, port activity LEDs
- Thermal rating: server BTU/hr — 1467 BTU/hr (430 Watts) CSA
- Power attributes: 4.1A (max) @ 110VAC, 455 W (US) optional; 2.2A (max) @ 208VAC, 455 W (US); 2.0A (max) @ 230 VAC, 455 W (UK)

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