

Consolidate file data on the same infrastructure you already trust for a flexible, efficient, and reliable way to meet the mission critical demands of unstructured data.

DATASHEET

Hitachi NAS Platform 5000 Series

Enterprise-Class NAS

With enterprise organizations under increasing pressure to address the substantial growth of file-based data, applications and life-cycle challenges you need an agile file infrastructure to be more efficient and deliver information faster, while maintaining customer interest and maximizing revenue. The flexibility to deploy cost optimized, high performance storage services with non-disruptive refreshes are also critical. The new Hitachi NAS Platform 5000 series is a robust file storage solution that delivers the best file scalability and flexibility for workload consolidation with an enhanced accelerated file system that dramatically improves your return on investment (ROI) for your enterprise scale-out filing system needs. Leverage and utilize the same, shared infrastructure you already know and trust to manage the growth of your unstructured data without breaking the bank.

- **Manage your data growth while lowering costs:** With our dedupe and compression capabilities you have the most efficient technology at the lowest effective cost.
- **Lower latency, faster response times:** Providing you with fresher data to drive better business decisions with improved response time and reporting completion.
- **High availability, no unscheduled outages:** Meet and exceed your service level agreement targets for increased productivity.
- **Ease of use:** Faster deployment time with better toolsets for system set ups, provisioning, configuration and device management, workflow automation and overall system management to improve productivity.
- **Snap on snap:** Speed up and improve reliability of backups and clones to give you quicker access to recover data.

Flexibility to Enable No Compromise Consolidation

The HNAS 5000 series supports both file and block (iSCSI) workloads for greater consolidation and operational simplicity. File controllers are designed with a hardware-accelerated architecture, using field-programmable gate arrays (FPGA) for active, critical, and sensitive file services. Individual file systems belong to a Hitachi Enterprise Virtual Server (EVS) for NAS, and each server has its own set of IP addresses, policies, and individual port assignments.

- Virtual cluster support up to 80 nodes*
- 2x the throughput than its predecessor
- Multitenant security: Designed for up to 64 enterprise virtual servers (EVS), per namespace, with each having its own security context to segregate network traffic for increased security.

Simple, Non-Disruptive Migration, Management and All-Inclusive Software

Migration deployment from our HNAS 3000 and 4000 series are built on cluster rolling upgrades and node EVS failover capabilities allowing a hassle-free, non-disruptive migration to occur in as easy as 1-2-3. See Figure 1.

The enhanced Hitachi Disaster Recovery System (HDRS)* provides a simple interface and automates operator tasks associated with using a Global Active Device (GAD) enhanced for NAS built on Hitachi VSP storage.

- Active-active NAS cluster management
- Automated setup and installation of cluster hardware and software in less time than a manual installation.
- Storage provisioning with simplified options to expand or duplicate replicated storage.
- Monitors and automates recovery for out-of sync paired volume replication.

Each system includes Hitachi NAS OS's all-inclusive base software: SMB, NFS, iSCSI and FTP protocol support, tenants, filesystem audit/rollback, snapshot, deduplication, cluster namespace, EVS server farm migration, data migrator to the cloud, file and directory writeable clone, read caching, virtual server migration and security and WORM. Additional software add-ons include premium deduplication, EVS 8 packs and HDRS).

- Unlimited virtual capacity supports long-term growth per file system/namespace, with cloud extension up to 130/840 billion objects.
- Hardware-accelerated architecture FPGA: Primary data deduplication leverages an FPGA offload engine to perform CPU-intensive hash operations that reduce the impact on file-serving performance.
- Unmatched simplicity and power: Little to no administration, configuration or tuning is required. Scheduling is not necessary. Premium deduplication option provides additional ingest performance by increasing the number of logical state machines.
- Improved data reduction services with FPGAs and SVOS RF adaptive data reduction, including deduplication and compression, minimize storage footprint and maintain controller scalability.

Built-in intelligent filesystem cloud tiering provides the mobility and control in the cloud by transparently migrating data between local and external cloud tiers using a policy-based business rules engine. With an improved file system extension to cloud, the HNAS 5000 series enables snapshot archiving and leverages cost-effective cloud capacity to store stale or less active data, while providing local transparent access for users and applications.

- Kubernetes and Ansible* cloud support
- Public cloud targets: Amazon S3, Microsoft Azure and IBM® Cloud Object Storage.
- Private cloud: Hitachi Content Platform (HCP) and IBM Cloud Object Storage.
- Cross-volume link enables files that have been migrated to a cloud environment to be transparently accessed by the application for nondisruptive retrieval.

Tiered file system (TFS) separates file system metadata from user data. TFS automatically places file system metadata on a higher performance storage tier to increase file system performance while also providing cost efficiency.

Enhanced object replication with throughput throttling improves quality of service (QoS). Deduplication support targets and eliminates rehydration of embedded cross volume links while allowing up to 3 data center support powered by our global-active device metro clustering.

The cluster namespace feature creates a unified directory structure across storage pools and controllers. Multiple file systems appear under a common root, and both server message block (SMB) and network file system (NFS) clients obtain global access. EVS server farm migration enables tenant mobility across namespace and servers with shared storage.

*Available post GA feature support/enhancement; contact your Hitachi representative for more details

Best-in-class Efficiency

We live in a hybrid world: every data center uses cloud and on-prem storage and needs easier, more efficient ways to move data between the two. Our HNAS 5000 series enables a broad range of efficiency technologies that deliver maximum value and more predictable ongoing costs. Our direct cloud connect functionality to transparently move file data to your choice of content repository or cloud service (Hitachi Content Platform, Amazon S3, IBM Cloud Object Store or Microsoft Azure) allows you to gain unparalleled reduction in on-site storage costs and more predictable ongoing storage costs. All services are selectable and can be activated for specific workloads, giving you maximum control over efficiency and performance.

A new advantage to Hitachi's enterprise scale-out file system is our onode and file packing* for small files. Every object in a file system contains at least one small onode which are usually stored alone within the whole filesystem block resulting in wasted space. With onode and file packing, up to eight onodes or files can be packed into one filesystem block resulting in space saving, latency reduction and fewer writes to the storage. This new feature will allow you to optimize your files with the highest level of performance, efficiency and simplification your business strives for.

In addition, HNAS offers linked, writable snapshot clones. With linked clones, thousands — even millions — of copies of data sets are created very rapidly while using near-zero extra capacity. For highly virtualized environments, the ability to create a standard "gold image" that can be used across virtual machines and desktops not only saves money, but also reduces support and management costs.

Multilayered, Reliable Data Protection

The need for more resilience on business-critical data is noticeable now more than ever and Hitachi has you covered by offering the utmost NAS resiliency to deliver both on site and remote site failover access allowing for more uptime and consistent data.

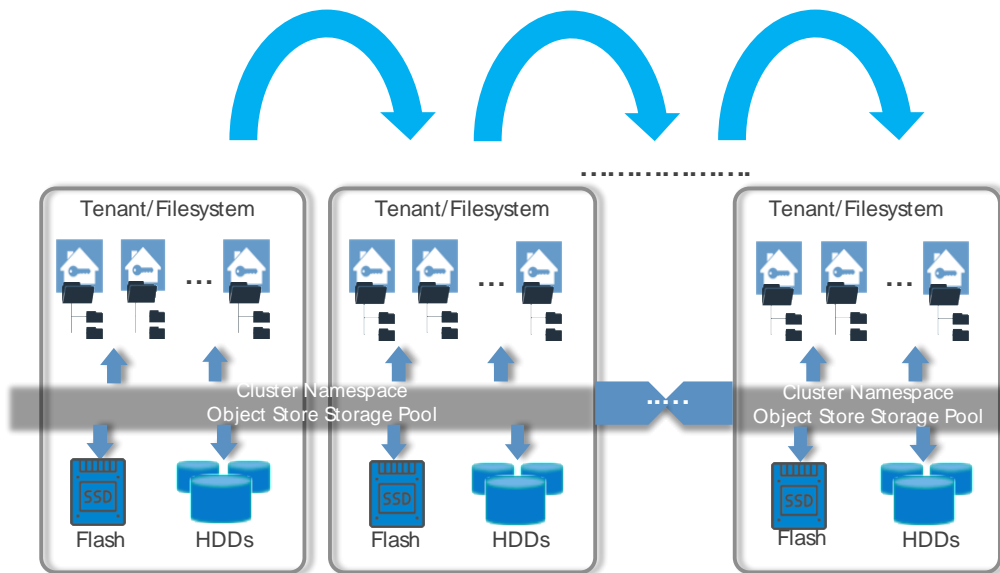
- NAS object-based replication provides a fast and efficient means to replicate data over wide area networks, improves recovery time objectives (RTOs) and facilitates simple failover and failback operations.
- Achieve fully synchronous active-active clustering of up to 500km with automated takeover, when implemented with global-active device metro clustering.

- Global-active device ensures continuous operations with nonstop data access so IT teams can meet their disaster recovery objectives with dramatically reduced return-to-operations time.
- A variety of snapshot options provides point-in-time data protection capabilities:
 - File system snapshot includes hidden snapshot folder read-only access and Microsoft Volume Shadow Copy Service (VSS) recovery capability for local data protection of end user files and folders.
 - File and directory clones enable the creation of capacity-efficient writable snapshots (clones) of files to accelerate production data copies in testing and development and virtual server and virtual desktop infrastructure environments. Directory clones extend the file cloning capability to directory trees to enable protection or repurposing of applications and databases.
 - Anti-Virus support (RPC/iCAP)
 - 2-way (FC attached tape)* and 3-way NDMP backup support

*Available post GA feature support/enhancement; contact your Hitachi representative for more details

Easy, Simple Migration Deployment

Figure 1. Migration from HNAS 3000/4000 Series



HNAS 5000 Series Specifications

TABLE 1: 5200 and 5300 Models

	5200	5300
Protocol Support	NFS, SMB, FTP, iSCSI and HTTP(S3) to the cloud	
Virtual Cluster Support	Up to 40 nodes	Up to 80 nodes
Aggregate Performance (GB/s)	192	384
Max. Virtual File System/namespace Size (w/tiering to Object Store)	Unlimited up to max. files per file system/namespace	
Max. Files per File System/namespace	130/840 Billion	

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