

The system software for Hitachi Virtual Storage Platform (VSP) N file and Hitachi NAS Platform (HNAS) gateways delivers a comprehensive, simplified storage solution.

**DATASHEET**

## NAS System Software: Industry Leading Performance and Scalability

### Enterprise-Class NAS with Advanced Cloud Integration

The software included with our VSP N series and HNAS models provides capabilities that enable policy-based migration of data between low latency local flash and remote elastic clouds (both public and private) for your unstructured data. Information management, storage, sharing, backup, and retrieval have been improved for even the largest data sets with new features to support continuous availability across data centers upholding the reliability of Hitachi for storage solutions.

Our intelligent cloud tiering transparently migrates data between local and external, public and private cloud tiers using a policy-based business rules engine that continue to drive capacity efficiency and lower total cost of ownership by leveraging cost-effective cloud capacity to store stale or less active data, while providing local transparent access for users and applications. In addition, our NAS object-based replication provides a fast and efficient means to replicate data over wide area networks, improving RTOs and facilitating simple failover and fallback operations.

The universal migrator feature enables seamless online migration of network file system (NFS) volumes to reduce downtime when migrating from legacy platforms. The cluster namespace feature creates a unified directory structure across storage pools and controllers. Multiple file systems appear under a common root, and both SMB and NFS clients obtain global access via any controller. EVS server farm migration enables tenant mobility across namespace and servers with shared storage.

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

- Automated configuration, deployment, monitoring and self-healing capabilities.
- Cross-volume link enables files that have been migrated to a cloud environment to be transparently accessed by the application for nondisruptive retrieval.
- Eliminate redundant data and achieve up to 90% capacity savings.
- Our 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 your file system performance while also providing cost-efficiency.
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## Primary Storage Deduplication

The premium deduplication add on option provides additional ingest performance by increasing the number of logical state machines giving you unmatched simplicity and power with little to no administration, configuration or tuning required. Additionally, the data-in-place deduplication during production process reduces the need to pre-allocate capacity to be used as deduplication workspace. Our hardware-accelerated architecture [field-programmable gate array (FPGA), primary data deduplication leverages an FPGA offload engine to perform CPU-intensive hash operations that reduce the impact on file-serving performance. Lastly, our quality of service allows the deduplication engine to automatically throttle down with the file-serving load surpasses 50%.

## Multilayered Data Protection

Our NAS system software also offers a variety of snapshot options that provide point-in-time data protection capabilities. One of which is a file system snapshot with 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. Another option are file and directory clones that 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.

Finally, the global-active device metro clustering feature of Hitachi Storage Virtualization Operating System RF (SVOS RF) provides continuous access and availability of data in case of controller, system, or site failure. When implemented, it provides fully synchronous active-active clustering up to 500km with automated takeover.

The combination of these features makes the Hitachi VSP family ideal for diverse applications, from NAS or multiprotocol file server consolidation to high-performance storage for VMware virtual machine (VM) or database environments while also supporting commercial enterprise applications.

## Highlights and Summary

| Key Features                                 |   |
|--|---|
| <b>Virtual Cluster</b>                       | <ul style="list-style-type: none"> <li>Enabled with EVS server farm migration, it extends the limits of Hitachi NAS scale-out up to 80 nodes in a virtual cluster. Server farm migration enables:               <ul style="list-style-type: none"> <li>Optimizing performance across clusters. For maximum throughput, migrate EVSs to a higher-end server or to a fully dedicated server.</li> <li>Balancing load. For more efficient use of available resources, migrate heavily used EVSs to less busy servers or to higher-end servers that support greater capacity.</li> </ul> </li> </ul>                                  |
| <b>Global-Active Device Metro Clustering</b> | <ul style="list-style-type: none"> <li>Zero RTO and RPO solutions that protect against controller, storage or site failure</li> <li>Fully automated configuration, deployment, failover and failback</li> <li>Flexibility for environments and sites up to 500km apart</li> </ul>   |
| <b>Multitenancy</b>                          | <ul style="list-style-type: none"> <li>Enables up to 64 Hitachi Enterprise Virtual Servers for NAS to exist in separate security domains</li> <li>Provides true network-level separation, feature per-virtual-server routing tables and support for overlapping IP ranges that includes patented crosstalk detection</li> </ul>   |
| <b>Superior Capacity Efficiency</b>          | <ul style="list-style-type: none"> <li>Support for 1PB file system</li> <li>Unlimited virtual capacity with tiering to an object store</li> <li>Hardware accelerated primary storage deduplication to eliminate copies of redundant data</li> <li>Thin provisioning at the storage, file system and virtual volume layers</li> </ul>  |
| <b>Intelligent File Tiering</b>              | <ul style="list-style-type: none"> <li>Policy-based hierarchical storage management feature allows data storage to span NAS filesystems and namespaces across public and private cloud storage, providing elastic storage capability at a utility cost.</li> </ul>  |
| <b>Enhanced High Availability</b>            | <ul style="list-style-type: none"> <li>Optimized file system pre-mount checks and improved NVRAM replay time for faster cluster failover</li> <li>Nondisruptive upgrades (NDU) and downgrades of cluster microcode to reduce risk and downtime</li> </ul>   |
| <b>Virtualization Services</b>               | <ul style="list-style-type: none"> <li>Hitachi Virtual Infrastructure Integrator simplifies backup, restore and cloning operation from VMware vSphere to a unified VSP</li> <li>VMware vStorage APIs for Array Integration (VAAI) adapter divests storage operations from VMware vSphere to a unified VSP</li> </ul>  |
| <b>Data Management Services</b>              | <ul style="list-style-type: none"> <li>Enterprise Virtual Servers and Namespaces unify file system data and simplifies the consolidation of islands of unstructured data.</li> <li>User, Group and Volume Quotas (Hard/Soft) help administrators manage capacity utilization and provisioning tasks.</li> </ul>   |
| <b>Data Governance Services</b>              | <ul style="list-style-type: none"> <li>Internet Content Adaptation Protocol (ICAP) and Remote Procedure Call (RPC) support for virus scanning</li> <li>File system auditing for Server Message Block (SMB) and NFS protocols</li> <li>External CEF administrative auditing</li> </ul>   |
| <b>Complete Network Protocol Support</b>     | <ul style="list-style-type: none"> <li>IPv4 and IPv6; SMBv1, SMBv2 and SMBv3; NFSv2, NFSv3 and NFSv4; File Transfer Protocol (FTP); iSCSI; Active Directory, NT Domain and Kerberos v5 authentication.</li> </ul>   |
| <b>Management and Other Protocols</b>        | <ul style="list-style-type: none"> <li>HTTP over Secure Socket Layer (HTTPS), Secure Shell (SSH), Syslog, Simple Network Management Protocol (SNMP) v2 and v3, Network Information Service (NIS), Lightweight Directory Access Protocol (LDAP), Domain Name System (DNS), Windows Internet Name Service (WINS), Network Time Protocol (NTP) and email alerts.</li> </ul>  |
| <b>Data Protection Services</b>              | <ul style="list-style-type: none"> <li>NDMP v3, v4, ADC for Backup and ViVol Replication</li> <li>Active-active clustering.</li> <li>File System Checkpoints and Snapshots based on scalable zero impact redirect on write architecture with instant rollback.</li> <li>Capacity-efficient, writeable, file and directory clones for repurposed data copies for data protection or test/dev. Supports almost unlimited direct and cascaded copies.</li> <li>High Speed local and remote replication with automated failover and failback. Multi-target and cascade topologies. Read-only Target, Bandwidth Throttling.</li> </ul> |

\* Feature or enhancement available after initial release. Ask your Hitachi Vantara representative or partner for more information.

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