HITACHI
Inspire the Next

Hitachi NAS Platform, Powered by BlueArc®: Software

The software for Hitachi NAS Platform works seamlessly with the platform's powerful, hardware accelerated architecture. In fact, this comprehensive network attached storage (NAS) solution leads the industry in performance and scalability, and it complements other powerful Hitachi solutions.

Scale Out NAS with Advanced Data Management

The Hitachi NAS Platform is designed for consolidating unstructured data, highly efficient content indexing and "intelligent file tiering," capabilities that enable policy-based migration of data and content among storage and archive tiers. Users working on even the largest data sets see dramatic improvements in information management, storage, sharing, backup and retrieval.

The combinations of features available make the Hitachi NAS Platform 3000 family ideal for diverse applications, from NAS or file server consolidation to high performance storage for VMware and Microsoft® Hyper V™ virtual machine environments and commercial enterprise applications, including Microsoft Exchange Server, SQL Server® and SharePoint®, Oracle and more. Enhanced high availability as well as intelligent file tiering features and advanced content management capabilities simplify data reorganization, classification, movement and protection.

Virtualizing Storage Is Key

Intelligent File Tiering helps organizations move data among storage and archive tiers with automated, policy driven migration tools. This unique integration of NAS and "write once, read many" (WORM) features sets a new standard for file services offerings to incorporate NAS, archive, index and search technologies.

- Cross Volume Link Migration enables migration of data between internal Fibre Channel, SAS and SATA storage tiers.
- External Volume Link Migration enables data migration between the Hitachi NAS Platform and external devices.
- Advanced Virtualization Framework delivers thin provisioning and virtual servers.
- Concurrent support for iSCSI, Network File System (NFS) and Common Internet File System (CIFS) eliminates storage silos.
- Integration with the Hitachi Data Discovery Suite provides content indexing and enables data migration based on file content as well as file system metadata.

Advanced Content Indexing[1] provides for more efficient indexing operations and implements a data management API that enables the Hitachi Data Discovery Suite to coordinate Intelligent File Tiering software operations based on file content.

Cluster Namespace creates a unified directory structure across storage pools and servers. Multiple file systems can be linked and appear under a single common root, and both CIFS and NFS clients can obtain global access through any node in the cluster.

Virtual File System supports CIFS and NFS protocols and delivers flexibility and power to handle very large files and millions of small files, as well as several concurrent file system operations, with no performance impact. Automatic File System expansion is also available.

Virtual Volumes allow rapid allocation of storage required for different applications or users. Virtual volumes mask complexity of underlying physical disks while automatically reflecting capacity changes from clients, allowing automatic growth and the ability to shrink volumes based on pre-defined thresholds and growth rates.

Virtual Servers enable high capacity and high throughput as well as multidomain support across up to 64 virtual servers per node; they

[1] In the latest version of the file system (WFS-2)

enable support for a large number of virtual machines from a single storage pool.

Multiprotocol Support sustains both block- and file-level application data within a single system. This extends to standards-based data transfer protocols:

- CIFS, NFS and FTP, which support file-level data access needs of Microsoft Windows® and UNIX client environments
- User Datagram Protocol (UDP) and Transmission Control Protocol (TCP), which provide support for UDP versions 2 and 3 and TCP versions 2, 3 and 4 over IP for data transport
- Network Data Management Protocol (NDMP), which supports industry standard data migration, tape backup and archiving functions performed using NDMP versions 2, 3 and 4, enabling backup and data replication
- iSCSI, which supports up to 8,192 logical unit numbers (LUNs) on each system, allowing both block- and file-level storage on the same system

Complete File- and Block-based Virtualization Framework

- Complements powerful Hitachi Tiered Storage Manager and Hitachi Device Manager advanced file-based virtualization framework with the industry leading block-based virtualization provided by the Hitachi Universal Storage Platform® V and Universal Storage Platform VM systems

Multilayered Approach to Data Protection

- Synchronous data replication via IP with Hitachi TrueCopy® Synchronous remote replication software; support of local clones with Hitachi ShadowImage® Heterogeneous Replication or Shadow-Image Replication in-system software
- MetroCluster support with Active-Active GeoCluster for distances up to 100km
- High speed snapshot or point-in-time technologies that enable one per second
- Rapid data backup and recovery
- Support for quotas for individual users, virtual volumes or directories

Extending the Architecture

- Create powerful data protection and management policies with an easy-to-use graphical user interface (GUI) and an online documentation library.
- The Hierarchical Storage Management feature identifies and migrates data across storage tiers with automated policies.

Complementary Solutions

The Hitachi Data Systems Global Solution Services (GSS) team offers design, implementation and data migration services that support Hitachi NAS Platform and the entire suite of Hitachi storage products. With proven methodology, GSS ensures successful implementations that reduce risk and accelerate time to results.

FEATURE HIGHLIGHTS AND SUMMARY

Performance, Availability and Scalability

- Best-in-class performance and near linear scale out, up to 4PB[2], and large volumes (128TB+)

Intelligent File Tiering

- Policy-based Hierarchical Storage Management feature that spans Hitachi NAS Platform and the Hitachi Content Platform

Efficient Content Indexing

- Enables Hitachi NAS Platform to incrementally update Hitachi Data Discovery Suite indexes, which results in much faster, more frequent index updates

Enhanced High Availability

- Optimized file system pre-mount checks and improves NVRAM replay time to provide faster cluster failover times that mitigate unplanned downtime.
- Nondisruptive "rolling" upgrades limit planned downtime required for updates and upgrades.

System Management Framework

- Comprehensive, centralized management with GUI interfaces: CLI, SNMP, LDAP, Active Directory with Auditing and NIS

Virtualization Services

- Virtual Volumes (VVols), Virtual Servers and Cluster Namespace unify directory structure while simplifying storage capacity management tasks

Data Management Services

- Centralized GUI management, snapshots and quick file restore, Accelerated Data Copy (ADC), hard and soft quotas (volume, group or user), NAS Data Migrator feature, scalable file systems, storage pools (with up to 4PBs in a single pool), policy-based management and transparent data migration and relocation

Hardware Accelerated Protocols

- NFS, CIFS, iSCSI, NDMP, FTP, TCP/IP and UDP

Data Protection Services

- Active-active clustering, from two to eight nodes with Cluster Read Caching, for scalable, read intensive NFS workload, Incremental Block Replication (IBR), TrueCopy Synchronous remote replication, Shadow-Image Heterogeneous Replication (enterprise) or ShadowImage Replication (modular) in-system replication, MetroCluster, role-based security and virus scanning, block- and file-level replication

[2] When used with Hitachi Adaptable Modular Storage 2000 family

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