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SOLUTIONS BRIEF

Hitachi NAS Platform 3080 and 3090

Storage Consolidation and Intelligent Tiering for Microsoft® SQL Server® Environments

Hitachi Storage Solutions

Hitachi Data Systems

Hitachi NAS Platform 3080 and 3090

Storage Consolidation and Intelligent Tiering for Microsoft® SQL Server® Environments

Microsoft SQL Server gives companies the flexibility to deploy diverse applications based on this popular and powerful database. It is a cost effective solution for organizations that are heavily invested in the Microsoft Windows Server® platform and it is deployed across many different industries.

As organizations depend more on SQL Server, they must be able to manage growth, availability and performance to support growing numbers of users and applications. The midrange Hitachi NAS Platform 3080 and 3090 provide simplified storage provisioning and management for SQL Server with performance and scalability to meet the needs of enterprise class database management.

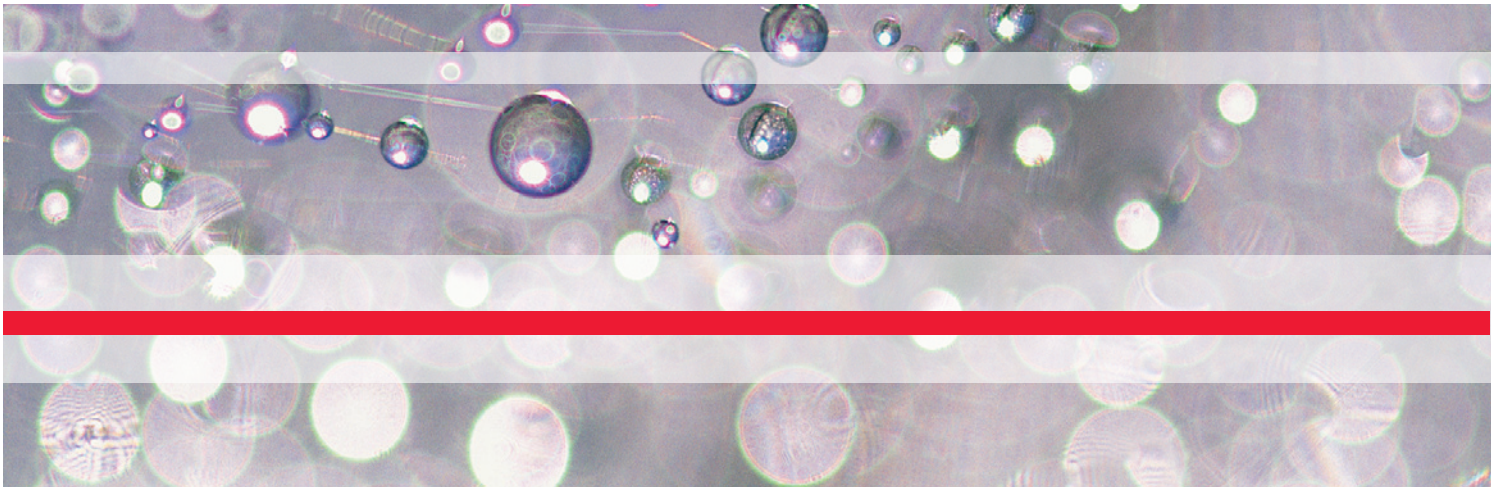
Key Benefits

- **Improved performance.** Massively parallel computing in hardware accelerates SQL Server performance.
- **Intelligent tiering.** Automated migration of data between storage tiers optimizes cost and performance.
- **Faster backup and recovery.** The capability to support up to one snapshot per second enables frequent backups and instant recovery.
- **Improved reliability.** Four-way cluster scale out protects the SQL Server environment.
- **Simplified management.** Hitachi Storage Command Suite centralizes management of SQL Server storage.
- **Reduced costs.** Lower cost iSCSI infrastructure can be deployed.

Performance

Hitachi NAS Platform, powered by BlueArc®, uses a Hybrid Core Architecture that accelerates processing to achieve best-in-class performance. The unique hardware-based file system enables outstanding 1,100MB/sec data throughput and up to 100,000 IOPS per node. Performance and availability are enhanced with up to eight nodes per cluster, enabling faster response to more queries from more users.

Performance scaling is simple and effective, with no impact to users or database applications. With a cluster namespace, a two node Hitachi NAS Platform can grow as required to an eight-node deployment with virtually linear performance scaling, enabling businesses to



expand rapidly, absorb acquisitions or dramatically improve service levels.

Intelligent Tiered Storage

Intelligent storage tiering enables native policy-based Hierarchical Storage Management (HSM) and can be automated on Hitachi NAS Platform. The setup is via an intuitive wizard and can dynamically move data between different tiers of storage. For example, older data may be moved from high speed Fibre Channel or SAS disk to lower cost SATA disk, or even archive media. Based on usage, data can be promoted or demoted simply. In addition, dynamic read caching takes storage tiering further by automatically placing recently accessed data into high-performance cache, reducing the need for increased capacity in the performance tier.

Simplified Management

The intuitive single-pane-of-glass management interface enables IT staff to quickly perform key tasks, such as provisioning storage for databases and log files, automating backup or defining policies for automated storage tiering. The simplified management is the same whether administering physical, virtual or a combination of SQL instances.

As more storage is consolidated in the single namespace — up to 2PB — the management tasks on silos of direct attached storage (DAS) and NAS can be reduced, increasing IT productivity. Storage can be added on the fly, with no disruption to users or applications. The snapshot capability built into the Hitachi NAS Platform allows up to one snapshot per second per file system, providing fine granularity of backup and the ability to go back to a specific point in time.

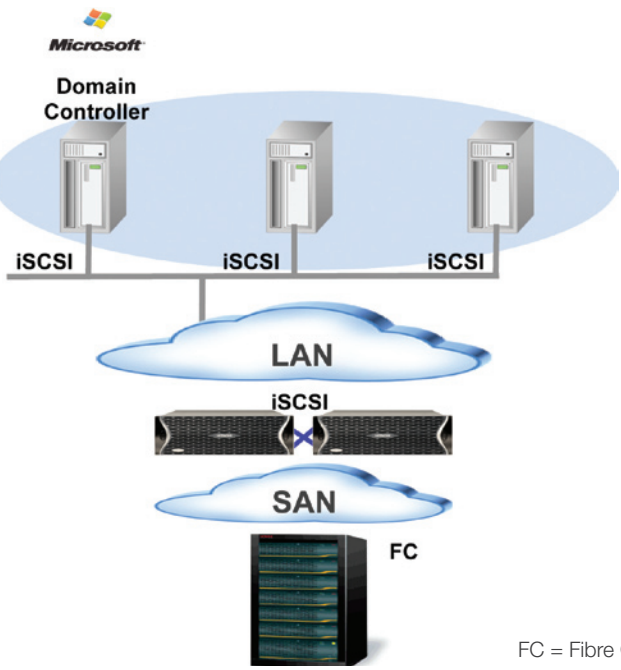


Figure 1: Example of a Microsoft SQL Server and Hitachi NAS Platform iSCSI Deployment

Storage Consolidation

The midrange Hitachi NAS Platform 3080 and 3090 deliver best-in-class performance and scalability with the flexibility to provide multiprotocol file services in addition to iSCSI-based storage area network (SAN) storage. This unified storage approach is ideal for storage consolidation projects. The Hitachi NAS Platform 3080 and 3090 can scale to 2PB in a single namespace, so organizations can realize a greater return on their investments by consolidating storage from multiple DAS and NAS devices into a centrally managed pool, simplifying management and increasing productivity.

Hitachi NAS Platform has the performance and capacity to enable consolidation of multiple DAS and NAS storage systems into the same storage pool as the SQL databases. Unstructured data is the fastest growing category of data storage, increasing file server sprawl and leading to islands of data in file servers and NAS devices. Storage consolidation also helps organizations move towards the green data center; fewer disks and servers require less power and cooling. Now organizations can do the right thing for the environment while reaping the business advantage and cutting costs.

Reduced Cost

Deploying Hitachi NAS Platform in a database environment reduces cost in a number of ways, including acquisition, deployment and management. The Hitachi NAS Platform uses iSCSI for SAN protocol, which runs on TCP/IP networks; thus, the network infrastructure, including switches and host bus adapters (HBAs), is significantly less expensive to install than Fibre Channel deployments. Additionally, IT staffs are typically familiar with Ethernet technology, and the learning curve is substantially less than with Fibre Channel SANs. Hitachi NAS Platform 3080 and 3090 support multiple SQL instances (either physical or virtual) with better utilization.

Intelligent Thin Provisioning

Intelligent thin provisioning is a key technology for managing the growth of databases. By releasing storage to applications only when they actually consume it, organizations can achieve better utilization and can postpone storage hardware purchases to a later date.

Archive and Compliance

Organizations need to be able to respond to legal, corporate or regulatory requirements for record keeping. Hitachi NAS Platform has enhanced "write once, read many" (WORM) technology that effectively locks down selected storage in an unchangeable state, providing secure archiving of critical company records. In conjunction with the Hitachi Data Discovery Suite, e-discovery can be achieved in a timely manner with minimum impact on IT staff.

Policy-based HSM can be automated in the Hitachi NAS Platform 3080 and 3090. The setup is via an intuitive wizard and can move data between different tiers of storage. For example, older files may be moved from Fibre Channel disk to lower cost SATA disk.

At Your Service

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.

For information on services to help with installation and configuration, meet regulatory compliance requirements, protect data, reduce total cost of ownership or develop a disaster recovery plan for SQL Server, contact your Hitachi Data Systems representative or your Hitachi TrueNorth Channel Partner to engage with GSS.

Features and Benefits

Performance	Support large numbers of SQL applications and users; design for massive computing parallelism delivers the necessary performance.
Intelligent Tiering	Automatically migrate files between storage tiers to balance cost and performance.
Dynamic Read Caching	Improve performance without intervention from the storage administrator via dynamic read caching, which makes a background copy to a high-performance cache tier.
Hardware Acceleration	Experience data rates up to 1,100MB/sec and improved database performance as a result of processing operations being performed in hardware instead of software.
Scalability	Scale performance by adding nodes or scale capacity by adding storage shelves; neither approach causes disruption to users, applications or virtual machines.
Cluster Namespace	Grow databases within a single namespace — up to 2PB — enabling enterprise-wide consolidation with a single management interface.
Thin Provisioning	Manage storage more efficiently and achieve higher utilization by providing storage only when SQL Server applications actually need it.
Multiprotocol Support	Increase the utilization of your data center by sharing SAN storage space with CIFS and NFS file sharing across both physical and virtual machines.

Solution Benefits

The Hitachi NAS Platform 3080 and 3090 have a unique, performance oriented architecture with outstanding scalability at a midrange price point. They offer both NAS and iSCSI connectivity for storage consolidation of databases, application data and file sharing, with ease of management and ongoing cost advantages. Intelligent storage tiering and thin provisioning enable more effective management of storage in SQL Server deployments while balancing cost and performance.

For More Information

To learn more about how to effectively plan and deploy the Hitachi NAS Platform please contact your Hitachi Data Systems representative or your Hitachi TrueNorth Channel Partner, or visit www.hds.com.

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