



Hitachi Demonstrates Momentum With Latest USP Enhancements

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Hitachi Positions USP for Consolidation

Hitachi recently announced several enhancements to its *Universal Storage Platform (USP)*, a high-end storage platform for open systems and mainframe environments. The USP is designed to support multiple applications simultaneously, even with widely-varying requirements. These might range from enterprise resource planning, to messaging, to data warehousing, to NAS file serving, and even to online archiving. Hitachi's USP functions as a consolidated and centralized storage resource.

The USP achieves consolidation through a combination of scale, flexibility, and advanced functionality. It scales to 32,000 TB of capacity (332 TB internally and the rest attached externally). Performance reaches 2.5 million IOPS and 68 GB/s of bandwidth for data transfer – plenty of power for multiple applications. It offers numerous data management and protection software features, as one would expect at the high end. The USP employs virtualization to apply this power and functionality to not only internal disks, but also to externally-attached, heterogeneous storage arrays. Therefore, it can create a very large pool of storage. The USP can then divide into 32 logical partitions, each with dedicated cache, host ports, and disks. These partitions are autonomous, independently manageable, and can deliver different service levels¹. In this way, the USP delivers multiple tiers of storage in a single, unified system. With the latest enhancements, Hitachi has extended the USP's ability to function as a centralized storage resource.

General Performance Boost of 25%

Hitachi increased the performance of the USP by 25%, from 2 million to 2.5 million IOPS. This is a big leap. It achieved this primarily by optimizing the microcode, as well as taking advantage of faster 4 Gb/s Fibre Channel host ports. The new 4 Gb/s Fibre Channel blades support 350 MB/s of bandwidth, as opposed to the original version at 250 MB/s. The microcode upgrade is free for existing USP customers and does not involve a hardware upgrade.

This performance boost means that the USP can do more work in a given period of time – it is a productivity enhancement. So, if storage is the bottleneck in the performance of an application, this boost could lift the constraint and help users get more work done. Alternatively, more applications and hosts could attach to a system, thereby achieving greater consolidation. The first case contributes to business productivity; and the second helps lower storage and IT costs.

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¹ In terms of performance, availability, recoverability, and cost.

iSCSI Blade

iSCSI is now a connectivity option for the USP and Hitachi's *Network Storage Controller (NSC)*, joining the existing ensemble of Fibre Channel, ESCON, FICON, and NAS. iSCSI is a protocol for accessing block storage over IP networks. It provides a less-expensive alternative to Fibre Channel because the equipment costs less and IP is a more common skill set among administrators. The iSCSI host-attach blades for the USP have 8 ports at 1 Gb/s Ethernet, with up to 4 blades per system.

iSCSI is useful for attaching so-called "stranded" servers. Typically, these are inexpensive Windows and Linux servers that do not need the speed of Fibre Channel, nor could they justify its cost. iSCSI offers a practical way to connect them to a consolidated storage platform, as opposed to the status quo of direct-attached or internal storage. In this way, a data center can achieve higher overall storage utilization, lower management costs, and better storage economies. The server can also take advantage of the advanced data protection and management capabilities on the USP and NSC.

iSCSI also facilitates backup to disk. Using disk as a backup target instead of (or prior to) tape is increasingly popular because it shortens backup windows and recovery times. Some backup applications support iSCSI for target storage. The USP could then serve as a backup target, especially if a storage array with low-cost SATA drives were attached and virtualized.

Hitachi Universal Replicator (HUR) Delta Resync

Delta Resync is a special function for three-site replication configurations, where Hitachi USP or NSC synchronously replicates to a metro-area standby site and asynchronously to a remote recovery site. *TrueCopy* software performs the synchronous replication and *Hitachi Universal Replicator*² performs the asynchronous. If the primary site fails and metro standby site takes over, Delta Resync ensures that no journal updates are lost for the remote site. The standby sends the most recent ones and quickly brings the remote site up to date. Delta Resync minimizes data exposure in the event of a primary site failure, which helps protect data and ensure business continuity.

HUR 4 x 4 Support

Furthermore, for large mainframe (only) environ-

² Hitachi Universal Replicator (HUR) is an asynchronous remote replication solution for disaster recovery supported by the USP and NSC platforms. It uses disk-based journaling and pull-style replication to minimize cache and bandwidth consumption and smooth out the impact of network failures. It can also incorporate heterogeneous and third-party storage through the virtualization.

ments, HUR supports a single consistency group container that spans up to:

- 4 controllers, each with 4 consistency groups;
- 64k volumes; and
- 8 controllers, when considering source (4) and destination (4) sites.

The bottom line is faster recovery for large, federated mainframe environments.

Audit Logging

Who did what, when, and what was the result? We are not talking about a Sherlock Holmes mystery, but rather the new audit logging capability on the Hitachi USP and NSC55. The Service Processor on the storage platform maintains a secure log of all interactions, which can be exported to any operating system's SYSLOG file, for analysis and auditing.

Information security is a front-and-center issue in the data center today. It can make or break a business. It also involves multiple facets, of which secure auditing is one. The ability to review what happened and who did it is important to demonstrate and ensure secure data management processes. Hitachi now brings this capability to the table for USP and NSC55 platforms.

ShadowImage Boost

Hitachi increased the copy performance of *ShadowImage In-System Replication* by 300%, from approximately 350MB/sec to over 1GB/sec. It also doubled the number of point-in-time copy pairs to 4,096. What does this mean? Whatever you did with point-in-time copies before (fast recovery points, testing & development, loading data warehouses), you can now do more of it faster. This will be a productivity enhancer for IT.

Conclusion

The high-end storage market is race with few contenders. It takes real commitment and capability to field a product here. There is constant surging and jostling for position as vendors innovate and upgrade their products. Hitachi has demonstrated serious momentum in this race, as shown by this slate of USP enhancements.

If you are an existing USP customer, be sure to take advantage of these enhancements, especially the 25% performance boost. (Remember, it's free with a micro-code update!) These will let you get more out of your storage investment.

If you are considering Hitachi storage as a high-end storage solution, remember to factor these enhanced capabilities into your calculus. They could tip your scales!



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