

# Hitachi Data Systems extends its mid-range storage and advanced functionality

*Hitachi Data Systems has expanded its mid-range storage product line with the announcement of the AMS1000 (Adaptable Modular Storage), effectively doubling the capacity of the AMS500 announced last year. Advanced functional enhancements include extended distance replication (asynchronous), RAID Group Movement and Expansion (LU migration), expanded logical cache-partitioning capability and unified multi-path management for large server farms. Carl Greiner comments on the ongoing trend to bring more high end functionality to the mid-range market.*

## The Ovum view

Hitachi Data Systems continues to push the norm as to what is modular mid-range storage and what is enterprise. In addition, with the Universal Storage Platform and Network Storage Controller intelligent virtual storage controllers, all instantiations/types of storage can be intermixed, including non-Hitachi alternatives. Such functionality continues to ease storage consolidation and complexity considerations (including NAS/SAN integration), yet still allows for unique performance requirements related to different applications. The end result is a focus on providing the optimised solutions for today's multi-faceted and dynamic business environments allowing requirements, expectations and cost to be balanced. With this announcement, Hitachi Data Systems continues to maintain its position as a top-tier modular and enterprise storage provider.

## Announcement highlights

### TagmaStore Adaptable Modular Storage Model 1000

Completing the refresh of its mid-range Thunder offerings, Hitachi Data Systems has introduced the replacement for the Thunder 9585V – the AMS1000. The product joins the previously announced AMS200 and AMS500 and the upgradeable family can scale raw capacity from under 2TB to over 208 TB with 500GB SATA drives. While the initial models clearly addressed the medium and less intense enterprise business requirements, the AMS1000 squarely overlaps with the low end/mid-enterprise solutions at a more attractive price. All AMS models support and intermix 15K RPM FC drives (73 or 146GB), 10K RPM FC drives (73, 146, or 300GB) and 7.2 RPM SATA (250GB, 400GB, or 500GB). The family supports 1Gbit/s, 2Gbit/s, 4Gbit/s front-end connectivity and 2Gbit/s FCAL back-end loops, plus all models support logical cache partitioning for performance-sensitive applications. The AMS200 and AMS500 support dedicated FC, iSCSI or NAS

protocols. However, the AMS1000 is multi-protocol and can be dedicated or simultaneously support 2 protocols (FC, iSCSI or NAS) in a single subsystem.

The entire AMS family supports RAID-6 ('n' data, 2 parity) for improved reliability overall and minimises the potential long rebuild times associated with large capacity disks. RAID-6 basically eliminates the exposures due to double disk failures and associated rebuild times, plus in a fault situation the data is either copied or rebuilt on a spare, which then becomes part of the new RAID group and the bad drive is replaced and becomes a new spare.

The company also announced immediate general availability of iSCSI connectivity for all AMS and WMS models enabling inexpensive SAN connectivity over Ethernet.

### **Workgroup modular storage**

In September 2005, HDS announced WMS100 (replacing the 9520V), an all SATA device targeting the SMB markets with a cost-effective solution that scales to almost 50TB raw with 500GB SATA drives. It is interesting to note that all HDS storage solutions share common controller code, making common management and tiered storage participation a reality. Plus; the AMS and WMS product lines can be configured as externally attached storage to the Hitachi TagmaStore Universal Storage Platform or Network Storage Controller.

### **Advanced functionality**

Consistent with the evolution of modular mid-range storage solutions has been the exploitation of selected functionality that has normally been reserved for the high-end enterprise alternatives. Continuing this evolution, Hitachi Data Systems announced additional storage system-based TrueCopy capability (currently Synchronous replication only) to include TrueCopy Extended Distance (Asynchronous for AMS500/AMS1000) providing unlimited distance support.

In addition, all AMS and WMS configurations support logical cache partitioning through the Resource Manager utility package and the Cache Partition Manager, allowing for the customisation of cache performance for particular application optimization requirements.

Another functional enhancement, RAID Group Movement and Expansion (Logical Unit Migration software), addresses the requirement to move/migrate RAID groups non-disruptively (for example, move active data from RAID5 FC HDD to RAID 6 SATA HDD) and with no system impact. This functionality also will expedite the replacement of drives without impacting production as well as addressing performance bottlenecks found by the Performance Monitor and migrating LUs to a less busy RAID group. At this time RAID Group expansion is not dynamic and requires operator intervention. However, we believe it will eventually be exploited by policy-based management, thus becoming truly dynamic.

### **HiCommand Global Link Availability Manager**

The primary focus of the Hitachi Data Systems announcement was the AMS1000 addition to its modular mid-range storage family. The announcement also included a unique solution that addresses enterprise wide multi-path management, particularly in complex server farm configurations. The New HiCommand Global Link Availability Manager extends and builds upon the HiCommand Dynamic Link Manager and provides for simple integrated path management across complex configurations that were previously many unique individual system instantiations that were difficult and resource intensive to manage.

Now it is possible to manage as well as report and monitor on many servers' multi-path storage connections from a single console, increasing system administrator productivity, minimising configuration errors and thus improving overall reliability. The product provides per-host LUN bandwidth control and load balancing, optimising path performance and reliability as it relates to total system workloads. In addition, easy switching to and back from alternate paths maintains applications' availability while particular paths are reassigned or taken down for maintenance. Another benefit allows for more effective SAN consolidation, eliminating path management as a deterrent. While we believe this product will become more heterogeneous over the next few years, providing support for non-HDS multi-pathing managers, it currently can be used only with Hitachi HiCommand Dynamic Link Manager.

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