

INSIGHT

Hitachi Data Systems Introduces Universal Storage Platform: Sets Sights on Leadership in Tiered Storage

Richard L. Villars

IDC OPINION

Hitachi Data Systems' (HDS') Universal Storage Platform (USP) announcement is a response to enterprises' evolving storage systems requirements for greater flexibility in expanding storage capacity and leveraging existing storage resources. IT managers are also demanding families of storage solutions that allow them to deploy complementary tiers of storage optimized to meet specific requirements for performance, capacity, and reliability. In this emerging market, owning one or more tiers of an enterprise's storage systems business will be less important than being the provider of the "networked" storage controllers and complementary data replication/management software that interconnects and manages all the data flows into and between these systems. HDS' introduction of the USP is a clear example of the company's intent to be a leader in delivering such solutions. Any vendor that wants to succeed in this emerging area must:

- Provide a scalable platform to support the software-driven operations required for moving data through the tiers
 - Boost support for heterogeneous storage systems
 - Deliver robust unified management services across storage devices and applications
 - Develop a full suite of complementary professional services offerings that can assist enterprises in the evolution to tiered storage
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IN THIS INSIGHT

This IDC Insight evaluates Hitachi's September 7 announcement of its TagmaStore Universal Storage Platform and supporting software products. It analyzes how this new product family reflects enterprises' demands for more robust tiered storage solutions and discusses challenges that HDS faces as it rolls out this product line.

SITUATION OVERVIEW

Announcement Highlights

On September 7, 2004, HDS announced the availability of the first products based on its TagmaStore USP, a combination of new hardware and software. The announcement covered three major areas:

- ☒ It unveiled the Hitachi Universal Star Network as the third-generation massively parallel, scalable crossbar switch architecture for storage systems
- ☒ It introduced three new storage systems: the USP100, USP600, and USP1100, which use 73GB, 146GB, or 300GB (available in CY 1Q05) Fibre Channel (FC) disk drives and have maximum internal capacities ranging from 38TB to 332TB
- ☒ It positioned the USP as a scalable, highly reliable networked storage controller that can aggregate storage access and management for up to 32PB of storage, both internal to the UPS and on attached heterogeneous storage systems

In support of this last initiative, HDS also announced a series of complementary storage software offerings. They include:

- ☒ Hitachi Universal Volume Manager, which supports virtualization for up to 32PB of internal and external storage while also allowing data replication and migration capabilities across heterogeneous storage systems. In the first release, these systems include other Hitachi Lightning systems (including versions sold by HP and Sun), the Thunder 9500 V Series, and older 7700E systems.
- ☒ Hitachi Virtual Partition Manager software, which allocates internal and external physical storage resources, including ports, cache, and disk, into independently managed Private Virtual Storage Machines
- ☒ Hitachi Universal Replicator, which supports asynchronous remote replication, including heterogeneous replication, disk-based journaling, protection against link failure, "pull" copying, and multidatacenter support

Hitachi Ltd., HDS (a subsidiary of Hitachi Ltd.), HP, and Sun announced that they would begin selling storage systems based on the USP immediately. They also will begin providing consulting services to help customers leverage USP capabilities for data consolidation and ILM efforts. In addition, HP announced that its version (called the XP12000) would be the first external storage system to support its high-availability Non-Stop operating system.

IDC Analysis

HDS' USP announcement is a response to enterprises' evolving storage systems requirements. These requirements include:

- ☒ Providing greater flexibility in purchasing and expanding storage capacity
- ☒ Maximizing useful storage capacity and leveraging existing storage resources
- ☒ Reducing ongoing administration costs in terms of staff, timeliness, and quality

Hitachi's USP strives to address these requirements at two levels:

- ☒ As a high-performance, high-capacity, next-generation, high-end storage system
- ☒ As a platform for enabling robust and scalable deployments of tiered storage

Enhancing Storage System Capacity and Expandability

At the individual storage system level, these requirements are especially important in the high end of the market, where solutions such as Hitachi's Lightning 9900 V Series, EMC's DMX, and IBM's ESS are the dominant solutions.

As large enterprises accelerate storage consolidation efforts to cover more systems and applications, they are looking to their storage systems suppliers for greater capacities. According to IDC's Quarterly Storage Systems Tracker, the average capacity on new storage systems that cost less than \$500,000 grew 126% to over 14TB between 4Q02 and 4Q03. In 1Q04, the average capacity grew to 15TB. Hitachi's USP100, 600, and 1100 provide the large customers with robust and scalable solutions that address a wide range of capacity needs.

Enterprises want more than just bigger systems; however, they also want systems that can expand gracefully as they consolidate additional systems and grow existing applications. HDS' USP solutions provide a common modular foundation so enterprises can start at relatively low capacity levels and grow nondisruptively to very large capacity systems. Enabling this kind of modularity in initial system setup and expansion is an important capability that all suppliers in this space need to provide.

Enabling Tiered Storage

Although boosting individual storage system capacity and expandability are important large enterprise requirements, of much more strategic concern is the interest of large enterprises in both maximizing the value of existing storage assets and optimizing the return on future investments. As a consequence, IT executives are:

- ☒ Demanding families of storage solutions that allow them to deploy complementary tiers of storage optimized to meet specific requirements for performance, capacity, and reliability

- ☒ Recognizing the need for a common suite of data replication capabilities that allows them to match application data needs to storage attributes by easily and intelligently moving data between different classes of storage
- ☒ Looking for storage management solutions that automate provisioning, expansion, and data protection tasks across heterogeneous systems

HDS' positioning of the USP as a scalable and reliable front end for interconnecting SAN-attached servers and multiple tiers of storage systems and its introduction of complementary new software products supporting virtualization, logical partitioning, and universal replication are clear efforts to aggressively pursue the tiered storage and data life-cycle management opportunities in large enterprises.

In this emerging market, owning one or more tiers of an enterprise's storage systems business will be less important than being the provider of the "networked" storage controllers and complementary software that interconnect and manage all the data that flows into and between these systems. Over the next three years, this will be the true large enterprise battleground for leading storage systems and storage software suppliers.

FUTURE OUTLOOK

HDS, as well as its competitors, faces several challenges in achieving the goal of delivering the next-generation tiered storage solution for enterprise customers.

Boosting Heterogeneous Storage Support

The company's introduction of a highly scalable platform for delivering common data replication and storage management services across its own storage product lines is an important first step. It does not, however, fully meet enterprises' need for heterogeneous storage services that support older assets as well as installed storage systems from other leading suppliers.

One confirmation of this point is the growing number of large enterprises that are deliberating selecting storage systems from different suppliers for each storage tier in their environment. These companies want to keep their suppliers honest in terms of pricing while also applying pressure to improve storage interoperability across SANs.

Whether they like it or not, the leading storage vendors will need to take steps to address this enterprise customer concern. HDS indicated that it will provide broad heterogeneous storage support starting in mid-2005, and HP indicated that the USP would support the MSA storage family.

Delivering Unified Management

Another major challenge for HDS and its competitors is to bring all legacy storage management tools and utilities under a common management infrastructure. As enterprises begin evaluating their options for tiered storage solutions, they will need straightforward, easy-to-deploy management solutions that provide for coordinated and automated administration.

HDS and HP both announced new versions of their existing storage management solutions that begin to address the capabilities of the USP and related software, but they must continue to do more to ensure that their systems effectively support a tiered storage approach. Deeper integration includes:

- Employing consistent processes and workflows for completing tasks that cross devices and applications
- Employing standard tools for job scheduling, reporting, and security
- Providing integrated policy-driven automation and workflow

Enhanced Services Will Be Key to Success

The vision of an enterprise storage environment that takes advantage of tiered storage, common data replication, and coordinated management to enhance flexibility and boost application availability/reliability (all while improving the operational efficiency of the IT department) will not come to pass overnight.

The most advanced and integrated storage solution is of little use if IT departments do not change existing policies and procedures to automate repetitive administrative tasks. Effective implementation, always a major concern, is an especially critical issue when considering these emerging solutions.

IT managers need help from their suppliers as they establish rules and procedures for naming conventions, application upgrades, and provisioning and replication policies. Any storage supplier that wants to compete in this market must enhance its professional services programs to enable more effective deployment of tiered storage solutions and the successful implementation of current and future products.

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