HDS and BlueArc – A Marriage of Opportunity

Analyst: Dianne McAdam

Management Summary

Many years ago, some data centers bought their hardware from one vendor. There were many loyal Big Blue (IBM) customers. In fact, IBM was the dominant mainframe computer company at that time. Several people left IBM to form a competing company called Amdahl, named after Gene Amdahl, the founder. Amdahl salespeople had to be creative to convince loyal IBM customers to purchase their next mainframe from Amdahl. They convinced customers by bringing them a *million-dollar coffee mug*. The coffee mug was a plain red mug with Amdahl printed on the side. It was not made of fine china or precious metals. However, Amdahl salespeople told prospective buyers to leave the mug on their desk the next time IBM called on them and they would get a million dollar discount from IBM. The tactic worked – IBM would drop their prices on their multi-million dollar mainframe. The million-dollar Amdahl mug became a prominent fixture on many CIO's desks and Amdahl gained about 24% mainframe market share, since the CIO's understood the benefits of having a second server vendor installed. Amdahl no longer exists, but there are still many Amdahl mugs around.

The million-dollar mug started a trend. All vendors, large and small, distributed mugs to IT. In those days, IT systems and storage administrators collected mugs like boys collected baseball cards. The person with the most mugs held an esteemed position within IT. Distributing coffee mugs is not as popular as it used to be – many enterprises do not allow employees to accept any gifts from vendors. However, one trend that has remained constant is that IT organizations purchase hardware and software from many different vendors. This provides them with competitive pricing but, unfortunately, it does not simplify operations or management.

Ask any storage administrator that has to administer many different storage devices! Each storage device has its own management interface, its own set of features and restrictions. How do we simplify management and operations of storage? Simply put, you virtualize the storage.

Storage virtualization has become the buzzword of the last several years. Every storage vendor claims to have it. Some do a better job than others. Storage virtualization allows IT administrators to combine many different physical disks into one logical storage pool which can be administered through one console – simplifying management.

Hitachi Data Systems (HDS) announced their block level storage array virtualization product, *Hitachi TagmaStore Universal Storage Platform (USP),* in September 2004. The success of this product was followed by the *Network Storage Controller, NSC55*, less than one year later. Both products can virtualize other vendor's block-based storage. **What was missing from HDS' product line was a product that could also virtualize file-based storage. The global OEM agreement between Hitachi Data Systems and BlueArc Corporation fills that gap and provides HDS with a very high-performing NAS solution.** Read on to find out more about this partnership.

First, the HDS TagmaStore and NSC55

As the number of storage devices continue to grow, the cost and complexity of managing these devices grows even more dramatically. Yet enterprises are faced with managing more and more disparate storage systems without the luxury of adding more people to their team.

Storage virtualization allows different storage systems to be combined into one or common logical group or pool, which simplifies management, and can improve storage utilization. There are several common ways to provide storage virtualization – in the host, in the network or in the controller. All approaches have their advantages and disadvantages. HDS chose to implement their virtualization within an intelligent controller. This approach has been very successful for HDS.

The HDS approach allows storage systems from HDS and other vendors to be installed behind the intelligent controller. The controller manages all of the devices as one logical pool. The advantage – IT administrators can use the functionality built into the controller to manage all of the data. Data from different vendors storage can all be managed, copied, and replicated using HDS software. The requirement, good or bad, is that you have to buy an HDS controller.

HDS TagmaStore Universal StoragePlatform

The HDS TagmaStore Universal Storage Platform is not for the small enterprise. It is designed for enterprises with large performance and capacity needs. It can support up to 192 Fibre Channel connections or up to 96 FICON or ESCON connections for those enterprises running mainframe operating systems, such as *z/OS* or *z/VM*. Each connection port can be *virtualized* – up to 32,768 virtual ports can be supported providing consolidation across numerous servers.

Many different storage systems can be connected behind the platform. These include storage platforms from EMC, HP, IBM, and SUN, among others. In addition, the TagmaStore USP can support up to 332 TB of its own internal storage, for a total of 32 petabytes of internal and externally attached storage managed under one TagmaStore USP.

HDS Network Storage Controller

The Network Storage Controller Model NSC55 is designed for those enterprises that do not need as much capacity that the TagmaStore USP offers. Here, IT has two options. They can configure the NSC55 with up to 69 TB of internal capacity or bring it in as a *disk-less* solution; that is, without any internal storage. The disk-less version of the NSC55 allows storage administrators to virtualize existing storage systems without adding more capacity. In either case, the NSC55 will manage up to 32 PBs of internal and external storage.

Storage Virtualization, HDS Style

The HDS TagmaStore USP or the *Network Storage Controller* provides numerous benefits to the enterprise. Let's assume that two older HDS storage systems, a *Lightning 9900* and a *Thunder 9585V*, along with an *EMC Symmetrix DMX 1000* and a *SUN StorEdge 6130* storage system are externally attached to the TagmaStore USP. Volumes on one of the attached storage systems can be migrated to internal storage or another attached array using *Hitachi HiCommand Tiered Storage Manager*. Alternatively, these volumes can be replicated to another TagmaStore located at a second site using Hitachi HiCommand Replication Monitor Software. Hitachi HiCommand Storage Services Manager can manage and provide reports about SAN visualization, asset management and performance and capacity utilization for all volumes, both internal and external. There are many other software products available within HDS' product suite. However, these few examples illustrate that all volumes can be managed the same way - a significant boon to overworked storage administrators.

So What Has Been Missing?

HDS has been successfully in installing the TagmaStore USP and Network Storage Controller to numerous IT organizations to virtualize block-based storage. Enterprises that wanted to use the TagmaStore to store both block- and file-based data could install up to four NAS blades on each TagmaStore controller. Installing NAS blades allows enterprises to consolidate NAS and SAN storage under one platform.

However, some companies require very high performance NAS systems and HDS did not have a suitable solution for these organizations until it just announced its global OEM agreement with Blue Arc.

Enter BlueArc

While TagmaStore USP and Network Storage Controller were designed to deliver high

performance and virtualize block-based storage, BlueArc was designed to provide high performance and virtualize shared file systems. The BlueArc solution can support up to four million files per directory; one file system can scale up to 512 terabytes. At the same time, BlueArc can deliver high performance of up to 200,000 IOPS.

BlueArc has made its mark in many organizations and has been very successful in some key vertical markets, including entertainment, internet services, and life sciences. The entertainment industry requires high performance and high capacity NAS solutions to speed up the rendering process to produce today's favorite digital movies. BlueArc has allowed graphic artists to improve the resolution of these films while delivering the movies on time. Life sciences has also benefited from BlueArc solutions. Gene and protein sequencing is very compute intensive. BlueArc solutions can keep up with the demands of researchers while allowing collaboration across numerous research centers. BlueArc allows enterprises, such as Internet services providers, to consolidate and share file systems across the enterprise while delivering high performance. BlueArc has also developed software to manage, copy, migrate, and replicate files across different tiers of storage.

HDS-BlueArc Marriage

IT organizations need to provide high levels of service to different departments. Financial departments require high performance for online transactions that can best be met by high performance storage systems such as Hitachi Data Systems' TagmaStore USP. However, IT may also need to provide high performance for the engineering department, which needs to share file systems across several different development locations. These needs are best met by solutions such as those offered by Blue Arc. In the past, IT administrators had to administer and manage the two solutions separately. Each solution had its own management console to configure, set up replication activities, and generate reports.

Having one central console to manage both solutions simplifies management and operations. That is what this partnership between HDS and BlueArc brings to the IT organization. HDS will OEM BlueArc's solution under the name *Hitachi High-performance NAS Platform, Powered by BlueArc*, which will use HDS storage on the back end. IT administrators can manage the BlueArc solution and the HDS storage from one

console.

The development of tighter integration between the two products is already underway. In the future, administrators can manage, replicate, and copy block-based and file-based data using the same commands. This simplifies daily operations for backup and replication. Tight integration between the two products will provide a high-performance file- and block-based virtualization solution under one platform that will be easy to manage and provide the cost benefits of simplified operations and consolidation. IT organizations that need both file- and block-level virtualization should evaluate this joint solution from HDS and BlueArc.

About The Clipper Group, Inc.

The Clipper Group, Inc., is an independent consulting firm specializing in acquisition decisions and strategic advice regarding complex, enterprise-class information technologies. Our team of industry professionals averages more than 25 years of real-world experience. A team of staff consultants augments our capabilities, with significant experience across a broad spectrum of applications and environments.

➤ *The Clipper Group can be reached at 781-235-0085 and found on the web at www.clipper.com.*

About the Author

Dianne McAdam **is Director of Enterprise Information Assurance for the Clipper Group**. She brings over three decades of experience as a data center director, educator, technical programmer, systems engineer, and manager for industry-leading vendors. Dianne has held the position of senior analyst at Data Mobility Group and at Illuminata. Before that, she was a technical presentation specialist at EMC's Executive Briefing Center. At Hitachi Data Systems, she served as performance and capacity planning systems engineer and as a systems engineering manager. She also worked at StorageTek as a virtual tape and disk specialist; at Sun Microsystems, as an enterprise storage specialist; and at several large corporations as technical services directors. Dianne earned a Bachelor's and Master's degree in mathematics from Hofstra University in New York.

➤ *Reach Dianne McAdam via e-mail at dianne.mcadam@clipper.com or at 781-235-0085 Ext. 212. (Please dial "212" when you hear the automated attendant.)*

Regarding Trademarks and Service Marks

The Clipper Group Navigator, **The Clipper Group Explorer**, **The Clipper Group Observer**, **The Clipper Group** *Captain's Log*, **The Clipper Group Voyager**, and *"clipper.com"* are trademarks of The Clipper Group, Inc., and the clipper ship drawings, *"Navigating Information Technology Horizons"*, and *"teraproductivity"* are service marks of The Clipper Group, Inc. The Clipper Group, Inc., reserves all rights regarding its trademarks and service marks. All other trademarks, etc., belong to their respective owners.

Disclosure

Officers and/or employees of The Clipper Group may own as individuals, directly or indirectly, shares in one or more companies discussed in this bulletin. Company policy prohibits any officer or employee from holding more than one percent of the outstanding shares of any company covered by The Clipper Group. The Clipper Group, Inc., has no such equity holdings.

Regarding the Information in this Issue

The Clipper Group believes the information included in this report to be accurate. Data has been received from a variety of sources, which we believe to be reliable, including manufacturers, distributors, or users of the products discussed herein. The Clipper Group, Inc., cannot be held responsible for any consequential damages resulting from the application of information or opinions contained in this report.