

HP Updates the EVA Storage System Family

Date: May 2005

Author: Tony Asaro – Senior Analyst

Abstract: HP is ready to take on the world with its newest StorageWorks EVA midrange storage systems. The new HP EVA line up includes the 4000, 6000 and 8000 that offer greater performance, scalability and new capabilities.

HP Updates the EVA

The new midrange EVA family of storage systems are designed to go toe-to-toe with other leading midrange products from EMC (CLARiiON) and IBM (DS4000). The HP EVA has improved performance, scalability, increased cache memory and FC ports, and offers multipathing support for multiple O/S platforms including Windows MPIO. This is all in addition to the current strengths of the HP EVA, which includes ease of management and advanced copy services.

Table One: HP EVA Hardware Configurations

| <i>Storage System</i> | <i>Max Capacity</i> | <i>Cache Memory</i> | <i>FC Host Ports</i> |
|-----------------------|---------------------|---------------------|----------------------|
| EVA 4000 | 16.8 TB | 2 GB | 4 |
| EVA 6000 | 36.6 TB | 2 GB | 4 |
| EVA 8000 | 72 TB | 4 GB | 8 |

The following is what is new with the HP EVA family:

- Improved performance
- More capacity support
- Increased cache memory support
- Supports up to 8 FC ports with the EVA 8000
- Direct attached support for Windows servers
- EVA Command View support for Windows
- The addition of Command View EVA performance monitoring software at no additional charge
- Supports popular multipathing software including native Windows MPIO
- Continuous Access compatibility with the HP EVA 3000 and 5000 products

The HP EVA Value Proposition

The HP EVA uses virtualization technology internal to the array to manage all of its disk capacity as a single pool of storage. For example, the EVA 8000 supports up to 240 disks and data can be striped across all of them. The slowest part of any storage system is the disks since it is electro-mechanical. Striping data across a large number of drives leverages all of the actuators making data access a much more parallel process. This increases performance and essentially eliminates the need for tuning and determining hot spots. The EMC CLARiiON only allows customers to stripe data across up to 16 disk drives versus a maximum of 240 with the HP EVA.

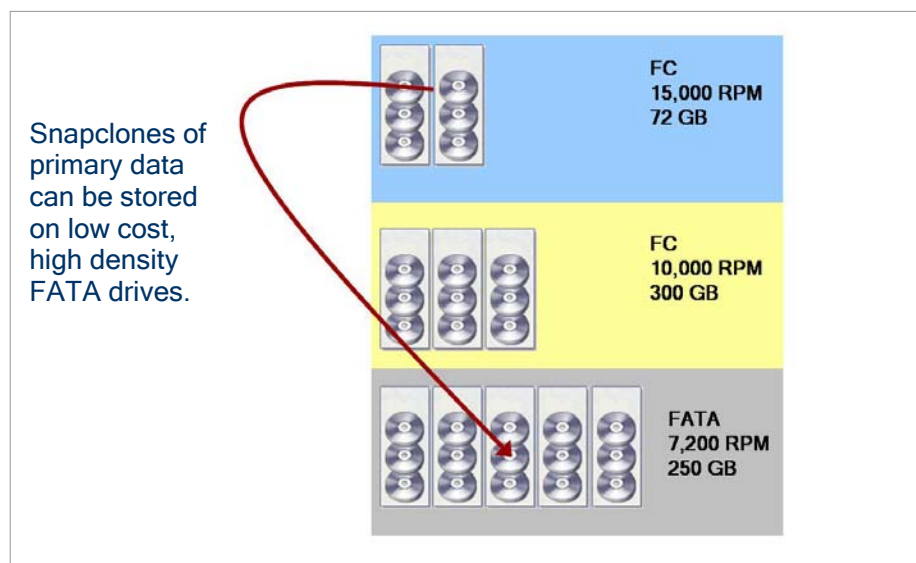
Managing disk capacity as a single pool of storage also simplifies the process of storage provisioning. Adding new disks to the array is easier since all of the capacity gets added to the pool. And like many other storage systems today the HP EVA has the ability to dynamically expand a volume as well.

The HP EVA supports both FC and FATA disk drives in a single array and side by side in the same drive enclosure allowing for tiered storage within a storage system. Customers can lower costs by creating different tiers of storage based on the performance and protection requirements of their application data. The use of higher density, lower cost

disk drives has changed the economics of network storage. Customers have embraced the use of different drive types within a storage array for this reason. The trade-off for using ATA, SATA or FATA drives may be performance. Again, since the disk drives are the slowest component within the data path this might become an issue. However, as discussed above, striping data across a large number of drives improves performance but having faster drives is important as well. The HP EVA FATA drives are 7,200 RPM versus the EMC CLARiiON that still supports parallel ATA drives running at 5,400 RPM. In real world applications disk performance can be major bottleneck especially if you only stripe data across a small set of drives. One of the main uses for ATA, SATA and FATA is for disk-to-disk (D2D) backup applications. This application requires high performance. The combination of faster FATA drives and the ability to stripe over many of them concurrently will drastically improve backup performance with the HP EVA.

The HP EVA can provide unique value with its Snapclone copies that leverages the tiered storage within the storage system. ESG has spoken to a number of customers that either avoid or minimize the number of snapshot or clone copies they make because of cost. Most storage systems require that snapshot or clone copies be made on the same disk types as the primary data. The HP EVA supports the ability to store Snapclone copies of primary data stored on FC drives to lower cost FATA drives within the same storage system. This enables customers to make less expensive copies and could motivate customers to increase the number of Snapclones for more granular recovery point objectives. In addition to this capability, the HP EVA also allows the RAID type to be changed on both Snapclones and snapshots to match the customer's protection requirements. This capability allows yet another level of cost control.

Figure One: Snapclone Copies Over Tiered Storage



The HP EVA has two controllers that work as an active-active cluster. These two physical controllers act as one logical system combining processors and cache memory. This is different than the EMC CLARiiON that has two controllers that work as an active-passive cluster. An active-passive cluster has one controller do all of the work while the second controller is essentially in stand-by mode in case the active controller fails. The main job of the passive controller is to keep a copy of all write data in real-time and to wait. The advantage of an active-active cluster is that it has two controllers working in concert as one, providing more resources to serve read and write requests.

Remote Mirroring

The HP EVA has supported both synchronous (up to 200 miles) and asynchronous (global) mirroring for several years. The HP Continuous Access software is supported on the EVA 4000, 6000 and 8000. Additionally, the software is interoperable between all of the new HP EVA systems and the EVA 3000 and 5000. Customers may want to think about using the existing EVA 3000 and/or 5000 systems for remote site mirroring/replication deployments as they install new EVA storage systems. This would be an excellent re-use of capital assets that have already been paid for. Another smart approach is to use FATA drives for the remote copies. For example, customers can perform remote mirroring from the HP EVA 8000 with mission-critical primary data stored on FC drives to a lower cost HP EVA 4000 with FATA drives. Or take the FC drives from an older HP 3000 and put them into an HP EVA 8000 (they use the

same drive trays) and then fill up the HP 3000 with FATA drives. These two examples illustrate just some of the ways customers can design strategies to streamline their remote mirroring expenditures using the HP EVA products.

To complement the HP EVA replication capabilities, a new unified remote and local replication management interface was introduced to support the full EVA family. Replication Solutions Manager dramatically simplifies many of the common replication tasks while providing unified control access across the SAN. By using wizards and automation, complex replication tasks have been narrowed down to just a few mouse clicks or can be easily scripted through the CLUI.

Storage Management

Managing the HP EVA is also an important consideration for customers. HP uses Command View EVA software (CV) and HP Storage Essentials. The CV EVA device management software was reduced in price and is available in a simple licensing format with the HP EVA. It allows customers to provision and manage up to 16 EVA storage systems from a single console. Additionally, HP CV EVA can now be installed in a variety of Windows server deployment options to suite user needs.

Storage Essentials is storage area management software that provides application management, storage resource management and storage network management services using a unified standards-based approach. Storage Essentials consists of an excellent set of tools for automating repetitive tasks and managing the complex relationships between applications, storage devices, and everything in between. By tracking configuration, performance and availability through each of these layers in a storage infrastructure, Storage Essentials enables users to manage capacity, performance, and path dependencies for such common applications as messaging, databases, file servers, and backup software including Oracle, Sybase, Microsoft Exchange, Windows file servers, and VERITAS NetBackup. Storage Essentials allows users to manage their environments from the application down to the individual hard drives.

The Bottom Line

The midrange storage market is growing rapidly with medium-sized companies as well as the largest global organizations implementing these systems. HP is one of the leaders in the midrange storage market but has had set backs in the last couple of years. HP is advancing its storage strategy on all fronts including storage systems, storage management, CAS, NAS, WAFS and VTL. HP has the products so the onus is on its ability to execute aggressively against formidable competitors. The HP EVA is a competitive product that has strengths and value that must be more effectively communicated to the market.

All trademark names are property of their respective companies. Information contained in this publication has been obtained by sources The Enterprise Strategy Group (ESG) considers to be reliable but is not warranted by ESG. This publication may contain opinions of ESG, which are subject to change from time to time. This publication is copyrighted by The Enterprise Strategy Group, Inc. and is intended only for use by Subscribers or by persons who have purchased it directly from ESG. Any reproduction or redistribution of this publication, in whole or in part, whether in hard-copy format, electronically, or otherwise to persons not authorized to receive it, without the express consent of the Enterprise Strategy Group, Inc., is in violation of U.S. copyright law and will be subject to an action for civil damages and, if applicable, criminal prosecution. Should you have any questions, please contact ESG Client Relations at (508) 482-0188.