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HP's All-in-One Storage Redefines RAS for the SME

Analyst: Dianne McAdam

Management Summary

Storage can be very complicated. Just ask any storage administrator that has the responsibility of installing the new storage system. It involves determining LUN or file system sizes, determining which RAID schemes should be used, defining LUNs and file systems, RAID groups and logical volumes, …and the list goes on.

Large enterprises have staff dedicated to installing and maintaining disk storage. On the other hand, small to medium enterprises usually have limited (or no) staff dedicated to these installation and maintenance tasks. Small to medium companies have some of the same requirements as larger enterprises. They need to install more and more storage to keep up with data growth. HP has designed a new storage system that does not require smaller enterprises to know about RAID groups, LUNs and file systems. In fact, these organizations don't need to understand a lot about storage systems at all. They only need to know the names of their servers and the automated software takes care of configuring the devices. That is good news for SMEs that require more disk storage but don't want to spend hours or days understanding it, installing it and configuring it.

This new disk storage family is called All-in-One Storage. You may have already heard the name All-in-One. In fact, you may already own an HP All-in-One device – check out your HP printer in your work or home office. The design intent of the All-in-One printer series is that they must be quick to install and easy to use while combining multiple functions. HP StorageWorks personnel learned some valuable insight from the profitable printer division. They had to make systems easy to install to appeal to the SME market and they have accomplished that goal. HP StorageWorks All-in-One storage systems allow storage to be setup using a handful of mouse clicks, reducing setup to a matter of minutes rather than hours or days.

Disk systems that are easy to install and use is one important criterion for the small to medium enterprise. But the systems must also be reliable and inexpensive. HP has hit the mark on all three objectives. In fact, HP has redefined RAS for the SME market. RAS (Reliability, Availability, and Serviceability) is an acronym used for many years to define the resiliency of high-end storage and servers. ***HP now provides RAS features for the small to mid-size marketplace – that is, Reliability, Affordability, and Simplicity***.

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HP StorageWorks All-in-One

HP *StorageWorks All-in-One Storage Systems* are network-attached storage products that provide both NAS and SAN functionality while attaching to an existing IP network. All-in-One comes in two models. The 1U, rack-mounted *AiO400* has one terabyte of storage. The larger *AiO600* is a tower- or rack- mounted system that can contain 1.5 or 3.0 TBs of SATA disk. It is also available with a total of 876 GB higher-performance Serial-Attached SCSI (SAS) drives. All models are built on top of *Windows Storage Server 2003 R2* and support *CIFS* and *NFS* file serving. Block serving array functionality is provided through the *Microsoft iSCSI Software Target*.

What makes All-in-One different from other competing devices is its integrated software. The All-in-One Storage Manager translates complex storage concepts into easy to understand application terms. The following comparisons will show how easy it is to configure storage the All-in-One way.

Configuring Storage the Old Way

Let's assume that the disk system currently storing Microsoft *Exchange* data is no longer reliable and you want to move the Exchange files to faster, more reliable storage. With networked storage that does not have application-aware software, here is what you would have to do.

1. Determine the location of the Exchange files.
2. Note the size of each file. Determine if these file sizes should be increased.
3. Determine the best RAID level of protection. Read Microsoft manuals to determine what Microsoft recommends for RAID levels.
4. Create the iSCSI LUNs on the new disk
5. Create the new files on the new disk.
6. Determine the best way to copy the files on the older disk to the newer disk.
7. Bring down Exchange and start to copy the files.
8. Verify that the files have been successfully completed.
9. Purchase and install snapshot software, if necessary. Set up the steps to take snapshots of the files during the day. Create the snapshots and point the backup application to the snapshots.
10. Start the backup, monitor it, and ensure that the backup completed successfully.
11. If any of these steps fail, determine the best way to restart the process.
12. Continuously monitor the disk storage system to ensure that there is enough disk storage allocated to support the Exchange environment.

Configuring Storage the All-in-One Way

Here's how to use the All-in-One storage system as the target system for Microsoft Exchange.

1. Bring up the All-in-One Storage manager screen and select the "*Host an Exchange Storage Group*" wizard. Type in the name of the Exchange server and Click *Next*. All-in-One will locate the Exchange server and inventory the storage groups and mailstores on the old disk system.
2. All-in-One determines the correct RAID levels of protection and files sizes based on Microsoft's best practices. These values can be overwritten, but these are Microsoft's recommended values for running Exchange on network storage.
3. Click *Next*. All-in-One automatically configures the LUNs and copies the files.
4. Click *Next*. Snapshot software is integrated within All-in-One. Respond if and when you want snapshots to be taken. Backup software is also built in. Specify when you want the backups to be started (All-in-One will also determine if a tape drive is attached to the disk system and will configure the tape drive to the backup application.

It only takes about 10 mouse clicks to discover Exchange files, configure the new

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storage, migrate the files, and set up a snapshot and backup environment. The All-in-One Storage Manager continuously monitors the file sizes and will send alerts when the files need to be expanded.

HP StorageWorks All-in-One is not just for Microsoft Exchange environments. The same easy to use management screens with built-in best practices recommendations are available for Microsoft SQL applications. Other applications, such as Oracle, can use general purpose set up wizards to configure the storage and establish backup policies for other iSCSI applications. Integrated file serving allows files to be easily shared in CIFS and NFS environments.

Redefining RAS

HP StorageWorks All-in-One redefines *RAS* – that is, Reliability, Affordability and Simplicity for small to medium sized enterprises.

Reliability

- All models support hardware RAID-protected storage and call-home features.
- The AiO model 600 has dual power supplies and fans.

Affordability

- The model AiO400 with one TB of storage includes all of the unified storage functionality as well as *HP Data Protector Express* backup software and snapshot support for about $5,000. That includes one year of next-day onsite support and a year of software support.
- The model AiO600 with 3 TBs of SATA disk storage including the backup and snapshot software is less than $9,700.

Simplicity

- HP has customers that will attest to how easy it is to install the All-in-One system.

When to Choose All-in-One

The AiO model 400 can support up to 100 Exchange mailboxes for a small business or a remote office. Larger organizations, those with up to 500 Exchange users, require the larger model 600. Companies that require higher performance should consider the SAS version of the model 600, which can support over 1,000 mailboxes.

Enterprises that need to support other applications, such as Microsoft SQL and Oracle will also find the All-in-One suitable. All-in-One also supports file sharing applications.

Enterprises that need to replicate data from one location to another can use Microsoft's *DFS-R* to replicate from one All-in-One to another.

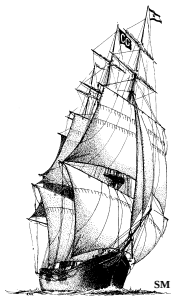
Enterprises that expect high growth rates can start with the All-in-One storage system and later upgrade to HP StorageWorks *Modular Storage Array (MSA)*. The disk drives used in the All-in-One can be placed into the MSA frame, providing a cost-effective upgrade path.

HP StorageWorks All-in-One is not for everyone. It is not designed for IT storage administrators that want to spend time configuring storage. It is designed for those organizations that want to manage storage from an application point of view.

Conclusion

Many small to-medium businesses are experiencing high data growth rates that require more and more storage. Yet, many of these organizations do not have the time, or expertise to install, configure and manage their storage.

Some disk storage vendors strip features and functions from their higher end products to reduce the cost of storage for the smaller enterprises. HP has chosen to build this new product from the ground up. They have used the knowledge gained from their success in the printer division to design a storage product that is almost as easy to install as a printer. It truly is All-in-One storage.



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- ***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.)***

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