

HP 3PAR StoreServ 8000 Series Lays Foundation for Flash Lift-off

Almost any hybrid or all-flash storage array will accelerate performance for the applications it hosts. Yet many organizations need a storage array that scales beyond just accelerating the performance of a few hosts. They want a solution that both solves their immediate performance challenges and serves as a launch pad to using flash more broadly in their environment.

Yet putting flash in legacy storage arrays is not the right approach to accomplish this objective. Enterprise-wide flash deployments require purpose-built hardware backed by Tier-1 data services. The HP 3PAR [StoreServ 8000 series](#) provides a fundamentally different hardware architecture and complements this architecture with mature software services. Together these features provide organizations the foundation they need to realize flash's performance benefits while positioning them to expand their use of flash going forward.

A Hardware Foundation for Flash Success

Organizations almost always want to immediately realize the performance benefits of flash and the HP 3PAR [StoreServ 8000 series](#) delivers on this expectation. While flash-based storage arrays use various hardware options for flash acceleration, the 8000 series complements the enterprise-class flash HP 3PAR StoreServ 20000 series while separating itself from competitive flash arrays in the following key ways:

- **Scalable, Mesh-Active architecture.** An Active-Active controller configuration and a scale-out architecture are considered the best of traditional and next-generation array architectures. The HP 3PAR StoreServ

8000 series brings these options together with its Mesh-Active architecture which provides high-speed, synchronized communication between the up-to-four controllers within the 8000 series.

- **No internal performance bottlenecks.** One of the secrets to the 8000's ability to successfully transition from managing HDDs to SSDs and still deliver on flash's performance benefits is its programmable ASIC. The HP 3PAR ASIC, now it's 5th generation, is programmed to manage flash and optimize its performance, enabling the 8000 series to achieve **over 1 million IOPs**.
- **Lower costs without compromise.** Organizations may use lower-cost commercial MLC SSDs (cMLC SSDs) in any 8000 series array. Then leveraging its Adaptive Sparing technology and Gen5 ASIC, it optimizes capacity utilization within cMLC SSDs to achieve high levels of performance, extends media lifespan which are backed by a 5-year warranty, and increases usable drive capacity by up to 20 percent.
- **Designed for enterprise consolidation.** The 8000 series offers both 16Gb FC and 10Gb Ethernet host-facing ports. These give organizations the flexibility to connect performance-intensive applications using Fibre Channel or cost-sensitive applications via either iSCSI or NAS using the 8000 series' File Persona feature. Using the 8000 Series, organizations can start with configurations as small as 3TB of usable flash capacity and scale to 7.3TB of usable flash capacity.

A Flash Launch Pad

As important as hardware is to experiencing success with flash on the 8000 series, HP made a strategic decision to ensure its converged flash and all-flash 8000 series models deliver the same mature set of data services that it has offered on its all-HDD HP 3PAR StoreServ systems. This frees organizations to move forward in their consolidation initiatives knowing that

they can meet enterprise resiliency, performance, and high availability expectations even as the 8000 series scales over time to meet future requirements.

For instance, as organizations consolidate applications and their data on the 8000 series, they will typically consume less storage capacity using the 8000 series' native thin provisioning and deduplication features. While storage savings vary, HP finds these features usually result in about 4:1 data reduction ratio which helps to drive down the effective price of flash on an 8000 series array to as low as \$1.50/GB.

Maybe more importantly, organizations will see minimal to no slowdown in application performance even as they implement these features, as they may be turned on even when running mixed production workloads. The 8000 series compacts data and accelerates application performance by again leveraging its Gen5 ASICs to do system-wide striping and optimize flash media for performance.

Having addressed these initial business concerns around cost and performance, the 8000 series also brings along the HP 3PAR StoreServ's existing data management services that enable organizations to effectively manage and protect mission-critical applications and data. Some of these options include:

- ***Accelerated data protection and recovery.*** Using HP's Recovery Manager Central ([RMC](#)), organizations may accelerate and centralize application data protection and recovery. RMC can schedule and manage snapshots on the 8000 series and then directly copy those snapshots to and from HP StoreOnce without the use of a third-party backup application.
- ***Continuous application availability.*** The HP 3PAR [Remote Copy](#) software either asynchronously or synchronously replicates data to another location. This provides recovery point objectives (RPOs) of minutes, seconds, or even non-disruptive application failover.

- **Delivering on service level agreements (SLAs).** The 8000 series' Quality of Service ([QoS](#)) feature ensures high priority applications get access to the resources they need over lower priority ones to include setting sub-millisecond response times for these applications. However QoS also ensures lower priority applications are serviced and not crowded out by higher priority applications.
- **Data mobility.** HP 3PAR StoreServ creates a federated storage pool to facilitate non-disruptive, bi-directional data movement between any of up to four (4) midrange or high end HP 3PAR arrays.

Onboarding Made Fast and Easy

Despite the benefits that flash technology offers and the various hardware and software features that the 8000 series provides to deliver on flash's promise, migrating data to the 8000 series is sometimes viewed as the biggest obstacle to its adoption. As organizations may already have a storage array in their environment, moving its data to the 8000 series can be both complicated and time-consuming. To deal with these concerns, HP provides a relatively fast and easy process for organizations to migrate data to the 8000 series.

In as few as five steps, existing hosts may discover the 8000 series and then access their existing data on their old array through the 8000 series without requiring the use of any external appliance. As hosts switch to using the 8000 series as their primary array, Online Import non-disruptively copies data from the old array to the 8000 series in the background. As it migrates the data, the 8000 series also reduces the storage footprint by as much as 75 percent using its thin-aware functionality which only copies blocks which contain data as opposed to copying all blocks in a particular volume.

Maybe most importantly, data migrations from EMC, HDS or HP EVA arrays (*and others to come*) to the 8000 series may occur

in real time Hosts read data from volumes on either the old array or the new 8000 series with hosts only writing to the 8000 series. Once all data is migrated, access to volumes on the old array is discontinued.

Achieve Flash Lift-off Using the HP 3PAR StoreServ 8000 Series

Organizations want to introduce flash into their environment but they want to do so in a manner that lays a foundation for their broader use of flash going forward without creating a new storage silo that they need to manage in the near term.

The HP 3PAR StoreServ 8000 series delivers on these competing requirements. Its robust hardware and mature data services work hand-in-hand to provide both the high levels of performance and Tier-1 resiliency that organizations need to reliably and confidently use flash now and then expand its use in the future. Further, they can achieve lift-off with flash as they can proceed without worrying about how they will either keep their mission-critical apps online or cost-effectively migrate, protect or manage their data once it is hosted on flash.