HP 3PAR® Utility Storage is designed to deliver an agile and efficient storage infrastructure that offers superior resilience, even during failure scenarios. Persistent Cache is an HP 3PAR Utility Storage feature that builds on the Mesh-Active architecture within the HP 3PAR Storage System. In the event of a storage controller or cache failure, Persistent Cache minimizes the performance and availability impact to applications and virtual machines typically seen with dual-controller and even monolithic arrays.

The challenge: maintaining high availability in a consolidated environment

In the traditional datacenter, prior to server virtualization, a dedicated hardware and software stack was installed to support a single application. When issues arose with that stack, only that one application was affected. In today's shared, virtualized datacenter, outages within core infrastructural elements such as storage can affect tens—or even hundreds, in some instances—of applications, virtual machines, and customers. This means that a critical component failure such as a storage controller on a traditional array can cause a material impact to the performance of every line of business within the company and in cloud datacenters can even extend to the external clients that rely on that cloud.

Dual-controller storage arrays are a popular choice for many companies for their attractive acquisition costs as compared to monolithic arrays. However, when a single controller fails, storage performance is not just cut in half. Instead, it drops an additional 20–30% as dual controller arrays go into “write-through” mode, suspending the use of write caching for data integrity reasons. Even with their high price premiums, legacy high-end monolithic storage arrays still suffer from a similar problem with nearly the same end result: when a component cache failure occurs, volumes experience significant performance degradation that is particularly problematic for mission-critical applications.

The benefits

- Minimize performance impact to applications or virtual machines resulting from planned or unplanned controller node or cache failures
- Averts outages that impact multiple lines of business within the company as well as external clients
- High-end resiliency feature now available for high-end and midrange utility storage arrays

In the agility-centric marketplace that today's virtual datacenters are faced with, both scenarios are unacceptable.

The solution: Persistent Cache

HP 3PAR Utility Storage with Persistent Cache minimizes performance impacts resulting from unplanned component failures, making it a “must-have” for cost-effectively maintaining service levels in today’s virtual datacenter.

Persistent Cache is a resiliency feature designed to gracefully handle component failures by eliminating the substantial performance penalties associated with “write-through” mode. Supported on all quad-node and larger HP 3PAR arrays, Persistent Cache leverages the array’s unique Mesh-Active design to preserve write-caching by rapidly re-mirroring cache to the other nodes in the cluster in the event of a controller node failure.
Persistent Cache is supported on all T-Class arrays as well as the HP 3PAR F400 Storage System, making HP 3PAR Utility Storage the first platform to bring this industry-leading service level protection capability to high-end as well as midrange arrays. In environments such as public cloud datacenters—where uptime is paramount and application performance is just as important—even during failure scenarios, HP 3PAR Utility Storage with Persistence Cache stands alone as offering the maximum service level protection.

For more information visit www.hp.com and www.hp.com/go/3PAR.