



# Break the boundaries of storage

## HPE 3PAR Peer Persistence Software

Achieve high availability in your multisite federated environment. Allow your hosts, virtual machines (VMs), and data to move freely across data centers without impacting your business applications. Implement a true cloud solution, where storage resources are shared across data centers, and are not constrained by their physical boundaries.

### **Automated failover for a highly-available solution**

HPE 3PAR Peer Persistence software enables HPE 3PAR StoreServ systems located at metropolitan distances to act as peers to each other, presenting a nearly continuous storage system to hosts and servers connected to them. This capability allows you to configure a high-availability solution between two sites or data centers where failover and failback remains completely transparent to the hosts and applications running on those hosts. Compared to the traditional failover models where upon failover, the hosts must be restarted, the Peer Persistence software allows hosts to remain online serving their business applications even when they switch from their original site to the disaster recovery site, resulting in a much improved recovery time.

The Peer Persistence software achieves this key enhancement by taking advantage of the Asymmetric Logical Unit Access capability that allows paths to a SCSI device to be marked as having different characteristics.

When extended to support a third data center, HPE 3PAR Peer Persistence provides extreme data protection where customers have not only non-disruptive data mobility in case of local storage failure, but also a complete disaster recovery plan by replicating the same data to a 3<sup>rd</sup> site. Peer Persistence configurations with 3 data centers combine the best in class high availability with efficient disaster recovery based on asynchronous periodic replication.

As seen in figure 1, each host is connected to each HPE 3PAR StoreServ on both sites through a redundant fabric. Additionally, each volume maintains a synchronous copy of itself at the other site. While the primary volume onsite 1 is exported in a read/write mode, its corresponding secondary volume onsite 2 is exported in a read-only mode.

For example, in the figure, Volume A (primary) and Volume A (secondary) are exported to hosts on both sites with a common WWN (LUN A.123). However, volume paths for a given volume are “active” only on the HPE 3PAR StoreServ where the “primary”

copy of the volume resides. In the figure, for Volume A (primary), the path is active on HPE 3PAR StoreServ A onsite 1 whereas for Volume B (primary), path is active on HPE 3PAR StoreServ B onsite 2.

HPE 3PAR Quorum Witness monitors status of both of the HPE 3PAR StoreServ systems. In the event of a disaster that may bring either one of the storage systems or sites down, the Quorum Witness automatically initiates a failover to the surviving HPE 3PAR StoreServ system. During this failover operation, secondary volumes on the remaining storage system are made active. The host paths to those volumes are also made active, thereby ensuring that hosts can continue to access their volumes without any disruption or outage.

## Extreme disaster recovery

When extended to support a third data center, HPE 3PAR Peer Persistence provides extreme data protection where customer have not only non-disruptive data mobility in case of local storage failure, but also a complete disaster recovery plan by replicating the same data to a 3rd data site. Peer Persistence configurations with three data centers provide the best in class availability with efficient disaster recovery based on asynchronous periodic replication.

## Managed switchover for inter-site load balancing

HPE 3PAR Peer Persistence software allows you to use both their primary and secondary sites in an “active-active mode” thereby putting your secondary site to active use rather than just using it as an expensive insurance policy against disaster. Move your VMs from one site to another based on your business and performance needs without impacting the applications running on those VMs. In figure 1, a few VMs are being serviced by a HPE 3PAR StoreServ system onsite 1 while other VMs are being serviced by another HPE 3PAR StoreServ system at site 2 located within metropolitan distance from site 1. vMotion allows customers to move VMs across sites within a VMware vSphere environment.

However, under standard storage infrastructure, as the VMs move from site 1 to site 2, it forces presentation of new virtual volumes to those VMs, resulting into a forced reset of the VMs before continuing their operations. The Peer Persistence software addresses this limitation by presenting a VM with the “same” virtual volume even when it moves across data centers. Once VMs move from one site to another, the paths

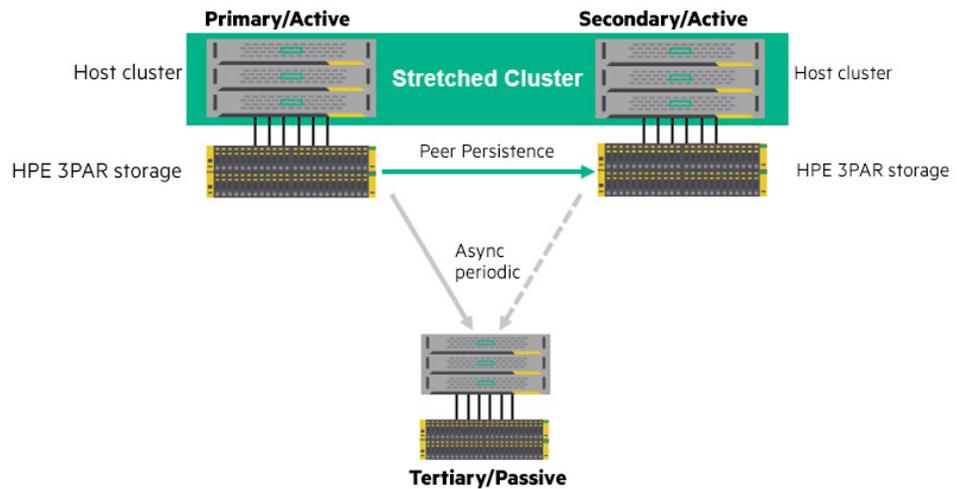


Figure 1. Transparent failover with HPE 3PAR Peer Persistence software

marked passive for their secondary volumes are made active and the VMs continue to access the same volumes (with the same WWN) as they were accessing prior to the switchover. In other words, movement of VMs across data centers becomes completely transparent to the applications those VMs are running.

## Take advantage

- HPE 3PAR StoreServ delivers highly available storage infrastructure solutions that are easy to configure and use
- HPE 3PAR StoreServ provides strong integration with VMware, enabling vMotion across data centers transparent to the hosts
- HPE 3PAR StoreServ support for Microsoft Windows includes an ideal setup with 2008 R2, 2012 R2 and Hyper-V configuration sets
- HPE 3PAR StoreServ support for Oracle RAC enables metro distance clusters across data centers

- HPE 3PAR StoreServ support for Red Hat Enterprise Linux enables metro distance clusters across data centers
- HPE 3PAR StoreServ reduces CAPEX and OPEX with common software stack and common manageability across enterprise and midrange storage segments

With HPE 3PAR Peer Motion and HPE 3PAR Peer Persistence, you can take advantage of the leading storage federation technologies and maximize storage efficiency while maintaining high availability across data centers. As is the case with any HPE 3PAR software capability, these federation technologies are available across all HPE 3PAR StoreServ systems. It delivers the efficiency and agility required by the most demanding virtual, cloud, and IT-as-a-Service environments.

Learn more at [hpe.com/storage/3PAR](http://hpe.com/storage/3PAR)



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