Evaluation Report: All-Flash HP 3PAR StoreServ 7450 Storage System and Generation 5 (Gen 5) 16 Gb/s Fibre Channel
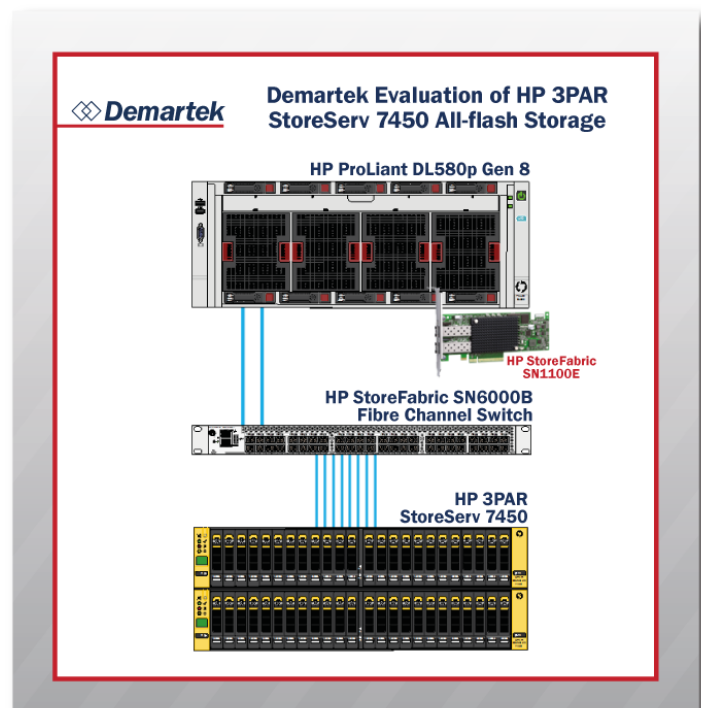
Evaluation report prepared under contract with HP

Executive Summary

Solid State storage is becoming increasingly common in the computing industry with hybrid and all-flash array deployments taking the place of traditional HDD storage for high performance workloads. The marriage of Gen 5 16 Gb/s Fibre Channel infrastructure (switches, host HBAs) with all-flash arrays—also equipped with Gen 5 16 Gb/s FC targets—is yet another enhancement for high performance flash storage.

HP 3PAR StoreServ 7450 All-Flash Storage system delivers high performance at low latency to meet today's datacenter requirements. To augment this HP recently made Gen 5 16 Gb/s FC targets available on new 3PAR StoreServ storage systems and as an upgrade to existing systems.

HP commissioned Demartek to evaluate the performance of the All-Flash HP 3PAR StoreServ 7450 Storage system in an end-to-end Gen 5 16 Gb/s FC SAN and compare it to

an end-to-end 8 Gb/s FC environment. Demartek ran an industry-standard, online transaction processing (OLTP) workload in an 8 Gb/s end-to-end FC configuration and then simply replaced the 8 Gb/s FC infrastructure with Gen 5 16 Gb/s FC, measuring the resulting difference in performance.

Demartek Evaluation of HP 3PAR StoreServ 7450 All-flash Storage

HP ProLiant DL580p Gen 8

HP StoreFabric SN1100E

HP StoreFabric SN6000B Fibre Channel Switch
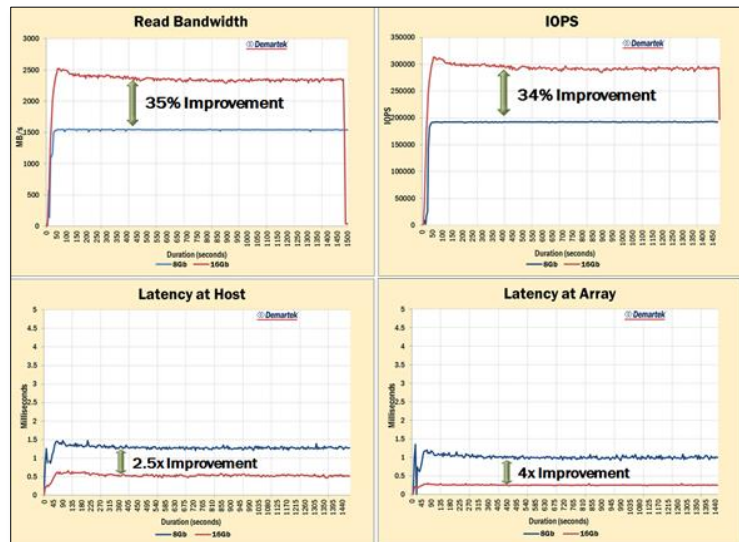
HP 3PAR StoreServ 7450

Key Findings

We took a reasonably well-running OLTP database workload in an 8 Gb/s Fibre Channel and wanted to determine if there was any benefit to simply upgrading the 8 Gb/s FC infrastructure to 16 Gb/s FC infrastructure, without making any other changes.
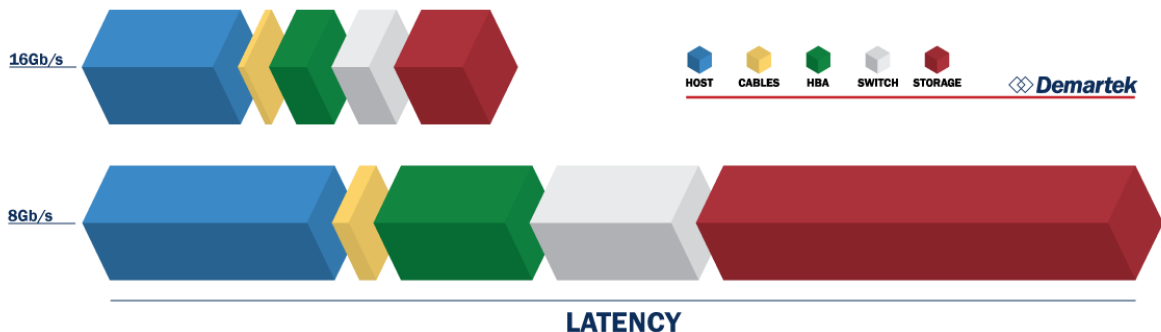

We upgraded to 16 Gb/s FC and observed:

◆ **IOPS** – 35% improvement
◆ **Read Bandwidth** – 35% improvement
◆ **Latency** – 2.5x improvement as observed at the host

A Brief Commentary on Latency

Latency in a SAN comes from several sources, as depicted in the diagram below. An upgraded SAN infrastructure can reduce latency dramatically.

More Information

To get additional information, please visit the following:

◆ **HP website:** Around the Storage Block Blog
◆ **The complete report:**
http://www.demartek.com/Demartek_HP_3PAR_StoreServ_7450_16GFC_2015-03.html

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