

Evaluation Report: HP StoreFabric SN1000E 16Gb Fibre Channel HBA

Evaluation report prepared under contract with HP



The computing industry is experiencing an increasing demand for storage performance and bandwidth due to increases in virtual machine density, new technologies such as flash-based storage, increasing demands for application performance and continual data growth.

Based on the latest Gen 5 (16Gb) Fibre Channel technology, the HP StoreFabric SN1000E 16Gb Fibre Channel (16GFC) host bus adapter (HBA) addresses these increasing demands on storage performance by providing double the bandwidth of previous generation Fibre Channel HBAs. We have found that flash-based storage technology, such as the HP 3PAR StorServ 7450, can easily drive the need for the bandwidth and performance that Gen 5 Fibre Channel provides.

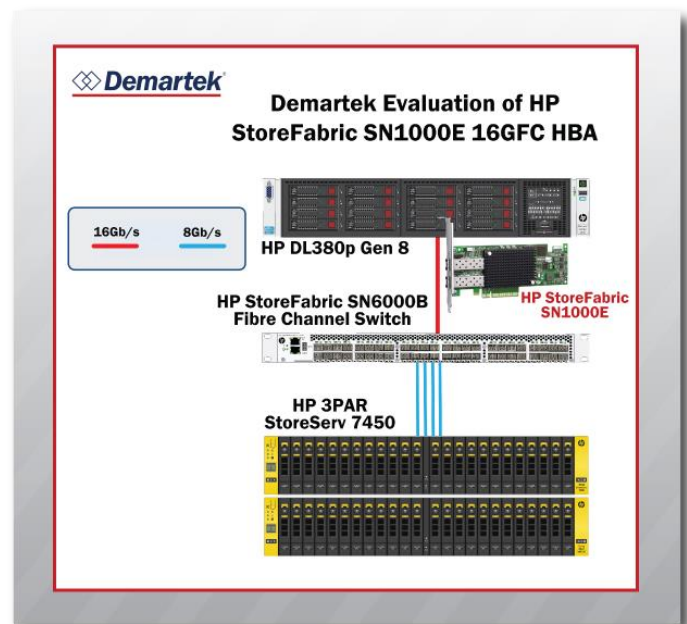
The Gen 5 (16Gb) FC HBAs provide the additional bandwidth to support more virtual machines per server, and servers can be upgraded for higher speed SANs as needed.

Demartek deployed an HP ProLiant DL380 Gen8 Server with the HP StoreFabric SN1000E 16GFC HBA and connected this server to an HP StoreServ Storage 7450 all-flash array with four 8GFC host ports. We ran a read-intensive data warehouse workload and compared the increased bandwidth and performance that Gen 5 Fibre Channel provides and with a previous-generation HP StoreFabric 82E 8Gb Fibre Channel HBA.

Key Findings

HP StoreFabric SN1000E 16GFC HBA results:

- ◆ The real database workload was completed up to 26% faster than the 8Gb FC HBA, reducing the time to complete the 6-user workload by approximately one hour.
- ◆ Provided 2x peak throughput compared to the 8Gb FC HBA.
- ◆ Reduced latency by more than 50%.
- ◆ HP StoreFabric SN1000E 16GFC HBAs provide a simple, plug-and-play performance upgrade for the replacement of older 4Gb and 8Gb HBAs.



HP StoreFabric SN1000E Series

The HP StoreFabric SN1000E series of Fibre Channel adapters provide several features designed for supporting growing enterprise I/O workloads:

- ◆ Twice the performance of 8Gb Fibre Channel adapters
- ◆ Backward compatibility with 4 Gb and 8Gb Fibre Channel infrastructure
- ◆ Support for Microsoft Windows Server 2008 and 2012 (with and without Hyper-V), VMware ESX and ESXi Server, Red Hat Linux and SUSE Linux Enterprise Server (SLES)
- ◆ In-box drivers for Windows Server 2012 (and R2) and VMware vSphere 5.1 and 5.5
 - ◆ NPIV support standard
 - ◆ An HP-branded solution which has undergone extensive HP interoperability testing for connecting HP ProLiant servers in storage and networking environments

Bandwidth Results

This data warehouse workload was able to achieve full line rate bandwidth with the 8Gb adapter for some of the queries. In some cases, near line-rate was achieved with the HP StoreFabric SN1000E 16Gb FC HBA adapter.

When running this test with the HP StoreFabric SN1000E 16Gb FC

HBA, the time to complete the run was 26% faster than the time required by the 8Gb adapter. This reduced the time to complete the workload by approximately one hour.

For many database workloads, time to complete the work is critical because this improvement compounds with more users and more transactions. In large environment, these time reductions can lead to many hours saved.

Gen 5 Fibre Channel and SSD Technology

In our lab tests, we have found that 16Gb Fibre Channel and SSD technology are made for each other.

More Information

To get additional information, please visit the following:

- HP Storage Blog podcast: [To use 16Gbps Fibre Channel or not - that is the question](#)
- The complete report: www.demartek.com/Demartek_HP_StoreFabric_SN1000E_16GFC_HBA_Evaluation_2013-08.html

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