

Brocade® SAN Automation product

recognized as category innovator

Broadcom's 7-nm PAM-4 opts

Broadcom G fast expand, uit

™ fin n +

accelerates 400GbE deployments

hyperscale data center and cloud net-

broadband on copper-fiber in trastructure

Emulex Gen 7 Fibre Channel HBAs deliver

to 55 percent better Oracle Database

rmance for all-flash arrays and

Data centers are undergoing a rapid transformation due to the availability of all-flash arrays (AFAs), Gen 6 Fibre Channel and the Intel® Xeon® Scalable Platform which are helping drive datacenter modernization by RECENT POSTS offering significant architectural and performance advances. According to Intel, Notes Xeon Scalable Platform will help customers and partners find new ways to transform data centers to meet the requirements

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Advances in Intel Xeon scalable architecture This highly scalable design delivers a solution for almost every need. At the high end of the family, these new processors offer 28 cores-per-socket and support up to eight sockets with up to three Intel UPI (UltraPath Interconnect) uplinks. They also support up to 1.5 TB of 2,666MHz DDR4 memory. The number of PCI Express lones per CPU has increased to 48 lanes of PCIe 3.0 per CPU.

of new cloud, networking and artificial intelligence applications.

The Xeon Scalable Platform was designed specifically for data center applications with a new mesh-based architecture that reduces latency at high core counts. Mesh architecture offers improved connectivity between processor cores compared with the ring architecture that has been a feature of intel's data center.

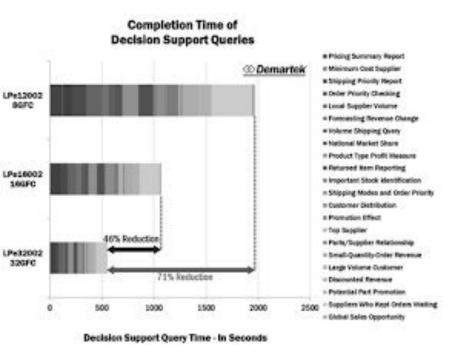
In addition, the Xeon Scalable Platform significantly increases memory bandwicth by almost 50 percent by incorporating an additional two memory channels, moving up to a hex-channel architecture versus the previous quad-channel platform. With a total of six memory channels available to the processor and an

With the significant advances in compute power delivered by the Xeon Scalable Platform, the spotlight is now on storage systems and the network to deliver the necessary performance to match. On the storage side, new AFAs are delivering the performance required to solve storage bottlenecks with exponentially better IOPS and latency compared to hard disk drives. AFAs are so fast that even lower-end AFAs have the capacity to match the power of Xeon Scalable platform based servers, which means traditional, enormous enterprise arrays are no longer required to achieve these performance levels. The focus is now on the network to deliver.

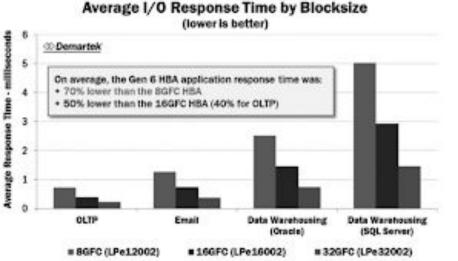
Why a Gen 6 Fibre Channel Network is required for Xeon Scalable Platform-based servers The majority of AFAs are deployed with fibre channel because of its performance, extreme reliability and highly-scalable architecture. The newest, sixth generation of Fibre Channel was designed to meet the demands of high-speed data center architectures such the Xeon Scalable Plotform, NVMe over Fabrics, growing deployments of AFAs and hyper-scale virtualization.

Testing has shown that Emulex® Gen 6 HBAs and Brocade® Gen 6 switches provide the performance needed to alloviate network bottlenecks and dramatically improve data warehousing application performance versus earlier FC generations. New features boost reliability and deliver a suita of diagnostic, troubleshooting. and deployment features.

Demartick tested Emulex Gen 6 HBAs and Brocade's Gen 6 G620 switch and found that they reduced Microsoft SQL Server 2014 data warehouse workload query time by almost half compared to 16GFC, and



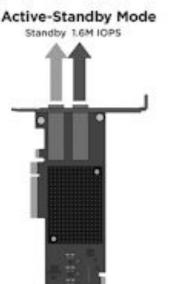
The Average I/O Response Time was reduced by 50 percent compared to 16GFC and was 70 percent lower than BGFC, as indicated in the graph below.



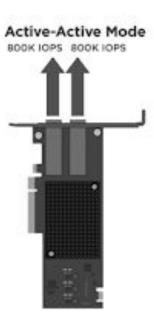
Emulex architectural advantages Emulex Gen 6 HBAs deliver 2x greater bendwidth than the previous generation - 12,800MBps (2 ports, 32G, full duples) – as well as less than half the latency and over 1.6 million IOPS on a single port. Improvements to Emulex Gen 6 Fibre Channel adapter technology include operating at faster clock rates and an increased number of hardware officeds that reduce the number of firmware "touch points" required for Flore Channel

connection initialization functions. One of the design goals of the new Emulex Gen 6 products was to lower latency in order to complement the new Xeon Scalable Platform and growing all-fash storage array.

Emuleo's unique Dynamic Multi-Core Architecture provides performance where it's needed. The architecture delivers tremendous IOPS performance - 1.6 million IOPS - to a single-port, which is 2.5x more IOPS than other Gen 6 HSA designs can deliver. The advantages of this design are critical when using dual-port HBAs in an active-standby configuration. In fact, an estimated 60 percent of HBAs sold are dual-port and



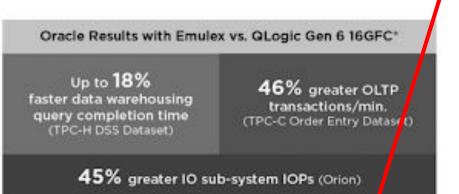
configured for active-standby fail-over mode.



4k lock sizes

Emulex database performance advantages versus QLogic Testing by Emules Labs with RedHat Enterprise Linux 7.4 and Cracle Database 12c on Xeon Scalable Platform servers has shown significant performance advantages when using Emulex HBAs. Compared to the equivalent QLogic Gen 6 HBAs, Emulex Gen 6 HBAs deliver up to 46 percent greater OLTP transactions per minute, using a TPC-C-like\* order entry dataset.

Data warehousing query times were up to 18 percent faster with Emulex using a TPC-H-like<sup>2</sup> DSS dataset a decision support benchmark. Emulex also delivered up to 45 percent higher Orion IO Subsystem IOPS. Oracle Orion is a tool to help predict performance of I/O loads on Oracle databases. Orion is specifically designed for simulating and predicting I/O bottlenecks against Oracle databases.



To maximize database performance, customers are making large investments in new Intel Xeon Scalable Platform servers, AFAs, as well as licensing costs for Oracle Database, Microsoft SQL S river and VMware. It only makes sense to upgrade from older Network infrastructure such as 8GFC to Ger 6 Fibre Channel to resp all the performance gains and get maximum ROI on new infrastructure purchase

1- TPC-C is an on-line transaction processing (OLTP) benchmark. TPC-C is more a implex than previous OLTP benchmarks such as TPC-A because of its multiple transaction types, more complex database and complexity either executed on-line or queued for deferred execution. The database is comprised of nine types of tables with a wide range of record and population sizes. TPC-C is measured in transactions per minute (tpmC). While the benchmark portrays the activity of a wholesale supplier, TPC-C is not limited to tr activity of any particular business segment, but, rather represents any industy that must manage, sell, or distribute a product or service.

2- TPC-H is a decision support benchmark. It consists of a suite of busings oriented ad-hoc queries and concurrent data modifications. The queries and the data populating the fatabase have broad industrial-side relevance.

make calls to the APIs...

measurement



Word on the Street: Media roundup for Brocade Gen6 bee Channel switch, port blade, and automation software From Dave Raffo at SearchStorage: "The REST AP a work with Brocade's storage partner management software. The PyFOS scripts

Broadcom's AFBR-S50 takes optical distance and motion measurement to a new Optical distance measurement has a variety of uses in industrial

applications. For years, time-of-flight (To ) sensors have been used in



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Industrial Ethernet: Connecting the Industry
4.0 Ecosystem
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imaginable. These... imaginable. These....

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