Broadcom, NetApp, and VMware Among the First to Demonstrate End-to-end NVMe over Fibre Channel with vSphere

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Streamlined solution for enterprise on-premises SAN customers; leverages VMware's standard management tools & current SAN infrastructure

SAN JOSE, Calif., Aug. 27, 2018 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ:AVGO), NetApp, and VMware are demonstrating an NVMe over Fibre Channel (NVMe/FC) solution delivering the next level of storage performance required by real-time applications for artificial intelligence, machine learning, and real-time analytics. The Broadcom, NetApp, and VMware demonstration in NetApp Booth 1036 at VMworld shows:

- NVMe over Fibre Channel running on VMware vSphere
- Building an NVMe namespace on the NetApp Array for a Windows Virtual Machine, a SUSE Virtual Machine, and a Redhat Virtual Machine
- Building a Virtual Machine Disk (VMDK)
- Installing VMs on a NVMe/FC Name Space from an ISO on a SCSI FCP LUN, showing concurrent NVMe/FC and SCSI FCP on the same infrastructure

The demo consists of Emulex® LPe32002 Gen 6 HBAs, NetApp AFF A300 all-flash storage array with pre-release ONTAP, and Brocade® Gen 6 switch with a pre-release version of vSphere code[1].

Key Advantages of NVMe over Fibre Channel include:

- **Highest performance:** NVMe over Fibre Channel delivers 50% more IOPs and 30% lower latency over a like SCSI solution on the AFF A700 NetApp array, as measured and validated by Demartek. *See the Demartek report for more information.*
- **Seamlessly extends customer's existing SAN infrastructure for Real-Time Applications** : with concurrent SCSI and NVMe over Fibre Channel support.
- **Purpose-built for storage**: NVMe over Fibre Channel is lossless and can handle the scalability requirements of next-generation applications including Artificial Intelligence (AI), Machine Learning (ML), Deep Learning (DL), Real-time Analytics and existing mission-critical applications.
- **Leverages the most secure Fabric platform:** NVMe over Fibre Channel is the proven network for mission-critical data.

"NVMe over Fibre Channel has emerged as the preeminent NVMe-oF protocol. It delivers proven, low-latency performance running over bullet-proof Fibre Channel networks to support existing applications and emerging workloads such as artificial intelligence, machine learning, deep learning and data analytics. VMware plays a critical role by enabling customers to take advantage of this next level of performance."

- Jeff Hoogenboom, general manager, Emulex Connectivity Division at Broadcom.

"Today's enterprise is under enormous pressure to unlock the full value of their data quickly. NVMe drives alone won't deliver on the promise of the next performance revolution. To realize the true value of NVMe technology, you need end-to-end NVMe connecting an all-Flash array with NVMe SSDs through NVMe over Fabric connectivity all the way to the server. Our work with Broadcom offers a modern end-to-end NVMe enterprise platform that allows users to run 50 percent more workloads or potentially cut their application-response time in half."

- Jeff Baxter, chief evangelist, ONTAP, NetApp.

"VMware software innovation makes the latest storage technology quickly accessible to today's storage customer. By working with Broadcom and NetApp, VMware is helping unleash the performance of NVMe technology."

- Lee Caswell, vice president, Product, Storage and Availability Business Unit, VMware.

"As enterprise applications move onto the VMware vSphere platform, they require a modern infrastructure to support the performance, reliability and scale requirements for highly virtualized environments. NVMe storage from NetApp and Fibre Channel from Broadcom drive unmatched storage performance on a network proven in the world's most demanding virtualized data centers. This demonstration showcases NVMe over Fibre Channel as a technology available today that every customer should consider as they modernize their data centers."

- Jack Rondoni, senior vice president and general manager, Brocade Storage Networking division at Broadcom.

"NVMe over Fibre Channel provides a simple, clean path to get the benefits of NVMe over Fabrics™ for the many enterprises that already use Fibre Channel. In our tests, running on the same hardware, we observed significantly higher IOPS and lower latency with NVMe/FC as compared to traditional SCSI FCP. Our report has seen very high interest since it was published in May 2018."

- Dennis Martin, president, Demartek.

About Broadcom
Broadcom Inc. (NASDAQ:AVGO) is a leading designer, developer and global supplier of a broad range of digital and analog semiconductor

connectivity solutions. Broadcom Inc.’s extensive product portfolio serves four primary end markets: wired infrastructure, wireless communications, enterprise storage and industrial & other. Applications for our products in these end markets include: data center networking, home connectivity, set-top box, broadband access, telecommunications equipment, smartphones and base stations, data center servers and storage, factory automation, power generation and alternative energy systems, and electronic displays. For more information, go to www.broadcom.com.

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[1] VMware does not promise any such functionality in its future release of vSphere.

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