Broadcom, NetApp & SUSE Announce Production Availability of the Industry's First End-to-End NVMe over Fibre Channel Solution Enabling Groundbreaking Application Performance

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Accelerates today's business-critical workloads and enables next-gen applications to run at scale on existing SAN infrastructure

SAN JOSE, Calif., May 15, 2018 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ:AVGO), today announced production availability of the industry's first end-to-end NVMe over Fibre Channel storage solution with NetApp and SUSE. NVMe over Fibre Channel extends the natively parallel NVMe protocol to run on existing SAN infrastructure fabric while providing massive gains in application productivity and performance so customers can power new projects and get more done, faster.

This is a significant milestone for the NVMe over Fabrics protocol, making Fibre Channel the first enterprise transport to be in production with a complete solution consisting of Emulex® Gen 6 HBAs, Brocade® Gen 6 switches, SUSE Linux Enterprise Server 12 SP3, and NetApp's AFF A800 , A700, A700s and A300 all-flash arrays running ONTAP 9.4. All of these components are in production and are available now.

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** : 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), and Deep Learning (DL).
- **Leverages the most secure platform:** NVMe over Fibre Channel remains the most secure network for mission-critical data.

This announcement also includes a number of notable NVMe over Fibre Channel achievements including:

- Broadcom and NetApp are the first with a commercially available NVMe over Fibre Channel Storage Performance Development Kit (SPDK).
- Broadcom demonstrated a leadership role within the open source community by contributing the NVMe over Fabrics Fibre Channel transport implementation to the Linux kernel. Broadcom continues to serve as the Linux NVMe over Fabrics Fibre Channel transport subsystem maintainer.
- Broadcom provided the industry a pre-standard implementation of NVMe Fabrics and the FC-NVME protocol to facilitate and validate the FC-NVME standard.

"Delivering the production availability of an end-to-end NVMe over Fibre Channel solution required a deep technical engagement between Broadcom's Emulex team, NetApp, SUSE, and Broadcom's Brocade team. In working together, we have delivered a solution that extends the low latency and natively parallel NVMe protocol to the Fibre Channel fabric, enabling datacenter customers a path to seamlessly modernize their storage network with blazing fast performance at scale."

- Jeff Hoogenboom, vice president and general manager, Emulex Connectivity division at Broadcom.

"Delivering the industry's first end-to-end NVMe over Fibre Channel solution is a major technology milestone. The combination of NetApp flash with Gen 6 Fibre Channel from Brocade and Emulex sets a new standard for enterprise storage that will drive massive gains in application productivity and performance."

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

"NVMe over Fibre Channel is an excellent, and perhaps obvious, technology to adopt, especially for those who already have Fibre Channel infrastructure. We saw significant performance improvements when using the new NVMe over Fibre Channel protocol instead of traditional SCSI FCP with Gen 6 HBAs and switches from Broadcom, and NetApp all-flash arrays including up to 58% improvement in IOPS and up to 34% lower latency."

-Dennis Martin, Demartek President

"Broadcom and NetApp have worked together to provide an end-to-end NVMe powered solution that gives customers massive performance improvements, accelerating our customers' critical applications. NetApp's new A800 platform provides NVMe-attached solid state paired with the new ONTAP 9.4 release with NVMe over Fibre Channel support for host connectivity. When paired with Broadcom's Brocade Gen6 SAN switches and Emulex Gen 6 host bus adapters, the A800 delivers the end-to-end NVMe performance that customers are asking for to support new workloads including Big Data Analytics, IoT, Artificial Intelligence, and Deep Learning."

- Octavian Tanase, Senior Vice President for ONTAP at NetApp

"Working with the Linux community, Emulex has been a leader in NVMe over Fabrics and NVMe over Fibre Channel, contributing the FC-NVMe

transport and collaborating with SUSE and NetApp to deliver a truly enterprise-class storage solution. SUSE looks forward to delivering production support for NVMe over Fibre Channel to all of the workloads that we support."

- Vojtech Pavlik, director of SUSE Labs

Resources:

NVMe over Fibre Channel for Dummies

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.

PRESS CONTACT:

David Szabados
Corporate Communications
david.szabados@broadcom.com
Telephone:1 408 433 7848

Broadcom Inc.