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CHELSIO DEMONSTRATES 100 GIGABIT NVMe OVER FABRICS PERFORMANCE

Showcases Extreme Storage Performance and Reach Using 100GbE iWARP RDMA

SUNNYVALE, CA – September 28, 2016 – Chelsio Communications, Inc., a leading provider of high performance (10Gb/25Gb/40Gb/50Gb/100Gb) Ethernet Unified Wire Adapters and ASICs for storage networking, virtualized enterprise datacenters, cloud service installations, and cluster computing environments, today announced the results of a demonstration of NVMe Express (NVMe) over Fabrics using the latest generation of Chelsio T6 100GbE iWARP RDMA silicon. The demonstration is based on software conforming to the specification of NVMe over Fabrics as defined by the NVM Express, Inc.

NVMe provides a standards-based approach for PCI Express (PCIe) SSD access that significantly improves performance by reducing latency and streamlining the command set, while providing support for security and end-to-end data protection. NVMe over Fabrics defines an efficient mechanism to utilize these devices in large scale storage deployments and provides investment protection by allowing the latest in innovations and advances in low latency SSD flash to be used over proven Ethernet iWARP (RDMA/TCP) networking. This enables the NVMe storage devices to be shared, pooled and managed more effectively. The Chelsio demonstration is aimed at providing a foundation for lower latency and increased performance, while providing improved iWARP integration for flash-based storage.

With its ultra-performance T6 100GbE iWARP solution, which can reliably operate with Ethernet PAUSE frames disabled, and which only adds approximately 12 microseconds of remote NVMe access latency relative to local NVMe access, Chelsio demonstrates that



accessing flash remotely does not need to come at the expense of performance, scalability or error recovery. Chelsio T6 100GbE Unified Wire offering enables a seamless migration path from 10/40GbE to 400GbE in the future, while offering the flexibility to fully leverage existing software investments. In addition, 100Gb iSCSI capability of the T6 silicon, allows an instant path to revenues for customers into an existing market. Customer will not need to choose between iSCSI and NVMe Fabrics when it comes to the choice of the adapter or switch.

Chelsio's iWARP technology inherits the resilience and congestion management capabilities of TCP/IP and as such can turn any Ethernet topology into a resilient fabric. Unlike competing technologies, it does not require a lossless fabric or special switch features to operate. Therefore, end users can decouple the storage and switch upgrade cycles, and benefit from incremental installs. Storage vendors in turn can deploy into any pre-existing Ethernet infrastructure.

Using 100GbE iWARP, storage system OEMs and device vendors can easily add the latest generation of Ethernet fabric connectivity to any existing NVMe device. NVMe over Fabrics enables end-users to connect remote subsystems with flash appliances, leveraging 100GbE RDMA/TCP technology to achieve extreme application response times and highest scalability across virtual datacenters. The complete T6 100GbE iWARP NVMe over Fabrics benchmark paper, detailing the hardware/software configuration used and results achieved, is available [here](#). A video of the demonstration is available [here](#).

"The new T6 100GbE controller enables the development of next generation flash-optimized storage enabling applications to achieve the highest system performance and utilization, while maximizing return-on-investment," said Kianoosh Naghshineh, CEO at Chelsio Communications. "NVMe over Fabrics requires sharing of flash storage across multiple applications using the most efficient, highest-performance networking available. We view T6 iWARP-enabled storage solutions to be a critical tool in meeting these business goals."



“Maximizing application performance and efficiency of server CPUs are critical priorities for datacenter environments,” said Harvey Newman, Professor of Physics, Caltech. “The Chelsio NVMe over Fabrics 100GbE iWARP demonstration provides clear validation of how high-performance NVMe solid state drives can help datacenters get the most out of their infrastructure assets, maximize performance and improve cost-of-ownership at the same time.”

About Chelsio Communications

Chelsio is a recognized leader in high performance (10Gb/25Gb/40Gb/50Gb/100Gb) Ethernet adapters for networking and storage within virtualized enterprise datacenters, public and private hyperscale clouds, and cluster computing environments. With a clear emphasis on performance and delivering the only robust offload solution, as opposed to simple speeds and feeds, Chelsio has set itself apart from the competition. The Chelsio Unified Wire fully offloads all protocol traffic, providing no-compromise performance with high packet processing capacity, sub-microsecond hardware latency and high bandwidth. Visit the company at www.chelsio.com, and follow the company on [Twitter](#) and [Facebook](#).

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