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CHELSIO DEMONSTRATES FIVE MILLION IOPS ISCSI PERFORMANCE

Chelsio T5 40G Adapters Set a New Bar for Industry-Standard Ethernet Storage Networking

SUNNYVALE, CA – August 9, 2016 – Chelsio Communications, Inc., a leading provider of Ethernet adapters for storage networking, virtualized enterprise datacenters, cloud service installations, and cluster computing environments, today announced the extreme Ethernet storage performance capabilities of its 40Gb Ethernet adapters. The demonstration shows Chelsio T5 cards enabling five million IOPS (input/output instructions per second) iSCSI performance for a cost-effective enterprise-class storage target solution built with volume, off-the-shelf hardware and software components.

Showcasing the iSCSI hardware offload capabilities of the Chelsio T5 Unified Wire adapters, the demonstration shows how all-flash and hybrid storage array OEMs can easily enable such arrays with industry-leading iSCSI target performance that is fully compatible with the existing iSCSI ecosystem and seamlessly supports the routability, scalability and reach advantages of iSCSI. The complete Chelsio T5 iSCSI benchmark paper detailing the hardware/software configuration used and results achieved is available [here](#).

iSCSI offload is especially suited for enterprise deployments:

- It requires only software peers (that are supported in all volume operating systems) and as such can be non-disruptively deployed in existing environments.
- The second source consists of operating system built-in software-only stacks. The enterprise customer will never be in a line-down situation because of the adapter hardware. It is therefore much easier to address dual source requirements.



- It is supported in Linux (LIO Target, Open-iSCSI Initiator), FreeBSD (Target and Initiator), Windows (Initiator – the most popular iSCSI initiator in the industry), VMware, and other OS's and distributions.
- It is built on the proven TCP/IP protocol and as such can scale and route and handle congestion and network loss resiliently and robustly without needing special switch features.
- It allows the same redline performance as other storage networking protocols such as NVMe or iSER, and has built-in RDMA, but it does so over the proven TCP/IP protocol (removing any challenges pertaining to TCP/IP “overhead”).
- It does not suffer from interoperability requirements of fabrics-based storage protocols such as iSER or NVMe Fabrics.
- It is a proven \$3.6B market today without any technology adoption risks.
- It runs at 100Gb and beyond, and will scale consistent with Ethernet evolution.
- The CPU savings resulting from iSCSI offload results in an immediate bill of materials reduction in storage applications – same or more performance at lower cost.
- iSCSI is mature, robust, tested, multi-vendor, deterministic, and ubiquitous. It has a much higher performance than Fibre Channel which it replaces.
- It allows enterprise OEMs to consider consolidating their adapter vendor product line and hence truly leverage the economies of scale of Ethernet.

Chelsio T5 adapters enable enterprise storage systems that are purpose-built to deliver optimized storage performance for various application workloads in mission-critical virtualized, private cloud environments. The high efficiency of T5-enabled storage systems lets IT departments balance high performance, capacity and features with game-changing storage economics. Chelsio-enabled storage systems also easily integrate into diverse enterprise IT environments by enabling SAN and NAS deployments from the same array through iSCSI and TCP/IP protocol offload for iSCSI block-level protocol, as well as NFS and CIFS file-level protocols.



“Our T5 Unified Wire adapters set a new performance bar by enabling a five million IOPS iSCSI storage target solution with very high efficiency,” said Kianoosh Naghshineh, CEO at Chelsio Communications. “Our iSCSI offload technology allows 40 Gigabit Ethernet to completely supplant proprietary storage fabrics, without requiring the deployment of new protocols that force an infrastructure forklift upgrade. With transition to Flash, all storage systems are essentially HPC systems and require offload technology to realize the Flash performance capabilities and value.”

About Chelsio iSCSI

Chelsio’s Terminator 5 ASIC offers a high performance, robust fourth generation implementation of iSCSI protocol over 40G Ethernet. T5 delivers a low latency, low CPU utilization, high bandwidth, and high IOPs implementation of the iSCSI protocol at 40Gb and beyond. It is the only robust iSCSI implementation in the industry that has not changed for a decade, allowing the benefit of years of quality assurance and the only industry solution that has scaled to 40Gb and beyond, and thus is ideally suited for Flash applications.

Chelsio’s iSCSI implementation is in production with a variety of OEMs and support will be available from several distributions. It is a feature rich solution that enables turning on of the iSCSI digest protocol with no penalties, use of standard Ethernet frames, and support for T10 protocol. Chelsio’s iSCSI is available either in full offload form using Chelsio’s iSCSI stack, in partial offload form using the OEM’s software stack, or support of all the standard iSCSI offerings in the common distributions.

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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