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CHELSIO SETS NEW NETWORK PERFORMANCE BAR

Terminator 6 TCP Offload Enables 100 Gigabit Per Second Throughput with 1 Percent CPU Utilization

SUNNYVALE, CA – October 18, 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 benchmark results of the Chelsio TCP/IP Offload Engine (TOE) drivers for the FreeBSD operating system utilizing the latest Terminator 6 (T6) 100GbE adapters.

The results validate the benefits of Chelsio's TCP/IP offload technology, showing a superior throughput and minimized CPU processing cycles. Chelsio T6 adapters deliver 100Gb/s line rate throughput even for a single network connection at 1% (receive) and 8% (send) CPU utilization.

The Terminator 6 (T6) ASIC from Chelsio Communications, Inc., is a highly integrated, hyper-virtualized 1/10/25/40/50/100GbE controller with full offload support of a complete Unified Wire solution. T6 provides no-compromise performance with both low latency (sub 1µsec through hardware) and high bandwidth, limited only by the PCI Express bus. Furthermore, it scales to true 100 Gigabit line rate operation, from a single TCP connection to thousands of connections, and allows simultaneous low latency and high bandwidth operation thanks to multiple physical channels through the ASIC. T6 also has integrated TLS/SSL, DTLS, IPsec and SMB 3.X crypto offload support, thus enabling concurrent secure communication and secure storage.



Chelsio's TCP Offload Engine enables reliable data transfers with minimal CPU utilization, freeing up CPU resources to be used for application processing. This will enable savings in host CPU acquisition, power and operational costs. T6 ASIC can flexibly offload TCP/IP processing per connection, per-server or per-interface, while selectively and simultaneously acting as a stateless server adapter for traffic from non-offloaded connections, delivering full Ethernet frames to the host processor for the native TCP/IP stack to process. Thanks to an [inbox driver in the FreeBSD source repository](#), T6-based adapters are plug-and-play solutions for extreme networking performance. In addition, T6-based adapters support capabilities such as traffic management, security and filtering, RDMA and iSCSI.

"Given that support for many aspects of Chelsio's architectures such as TOE, iSCSI, and RDMA are part of the driver included in FreeBSD, and given Chelsio does not charge a software licensing fee, the users now truly can benefit from all the additional performance, and advanced features, without an expensive CPU price premium," said Kianoosh Naghshineh, CEO of Chelsio Communications. "This will truly enable the FreeBSD OEMs to standardize on a single vendor for all networking applications, thereby reducing qualification and inventory carrying costs, while differentiating the end product, and lowering the bill of materials."

"FreeBSD is used in many networking and storage platforms, and we're happy to see that Chelsio's T6 coupled with FreeBSD delivers 100GbE performance with very low overhead," said George Neville-Neil, FreeBSD Foundation Board Member. "The ongoing collaboration between Chelsio and the FreeBSD Project continues to deliver the excellent networking performance that FreeBSD developers, vendors, and users have come to expect".

Additional information regarding the demonstration is available in a Chelsio [Technical Brief](#). A video of the demonstration is available [here](#).



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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