



Chelsio



Lowest Latency 10GbE Adapter for High Frequency Trading application infrastructure

LOW LATENCY MARKET DATA MESSAGING

High Frequency Trading (HFT) has transformed the investment landscape, accounting for over two thirds of current trading volume. However, as traffic volumes and complexity grow, so do the consequences of inefficiencies in your network. When a microsecond can make the difference between success and failure, why risk profitability by choosing slower network interface cards for your trading infrastructure?

Cost-Effective, Real Time Financial Data Streaming

Chelsio now delivers UDP socket connectivity with the shortest delay available in a network interface card. In recent tests with Chelsio partners, the T420-LL-CR 10GbE dual port adapter was found to deliver 2.9 μ sec latency for both unicast UDP and multicast traffic.

Moreover, the Chelsio dual-port 10GbE adapter can handle messaging at full wire rate with 256 byte packets typical to HFT environments, guaranteeing no update or trade is lost.



Figure 1 – The high-performance, dual-port Chelsio T420-LL-CR 10GbE Unified Wire Adapter

Features and Capabilities Combined for the Best Overall Performance

Chelsio's second generation iWARP (RDMA over Ethernet) design is a mature second generation RDMA iWARP implementation, building on Chelsio's T3 ASIC based adapters' proven track record, with in-box support on Linux with OpenFabrics Enterprise Distribution (OFED), and Windows HPC Server 2008. Chelsio's T4 ASIC brings in twice the bandwidth and half the latency compared to T3 based adapters and thus leading the iWARP adapters in the market.

Further speed increases are facilitated by the pipelined architecture of the core protocol processing engine, powering both T3 and T4. Both generations consistently outperformed supposedly faster InfiniBand interconnects (DDR and QDR respectively) in real application performance, and demonstrated superior scaling and robustness.

“...the T420-LL-CR was found to deliver 2.9 μ sec latency for UDP & Multicast”

Enhanced Storage Offloads

T4 offers protocol acceleration for both file and block-level storage traffic. For file storage, T4 support full TOE under Linux and TCP Chimney under Windows. T4's fourth-generation TOE design adds support for IPv6, which has become a requirement for many government and wide-area applications. For block storage, T4 supports both Protocol Data Unit (PDU) and full iSCSI offload, including virtualized environment such as VMware ESX.

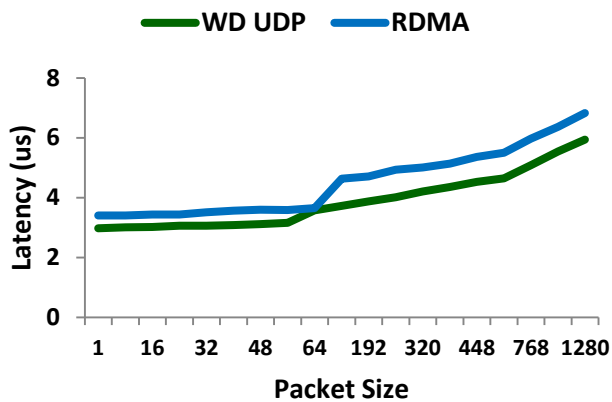


Figure 2 – Chelsio T4 latency vs. packet size

Broadening Chelsio’s support for block storage, T4 adds partial and full FCoE offload. With an HBA driver, full offload provides maximum performance as well as compatibility with SAN management software.

For software initiators, Chelsio supports the Open-FCoE stack and T4 offloads certain processing tasks much as it does in iSCSI. Unlike iSCSI, FCoE requires enhanced Ethernet support for lossless transport, Priority-based Flow Control (PFC), Enhanced Transmission Selection (ETS) and Data Centre Bridging Exchange (DCBX).

Conclusion

Chelsio’s T420-LL-CR network interface card achieves all the requirements to make it ideal for low latency High Frequency Trading operations. At the same time, when combined with iWARP, enabling NFSRDMA, LustreRDMA and similar protocols, the T420-LL-CR makes for an ideal Unified Target adapter, simultaneously processing iSCSI, FCoE, TOE, NFSRDMA, LustreRDMA, CIFS and NFS traffic.

So if you would prefer to use one card throughout your enterprise data center or private cloud, choose the T420-LL-CR; the unified wire adapter that does it best while doing it all.

Figure 4 – 4 delivers 2.9usec application latency for both unicast and multicast traffic

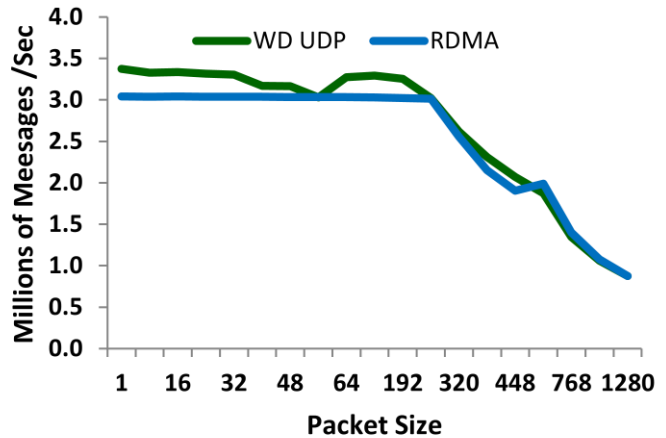


Figure 3 – Chelsio T4 Messaging rate vs. packet size

About Chelsio Communications

Chelsio is a leading technology company focused on providing high performance networking and storage solutions for virtualized enterprise data centers, cloud service installations, and cluster computing environments. Now shipping its fourth generation protocol acceleration technology, Chelsio is delivering hardware and software solutions including Unified Wire Ethernet network adapter cards, Unified Storage Server software, high performance storage gateways, unified management software, bypass cards, and other solutions focused on specialized applications.

To learn more, contact your Chelsio sales representative at sales@chelsio.com, or visit us at www.chelsio.com.

