

Chelsio & IBM Storwize have Partnered

Chelsio's R-NIC a key piece in IBM's storage performance enhancement

Introduction

When IBM wanted to upgrade their Ethernet based storage networking performance in their highly successful IBM SVC, IBM Storwize V5000, IBM Storwize V7000, and IBM FlashSystem 9100 series storage platforms, they looked for a reliable and standard set of protocols. They also looked for a partner that has a proven track record in storage networking for delivering a key hardware component with solid software capabilities. They came to Chelsio.



Figure 1- The IBM Storwize V7000

Why iWARP RDMA & iSCSI Protocols

IBM Storwize protocols of choice? RDMA of course and specifically, with its superior ease of use, and highest performance available, the IETF standard iWARP protocol. IBM was also looking for a path upward in speeds and feeds, not just the here and now but with a leader in the field who's technology would scale beyond the standard 10Gb and 25Gb but to 100Gb and beyond. Again, Chelsio fit the bill.

Today, IBM is shipping Chelsio adapters in the Storwize SV1, V5000, and the V7000 series high performance systems. For this block storage series of appliances that utilize iWARP, IBM chose to leverage the enterprise worthiness of iSCSI, but with a twist. With the industry standard merge of these two protocols into the iSER protocol, IBM is leveraging the best of both. iSER is an enabler of such enterprise storage features as multipathing, reservations, virtualization features for vSphere & VDI, storage migration, containers, and clustering. All of this while leveraging RDMA's performance superiority and goodness of zero copy and low latency. When picking a flavor of RDMA over competing RDMA protocols, they chose iWARP to leverage the often overlooked but all too important ease-of-use requirement.

Compute Nodes not Left Out of the Fun

Chelsio didn't stop there. Traditionally the compute interconnects to IBM Storwize systems have been through iSCSI and Fibre Channel, with iSCSI continuing to be available to this day. Now however, there's a higher performance option available for Compute servers and nodes to connect through iSER to the Storwize storage appliances. Chelsio has developed iSER initiator

drivers for use on Compute nodes shipping with the Linux, ESX, and Windows Server Operating Systems. Specifics:

- Linux → in-boxed in RHEL, SLES, kernel.org
- Windows Server 2016 (soon also Server2019) → available through Windows Update
- VMware ESXi 6.7 → available at Chelsio.com

iSER runs on these Chelsio's T5 & T6 Unified Wire Ethernet adapters:

- T5 adapters – All models, up to 4 ports, 1/10/40 Gbps
- T6 adapters – All models, 2 port, 1/10/25/40/50/100 Gbps

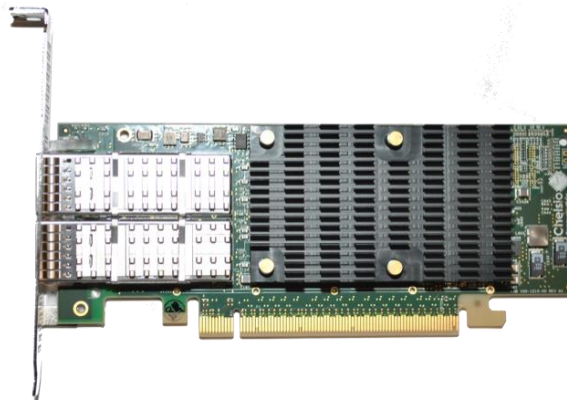


Figure 2- Chelsio's T62100-LP-CR

Unified Wire Goodness

Chelsio adapters are great at iSER, but they're just as great at offloading other storage protocols: NVMe-oF, iSCSI, FCoE. Oh, and they operate all of those protocols simultaneously over all ports without any special or expensive firmware or software upgrades. On Windows, another very special protocol these adapters shine at is SMBDirect using iWARP RDMA, great for Storage Spaces Direct and WSSD applications. Also, be sure to check out T6 adapters for their crypto offload magic. Chelsio's name for these great features? Unified Wire of course!

Conclusion

Chelsio is pleased to have such a close relationship to collaborate with IBM and the Storwize team. It is a partnership that pays dividends to our mutual customers. IBM wanted performance. Chelsio delivered in spades. IBM wanted ease of use, Chelsio obliged with iWARP. IBM wanted the enterprise worthiness of iSCSI through iSER, Chelsio delivered. Now it's time for you to take advantage!

Related Links

- Chelsio Adapters : <https://www.chelsio.com/nic/unified-wire-adapters/>
IBM FlashSystem 9100 : <https://www.ibm.com/us-en/marketplace/flashsystem-9100>
IBM Storwize V7000 : <https://www.ibm.com/us-en/marketplace/storage-workload/>
IBM Storwize V5000 : <https://www.ibm.com/us-en/marketplace/storage-consolidation/>
IBM SVC : <https://www.ibm.com/us-en/marketplace/san-volume-controller>