

Chelsio T6 Ethernet Controller - Competitive Analysis



		Features	Broadcom NetXtreme C-Series	Cavium/QLogic FastLinQ(45000 Series)	Intel (Fortville) XL710/XXV710	Mellanox ConnectX-5 VPI	Chelsio Terminator 6	Why Chelsio
Host Interface Power, Performance		Host Interface	PCIe Gen3 x8	PCIe Gen3 x16	PCIe Gen3 x8	PCIe Gen3 x16	PCIe Gen3 x16	<ul style="list-style-type: none"> All speeds/offloads using single FW Low Power, Low Cooling requirements Line rate performance Switch agnostic
		Link Speed / Ports	2x 10/25GbE	2x 25GbE , 1x 100G	2x 10/25/40GbE	2x 10/25/40/50/100GbE	2x 10/25/40/50/100GbE	
		Active Heatsink (with Fan)	No	Yes	No	No	No	
		Required Airflow	200LFM	200LFM	200LFM	800LFM	200LFM	
Enterprise Networking Storage		TCP/IP Offload					√	<ul style="list-style-type: none"> True Converged & Smart NIC Adapter Enables all storage protocol offloads Only vendor to provide iSCSI/iSER target bits upstream Only Vendor to enable Client RDMA Only Vendor to enable client Crypto (IPsec/TLS/SSL/DTLS)
		iSCSI Offload (Target/Initiator)					√	
		FCoE Offload (Target/Initiator)					√	
		RDMA Offload		√		√	√	
		iSER Offload (Target/Initiator)				√	√	
		NVMe / JBOF				√	√	
		Storage Space Direct (S2D w/ RDMA)		√		√	√	
		Win 10 Enterprise Client RDMA					√	
		IPsec/TLS/SSL/DTLS Crypto Offloads					√	
		T10 DIF				√	√	
		Microsoft Storage Replica					√	
	Lustre-RDMA, NFS-RDMA				√	√		
Cloud / Telco Virtualization Cloud, SDN, NFV		Secure Tunneling (VXLAN/NVGRE) (IPsec/TLS/SSL/DTLS Offloads)					√	<ul style="list-style-type: none"> SDN /NFV ready Inline Encryption IPsec/TLS/SSL User mode SW Stack Small packet line rate performance Great saving on CPUs
		DPDK (PMD)		√	√	√	√	
		SR-IOV w/ eSwitch (VM-VM)				√	√	
		OVS Kernel Datapath Offload				√	√	
		Integrated eSwitch		√		√	√	
		Integrated Firewall					√	
CDNs Media Streaming		Traffic Management Offloads					√	<ul style="list-style-type: none"> Secure media streaming at line rate Savings on CPU with TCP/UDP offloads Per stream QoS
		Secure Media Streaming (IPsec/TLS/SSL/DTLS)					√	
		TCP Media StreamEngine Per Stream, auto rate-shaping					√	
		UDP Segmentation Offload (USO) (Linux/ FreeBSD Upstream)					√	
		Network Packet Shaping			√	√	√	
HPC / HFT Clusters GPU		Network Packet Classification					√	<ul style="list-style-type: none"> Low Latency Switch agnostic All bits upstream Compatibility with OFED
		NVIDIA GPUDirect				√	√	
		OFED Package upstream				√	√	
		PTP				√	√	
		UDP Offload				√	√	
		Kernel Bypass SW Stack- WireDirect					√	

Chelsio T6 Ethernet Controller – Key Use Cases

<h3>CDNs</h3> <ul style="list-style-type: none"> • Integrated Crypto • Integrated QoS - Bandwidth Shaper • TCP/UDP segmentation Offload 	<h3>Crypto</h3> <p>AES/SHA encryption/decryption co-processor Data at rest crypto De-dupe</p> <ul style="list-style-type: none"> • IPsec/TLS/SSL/DTLS • AES/SHA/XTS • NIC + Crypto combo • Both Inline & Co-processor modes • Line Rate Perf. 	<h3>Data Security</h3> <ul style="list-style-type: none"> • Classification and Filtering • P2P Encryption • Secure Tunneling • Secure Streaming • Data finger printing 	<h3>GPU Pooling</h3> <ul style="list-style-type: none"> • iWARP RDMA • 100G Line Rate • Switch Agnostic • Low Latency • Compliance to NVIDIA CUDA SW 	<h3>HPC / HFT</h3> <ul style="list-style-type: none"> • Lower Latency • iWARP RDMA • Kernel bypass • User mode TCP • User mode UDP • No software fees 	<h3>SDN/DPDK/NFV</h3> <ul style="list-style-type: none"> • OVS Offload • DPDK • NVGRE/VXLAN/Geneve • TCP Offload • NAT Offload
<h3>Storage Targets</h3> <ul style="list-style-type: none"> • All Storage Protocol Offloads • 100Gb iSCSI, iSER, NVMe-oF, TOE, FCoE, T10-DIF, Data-at-rest Encryption, Lustre-RDMA, etc. 	<h3>Storage Initiators</h3> <ul style="list-style-type: none"> • All Offloads • 100Gb capable • Encryption • Windows, Linux, VMware, FreeBSD Initiator Offload 	<h3>Server 2016 / S2D</h3> <ul style="list-style-type: none"> • Server 2016, SDDC Certified • Highest S2D 100G Performance • Client RDMA • iSCSI • SMB-Direct, Storage Replica • SR-IOV, Network QoS • Nano Server 	<h3>NVMe-oF / JBOF</h3> <ul style="list-style-type: none"> • Inboxed NVMe-oF support • All Bits available for JBOF use case • Low Latency • Multi-protocol Support • iSCSI/iSER/NVMe-oF target • Inbuilt Crypto support – Co-processor & Inline Modes 		

- Please visit [Chelsio Solutions Overview](#) to know more about listed solutions
- Please visit [Chelsio Product Selector](#) to know more about Chelsio Unified Wire Adapters
- Please visit [Chelsio Competitive Analysis](#) to know more about key differentiations
- Please visit [Chelsio Performance Benchmark](#) to know more about why Chelsio solution is best in its class