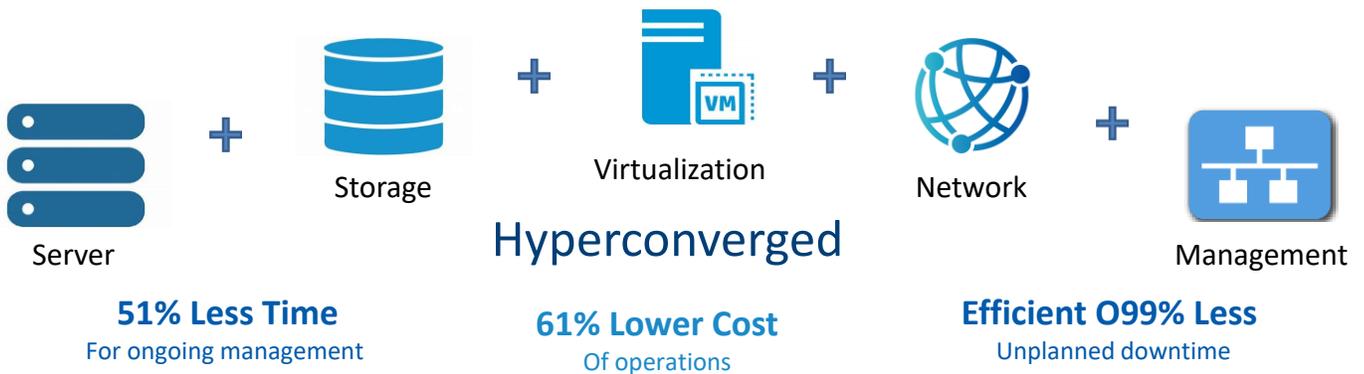


Increase Efficiency with 25Gb Ethernet for Hyperconverged Architectures

It's clear that organization of all sizes are deploying hyperconverged solutions. The reasons for this is apparent: rapid deployment, simplified management and scale-out expansion to accommodate evolving needs and new projects. Mellanox end-to-end Ethernet infrastructure of Spectrum Switches, ConnectX adapters and LinkX cables easily enable a turnkey software-defined infrastructure when combined with Dell EMC XC™ Series based on Nutanix software. The Dell EMC XC utilizes the proven Dell EMC PowerEdge servers with its management software to deliver one-click simplicity for infrastructure operations and to help streamline common enterprise workflows for simple, cost-effective solutions.



25GbE Advantage

Mellanox 25GbE technology delivers superior server and switch port density compared to 10GbE by providing higher bandwidth in a single lane along with lower latencies and CPU offloads to increase efficiencies. 25GbE also provides a future proof path that can scale well into the future, something that 10GbE falls short on.

- ✓ Fewer networking components reduces cost of ownership
- ✓ Increase bandwidth for better scalability and faster storage access

10GbE Technology	25GbE Technology
64 PowerEdge servers	64 PowerEdge servers
128x 10GbE Server Ports	64x 25GbE Server Ports
128x 10GbE ToR switch ports	64x 25GbE ToR switch ports
1.2 Tb Available	1.6 Tb Available

Increased Bandwidth
Get Faster Business Decisions

Lower Latencies
Maximize Flash & NVMe Storage

Efficient Offloads
For Increased Scalability

Accelerate your Hyperconverged Infrastructure to the Fast Lane!

Mellanox Adapters

Mellanox Connect-X Adapters:

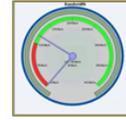
- Enable near-native performance for VMs thru Stateless offloads
- Extend hardware resources to 64 PF, 512 VF w/ SR-IOV & ROCE
- Accelerate virtualized networks with VXLAN, GENEVE & NVGRE
- Align network services with compute services for multitenant network support

Mellanox provides multiple adapters to choose from:

Description	Speed	Mellanox PN	Dell PN
ConnectX-4 Lx EN rNDC	10/25G	MCX4121A-ACAT	406-BBLH
ConnectX-4 Lx dual port	10/25G	MCX4121A-ACAT	406-BBLC
ConnectX-5 Ex dual port	100G	MCX516A-CDAT	540-BCIW

12% CPU Utilization

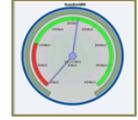
12Gb/s Throughput



Without Offloads

7% CPU Utilization

21Gb/s Throughput

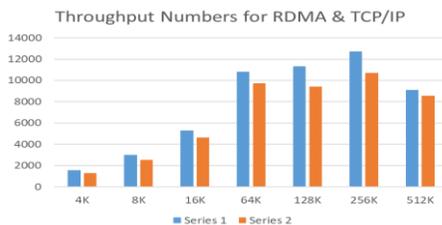


With Mellanox Offloads

HCI workloads require intensive processing which can waste CPU cycles, and choke applications. Mellanox adapters can alleviate CPU loads by implementing intelligent networking that can ease CPU strain, increase network bandwidth and enable scale and efficiency.

RoCE Certified

vSphere 6.5 introduced Remote Direct Memory Access over Converged Ethernet (RoCE), which offloads the transfer of data to a Mellanox adapters, freeing the CPU from the data transfer process and reducing latencies. For virtual machines, the same Mellanox adapter can be used for PVRDMA (para-virtualized RDMA) to communicate with other virtual machines. Mellanox adapters are certified in vSphere where inbox drivers are available to dramatically accelerates communication. Once RoCE is setup on vSphere close-to-local, predictable latency can be gained from networked storage along with line-rate throughput and linear scalability to accommodate dynamic and agile data movement between nodes.

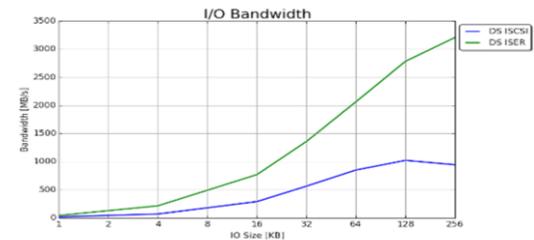


70% Read and 30% Write Throughput		
# of Threads	RDMA	TCP/IP
6	1545.42	1278.19
6	2995.17	2533.35
6	5287.53	4614.59
6	11331.56	9706.61
6	12716.34	10715.93
1	9099.93	8558.96

iSER Efficiency

Storage virtualization requires an agile and responsive network. iSER accelerates workloads by using iSCSI extensions for RDMA. Using Mellanox iSER extension lowers latencies and CPU utilization to help keep pace with I/O requirements and provides:

- ✓ 70% improvement in throughput
- ✓ 70% reduction in latencies



DELL EMC XC HCI Appliances

The Dell EMC XC Series of hyper-converged appliances consolidate compute and storage into a single platform enabling quick and simple deployment of new workloads. Enabling data center capacity and performance to be easily expanded, delivering linear and predictable scale-out expansion one node at a time.



Model/Feature	XC640	XC740xd	XC940
Form Factor	1U, 1 Node	2U, 1 Node	3U, 1 Node
Workload	Non mission-critical	Storage heavy	Memory/compute intensive
Applications	Remote/branch office, virtualization, test/dev	Exchange, SharePoint, data warehousing	SQL, OLTP, cloud, service providers
Networking	Mellanox Connect X4 LX 2x 25GbE SFP28 (Except XC640-4i, XC740xd-12R are compatible with Mellanox CX4 LX)		