



# ConnectX<sup>®</sup>-3 EN

Dual Port 10 Gigabit Ethernet Adapters with PCI Express 3.0 Mezzanine Cards for Dell<sup>®</sup> Servers

Mellanox ConnectX-3 EN 10 Gigabit Ethernet Network Interface Cards (NIC) with PCI Express 3.0 deliver high-bandwidth and industry-leading Ethernet connectivity for performance-driven server and storage applications in Enterprise Data Centers, High-Performance Computing, and Embedded environments.

Clustered databases, web infrastructure, and high frequency trading are just a few applications that will achieve significant throughput and latency improvements resulting in faster access, real-time response and more users per server. ConnectX-3 Ethernet Adapter improves network performance by increasing available bandwidth while decreasing the associated transport load on the CPU especially in virtualized server environments.

### World-Class Ethernet Performance

**RDMA over Converged Ethernet** – Utilizing RoCE technology Mellanox Ethernet Adapters provide efficient RDMA services, deliver high performance and bandwidth to latency sensitive applications. With link-level interoperability within Ethernet infrastructures Network Administrators can leverage existing data center fabric management solutions.

**Sockets Acceleration** – Applications utilizing TCP/UDP/IP transport can achieve industry-leading throughput over 10/40GbE. The hardware-based stateless offload and flow steering engines in Mellanox Ethernet Adapters reduce the CPU overhead of IP packet transport, freeing more processor cycles required for the application.

**I/O Virtualization** - Mellanox Ethernet Adapters provide dedicated adapter resources that guarantee isolation and protection for virtual machines (VM) within the server. By enabling a single NIC to appear as multiple virtual NIC's

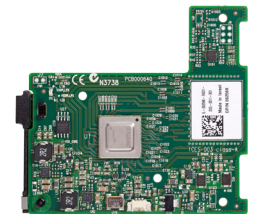
Mellanox Ethernet Adapters give data center managers better server utilization for LAN and SAN unification while reducing capital expenditures, power and cable complexity.

**Overlay Networks** – New large-scale cloud environments require the implementation of overlay network protocols to overcome the issues of security, isolation and VLAN limitations within the cloud. Mellanox Ethernet Adapters bring a unique value to cloud providers by enabling them to reduce their CPU overhead and consequently reduce their OPEX and CAPEX by supporting more cloud tenants over the same infrastructure. A consolidated compute and storage network achieves significant cost-performance advantages over multi-fabric networks. Standard block and file access protocols can leverage RDMA for high-performance storage access.

### Software Support

All Mellanox Ethernet Adapters are supported by a full suite of software drivers for Microsoft Windows, Linux distributions, VMware and Citrix XenServer. Stateless offload which is fully interoperable with standard TCP/UDP/IP stacks are supported within the adapters. Various management interfaces and a rich set of configuration and management tools are supported across multiple operating systems.

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## HIGHLIGHTS

### BENEFITS

- 10Gb/s connectivity for servers and storage
- Industry-leading throughput and latency performance
- I/O consolidation (single unified wire for networking, storage and clustering)
- Supports industry-standard SR-IO Virtualization technology and delivers VM protection
- Software compatible with standard TCP/UDP/IP stacks

### KEY FEATURES

- Dual 10 Gigabit Ethernet ports
- PCI Express 3.0 (up to 8GT/s)
- Low Latency RDMA over Converged Ethernet (RoCE)
- Hardware stateless offload for TCP/UDP/IP
- Traffic steering across multiple cores
- Single Root IOV
- Intelligent interrupt coalescence
- VMware NetQueue support

## FEATURE SUMMARY

### ETHERNET

- IEEE 802.3ae 10 Gigabit Ethernet
- IEEE 802.3ba 40 Gigabit Ethernet
- IEEE 802.3ad Link Aggregation and Failover
- IEEE 802.1Q, .1p VLAN tags and priority
- IEEE 802.1Qau Congestion Notification
- IEEE P802.1Qbb D1.0 Priority-based Flow Control
- Multicast
- Jumbo frame support (10KB)
- 128 MAC/VLAN addresses per port

### ADDITIONAL CPU OFFLOADS

- RDMA over Converged Ethernet (RoCE)
- TCP/UDP/IP stateless offload
- Intelligent interrupt coalescence

### TCP/UDP/IP STATELESS OFFLOAD

- TCP/UDP/IP checksum offload (CSO)
- TCP Large Send (< 64KB) or Giant Send (64KB-16MB) Offload for segmentation (LSO)
- Receive Side Scaling (RSS) up to 32 queues
- Line rate packet filtering

### HARDWARE-BASED I/O VIRTUALIZATION

- Single Root IOV
- Address translation and protection
- Dedicated adapter resources
- Multiple queues per virtual machine
- Enhanced QoS for vNICs
- VMware NetQueue support

### WOL SUPPORT

## COMPATIBILITY

### PCI EXPRESS INTERFACE

- Fits x8 or x16 slots
- 2.5, 5.0, or 8.0GT/s link rate x8
- Auto-negotiates to x8, x4, x2, or x1
- Support for MSI/MSI-X mechanisms

### CONNECTIVITY

- Interoperable with 10/40GbE switches

### MANAGEMENT AND TOOLS

- Open Manage, iDRAC, Lifecycle Controller
- Configuration and diagnostic

### OPERATING SYSTEMS/DISTRIBUTIONS

- Windows 2008 SP2 and 2008 R2, Windows 2012 and 2012 R2 (vNext)
- Linux Distributions (Visit [www.dell.com](http://www.dell.com) for approved Linux Distributions)
- SLES11 SP2 / SP3, VMWare ESX/ESXi 5.5
- XenServer 6.1 / 6.2



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350 Oakmead Parkway, Suite 100, Sunnyvale, CA 94085  
Tel: 408-970-3400 • Fax: 408-970-3403  
[www.mellanox.com](http://www.mellanox.com)