

ConnectX[®]-3 EN for Open Compute Project (OCP)

Single/Dual-Port 10 Gigabit Ethernet Adapters with PCI Express 3.0



Mellanox ConnectX-3 EN 10 Gigabit Ethernet Media Access Controllers (MAC) with PCI Express 3.0 deliver high-bandwidth and industry-leading Ethernet connectivity for Open Compute server and storage applications in Web 2.0, Enterprise Data Centers and Cloud infrastructure.

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 EN improves network performance by increasing available bandwidth while decreasing the associated transport load on the CPU especially in virtualized server environments.

ConnectX-3 EN 10GbE OCP for Open compute project adhere to Server specifications revision 2.0.

World-Class Ethernet Performance

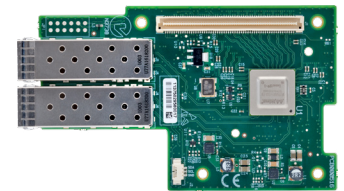
RDMA over Converged Ethernet—ConnectX-3 utilizing IBTA RoCE technology provides efficient RDMA services, delivering low-latency and high-performance to bandwidth and latency sensitive applications. With link-level interoperability in existing Ethernet infrastructure, Network Administrators can leverage existing data center fabric management solutions.

Sockets Acceleration – Applications utilizing TCP/UDP/IP transport can achieve industry-leading throughput over 10GbE. The hardware-based stateless offload and flow steering engines in ConnectX-3 reduce the CPU overhead of IP packet transport, freeing more processor cycles to work on the application. Sockets acceleration software further increases performance for latency sensitive applications.

I/O Virtualization – ConnectX-3 EN with Virtual Intelligent Queuing (Virtual-IQ) technology provides dedicated adapter resources and guaranteed isolation and protection for virtual machines (VM) within the server. ConnectX-3 EN gives data center managers better server utilization and LAN and SAN unification while reducing costs, power, and complexity.

Multiple Physical Function (MPF) is a hardware based solution, for single physical network card representation as multiple virtual instances. The virtualized representation is not dependent on BIOS features or switching solution. Complete, standard, Management and functional definition is assigned to every virtual network adapter.

Quality of Service – Resource allocation per application or per VM is provided and protected by the advanced QoS supported by ConnectX-3 EN. Service levels for multiple traffic types can be based on IETF DiffServ or IEEE 802.1p/Q allowing system administrators to prioritize traffic by application, virtual machine, or protocol. This powerful combination of QoS and prioritization provides the ultimate fine-grained control of traffic – ensuring that applications run smoothly in today's complex environments.



HIGHLIGHTS

BENEFITS

- 10Gb/s connectivity for servers and storage
- Open Compute Project Form Factor, Intel Platform
- Industry-leading throughput and latency performance
- I/O consolidation
- Virtualization acceleration
- Software compatible with standard TCP/UDP/IP and iSCSI stacks

KEY FEATURES*

- Single and Dual 10 Gigabit Ethernet ports
- PCI Express 3.0 (up to 8GT/s)
- Low Latency RDMA over Ethernet
- Data Center Bridging support
- T11.3 FC-BB-5 FCoE
- TCP/IP stateless offload in hardware
- Traffic steering across multiple cores
- Hardware-based I/O virtualization
- Intelligent interrupt coalescence
- Advanced Quality of Service
- RoHS-R6

Software Support

ConnectX-3 EN is supported by a full suite of software drivers for Microsoft Windows, Linux distributions, VMware and Citrix XENServer. ConnectX-3 EN supports stateless offload and is fully interoperable with standard TCP/UDP/IP stacks. ConnectX-3 EN supports various management interfaces and has a rich set of configuring and management tools across operating systems.

FEATURE SUMMARY*

ETHERNET

- IEEE 802.3ae 10 Gigabit Ethernet
- IEEE 802.3ad Link Aggregation and Failover
- IEEE 802.3az Energy Efficient Ethernet
- IEEE 802.1Q, .1p VLAN tags and priority
- IEEE 802.1Qau Congestion Notification
- IEEE P802.1Qaz D0.2 ETS
- IEEE P802.1Qbb D1.0 Priority-based Flow Control
- Jumbo frame support (10KB)
- 128 MAC/VLAN addresses per port

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

ADDITIONAL CPU OFFLOADS

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

FLEXBOOT™ TECHNOLOGY

- Remote boot over Ethernet
- Remote boot over iSCSI

COMPATIBILITY

PCI EXPRESS INTERFACE

- PCIe Base 3.0 compliant, 1.1 and 2.0 compatible
- 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 10GigE switches
- SFP+ connectors
- Passive copper cable and Optical Modules support
- Powered connectors for optical and active cable support

MANAGEMENT AND TOOLS

- MIB, MIB-II, MIB-II Extensions, RMON, RMON 2
- Configuration and diagnostic tools

OPERATING SYSTEMS/DISTRIBUTIONS

- Novell SLES, Red Hat Enterprise Linux (RHEL), Fedora, CentOS and other Linux distributions.
- Microsoft Windows Server 2008/CCS 2003, HPC Server 2008
- OpenFabrics Enterprise Distribution (OFED)
- OpenFabrics Windows Distribution (WinOF)
- VMware ESX Server 3.5, vSphere 4.0/4.1

Ordering Part Number	Ethernet Ports
MCX342A-XCAN	Dual 10GbE SFP+
MCX341A-XCAN	Single 10GbE SFP+

*This product brief describes all of the hardware features and capabilities. Please refer to the driver release notes on www.mellanox.com for feature availability.



350 Oakmead Parkway, Suite 100, Sunnyvale, CA 94085
 Tel: 408-970-3400 • Fax: 408-970-3403
www.mellanox.com