

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 0.5.

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.

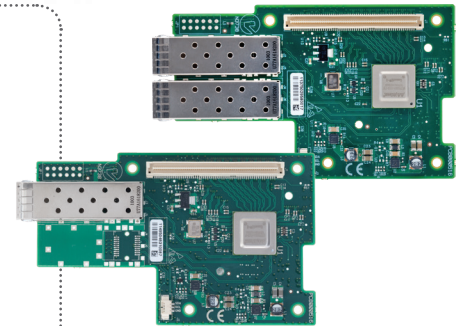
Sockets Acceleration – Applications utilizing TCP/UDP/IP transport can achieve industry-leading throughput over 10GbE. The hardware-based stateless offload and flow steering engines in ConnectX-3 reduce the CPU overhead of IP packet transport, freeing more processor cycles to work on the application.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

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.

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.



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

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
- OpenFabrics Enterprise Distribution (OFED)
- OpenFabrics Windows Distribution (WinOF)
- VMware ESX Server

Ordering Part Number	Ethernet Ports	Dimensions
MCX341A-XCCN	Single 10GbE SFP+	11cm x 6.8cm
MCX341A-XCEN	Single 10GbE SFP+, with IPMI and UEFI IPv6 support	11cm x 6.8cm
MCX341A-XCGN	Single 10GbE SFP+, with NC-SI host management support	11cm x 6.8cm
MCX342A-XCCN	Dual 10GbE SFP+	11cm x 6.8cm
MCX342A-XCGN	Dual 10GbE SFP+, with NC-SI host management support	11cm x 6.8cm

*This product brief describes hardware features and capabilities. Please refer to the driver release notes on mellanox.com for feature availability or contact your local sales representative.

**Product images may not include heat sync assembly; actual product may differ.



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