



ADAPTER CARDS

ConnectX® ENt

10GBASE-T Adapter with PCI Express 2.0

ConnectX ENt 10GBASE-T Network Interface Card (NIC) provides easy connections up to 100m over familiar UTP wiring and delivers high-bandwidth and industry-leading 10GigE connectivity with stateless offloads for converged fabrics in High-Performance Computing, Enterprise Data Centers, and Embedded environments. Clustered databases, web infrastructure, and IP video servers are just a few example applications that will achieve significant throughput and latency improvements resulting in faster access, real time response and increased number of users per server. ConnectX ENt improves network performance by increasing available bandwidth to the CPU and providing enhanced performance, especially in virtualized server environments.

New enhancements such as Data Center Ethernet (DCE) are being added to Ethernet for better I/O consolidations. ConnectX ENt enables servers and storage systems to utilize Low-Latency Ethernet (LLE) which provides efficient RDMA transport over Layer 2 Ethernet with IEEE 802.1q VLAN tagging and Ethernet Priority-based Flow Control (PFC). The LLE software stack maintains existing and future application compatibility for bandwidth and latency sensitive clustering applications. With link-level interoperability in existing Ethernet infrastructure, Network Administrators can leverage existing data center fabric management solutions.

ConnectX ENt protects investments by providing in hardware today support for DCE and Fibre Channel over Ethernet (FCoE) as well as technologies such as SR-IOV that provide enhanced virtual machine performance for virtualized servers.

Optimal Price/Performance

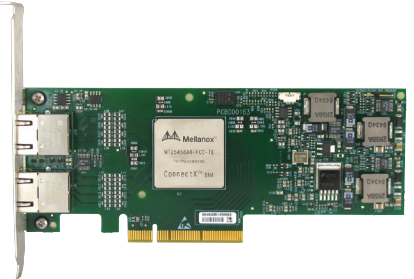
ConnectX ENt removes I/O bottlenecks in mainstream servers that are limiting application performance. Servers supporting PCI Express 2.0 with 5GT/s will be able to fully utilize both 10Gb/s ports, balancing the I/O requirement of these high-end servers. Hardware-based stateless offload engines handle the TCP/UDP/IP segmentation, reassembly, and checksum calculations that would otherwise burden the host process. These offload technologies are fully compatible with Microsoft RSS and NetDMA. Total cost of ownership is optimized by maintaining an end-to-end Ethernet network on existing operating systems and applications.

I/O Virtualization

ConnectX ENt support for hardware-based I/O virtualization provides dedicated adapter resources and guaranteed isolation and protection for virtual machines (VM) within the server. I/O virtualization with ConnectX ENt gives data center managers better server utilization and LAN and SAN unification while reducing cost, power, and cable complexity.

Quality of Service

Resource allocation per application or per VM is provided by the advanced QoS supported by ConnectX ENt. 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-grain control of traffic – ensuring that applications run smoothly in today's complex environment.



BENEFITS

- 10Gb/s full duplex bandwidth for servers and storage
- Industry-leading throughput and latency performance
- I/O consolidation
- Virtualization acceleration
- High-performance networking and storage access
- Software compatible with standard TCP/UDP/IP and iSCSI stacks

KEY FEATURES

- Dual 10GBASE-T ports
 - Up to 100m on Cat6a or Cat7 UTP
 - Up to 50m on Cat5e or Cat6 UTP
- PCI Express (up to 5GT/s)
- Traffic steering across multiple cores
- TCP/UDP/IP stateless offload in hardware
- Intelligent interrupt coalescence
- Hardware-based I/O virtualization
- Fibre Channel over Ethernet
- Data Center Ethernet
- Advanced Quality of Service
- Full support for Intel I/OAT

Software Support

ConnectX ENt is supported by a full suite of software drivers for Microsoft Windows, Linux distributions, VMware and Citrix XENServer. ConnectX ENt supports stateless offload and is fully interoperable with standard TCP/UDP/IP stacks. Stateless offload connections are also easy to scale using multiple adapters to reach the desired level of performance and fault tolerance. ConnectX ENt supports various management interfaces and has a rich set of configuring and management tools across operating systems.

FEATURE SUMMARY

ETHERNET

- IEEE Std 802.3ae 10 Gigabit Ethernet
- IEEE Std 802.3an 10GBASE-T
- IEEE Std 802.3ad Link Aggregation and Failover
- IEEE Std 802.3x Pause
- IEEE Std 802.1Q VLAN tags
- IEEE Std 802.1p Priorities
- Multicast
- Jumbo frame support (10KB)
- 128 MAC/VLAN addresses per port

TCP/UDP/IP STATELESS OFFLOAD

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

ADDITIONAL CPU OFFLOADS

- Traffic steering across multiple cores
- Intelligent interrupt coalescence
- Full support for Intel I/OAT
- Compliant to Microsoft RSS and NetDMA

HARDWARE-BASED I/O VIRTUALIZATION

- Single Root IOV
- Address translation and protection
- Multiple queues per virtual machine
- VMware NetQueue support
- PCISIG IOV compliant

COMPATIBILITY

CPU

- AMD X86, X86_64
- Intel X86, EM64T, IA-32, IA-64
- SPARC
- PowerPC, MIPS, and Cell

PCI EXPRESS INTERFACE

- PCIe Base 2.0 compliant, 1.1 compatible
- 2.5GT/s or 5.0GT/s link rate x8 (20+20Gb/s or 40+40Gb/s bidirectional bandwidth)
- Fits x8 or x16 slots
- Support for MSI/MSI-X mechanisms

CONNECTIVITY

- Interoperable with 10GigE switches and routers
- 100m of Cat6a and Cat7 UTP, 50m of Cat5e and Cat6

OPERATING SYSTEMS/DISTRIBUTIONS

- Novell SuSE Linux Enterprise Server (SLES), Red Hat Enterprise Linux (RHEL), and other Linux distributions
- Microsoft Windows Server 2003/2008, Windows Compute Cluster Server 2003
- VMware ESX 3.5
- Citrix XENServer 4.1

MANAGEMENT

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

Adapter Cards

Ordering Part Number	Ethernet Port	Host Bus	Power Typ	Dimensions w/o Brackets
MNTH28B-XTC	Dual RJ-45	PCIe 2.0 2.5GT/s	consult factory	16.8cm x 6.4cm
MNTH29B-XTC	Dual RJ-45	PCIe 2.0 5.0GT/s	consult factory	16.8cm x 6.4cm



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

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