



ADAPTER CARDS

ConnectX[®]-2 EN

Dual-Port Flex-10 10 Gigabit Ethernet Mezzanine NIC for HP BladeSystem c-Class

ConnectX-2 EN Ethernet Network Interface Card (NIC) for HP BladeSystem c-Class delivers high-bandwidth and industry-leading 10GigE connectivity with stateless offloads for converged fabrics in Enterprise Data Center and High-Performance Computing environments. Clustered databases, virtualized environments, and financial services 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-2 EN improves network performance by increasing available bandwidth to the CPU and providing enhanced performance, especially in virtualized server environments.

Optimal Price/Performance

ConnectX-2 EN removes I/O bottlenecks in mainstream servers that are limiting application performance. Dual ports combined with PCI Express 2.0 supply the I/O requirements of the BladeSystem servers. Hardware-based stateless offload engines handle the TCP/UDP/IP segmentation, reassembly, and checksum calculations that would otherwise burden the host. Stateless offload connections are also easy to scale enabling the use of multiple adapters to reach the desired level of performance and fault tolerance. Total cost of ownership is optimized by maintaining an end-to-end Ethernet network on existing operating systems and applications.

I/O Virtualization

ConnectX-2 support for hardware-based I/O virtualization provides dedicated adapter resources and guaranteed isolation and protection for virtual machines (VM) within the server. With Virtual Connect Flex-10, IT managers will be able to use multiple NICs in this one adapter each with dynamically adjustable bandwidth control at their disposal. I/O virtualization with ConnectX-2 gives data center managers better server utilization and LAN and SAN unification while reducing cost, power, and cable complexity.

Low Latency Ethernet

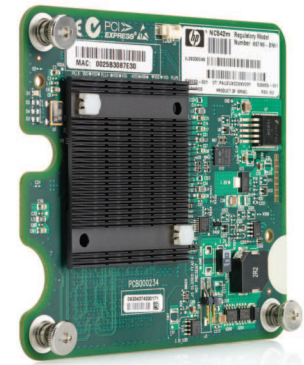
Low Latency Ethernet (LLE) utilizing RDMA over Converged Enhanced Ethernet (RoCEE) technology provides efficient RDMA transport over Layer 2 Ethernet. LLE ensures timely delivery of data and accelerates application execution.

Quality of Service

Resource allocation per application or per VM is provided by the advanced QoS supported by ConnectX-2 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-grain control of traffic – ensuring that applications run smoothly in today's complex environment.

Software Support

ConnectX-2 EN is supported by a full suite of software drivers for Microsoft Windows, Linux distributions, VMware and Citrix XENServer. ConnectX-2 EN supports stateless offload and is fully interoperable with standard TCP/UDP/IP stacks. ConnectX-2 EN supports various management interfaces and has a rich set of configuring and management tools across operating systems.



ConnectX[®]-2

BENEFITS

- 10Gb/s full duplex bandwidth
- 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 Flex-10 10 Gigabit Ethernet ports
- PCI Express 2.0
- Traffic steering across multiple cores
- TCP/UDP/IP stateless offload in hardware
- Intelligent interrupt coalescence
- Hardware-based I/O virtualization
- Data Center Bridging support
- Advanced Quality of Service
- RoHS-R6

FEATURE SUMMARY

ETHERNET

- IEEE Std 802.3ae 10 Gigabit Ethernet
- IEEE Std 802.3ad Link Aggregation and Failover
- IEEE Std 802.3x Pause
- IEEE Std 802.1Q VLAN tags
- IEEE Std 802.1p Priorities
- IEEE P802.1au D2.0 Congestion Notification
- IEEE P802.1az D0.2 Enhanced Transmission Selection
- IEEE P802.1bb D1.0 Priority-based Flow Control
- 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

- RDMA over CEE support
- Traffic steering across multiple cores
- Intelligent interrupt coalescence
- Compliant to Microsoft RSS and NetDMA

HARDWARE-BASED I/O VIRTUALIZATION

- Address translation and protection
- Dedicated adapter resources and guaranteed isolation
- Multiple queues per virtual machine
- Hardware switching between guest OSs
- Enhanced QoS for vNICs
- VMware NetQueue support

COMPATIBILITY

CPU

- AMD X86, X86_64
- Intel X86, EM64T, IA-32, IA-64

PCI EXPRESS INTERFACE

- PCIe Base 2.0 compliant, 1.1 compatible
- 5.0GT/s link rate x8 (40+40Gb/s bidirectional bandwidth)
- HP BladeSystem c-Class blade servers
- Support for MSI/MSI-X mechanisms

OPERATING SYSTEMS/DISTRIBUTIONS

- Novell SuSE Linux Enterprise Server (SLES), Red Hat Enterprise Linux (RHEL), and other Linux distributions
- Microsoft Windows Server 2007/2008/CCS
- VMware ESX 3.5
- Citrix XENServer 4.1

MANAGEMENT

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

COMPLIANCE

SAFETY

- US/Canada: cTUVus
- EU: IEC60950
- International: CB

EMC (EMISSIONS)

- USA: FCC, Class A
- Canada: ICES, Class A
- EU: CE Mark (EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3)
- Japan: VCCI, Class A
- Korea: KCC Class A
- Australia/New Zealand: C-Tick Class A

ENVIRONMENTAL

- EU: IEC 60068-2-64: Random Vibration
- EU: IEC 60068-2-29: Shocks, Type I / II
- EU: IEC 60068-2-32: Fall Test

OPERATING CONDITIONS

- Operating temperature: 0-40° C
- Air flow: 200LFM @ 55° C
- Requires 3.3V, 12V supplies

SPECIFICATIONS

- Dual 10GigE ports
- PCI Express 2.0 x8 (1.1 compatible)
- Single chip architecture
- Mezzanine form factor
- RoHS-R6 compliant
- 12-month warranty

Visit <http://www.hp.com> for more information.

Mezzanine Cards

Ordering Part Number	Ethernet Ports	Host Bus
539857-B21	Dual KR	PCIe 2.0 5.0GT/s



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