



KEY FEATURES

- Dual 10Gb/s (MHEA28-X and MHEL-CF128) or 20Gb/s (MHGA 28-X and MHGA28-1) 4X InfiniBand Ports
- Integrated Serializer/Deserializer (SerDes) interfaces
- InfiniRISC™ embedded RISC processors
- PCI Express revision 1.0a compatible card
- PCI Express x8 (20 + 20Gb/s full duplex) interface
- IBTA version 1.2 compatible
- Copper InfiniBand connectors (MicroGigaCN) with media detect circuit for optional fiber media adapter

Software Support

- Linux and Windows drivers
- InfiniBand Compatible Verbs API
- Linux management and applications package available
- Various upper layer protocols

KEY APPLICATIONS

- Virtualized data centers that require a high-bandwidth, low-latency interconnect for server and storage grids
- High performance parallelized computing leveraging
- Message Passing Interface (MPI) based applications such as molecular modeling, oil and gas exploration, car crash simulations, etc.
- Clustered database applications, parallel RDBMS queries, high-throughput data warehousing
- Performance storage applications such as backup, restore, mirroring, etc.
- High bandwidth streaming content such as video-on-demand and HDTV
- Electronic Design Automation (EDA)
- Networking, Telecom and Industrial data acquisition

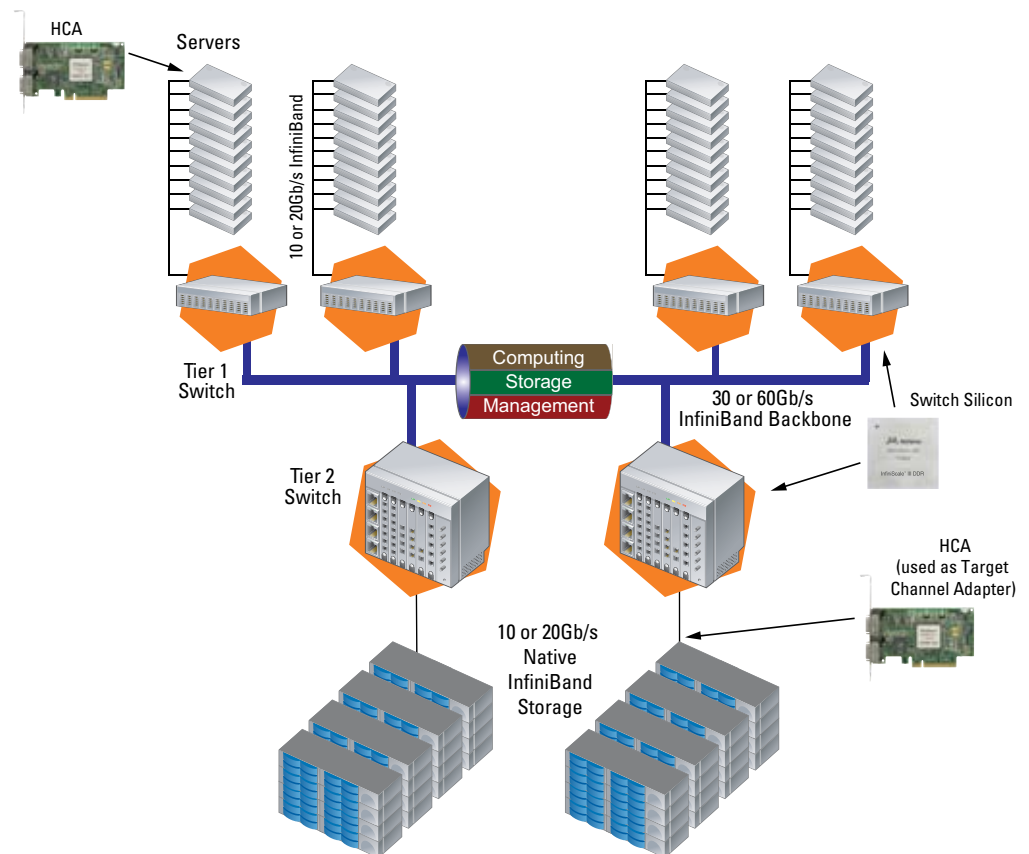
InfiniHost™ III Ex Dual-Port InfiniBand HCA Cards with PCI Express x8

Overview

InfiniHost III Ex dual-port 4X InfiniBand Host Channel Adapter (HCA) cards connect to the host system through a PCI Express x8 interface. Single data rate (SDR) InfiniHost III Ex cards support dual 10Gb/s InfiniBand connections while double data rate (DDR) versions support dual 20Gb/s InfiniBand connections. InfiniHost III Ex HCA cards deliver the most cost effective 10 or 20Gb/s solution available and feature remote direct memory access (RDMA), hardware transport, and

advanced per queue pair (QP) QoS services.

All InfiniHost III Ex cards can be directly inserted into PCI Express x8 or wider slots of standard servers, blade servers, storage and communications platforms to enable InfiniBand fabrics. All adapter cards utilize 4X MicroGigaCN InfiniBand compliant connectors for copper cables. This copper connector provides the lowest cost 10 or 20Gb/s connection available. In addition, a plug-gable media adapter module can be used for fiber connections up to 300m.



InfiniHost III Ex HCA Cards used in Compute and Storage Nodes for a Unified InfiniBand Network

MHEL-CF128, MHGA28-1, MHGA28-X, and MHEA28-X HCA Cards

CHARACTERISTICS

- Low Profile PCI Express card
- Requires 4X InfiniBand copper cable(s) (not included)
- Link status indication LED
- Serial EEPROM for Vital Product Data (VPD)
- Regulatory compliance testing
- ISO 9002 qualified manufacturing
- OEM labeling options

INFINIBAND BENEFITS

- Industry-standard technology
- Unified computing, storage and management
- High-bandwidth, low-latency
- Performance roadmap to 120Gb/s
- Highly-efficient clustering
- Ultimate reliability and scalability
- Multi-platform support
- Congestion management and QoS
- Virtualized I/O fabric
- World-class price/performance

Feature Highlights

The MHEL-CF128 and MHGA28-1 use 128MB of local HCA attached SDRAM memory to store connection information directly on the adapter card.

Enabled by the high-bandwidth and low-latency capability of PCI Express, the MHEA28-XT and MHGA28-XT cards feature MemFree technology. This removes the requirement for local memory on the PCI Express adapter card itself, and instead, uses system memory to store connection information—resulting in lower power, lower adapter card cost, and smaller physical size.

InfiniHost III Ex HCA cards feature a full hardware implementation of the InfiniBand architecture memory protection and translation tables, as well as hardware transport. This drastically reduces processing overhead and allows the host CPU to spend its cycles on processing applications rather than network transport tasks.

Configuration and management of the adapter card can be handled through the PCI Express interface or in-band through the InfiniBand fabric.

Software Support

All InfiniHost III Ex low profile HCA cards include verbs interface and device drivers for both Windows and Linux operating systems. In addition, the cards include internal Subnet Management Agent (SMA) and General Service Agents, eliminating the requirement for an external management agent CPU. The HCAs are fully compatible with the open source OpenIB.org software suite. Mellanox also provides InfiniBand Gold, an easy-to-install, open-source software package including device drivers, upper layer protocols and management tools. In addition to Linux and Windows, industry support for virtually all other operating systems is available including HPUX, AIX, OS-X, Solaris, and VxWorks.



MHEL-CF128 – Dual 10Gb/s InfiniBand
128MB local SDRAM w/ PCI Express x8



MHEA28-X – Dual 10Gb/s InfiniBand
MemFree w/ PCI Express x8



MHGA28-1 – Dual 20Gb/s InfiniBand
128MB local SDRAM w/ PCI Express x8



MHGA28-X – Dual 20Gb/s InfiniBand
MemFree w/ PCI Express x8

(all cards shown with tall brackets)

HCA CARD FAMILY

InfiniHost III Ex HCA Cards	InfiniBand Ports	Local Memory	Power (Typical)
MHEL-CF128	Dual 10Gb/s	128MB	10.5W
MHGA28-1	Dual 20Gb/s	128MB	12.7W
MHEA28-X	Dual 10Gb/s	MemFree	7.8W
MHGA28-X	Dual 20Gb/s	MemFree	10.3W

* Add a "T" to the end of the part number for a tall bracket. Add a "S" the end of the part number for a short bracket card.



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