KEY FEATURES

- 10Gb/s (MHES14-X and MHES18-X) or 20Gb/s (MHGS18-X) 4X InfiniBand Port
- Integrated Serializer/Deserializer (SerDes)
- InfiniRISC™ Embedded RISC Processors
- PCI Express Revision 1.0a Compatible Card
- PCI Express x4 (10 +10Gb/s Full Duplex) Interface (MHES14-XT)
- PCI Express x8 (20+20Gb/s Full Duplex) Interface (MHES18-XT, MHGS18-XT) IBTA version 1.2 Compatible
- Copper InfiniBand Connector (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
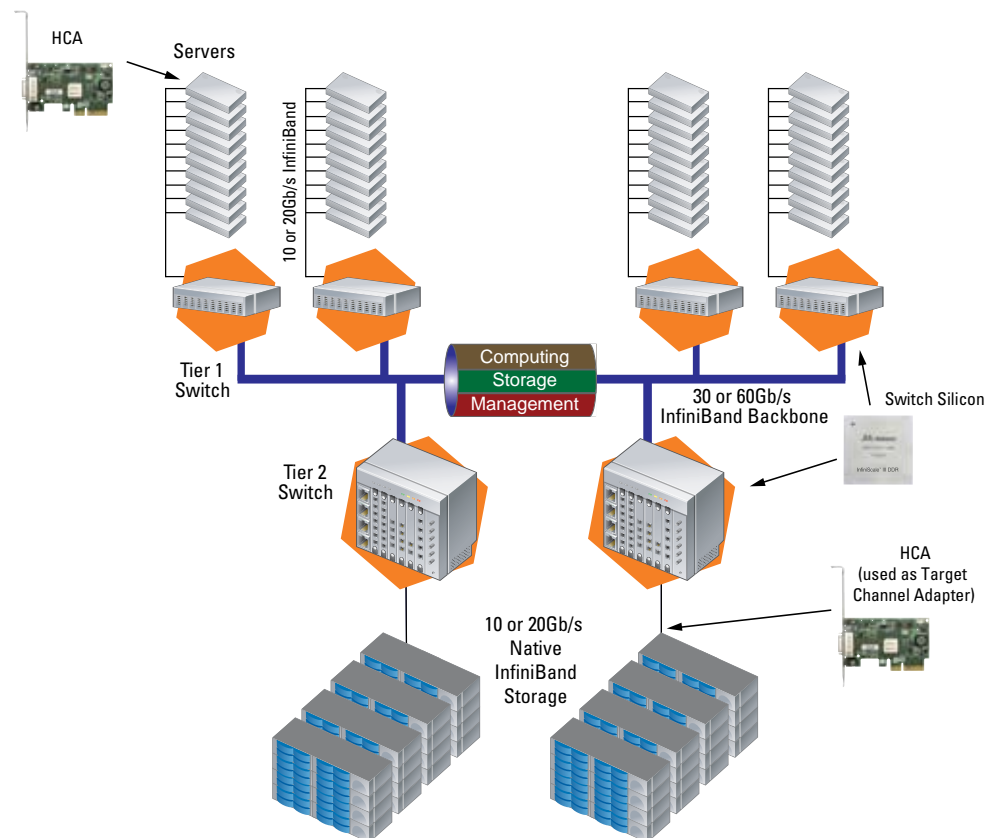- Various upper layer protocols

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 Lx Single-Port InfiniBand HCA Cards with PCI Express

Overview

InfiniHost III Lx single-port 4X InfiniBand Host Channel Adapter (HCA) cards connect to the host system through a PCI Express interface. Single data rate (SDR) InfiniHost III Lx cards support 10Gb/s InfiniBand connections while the double data rate (DDR) version supports 20Gb/s InfiniBand connections. InfiniHost III Lx 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.

The MHES14-X card can be directly inserted into PCI Express x4 or wider slots, while both the MHES18-X and MHGS18-X can be directly inserted into PCI Express x8 or wider slots of standard servers, blade servers, storage and communications platforms to provide node connectivity for InfiniBand fabrics. All adapter cards utilize a 4X MicroGigaCN InfiniBand compliant connector for copper cables. This copper connector provides the lowest cost 10 or 20Gb/s connection available. In addition, a pluggable media adapter module can be used for fiber connections up to 300m.

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

MHES14-X, MHES18-X, and MHGS18-X Single-Port InfiniBand HCA Cards

Feature Highlights

Enabled by the high-bandwidth and low-latency capability of PCI Express, the InfiniHost III Lx 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 Lx 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 Lx 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, the industry support for virtually all other operating systems is available including HPUX, AIX, OS X, Solaris, and VxWorks.

MHES14-X – 10Gb/s InfiniBand w/ PCI Express x4

MHES18-X – 10Gb/s InfiniBand w/ PCI Express x8

MHGS18-X – 20Gb/s InfiniBand w/ PCI Express x8

(all cards shown with tall brackets)

HCA Card Family

InfiniHost III Lx HCA Cards	InfiniBand Ports	System Interface	Power (Typical)
MHES14-X	Single 10Gb/s	PCI Express x4	3.3W
MHES18-X	Single 10Gb/s	PCI Express x8	3.5W
MHGS18-X	Single 20Gb/s	PCI Express x8	4W

* 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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