Mellanox
TECHNOLOGIES

KEY FEATURES

- 10Gb/s 4X InfiniBand Port
- Integrated Serializer/Deserializer (SerDes)
- InfiniRISC™ Embedded RISC Processors
- PCI Express Revision 1.1 Compatible Card
- PCI Express x4 (10 +10Gb/s Full Duplex) Interface
- 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
- Clustered database applications, parallel RDBMS queries, highthroughput 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
- Parallelized computing leveraging Message Passing Interface (MPI) based applications such as molecular modeling, oil and gas exploration, car crash simulations, etc.
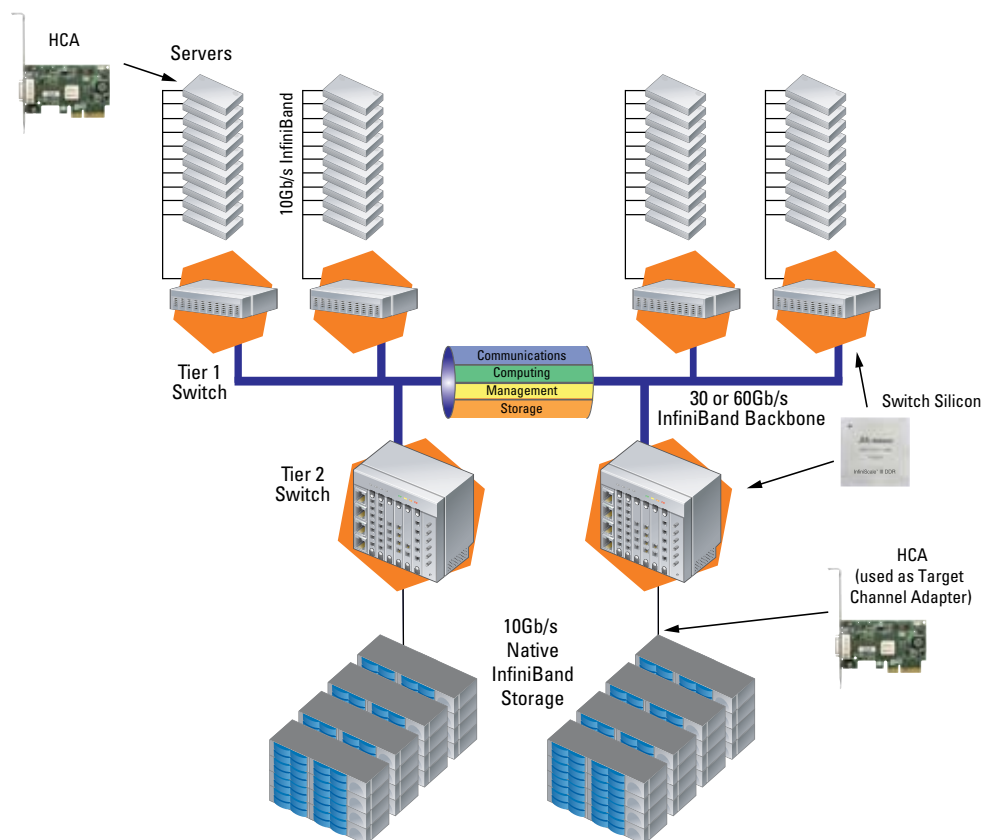
InfiniHost™ III Lx Single-Port InfiniBand HCA Card with PCI Express x4

Overview

The InfiniHost III Lx single-port 4X InfiniBand host channel adapter (HCA) card provides data centers with a cost-effective solution to consolidate communications, computing, management and storage traffic onto a single fabric. This HCA connects to the host system through a PCI Express x4 interface and supports single data rate (SDR) 10Gb/s InfiniBand connections. The InfiniHost III Lx HCA card delivers the most cost effective 10Gb/s solution available and features remote direct memory access (RDMA), hardware transport, and advanced per queue pair (QP) QoS services.

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

InfiniHost III Lx HCA Card (MHES14) used in Compute and Storage Nodes for a Unified InfiniBand Network

MHES14 Single-Port InfiniBand HCA Card
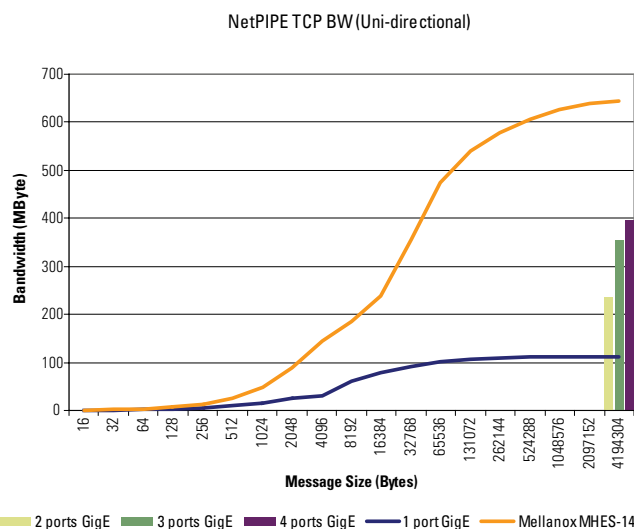
Feature Highlights

Enabled by the high-bandwidth and low-latency capability of PCI Express, the InfiniHost III Lx card features 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.

This low-profile InfiniHost III Lx HCA Card features 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. TCP-based application latency is also reduced. Interrupt-driven solutions will have 17us latencies end-to-end while polling-based solutions can expect latencies as low as 8us.

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

Software Support

The InfiniHost III Lx HCA card includes verbs interface and device drivers for both Windows and Linux operating systems. In addition, the card includes internal Subnet Management Agent (SMA) and General Service Agents, eliminating the requirement for an external management agent CPU. The HCA is fully compatible with the open source OpenIB.org software suite. Mellanox also provides IBG2, 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.

NetPIPE TCP BW (Uni-directional)

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

(card shown with tall bracket)

HCA Card Family

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

*Short brackets are also available by replacing "XTC" with "XSC"

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