

Oracle Dual Port QDR InfiniBand Adapter M3

Frequently Asked Questions

September 12, 2013

Overview

InfiniBand

High-performance application clusters require extreme performance from the cluster fabric in order to deliver breakthrough application performance. Fabric bandwidth, latency, and RDMA-based network and storage protocols have become critical enablers for leading application performance.

InfiniBand, which today delivers 40 Gigabit-per-second connectivity with application-to-application latency as low as one microsecond, has become a dominant fabric for high-performance enterprise clusters. Its ultra-low latency and near-zero CPU utilization for remote data transfers make InfiniBand ideal for high-performance clustered applications.

RDMA and application latency

Moving data between applications over a traditional network can be time consuming and drain precious server resources. With traditional network technologies, data exchanges traverse the operating systems on both the source and destination servers, resulting in excessive application latency due to operating system calls, buffer copies, and interrupts.

InfiniBand provides a direct channel from the source application to the destination application, bypassing the operating systems on both servers. This channel architecture doesn't just yield ultra-low application latency, but it also preserves server resources for application processing. The InfiniBand host channel adapter and not the CPU is responsible for moving data from application to application.

Fabric convergence

In addition to providing unrivaled access to remote application data, InfiniBand's industry-leading bandwidth enables fabric convergence, allowing all network, storage, and inter-process communication traffic to be carried over a single fabric. Converged fabrics aggregate the functions of dedicated, sole-

purposed networks and alleviate the associated expense of building and operating multiple networks.

Customer Benefits

Highest bandwidth and lowest-latency fabric available

InfiniBand provides industry-leading performance, delivering over three times the throughput of 10 Gigabit Ethernet with one-tenth of the application latency.

Preserving server resources for application processing

InfiniBand's channel architecture eliminates the need for OS intervention in network and storage communication. This frees server memory bandwidth and CPU cycles for application processing

Simplification of IT infrastructure and management

InfiniBand's bandwidth and rich set of supported network and storage protocols make it an ideal fabric for delivering converged-network services to high-performance clusters. Fabric convergence eliminates the need to have servers provisioned with multiple network interfaces, eliminates the requirement for multiple leaf switches at the cluster level, and reduces the number of expensive switch ports consumed in the data center core.

Frequently Asked Questions

What is the Oracle Dual Port QDR InfiniBand Adapter M3?

The Oracle Dual Port QDR InfiniBand Adapter M3 is a high-performance InfiniBand host channel adapter (HCA) that is designed to perform optimally in server and storage systems that support PCI Express 3.0 x8 slots.

PCI Express 3.0 delivers up to 64 GT/s (in each direction) to an x8 slot. This provides the PCI Express bandwidth required to sustain full bandwidth on both QDR InfiniBand ports.

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What is QDR?

QDR stands for Quad Data Rate. QDR InfiniBand delivers 40 Gigabits of raw bandwidth. The InfiniBand base rate is 10 Gigabits per second. QDR-capable products deliver four times the base rate.

Is InfiniBand an open technology?

InfiniBand is an industry-standard technology. The standard was developed by and is maintained by the InfiniBand Trade Association. Further information on the InfiniBand standards can be found at www.infinibandta.org

Is the Oracle Dual Port QDR InfiniBand Adapter M3 supported with Oracle Virtual Networking?

Yes. The Oracle Dual Port QDR InfiniBand Adapter M3 is supported with Oracle Virtual Networking.

Oracle Virtual Networking is supported with leading Hypervisors and operating systems. For the current list of supported Hypervisors and operating systems, see: <https://wikis.oracle.com/display/SystemsComm/Home#tab:Oracle-Virtual-Networking>

What server and storage systems support the Oracle Dual Port QDR InfiniBand Adapter M3?

The Oracle Dual Port QDR InfiniBand Adapter M3 is supported with a number of Oracle platforms. For the current list of supported systems, see: <https://wikis.oracle.com/display/SystemsComm/Home>

What operating systems and Hypervisors are supported with Oracle Dual Port QDR InfiniBand Adapter M3?

Oracle InfiniBand adapters are components of the Oracle server or storage system in which they are installed. See the list of supported option cards for the applicable server or storage system to determine the relevant operating system support for the system and adapter combination. For the current list of supported systems, see: <https://wikis.oracle.com/display/SystemsComm/Home>

What InfiniBand-enabled networking products are interoperable with the Oracle Dual Port QDR InfiniBand Adapter M3?

The Oracle Dual Port QDR InfiniBand Adapter M3 is interoperable with all current Oracle networking products supporting InfiniBand connectivity, including:

- Oracle Virtual Networking
- Oracle's Sun Datacenter InfiniBand Switch 36
- Oracle's Sun Network QDR InfiniBand Gateway Switch
- Oracle's Sun InfiniBand Dual Port 4x QDR PCIe Low Profile Host Channel Adapter M2
- Oracle's Sun InfiniBand Dual Port 4x QDR PCIe ExpressModule Host Channel Adapter M2

What InfiniBand cables are supported with the Oracle Dual Port QDR InfiniBand Adapter M3?

Oracle supports copper cables for distances of 1 to 5 meters and optical cables for distances of 5 to 100 meters.

Supported InfiniBand Copper Cables	
Description	Oracle Part
QSFP to QSFP passive copper cable: 1 meter	X2121A-1M-N
QSFP to QSFP passive copper cable: 2 meter	X2121A-2M
QSFP to QSFP passive copper cable: 3 meter	X2121A-3M-N
QSFP to QSFP passive copper cable: 5 meter	X2121A-5M-N

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Supported InfiniBand Optical Cables	
Description	Oracle Part
QSFP parallel fiber optics short wave transceiver (NOTE: Quantity of 2 transceivers <u>required</u> for each cable below)	X2124A-N
High bandwidth QSFP optical cable: 5 meters, MPO to MPO	7105199
High bandwidth QSFP optical cable: 10 meters, MPO to MPO	7102869
High bandwidth QSFP optical cable: 20 meters, MPO to MPO	7102870
High bandwidth QSFP optical cable: 50 meters, MPO to MPO	7102871
High bandwidth QSFP optical cable: 100 meters, MPO to MPO	7105206



Oracle Corporation
Worldwide Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.
Worldwide Inquiries
Phone: +1.650.506.7000
+1.800.ORACLE1
Fax: +1.650.506.7200
oracle.com



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