InfiniBand Software Stack
WinIB

Overview
Use of clustered commodity servers, in lieu of traditional supercomputers and mainframes, offers tremendous price/performance benefits and unparalleled flexibility in deployment and long-term maintenance. To enable distributed computing transparently, HPC applications require the highest bandwidth and lowest possible latency. In enterprise data center (EDC) applications, these requirements are compounded with the need to support a large interoperable ecosystem of networking, virtualization, storage, and other applications and interfaces. The WinIB Collection from Mellanox Technologies is designed, packaged and supported to enable OEMs to meet the needs of HPC and EDC applications.

Attain Higher Bandwidth & Lower Latency
For HPC applications, WinIB offers the popular and well-deployed Message Passing Interface (MPI2) implementation. Bandwidth results in excess of 1300MB/s and application latencies lower than 4 microseconds have been achieved.

For traditional TCP/IP and sockets-based applications, WinIB offers a robust and fieldproven implementation of IP-over-IB to enable IP-based applications to work seamlessly over InfiniBand and perform at levels higher than Ethernet. WinIB also includes an InfiniBand implementation of Windows Sockets Direct Protocol (WSD) and the IBTA defined Sockets Direct Protocol (SDP) for enabling traditional TCP/IP sockets-based applications to capitalize on the RDMA and transport off-load capabilities of InfiniBand.

To enable traditional SCSI-based storage applications to enjoy similar RDMA performance benefits, WinIB provides the SCSI over RDMA Protocol (SRP) initiator.

WinIB MPI2 Pallas Benchmark

WinIB MPI Pallas Latency

WinIB MPI2 Pallas BW
Support for a Large and Interoperable Software Ecosystem

Through its collaboration with OpenIB, support for multiple industry-standard interfaces that enable off-the-shelf applications to work with InfiniBand, and support for popular Windows OS and CPU platforms, Mellanox has created a large, interoperable software ecosystem that benefits the HPC and EDC markets.

As a founding member of OpenIB—the organization chartered with creating interoperable Windows stack for InfiniBand—Mellanox actively contributes software components to this open source community. In addition, Mellanox HCA solutions are used as the gold standard for hardware in OpenIB, and future WinIB versions will include qualified and released versions of the OpenIB InfiniBand stack components.