



# Manufacturing

Mechanical computer-aided design (MCAD) and computer-aided engineering (CAE) systems are integral parts of the design and development process for manufacturers. As MCAD and CAE software tools have become more sophisticated, manufacturers have adopted HPC cluster computing environments to speed processing times and reduce time-to-revenue for new products.

## THE CONNECTIVITY CHALLENGE

HPC cluster environments employ multicore, multi-processor servers and high-speed storage. But without a high-performance network connecting them, clustered server performance is wasted while data moves through the network bottleneck. In order to maintain a balanced system and to achieve optimal performance for MCAD and CAE simulations, the network interconnect must eliminate this bottleneck and provide high bandwidth with minimum latency.

## THE MELLANOX SOLUTION

Mellanox's high-performance InfiniBand connectivity solutions maximize the cluster compute environment's efficiency and scalability. Designed for multi-core, multi-processor environments, Mellanox's 200Gb/s InfiniBand can efficiently handle multiple data streams simultaneously while guaranteeing fast and reliable data transfer for each stream. Enabling scalable and fast communication among servers and storage, Mellanox InfiniBand adapters, switches, cables and software maximize HPC productivity for manufacturing, speeding up development time and reducing time-to-market.

Mellanox solutions are built on open standards delivering exceptional performance and business value. Only Mellanox offers backwards and forwards compatibility, which future proofs your networking investment. What's more, Mellanox is the only interconnect that is built on offload architecture, freeing more CPU cycles for application processing with no CPU frequency sensitivity. MPI collectives are managed and executed from the network fabric and is the only interconnect that offers in-

## KEY BENEFITS

- The world's fastest interconnect, supporting up to 200Gb/s per port
- In-network co-processing capabilities and advanced offload engines
- Sub-600 ns latency
- Lossless packet transmission
- Converged data center fabric reduces costs and power requirements
- Support for GPUDirect RDMA and GPUDirect ASYNC



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