



# HPC for Weather Forecasting & Research

Meteorological forecasting and research requires high-speed processing of massive data inputs, so productivity depends on processing speed. Data centers used in weather research use HPC cluster technology, combining the power of hundreds or thousands of CPUs with large, high-speed storage systems. To complete the performance equation, however, these data centers must be able to move data from server to server or server to storage at a speed that doesn't create processing bottlenecks. Mellanox InfiniBand adapters, switches, cables and software maximize productivity by delivering industry-leading band-width and the lowest latency.

## THE MELLANOX SOLUTION

In today's multi-core, multi-processor servers, each server can require up to 200G of I/O performance to avoid processing delays. Mellanox I/O adapters, switches, and gateways delivering up to 200Gb/s per port of reliable, lossless connectivity with sub-600 ns latency to eliminate data movement bottlenecks. Mellanox solutions enable most of the world's most powerful supercomputers, and they can bring the same high performance and reliability to weather data centers.

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-network co-processing capabilities.

## 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 predictable latency
- Support for GPUDirect RDMA and GPUDirect ASYNC
- Lossless packet transmission