



Mellanox HDR 200G InfiniBand Accelerates New Generation of World-Wide High-Performance Computing and Artificial Intelligence Supercomputers

Providing World-Leading Performance and Scalability for Compute and Data Demanding Applications, Accelerating Research, Scientific Discoveries and Product Development

Mellanox® Technologies, Ltd. (NASDAQ: MLNX), a leading supplier of high-performance, end-to-end smart interconnect solutions for data center servers and storage systems, today announced that HDR 200G InfiniBand accelerates the next generation of supercomputers world-wide, enabling higher levels of research and scientific discovery. HDR 200G InfiniBand solutions include the ConnectX-6 adapters, Mellanox Quantum switches, LinkX cables and transceivers and software packages. With its highest data throughput, extremely low latency, and smart In-Network Computing acceleration engines, HDR InfiniBand provides world leading performance and scalability for the most demanding compute and data applications.

HDR 200G InfiniBand introduces new offload and acceleration engines, for delivering leading performance and scalability for high-performance computing, artificial intelligence, cloud, storage, and other applications. InfiniBand, a standards-based interconnect technology, enjoys the continuous development of new capabilities, while maintaining backward and forward software compatibility. InfiniBand is the preferred choice for world leading supercomputers, replacing lower performance or proprietary interconnect options.

"We are proud to have our HDR InfiniBand solutions accelerate supercomputers around the world, enhance research and discoveries, and advancing Exascale programs," said Gilad Shainer, senior vice president of marketing at Mellanox Technologies. "InfiniBand continues to gain market share, and be selected by many research, educational and government institutes, weather and climate facilities, and commercial organizations. The technology advantages of InfiniBand make it the interconnect of choice for compute and storage infrastructures."

The Texas Advanced Computing Center's (TACC) Frontera supercomputer, funded by the National Science Foundation, is the fastest supercomputer at any U.S. university and one of the most powerful systems in the world. Ranked #5 on the June 2019 TOP500 Supercomputers list, Frontera utilizes HDR InfiniBand, and in particular multiple 800-port HDR InfiniBand switches, to deliver unprecedented computing power for science and engineering.

"HDR InfiniBand enabled us to build a world-leading, 8,000+ node, top 5 supercomputer that will serve our users' needs for the next several years," said Dan Stanzione, TACC Executive Director. "We appreciate the deep collaboration with Mellanox and are proud to host one of the fastest supercomputers in the world. We look forward to utilizing the advanced routing capabilities and the In-Network Computing acceleration engines to enhance our users' research activities and scientific discoveries."

Located at the Mississippi State University High Performance Computing Collaboratory, the new HDR InfiniBand-based Orion supercomputer will accelerate the university research, educational and service activities. Ranked #62 on the June 2019 TOP500 list, the 1800-node supercomputer leverages the performance advantages of HDR InfiniBand and its application acceleration engines to provide new levels of application performance and scalability.

"HDR InfiniBand brings us leading performance and the ability to build very scalable and cost efficient supercomputers utilizing its high switch port density and configurable network topology," said Trey Breckenridge, Director for High Performance Computing at Mississippi State University. "Over 16 years ago MSU became one of the first adopters of the InfiniBand technology in HPC. We are excited to continue that legacy by leveraging the latest InfiniBand technology to enhance the capabilities of our newest HPC system."

CSC, the Finnish IT Center for Science, and the Finnish Meteorological Institute Selected HDR 200G InfiniBand to accelerate a multi-phase supercomputer program. The program will serve researchers in Finnish universities and research institutes, enhancing their research into climate science, renewable energy, astrophysics, nanomaterials, and bioscience, among a wide range of exploration activities. The first supercomputer is ranked #166 on the TOP500 list.

"The new supercomputer will enable our researchers and scientists to leverage the most efficient HPC and AI platform to enhance their competitiveness for years to come," said Pekka Lehtovuori, Director of services for research at CSC. "The HDR InfiniBand technology, and the Dragonfly+ network topology will provide our users with leading performance and scalability while optimizing our total cost of ownership."

Cygnus is the first HDR InfiniBand supercomputer in Japan, located in the Center for Computational Sciences at the

University of Tsukuba. Ranked #264 on the TOP500 list, Cygnus leverages HDR InfiniBand to connect CPUs, GPUs and FPGAs together, enabling accelerated research in the areas of astrophysics, particle physics, material science, life, meteorology and artificial intelligence.

"The Cygnus supercomputer utilizes the advantage of InfiniBand to connect the variety of compute elements, such as CPUs, GPUs, and additional FPGAs, in the most effective and high-performance way," said Prof. Taisuke Boku, Director of Center for Computational Sciences, University of Tsukuba. "Our multi-hybrid heterogeneous compute platform with the HDR InfiniBand technology enables the university to enhance our research activities, and to develop the applications and tools for the Exascale era."

The Center for Development of Advanced Computing (C-DAC) has selected HDR InfiniBand for India's national supercomputing mission. The C-DAC HDR InfiniBand supercomputer advances India's research, technology, and product development capabilities.

"The Center for Development of Advanced Computing (C-DAC), an autonomous R&D institution under the Ministry of Electronics and IT, Government of India with its focus in Advanced Computing is uniquely positioned to establish dependable and secure Exascale Ecosystem offering services in various domains. As our nation embarks upon its most revolutionary phase of Digital Transformation, C-DAC has committed itself to explore and engage in the avant-garde visionary areas excelling beyond in the present areas of research transforming human lives through technological advancement," said Dr Hemant Darbari, Director General, C-DAC. "C-DAC is spearheading the build, design and develop approach of National Supercomputing Mission (NSM) of the country. The first Supercomputer under NSM Build Approach by C-DAC was launched by Hon'ble Prime Minister at IIT (BHU) Varanasi, the solution comprising of Mellanox HDR InfiniBand Interconnect selected through a competitive evaluation process. C-DAC will build such solutions across the country under NSM contributing to advancing India's research, technology and product development capabilities. We have been using Mellanox InfiniBand Interconnect to our satisfaction as a part of our HPC solution deployed at C-DAC and various research and technical institutions in the country and look forward to continue working on developing our future supercomputers"

Mellanox will showcase the HDR InfiniBand solutions at the International Supercomputing conference in Frankfurt Germany, June 17-19, at booth number E-911.

Additional Resources:

- Learn more about [Mellanox Quantum™ HDR 200Gb/s InfiniBand Smart Switches](#)
- Learn more about [ConnectX-6 HDR 200Gb/s InfiniBand adapters](#)

Alex Shapiro
Enterprise Networking
1-415-608-5044
ashapiro@nvidia.com