NVIDIA Announces Industry's First Secure SmartNIC Optimized for 25G

NVIDIA Mellanox ConnectX-6 Lx SmartNIC Provides Advanced Network Offloads to Accelerate Cloud and Enterprise Workloads

GTC 2020 -- NVIDIA today launched the [NVIDIA® Mellanox ConnectX®-6 Lx SmartNIC](#) — a highly secure and efficient 25/50 gigabit per second (Gb/s) Ethernet [smart network interface controller (SmartNIC)](#) — to meet surging growth in enterprise and cloud scale-out workloads.

ConnectX-6 Lx, the 11th generation product in the ConnectX family, is designed to meet the needs of modern data centers, where 25Gb/s connections are becoming standard for handling demanding workflows, such as enterprise applications, AI and real-time analytics.

The new SmartNIC extends accelerated computing by leveraging software-defined, hardware-accelerated engines to offload more security and network processing from CPUs.

"Modern cloud and enterprise data centers rely on accelerated networking to address their scalability and compute challenges," said Amit Krig, senior vice president of software and NIC products in NVIDIA's Mellanox networking business. "ConnectX-6 Lx SmartNIC delivers cost-effective, accelerated and secure networking for the new era of disaggregated, composable data centers."

Advanced Security
Accelerated security features such as IPsec in-line cryptography and Hardware Root of Trust, and a 10x performance improvement for Connection Tracking, enable Zero Trust security throughout the data center. Best-in-class RDMA over converged Ethernet (RoCE), advanced virtualization and containerization, and NVMe over Fabrics storage offloads provide highly scalable and performant networking.

"The server industry is rapidly transitioning from 10GbE to 25GbE network speeds with very fast growth expected. With increasing requirements being placed on the network, more offloads need to be performed on SmartNICs," said Scott Raynovich, founder and chief technologist of Futuriom, a technology research firm. "NVIDIA's Mellanox ConnectX-6 Lx enables SmartNIC offloads, including advanced switching and security, in a cost-efficient 25/50GbE solution."

Key Features
The Mellanox ConnectX-6 Lx provides:

- Two ports of 25Gb/s, or a single port of 50Gb/s, Ethernet connectivity with PCIe Gen 3.0/4.0 x8 host connectivity
- Security features including Hardware Root of Trust, Connection Tracking for stateful L4 firewalls, and in-line IPSec cryptography acceleration
- GPUDirect® RDMA acceleration for NVMe over Fabrics (NVMe-oF) storage, scale-out accelerated computing and high-speed video transfer applications
- Zero Touch RoCE (ZTR) for scalable, easy-to-deploy, best-in-class RoCE without switch configuration
- Accelerated switching and packet processing (ASAP2), with built-in SR-IOV and VirtIO hardware offloads for virtualization and containerization, to accelerate software-defined networking and connection tracking for next-generation firewall services

ConnectX-6 Lx is sampling now, with general availability expected in Q3 2020. Like all products in the ConnectX family, it is compatible with the Mellanox SmartNIC software stack. Together with Mellanox Spectrum® switches and the LinkX® family of cables and transceivers, ConnectX SmartNICs enable the most comprehensive end-to-end solution for high-performance networks.

Broad Industry Support
Mellanox SmartNICs and software are used in cloud, hyperscale and enterprise data centers, high performance computing, cybersecurity and financial services systems around the world. Here's what some of NVIDIA's technology partners are saying about SmartNICs:

Scott Tease, general manager of High Performance Computing and Artificial Intelligence at Lenovo Data Center Group, said: "Lenovo offers best-of-breed solutions that are engineered, tested and certified for cloud, HPC, artificial intelligence, and hyperscale computing workloads. Mellanox ConnectX SmartNICs enable secure, efficient, high-speed connectivity that accelerates networks and provides critical business advantages for our clients."

Rashid Khan, director of networking at Red Hat, said: "Security is critically important for any enterprise data center or cloud deployment. We worked closely with Mellanox to develop Connection Tracking, which helps drive secure upstream and downstream networking capabilities. Connection Tracking enables software-defined networking and security to lock down critical resources and data; it offers stateful security at each server, and can be offloaded onto Mellanox ConnectX SmartNICs, reducing CPU cycles for optimal hardware utilization."

Michael McNerney, vice president of Marketing and Network Security at Supermicro, said: "As the leader in high-performance server and storage system technology, Supermicro strives to provide customers with superior performance, features and improved TCO to maximize the value from their data center. As more and more enterprises transition from 10GbE to 25GbE, ConnectX-6 Lx offers our customers a feature-packed 25GbE SmartNIC that can accelerate their network and applications at a competitive price point."

About NVIDIA
NVIDIA's (NASDAQ: NVDA) invention of the GPU in 1999 sparked the growth of the PC gaming market, redefined modern computer graphics and revolutionized parallel computing. More recently, GPU deep learning ignited modern AI — the next era of computing — with the GPU acting as the brain of computers, robots and self-driving cars that can perceive and understand the world. More information at http://nvidianews.nvidia.com/.

Certain statements in this press release including, but not limited to, statements as to the benefits, performance and features of our products and technologies, including the ConnectX-6 Lx SmartNIC; the rates of connections in data centers; data centers relying on accelerated networking; SmartNIC delivering networking for the new era of disaggregated, composable data centers; accelerated security features enabling Zero Trust security; the server industry transitioning network speeds and the growth expected; increasing offloads needing to be performed by SmartNIC; ConnectX-6 enabling offloads in a cost-efficient solution; the availability of Connect X-6 Lx; the NVIDIA Mellanox products enabling a comprehensive solution for networks; ConnectX SmartNICs enabling secure, efficient connectivity, accelerating networks and providing business advantages; the features and offerings of Connection Tracking and it enabling software-defined networking and security; and ConnectX-6 Lx offering customers a feature-packed SmartNIC that can accelerate their network applications at a competitive price point are forward-looking statements that are subject to risks and uncertainties that could cause results to be materially different than expectations. Important factors that could cause actual results to differ materially include: global economic conditions; our reliance on third parties to manufacture, assemble, package and test our products; the impact of technological development and competition; development of new products and technologies or enhancements to our existing product and technologies; market acceptance of our products or our partners' products; design, manufacturing or software defects; changes in consumer preferences or demands; changes in industry standards and interfaces; unexpected loss of performance of our products or technologies when integrated into systems; as well as other factors detailed from time to time in the most recent reports NVIDIA files with the Securities and Exchange Commission, or SEC, including, but not limited to, its annual report on Form 10-K and quarterly reports on Form 10-Q. Copies of reports filed with the SEC are posted on the company's website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

Michal Shoham
Senior Marketing Manager
+1-408-419-0554
michalsh@nvidia.com