Revolutionary Mellanox ConnectX-6 Dx SmartNICs and BlueField-2 I/O Processing Units Transform Cloud and Data Center Security

Mellanox Announces General Availability of ConnectX-6 Dx SmartNICs, Featuring Pioneering Security Accelerators for Cloud Platforms

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 the immediate general availability of ConnectX-6 Dx SmartNICs, in addition to the soon-to-be-released BlueField-2 I/O Processing Units (IPUs). Both feature a suite of cutting-edge security acceleration engines and platform security capabilities for building highly secure and efficient data center infrastructures at massive scale, across public, on-premises and edge environments.

Today's rapidly evolving cyber threats are driving organizations to continuously assess their security postures and adopt holistic defense strategies that address physical, virtual and human factors. The growth of cloud and edge computing has redefined the physical and virtual boundaries of the data center. Continuous advancements in cloud networking technologies and growing data volumes pose challenges to enterprises and cloud operators to deliver enhanced digital experiences, while also protecting data and assets.

"Networking and security must converge to achieve consistent and predictable application performance, with all the necessary levels of data privacy, integrity and reliability. This vision is the core foundation on which we designed our ConnectX-6 Dx SmartNIC and BlueField-2 IPU products," said Amit Krig, senior vice president, Ethernet NIC and IPU Product Line at Mellanox Technologies. "Today we are excited to ship production qualified ConnectX-6 Dx SmartNICs to our hyperscale customers, turning our vision into a reality."

"As countless economic opportunities are unlocked by software-defined cloud technologies, they bring along security requirements. Pure software-defined cyber security offerings that are decoupled from the underlying hardware will be challenged to achieve adequate protection, scale, and efficiency," said Vikram Phatak, Founder of NSS Labs. "By deploying purpose-built networking hardware like ConnectX-6 Dx SmartNICs and BlueField-2 IPUs with cloud-native software, cloud adopters and innovators can benefit from hardware-accelerated, fine-grained security that improves efficiency, increases agility and lowers costs."

ConnectX-6 Dx and BlueField-2 play a key role in distributed, zero-trust security architectures that extend traditional perimeter security to every endpoint. Integrating cutting-edge IPsec and TLS cryptographic acceleration technologies with leading open-source, upstream software solutions, Mellanox allows customers and partners to take advantage of innovative hardware acceleration capabilities in both new and existing data center environments. Both virtualized and bare metal servers benefit from secure web application delivery, east-west communication encryption, RoCE transport communication encryption and data-at-rest storage encryption, at data rates of up to 200Gb/s, and enhanced CPU efficiencies.

The emergence of cloud workload protection solutions calls for scalable and stateful packet filtering capabilities that both preserve application performance and enforce resilient security policies. Mellanox ConnectX SmartNICs and BlueField IPUs provide in-hardware security policy enforcement and connection tracking at full wire speed with up to 100X performance gains compared to non-accelerated solutions - making them ideal to boost next-generation firewalls in bare-metal, virtualized and containerized cloud environments.

As an IPU, BlueField-2 provides even more in-hardware security capabilities, including agentless micro-segmentation, advanced malware detection, deep packet inspection and application recognition, that far outperform software-only solutions. Mellanox BlueField IPUs enable the best of both worlds – the speed and flexibility of software-defined solutions, with tighter security, accelerated performance and improved efficiency by processing data in the device hardware at the I/O path.

See the Mellanox ConnectX-6 Dx and BlueField-2 IPU in the Mellanox booth #4525 at the RSA Conference, February 24-27, Moscone Center, San Francisco.

Supporting Quotes:

"The 2nd Gen AMD EPYC processors are the first x86 data center processor that supports PCIe 4.0 and provides industry leading performance for workloads such as virtualization, database applications, and high-performance computing," said Raghu Nambiar, corporate vice president, Data center Ecosystems & Application Engineering, AMD. "Our partnership with Mellanox, the leader in high-performance network solutions, is a natural fit for our open ecosystem strategy and we look

forward to seeing our joint customers deploy Mellanox ConnectX-6 Dx SmartNICs and BlueField-2 IPUs on 2nd Gen AMD EPYC based systems."

"Arm® Neoverse™ platforms are designed for fast, compute-intensive tasks, and support the broadest set of applications," said Mohamed Awad, vice president of marketing, Infrastructure Line of Business at Arm. "Integrating high-density Arm-based processors with Mellanox BlueField-2 IPUs delivers an optimal balance of performance and efficiency, capable of enabling advanced functionality across cloud, AI, and edge applications."

"Our hyperscale cloud platform serves over 200 million daily active users of our artificial intelligence-based mobile news feed and searching app. Data security is essential across every digital product and service we offer, and even more so as we plan to move beyond mobile, into smart homes and automobiles," said Ning Liu, director of system department at Baidu. "We have piloted the first generation of Mellanox's BlueField IPU and look forward to deploying BlueField-2 for our bare-metal instances in production."

"BlueField-2 SmartNICs with Ubuntu preinstalled break new grounds in data center security at scale and unlock exciting fields for bare-metal provisioning, network offloading and innovative data center architectures," said Loic Minier, global director, Field Engineering at Canonical. "By leveraging snaps, Bluefield 2 provides the best platform to deliver applications at the edge and manage data center security."

"Guardicore protects organization's most critical IT assets, wherever they run. We do so by providing a simple way to micro-segmentation data centers and cloud environments," says Sharon Besser, VP Business Development at Guardicore. "Our integration with Mellanox's BlueField IPUs is enabling us to provide hardware accelerated segmentation in very high-speed and low latency environments. We look forward to expanding the integration and to derive the benefits of the enhanced security capabilities of ConnectX-6 Dx SmartNICs and BlueField-2 IPUs."

"Our collaboration with Mellanox has helped bring additional capabilities to IBM and our customers," said Matthew Drahzal, IBM offering executive. "We look forward to exploring ways for this new technology to accelerate our modern AI and HPC offerings in this rapidly evolving space."

"Enterprise security is paramount as AI moves to the edge," said Justin Boitano, general manager of Enterprise and Edge Computing at NVIDIA. "Mellanox's new products offer high-speed crypto engines that enable highly secure and reliable communications between the cloud and AI applications running on millions of NVIDIA-powered edge devices."

"Enhancing system security is a key component of Red Hat's open technology approach across our Linux, hybrid cloud, container and Kubernetes offerings, and we do so by following a 'secure by default' approach across our technology portfolio," said Tom Nadeau, Technical Director, NFV at Red Hat. "Our collaboration with Mellanox in this area and others, including vDPA and virtio, has helped to amplify the adoption of software-defined networking across the open hybrid cloud, and we're pleased to extend our work with them in the open source communities in driving efforts around hardware-accelerated security."

"UCloud's differentiated cloud products and services deliver the highest levels of stability and reliability for various industry and universal use-cases," said Leo Xu, director of network group at UCloud. "The successful deployment of ConnectX SmartNICs in production have significantly increased our network capacity and reduced latency. We plan to deploy the next generation BlueField IPUs for streamlining bare-metal server provisioning and operations."

Supporting Resources:

- Learn more about ConnectX-6 Dx SmartNICs
- Learn more about BlueField-2 IPUs
- Learn more about Mellanox Security Solutions

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