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Mellanox Enables the Next Generation of Software-Defined Data Center Networks With BlueField™ SmartNIC Network Adapters

Software-Programmable Adapters Combine Multicore ARM Processing and ConnectX® Technology to Deliver Security, Acceleration and Server Offloads

SUNNYVALE, Calif. & YOKNEAM, Israel--(BUSINESS WIRE)-- Mellanox® Technologies, Ltd. (NASDAQ: MLNX), a leading supplier of high-performance, end-to-end interconnect solutions for data center servers and storage systems, today announced its BlueField™ family of software-defined SmartNIC adapters, designed for scale-out server and storage applications. The BlueField intelligent adapters bring new capabilities to Mellanox's portfolio by embedding powerful ARM processor cores and accelerators in the network interface card (NIC). Based on the BlueField system-on-chip processors, with up to 200Gb/s of low-latency throughput, these adapters enable a truly software-defined data center network.

As pressure on the data center's agility and efficiency continue to rise, intelligent networking solutions must simultaneously deliver higher data throughput, greater flexibility, and offload more and more of the costly host CPU cycles to the NIC. Integrating compute and accelerator resources directly into the NIC boosts the server workload capacity by 2 - 3 times, without requiring any additional rack space and without adding significant power. Cloud and large data center operators need the adaptability and scalability of programmable adapters in order to roll-out new services, features and advanced protocols without opening servers for a hardware upgrade.

Key features of the BlueField intelligent adapters:

- | 2 network ports of Ethernet or InfiniBand: 10G/25G, 40G, 50G or 100Gb/s options
- | RDMA support for both InfiniBand and RoCE from the leader in RDMA technology
- | Accelerators for NVMe-over-Fabrics (NVMe-oF), RAID, crypto and packet processing
- | PCI Express Gen3 and Gen4, with either x8- or x16-lane configurations
- | Integrated low-latency PCIe switch with up to 8 external ports for flexible topologies
- | Up to 16 ARMv8 Cortex A72 processors with 20MB of coherent cache
- | 8 - 32GB of on-board DDR4 DRAM
- | Comprehensive virtualization support with SR-IOV
- | Accelerated Switching and Packet Processing (ASAP²™) OVS offloads
- | Multi-host and SocketDirect™ enabling a single adapter to support up to four CPU hosts
- | Multiple server form-factor options including half-height, half-length PCIe and other configurations

In data center server environments, the BlueField SmartNIC addresses a wide range of applications, including Network Functions Virtualization (NFV), security and network traffic acceleration. The fully programmable environment and DPDK framework support a wide range of standard software packages running in the BlueField ARM subsystem. Examples include:

- | Open vSwitch (OVS)
- | Security packages such as L3/4 firewall, DDoS protection and Intrusion Prevention
- | Encryption stacks (IPsec, SSL/TLS)
- | Traffic monitoring, telemetry and packet capture

"Our BlueField adapters effectively place a *Computer in Front of the Computer*," said Gilad Shainer, vice president marketing, Mellanox Technologies. "They provide the flexibility needed to adapt to new and emerging network protocols,

and to implement complex networking and security functions in a distributed manner, right at the boundary of the server. This brings more scalability to the data center and enhances security by creating an isolated trust zone."

"We expect the BlueField SmartNIC adapters to be a compelling offering in the software-defined networking space," said Bob Wheeler, principal analyst at The Linley Group. "Performance demands in this segment are growing rapidly and Mellanox is well positioned with the ubiquitous driver support of its broadly deployed ConnectX[®] network controller. With the addition of the accelerators and ARM cores, BlueField will enable exciting innovations in server and storage applications."

"Mellanox BlueField intelligent adapters enable us to achieve higher performance and offload for complex networking and storage workloads," said CT Sun, the chief architect and vice president of engineering at AIC. "We are pleased to embrace a new generation of Mellanox SmartNICs that enable AIC and our MAX I/O[™] platform customers to create highly differentiated products by enabling fully software-programmable network processing."

Mellanox will be showcasing BlueField adapters at the Linley Processor Conference 2017, Oct. 4-5, at the Hyatt Regency, Santa Clara, CA.

Supporting Resources:

- | Learn more about: [BlueField Smart Adapters](#)
- | Follow Mellanox on [Twitter](#), [Facebook](#), [Google+](#), [LinkedIn](#), and [YouTube](#)
- | [Join the Mellanox Community](#)

About Mellanox

Mellanox Technologies (NASDAQ: [MLNX](#)) is a leading supplier of end-to-end Ethernet and InfiniBand intelligent interconnect solutions and services for servers, storage, and hyper-converged infrastructure. Mellanox intelligent interconnect solutions increase data center efficiency by providing the highest throughput and lowest latency, delivering data faster to applications and unlocking system performance. Mellanox offers a choice of high performance solutions: network and multicore processors, network adapters, switches, cables, software and silicon, that accelerate application runtime and maximize business results for a wide range of markets including high performance computing, enterprise data centers, Web 2.0, cloud, storage, network security, telecom and financial services. More information is available at: www.mellanox.com.

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