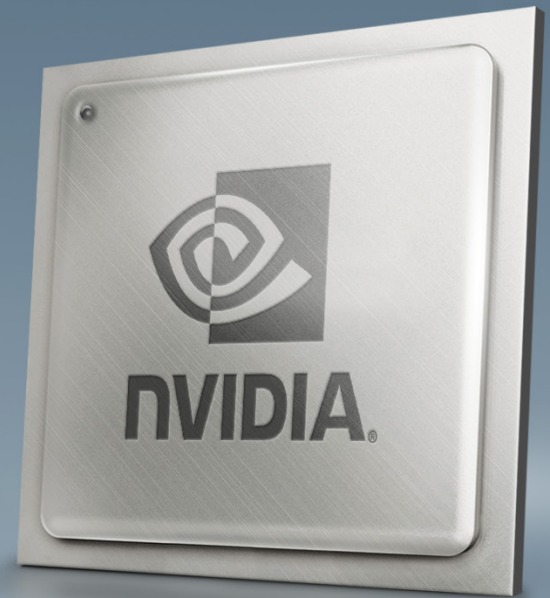




NVIDIA MELLANOX SPECTRUM 10/25/40/50 AND 100G ETHERNET SWITCH SILICON



NVIDIA® Mellanox® Spectrum® provides efficient Ethernet interconnect solutions for server and storage systems, in enterprise data centers, cloud computing, Web 2.0, data analytics, deep learning, high performance, and embedded environments. The Spectrum switch ASIC delivers leading Ethernet performance, efficiency, throughput, low latency, and scalability by integrating advanced networking functionality for Ethernet fabrics.

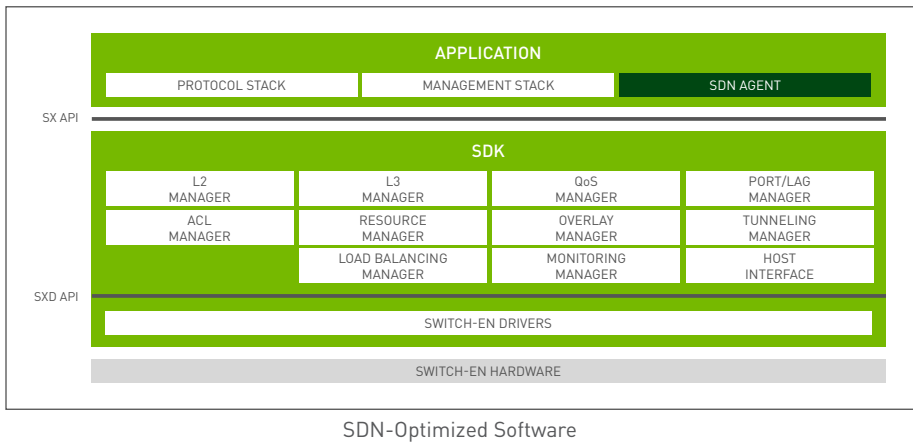
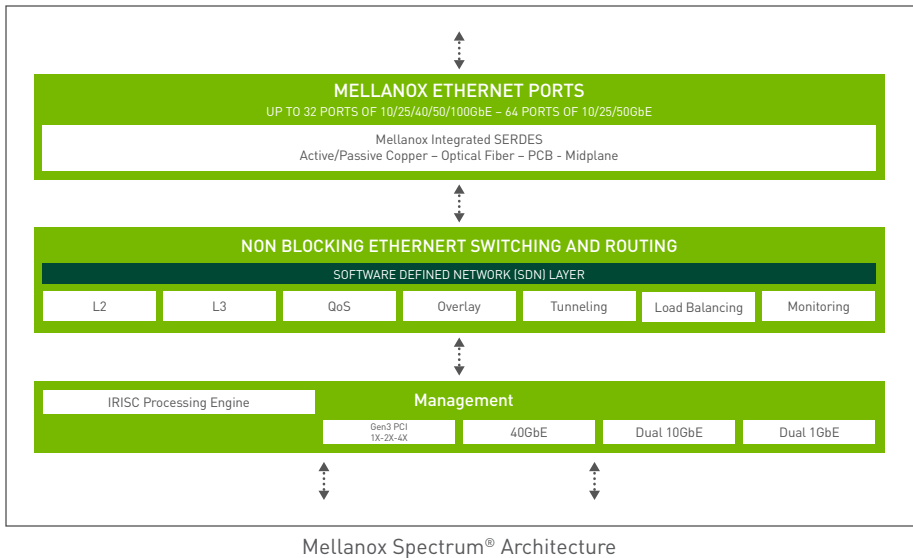
FROM 10 TO 100 GIGABIT ETHERNET

Hyperscale, cloud, data-intensive, virtualized data centers and storage environments are driving the need for increased interconnect performance and throughput. The increasing amount of data that needs to be analyzed quickly and in real time require interconnect speeds of 100 Gb/s and beyond. Mellanox Spectrum-based Ethernet switches enable users to upgrade their data center Ethernet network from 1 or 10 GbE to 25 GbE, from 40 GbE to 50 GbE, and to leverage 100 GbE for the highest data center return on investment. Mellanox Spectrum flexibility enables building Ethernet switch system at speeds of 10, 25, 40, 50 and 100 GbE with leading port density, low latency, zero packet loss, and non-blocking traffic.

The integration of 128 PHYs which are flexible enough to operate at data rates of 1 Gb/s to 28 Gb/s per lane, makes Mellanox Spectrum a clear choice for OEMs that must address end-user requirements for faster and more robust applications. Mellanox Spectrum supports network speeds of up to 100 Gb/s per port with extremely low latency, low jitter, and a high message rate. Reduced power, footprint and a fully integrated PHYs capable of connectivity across PCBs, backplanes, as well as passive and active copper/fiber cables allow interconnect fabrics based on Mellanox Spectrum to be utilized for deploying leading, fabric-flexible computing and storage systems with the lowest TCO.

Highlights

- > Zero packet loss
- > Industry leading, true, cut-through latency
- > Forwarding database sized for hyperscale
- > Optimized for Software Defined Networking
 - > Support for OpenFlow Switch Spec Version 1.0 to 1.4 and beyond
 - > Remote configurable routing tables
- > 3.2 Tb/s switching capacity delivering wire speed performance at all packet sizes and traffic patterns
- > Dynamically shared, flexible, packet buffering
- > Comprehensive overlay and tunneling support: VXLAN, NVGRE, Geneve and MPLS
- > Data Center Bridging (DCB)
- > PFC, DCBX, ETS
- > Advanced load balancing
- > Advanced congestion management, ECN
- > Low cost solution
 - > Fully integrated PHYs
 - > Backplane and cable support
 - > 1, 2 and 4 lane
- > Flexible port configurations
 - > Up to 32 x 40/100 GbE ports
 - > Up to 64 x 10/25/50 GbE ports



Compatibility

Ethernet

- > 1, 10, 25, 40, 50 and 100 Gb/s
- > DCB (PFC, ETS, DCBX)

CPU Interoperability

- > PowerPC, Intel® x86, AMD x86, and MIPS

Host Interface

- > PCIe Gen 3.0; 4 lanes of 5 GT/s or 2.5 GT/s

Interoperability

- > Full interoperability with standard Ethernet NICs and switches

Connectivity

- > Drives active/passive copper cables, fiber optics, PCB, or backplanes

I/O Specifications

- > 32 x 40/56/100 GbE ports, 64 x 10/20/25/40/50 GbE ports
- > SPI flash interface, I²C
- > IEEE 1149.1 boundary-scan JTAG
- > Link status LED indicators
- > General purpose I/O

Package

- > 52.5mm x 52.5mm FCBGA

LARGE-SCALE LAYER 2 OR LAYER 3

Fabrics drive requirements for increased bandwidth and virtualization, while maintaining non-blocking performance at low latency. Mellanox Spectrum addresses these requirements by integrating advanced networking functionality, such as virtualization and tunneling cores, with flexible Software Defined Network (SDN) control and monitoring engines on top of industry leading cut-through latencies and a 3.2 Tb/s, non-blocking, switching capacity.

MOST EFFICIENT SWITCH NETWORK INFRASTRUCTURE

The demand for data center performance continues to grow as multi-tenant private and public cloud workloads require the network to deliver a high level of reliability and guaranteed service levels. Mellanox switch solutions deliver zero loss, wire speed throughput for all message sizes, and the lowest jitter for predictable latency.

PORT CONFIGURATION

Mellanox Spectrum has flexible port configuration that supports a variety of port speeds in 4-lane, 2-lane or 1-lane operation. Mellanox Spectrum can provide up to 32 ports of 40/56/100 GbE, or up to 64 ports of 10/25/40/50GbE, or any combination of these speeds.

OPTIMIZED SDN SUPPORT

Mellanox Spectrum includes advanced capabilities for remote management as well as configuration and monitoring of data center fabrics, exceeding the requirements of OpenFlow Switch Specification Version 1.4. Such capabilities combine functions like L2 and L3 forwarding tables, overlay network units, and tunneling protocols with advanced statistics and monitoring tables, through an efficient, SDN-optimized control plane and software interfaces. The Mellanox Spectrum packet-processing pipeline provides unmatched flexibility in managing, monitoring, and distributing data flows at all layers, including tunneling and virtualized flows. Mellanox Spectrum enables IT managers to program and centralize their server and storage interconnect management and dramatically reduce their operation expenses by completely virtualizing their data center network.

SWITCH PRODUCT DEVELOPMENT PLATFORMS

The Mellanox Spectrum Development Kit (DVK) and Software Development Kit (SDK) are available to accelerate OEM evaluation, development and time to market. These rack-mountable systems are available with full hardware functionality and a mix of QSFP and SFP+ interfaces. OEMs can develop fully functional switching software by integrating a switching management stack on top of the Mellanox Spectrum SDK.

NVIDIA MELLANOX ADVANTAGE

NVIDIA Mellanox is the leading supplier of industry standard InfiniBand and Ethernet adapter and switch silicon. Our products have been deployed in clusters scaling to thousands of nodes and are being deployed end-to-end in data center systems around the world.

ORDERING INFORMATION

OPN	DESCRIPTION
MT52132A-FDCR-C	Mellanox Spectrum® 32 Port Ethernet 100GbE Switch IC
MT52132A1-FDIF-C ⁽¹⁾	Mellanox Spectrum® 32 Port Ethernet 100GbE Switch IC, Industrial Temperature

¹ Contact Mellanox for availability.

Learn more at www.mellanox.com/products/ethernet-switch-ic

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