



# Ethernet Product Reference Guide

## End-to-end solutions from 1 to 100Gbps

Mellanox is the only vendor to offer complete portfolio of adapters, switches and cables for modern data center environments. Delivering industry-leading performance, scalability, reliability and power usage ensures optimal data center efficiency to deliver performance at the application level.

### Mellanox Ethernet Switches



#### Open Ethernet. Flexibility, Speed and Simple Management

The Mellanox Spectrum™ family of Open Ethernet switches offer customers freedom of choice with third party network operating systems such as Cumulus to optimize utilization, efficiency, and overall return on investment Mellanox provides the highest density/performance with comprehensive L2/L3 support for spine and top-of-rack switching at speeds of 10/25/40/50/6/100Gb/s, in a broad portfolio of 1RU-sizes, ranging from 12 ports through 64 ports, including industry unique half-width wide switches. This allows for maximum connectivity flexibility to meet application deployment requirements.

### Mellanox Ethernet Adapters



#### Flexible I/O for the Dynamic Data Center

Mellanox world-class 10/25/40/50/56/100 Gigabit Ethernet Network interface Cards (NIC) deliver the highest performance and most flexible solutions for applications requiring high bandwidth, low latency and high message rates. Mellanox adapters provide performance-driven world-class server, network, and storage performance for the most demanding data-center environments. Accelerating server and application efficiency through hardware offloads and innovative technologies such as Multi-Host and ASAP2, allowing scalability to tens-of-thousands of nodes.

### Mellanox Interconnects



#### The Connection to Ensure Optimal Signal

Whether your network application is Ethernet or InfiniBand, Cloud, Web 2.0, Enterprise, HPC or Storage for server-to-top-of-rack, server-to-storage, or switch-to-switch, Mellanox interconnects scale in bandwidth, and distance to match any data center need. LinkX cables and transceivers are available in 1-channel SFP and 4-channel QSFP form factors, 10G and 25G line rates and reaches up to 2Km. Media includes: copper direct attach cables, active optical cables and multi-mode and single-mode optical transceivers - including silicon photonics.

### Mellanox Management Software



#### Cloud Networking, Orchestration and Configuration Management

Mellanox NEO™ is a powerful platform for data-center network orchestration, designed to simplify network provisioning, monitoring and operations of the Next-Generation Data-Center. NEO offers robust automation capabilities that extend existing tools, from network staging and bring-up, to day-to-day operations. NEO serves as a network API for Mellanox Ethernet solutions, and offers integrations with partner solutions of VMware, OpenStack and more

## Spectrum Switches

<b>SN2010</b> 	Ideal storage & hyperconverged 10/25 + 40/100GbE switch	<ul style="list-style-type: none"> <li>• 18x10/25GbE + 4x40/100GbE</li> </ul>	1U / ½ 19" wide	MLNX-OS or Cumulus Linux
<b>SN2100</b>  <b>SN2100B</b>	<ul style="list-style-type: none"> <li>• Ideal 25/50/100GbE ToR (48+4) storage switch</li> <li>• 128 x 10/25GbE ports in 1RU</li> </ul>	<ul style="list-style-type: none"> <li>• 16x100GbE</li> <li>• 32x50GbE</li> <li>• 64x10/25GbE</li> </ul>		
<b>SN2410</b>  <b>SN2410B</b>	<ul style="list-style-type: none"> <li>• ToR switch with 10/25GbE server ports &amp; 100GbE uplinks</li> </ul>	<ul style="list-style-type: none"> <li>• 48x10/25GbE + 8x100GbE</li> </ul>	1U	
<b>SN2700</b>  <b>SN2700B</b>	<ul style="list-style-type: none"> <li>• 100GbE Aggregation Switch</li> </ul>	<ul style="list-style-type: none"> <li>• 32x100GbE</li> <li>• 64x50GbE</li> <li>• 64x25GbE</li> </ul>	1U	

## Ethernet Adapters

Adapter	Speeds	Ports	Connector	Bus	Features	Drivers
ConnectX-5	1/10/25/40 50/100 GbE	Single and dual	QSFP28	PCIe 4 x16 PCIe 3 x8	Out-of-order RDMA, RoCE over Overlay Networks, PeerDirect RDMA, SR-IOV, ASAP <sup>2</sup> , Overlay Networks, Stateless Offloads, NVMeoF, MPI Tag Matching, Dynamically Connected Transport	Linux, Windows, VMWare, FreeBSD
ConnectX-4	1/10/25/40 50/100 GbE	Single and dual	QSFP28	PCIe 3.0 x8 or x16	RoCE(over layer2 and layer3), GPUDirect, SR-IOV, ASAP <sup>2</sup> , Overlay Networks, Stateless Offloads, Dynamically Connected Transport	
ConnectX-4Lx	1/10/25/40 and 50GbE	Single and dual	SFP28 or QSFP28	PCIe 3.0 x8	RoCE(over layer2 and layer3), GPUDirect, SR-IOV, ASAP <sup>2</sup> , Overlay Networks, Stateless Offloads, Dynamically Connected Transport	
Innova flex	10/40GbE	Single	QSFP	PCIe 3.0 x8	Open platform for user applications on FPGA as 'bump-in-the-wire, RoCE (over layer2 and layer3), GPUDirect, SR-IOV, Overlay Networks, Stateless Offloads, Dynamically Connected Transport	
Innova IPsec	10/40GbE	Single	QSFP	PCIe 3.0 x8	IPsec encryption and authentication algorithm offloads, RoCE (over layer2 and layer3), GPUDirect, SR-IOV, Overlay Networks, Stateless Offloads, Dynamically Connected Transport	

## Cables and Transceivers

### Direct Attach Cables (DAC)



- Lowest Priced 25G/100G cables
- Reach: 3 – 5m
- Zero power consumption
- Near zero latency delays
- Point-to-point, splitters & port adapters

### Active Optical Cables (AOC)



- Lowest Priced 25G/100G optical link
- Reach: up to 100m
- Lowest power consumption 2.2W
- Low latency delays
- Tunable CDRs - saves power, latency
- Multi-mode VCSEL & Silicon Photonics

### Optical Transceivers



- Full line of 25/50/100G
- Reaches: 100m – 2Km, 10Km
- Connectorized optics: MPO & LC
- SR4 lowest power consumption (2.3W)
- Multi-mode + single-mode