

# SX1016

## 64-Port 10GbE SDN Switch System

With industry-leading density, power efficiency and low-latency, the SX1016 provides data centers with significant performance and scalability advantages while lowering capital and operational expenditures.

The SX1016 is an economical, high-performance 64-port 10GbE switch providing 640Gb/s of line-rate performance. Based on Mellanox's SwitchX<sup>®</sup>-2 silicon and innovative hardware design, the switch packs 64 SFP+ interfaces in an ultra-dense 1U form factor. The SX1016 features industry-leading latency of 270ns and power of less than 1.8W per port, providing optimal performance and efficiency for enterprise data center, financial services, Web 2.0, High Performance Computing and cloud computing applications.

SwitchX-2 carries a unique design that enables users with a straight forward platform for implementation of a Software Defined Network, allowing the construction of a high scale network with advanced fine tuning control plane capabilities. The SX1016 provides a full suite of management options, including support for Mellanox's NEO™, SNMP V1,2,3, and web user interfaces. In addition, the SX1016 incorporates a familiar industry-standard CLI, which enables administrators to easily configure the switch.

To ensure long term applicability, the SX1016 is provisioned to enhance its current capabilities with additional L2 and L3 features through software upgrades.

### World-Class Design

The SX1016 is an elegant top-of-rack design that is designed for performance, serviceability, energy savings and high-availability. The compact 1U design and large SFP+ port count maximizes server density in industry-standard racks and scale-out computing solutions using standard interfaces. Both standard and reverse airflow schemes are supported to ensure compatibility with different data center thermal designs. Common accessories such as rack mount kit, AC power and RJ45 console cables are included with a quick-start guide as part of the standard system to ensure fast installation and a positive out-of-the-box experience.

### End-to-End

The SX1016 switch is interoperable with components supporting the Ethernet industry standards. The switch becomes an integral part of an optimized end-to-end interconnect solution when combined with other Mellanox Ethernet products, including the ConnectX<sup>®</sup> family of 10GbE NICs, acceleration and management software and cables. These solutions deliver industry-leading performance, scalability, reliability and power usage for optimal data center efficiency and application performance across a wide range of industry applications in financial services, Web 2.0, database, cloud and High Performance Computing environments.



## HIGHLIGHTS

### BENEFITS

- Software Defined Networking (SDN) support
- Leading performance and scalability
- Ultra-high density (64 port SFP+, 1U)
- Industry's lowest latency (270ns)
- Energy efficient (1.8W per port)
- Upgradable L2 and L3 features
- IPv6 IPsec



## FEATURES

### LAYER 2 FEATURE SET

- 1GbE, 10GbE
- 48K L2 Forwarding Entries
- Static MAC
- Jumbo Frames (9216 BYTES)
- VLAN 802.1Q (4K)
- 802.1W Rapid Spanning Tree Protocol
  - BPDU Filter
  - Root Guard
  - Loop Guard
  - BPDU Guard
- 802.1Q Multiple Spanning Tree Protocol
- PVRST+ (Rapid Per VLAN Spanning Tree+)
- 802.3ad Link Aggregation/LACP
  - 16 Ports/Channel
  - 64 Groups Per System
- 802.3X Flow Control
- 802.1Qbb Priority Flow Control (PFC)
- 802.1Qaz Enhanced Transmission Selection (ETS)
- DCBX
- 802.1AB LLDP
- 802.1x
- IGMP v1/v2/v3 Snooping Querier
- Access Control Lists (L2-L4)
- sFlow
- Port Mirroring

### LAYER 3 FEATURE SET

- Static Routes v4
- OSPFv2
- BGPv4
- Router Port Interface for Routing
- VLAN Interface for Routing
- PIM Bi-Dir
- DHCP Relay
- ECMP, 64-way
- VRRP
- IGMP v2/v3

### NETWORK MANAGEMENT

- 100/1000 Management port
- In-Band Management
- Serial Console Port

- SDN
- OpenFlow 1.0
- Embedded Puppet Agent
- RADIUS
- TACACS+
- LDAP
- SSHv2
- DHCP/Zeroconf
- Familiar Industry Standard CLI
- Management over IPv4/IPv6
- Telnet
- File Download via SCP, FTP & TFTP Client
- Network Time Protocol (NTP)
- Syslog
- Dual SW Image
- Auto Temperature Control
- System Alarms
- Port Counters
- Event Notification
- SNMP v1/v2/v3
- E-Mail
- Web UI
- Predefined Scheduled Scripts
- System Health Monitoring

### POWER SPECIFICATIONS

- ATIS Weighted Power Consumption: 61.6W
- Max Power Consumption: 148W
- Input Voltage Range: 100-240VAC
- Physical/ Electrical
  - 64 10GbE ports SFP+ cages
- Two fixed power supply units

### PHYSICAL CHARACTERISTICS

- Dimensions: 1.72"H x 16.85"W x 16.2"D
- Weight: 17.2 Lbs (7.82 Kgs)

### SUPPORTED MODULES AND CABLES

- QSFP, SFP+ short and long range optics
- QSA - QSFP to SFP+ adapter
- QSFP to SFP+ DAC cable
- QSFP to QSFP DAC Cable
- QSFP breakout cables 40GbE to 4x10GbE
  - DAC, Optical
- QSFP AOC

Part Number	Description
MSX1016X-2BFS	SwitchX®-2 based 64-port SFP+ 10GbE, 1U Ethernet switch. 2PS, Short depth, P2C airflow, Rail kit and RoHS-6
MSX1016X-2BRS	SwitchX®-2-based 64-port SFP+ 10GbE, 1U Ethernet switch. 2PS, Short depth, C2P side airflow, Rail kit and RoHS-6

\*P2C is connector side outlet, C2P is connector side inlet.



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