



# SN2410

## 48-port 25GbE + 8-port 100GbE Open Ethernet Switch System

The SN2410 switch provides the highest performance 100GbE top of rack switching solution for the growing demands of today's data centers environments.

The SN2410 switch is an ideal top of rack (ToR) solution, allowing maximum flexibility, with port speeds spanning from 10Gb/s to 100 Gb/s per port. Its optimized port configuration enables high-speed rack connectivity to any server at 10GbE or 25GbE speeds. The 100GbE uplink ports allow a variety of blocking ratios that suit any application requirement.

Powered by the Spectrum ASIC and packed with 8 ports running at 100GbE and 48 ports running at 25GbE, the SN2410 carries a whopping switching capacity of 4Tb/s with a landmark 5.95Bpps processing capacity in a compact 1RU form factor.

Following the footsteps of the SwitchX-2 based-systems, the SN2410 enjoys the legacy of the field-proven MLNX-OS operating system with a wide installed base and a robust implementation of data, control and management planes that drives the world's most powerful data centers.

Keeping with the Mellanox tradition of setting performance record switch systems, the SN2410 introduces the world's lowest latency for a 100GbE switching and routing element, and does so while having the lowest power consumption in the market. The low latency is maintained while switching or routing between ports at different speeds, leveraging a smart cut-through architecture that performs on-the-fly optimized buffering, eliminating any dependency between ports. With the SN2410, the use of 25, 40, 50 and 100GbE in large scale is enabled without changing power infrastructure facilities.



The SN2410 is part of Mellanox's complete end-

to-end solution which provides 10GbE through 100GbE interconnectivity within the data center. Other devices in this solution include ConnectX-4 based network interface cards, and LinkX copper or fiber cabling. This end-to-end solution is topped with NEO, a management application that relieves some of the major obstacles when deploying a network. NEO enables a fully certified and interoperable design, speeds up time to service and eventually speeds up RoI.

The SN2410 introduces hardware capabilities for multiple tunneling protocols that enable increased reachability and scalability for today's data centers. Implementing MPLS, NVGRE and VXLAN tunneling encapsulations in the network layer of the data center allows more flexibility for terminating a tunnel by the network, in addition to termination on the server endpoint.

While Spectrum provides the thrust and acceleration that powers the SN2410, the system gets yet another angle of capabilities while running with a powerful x86-based processor, which allows this system to not only be the highest performing switch fabric element, but also gives the ability to incorporate a Linux running server into the same device. This opens up multiple application aspects of utilizing the high CPU processing power and the best switching fabric, to create a powerful machine with unique appliance capabilities that can improve numerous network implementation paradigms.

The SN2410 supports the Open Network Install Environment (ONIE) for zero touch installations of network operating systems. It is preloaded with MLNX-OS and supports the installation of other ONIE images by customers.



## HIGHLIGHTS

### BENEFITS

- [www.zeropacketloss.com](http://www.zeropacketloss.com)
- True cut through latency
- Easy Scale from one to thousands of nodes and switches
- Arranged and Organized Data Center
  - Supports speeds of 10/25/40/50/56/100GbE
  - Easy deployment
  - Easy maintenance
- Unprecedented Performance
  - Line rate performance on all ports at all packet sizes
  - Storage and server applications run faster
- Software Defined Networking (SDN) support
- Running MLNX-OS, alternative operating systems over ONIE

### KEY FEATURES

- Wire Speed Switching
  - 4Tb/s
  - 5.95B packets-per-second
- High Density
  - 8 40/56/100GbE ports in 1RU
  - Up to 48 10/25 ports
- Lowest Latency
  - 300nsec port-to-port
  - Flat latency across L2 and L3 forwarding
  - Cut-through latency between ports in different speeds
- Lowest Power
  - Under 7.5 watts per port



## FEATURES

### LAYER 2 FEATURE SET

- 10/25/40/50/56/100GbE
- 256K 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
  - *32 Ports/Channel*
  - *64 Groups Per System*
- Multi Chassis Link Aggregation Group (MLAG)
- 802.3X Flow Control
- 802.1Qbb Priority Flow Control (PFC)
- 802.1Qaz Enhanced Transmission Selection (ETS)
- DCBX
- 802.1AB LLDP
- IGMP V1,V2, Snooping, Querier
- Access Control Lists (L2-L4)
- sFlow
- Port Mirroring
- 802.1X - Port Based Network Access Control

### LAYER 3 FEATURE SET

- Static Routes IPv4/IPv6
- OSPFv2
- BGPv4
- Router Port Interface for Routing
- VLAN Interface for Routing
- PIM Bi-Dir
  - *PIM Load Balancing*
- DHCP Relay
- ECMP, 64-way
- VRRP
- IGMP Snooping Querier

### NETWORK MANAGEMENT

- NEO

- 100/1000 Management port
- In-Band Management
- Serial Console Port
- SDN
- OpenFlow
- Embedded Puppet Agent
- RADIUS
- TACACS+
- LDAP
- SSHv2
- DHCP/Zeroconf
- 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
- Notification by E-Mail
- Web UI
- Predefined Scheduled Scripts
- System Health Monitoring

### POWER SPECIFICATIONS

- Typical Power Consumption: 195 Watts (prel.)
- Max Power Consumption: 350 Watts (prel.)
- Input Voltage Range: 100-240VAC

### PHYSICAL CHARACTERISTICS

- Dimensions: 1.72”H x 16.84”W x 27”D
- Weight: 11kg (24.2 Lb)

### SUPPORTED MODULES AND CABLES

- QSFP28, SFP28 short and long range optics
- QSFP28, SFP28 DAC Cable
- QSFP breakout cables 100GbE to 4x25GbE DAC, Optical
- QSFP breakout cables 100GbE to 2x50GbE DAC, Optical
- QSFP AOC

Ordering Part Number	Description
MSN2410-CS2F	Spectrum™ bbased 100GbE 1U Open Ethernet Switch with MLNX-OS, 8 QSFP28 100GbE Ports and 48 SFP28 25GbE Ports, 2 Power Supplies (AC), Standard depth, x86 CPU, P2C airflow, Rail Kit, RoHS6
MSN2410-CS2R	Spectrum™ based 100GbE 1U Open Ethernet Switch with MLNX-OS, 8 QSFP28 100GbE Ports and 48 SFP28 25GbE Ports, 2 Power Supplies (AC), Standard depth, x86 CPU, C2P airflow, Rail Kit, RoHS6



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