

SX6036

36-port Non-blocking Managed 56Gb/s InfiniBand Switch System

SX6036 switch system provides the highest performing fabric solution in a 1U form factor by delivering 4Tb/s of non-blocking bandwidth with 165ns port-to-port latency.



Scaling-Out Data Centers with Fourteen Data Rate (FDR) InfiniBand

Faster servers based on PCIe Gen3, combined with high-performance storage and applications that use increasingly complex computations, are causing data bandwidth requirements to spiral upward. As servers are deployed with next generation processors, High-Performance Computing (HPC) environments and Enterprise Data Centers (EDC) will need every last bit of bandwidth delivered with Mellanox's next generation of FDR InfiniBand high-speed smart switches.

FDR

FDR InfiniBand technology moves from 8b/10b encoding to the more efficient 64/66 encoding while increasing the per lane signaling rate to 14Gb/s. Mellanox end-to-end systems can also take advantage of the efficiency of 64/66 encoding on 4x10.3Gb/s links using Mellanox FDR-10 supporting 20% more bandwidth over QDR using the same cables/connectors designed for 40Gb/s Ethernet.

Sustained Network Performance

Built with Mellanox's 5th generation SwitchX™ InfiniBand switch device, the SX6036 provides up to thirty-six 56Gb/s full bi-directional bandwidth per port. These stand-alone switches are an ideal choice for top-of-rack leaf connectivity or for building small to extremely large sized clusters. The SX6036 is designed to carry converged LAN and SAN traffic with the combination of assured bandwidth and granular Quality of Service (QoS).

Smart Switches for Smart Clusters

The SX6036 enables efficient computing with features such as static routing, adaptive routing, and congestion control. These features ensure the maximum effective fabric bandwidth by eliminating congestion hot spots.

The SX6036 supports reversible airflow making the design fit into data centers with different thermal designs. Redundant and hot swappable power supplies and fans provide high availability for both High-Performance and Enterprise Data Center applications.

Management

SX6036 comes with an onboard subnet manager, enabling simple, out-of-the-box fabric bring-up for up to 648 nodes. The SX6036 MLNX-OS™ software delivers complete chassis management, to manage the firmware, power supplies, fans, ports and other interfaces.

The SX6036 can also be coupled with Mellanox's Unified Fabric Manager (UFM™) software for managing scale-out InfiniBand computing environments. UFM enables data center operators to efficiently provision, monitor and operate the modern data center fabric. UFM boosts application performance and ensures that the fabric is up and running at all times. UFM can also enhance MLNX-OS with UFM Diag diagnostic tools to check node-node, node-switch connectivity and cluster topology view.

HIGHLIGHTS

BENEFITS

- Industry-leading, switch platform in performance, power, and density
- Designed for energy and cost savings
- Granular QoS for Cluster, LAN and SAN traffic
- Quick and easy setup and management
- Maximizes performance by removing fabric congestions
- Fabric Management for cluster and converged I/O applications

KEY FEATURES

- 36 FDR (56Gb/s) ports in a 1U switch
- 4Tb/s aggregate switching capacity
- Compliant with IBTA 1.21 and 1.3
- FDR/FDR10 support for Forward Error Correction (FEC)
- Adaptive routing
- Congestion control
- Port mirroring
- Up to 8 multiple switch partitions**
- InfiniBand to InfiniBand Routing**
- Redundant power supplies and fan drawers

SPECIFICATIONS

MELLANOX SX3036

- 19" rack mountable chassis, 1U with redundant power supplies and Fan units
- 36 QSFP non blocking ports with aggregate data throughput up to 4.032 Tb/s (FDR)
- Port-to-port latency 165ns

SWITCH SPECIFICATIONS

- Compliant with IBTA 1.21 and 1.3
- Up to 8 switch partitions
- 9 virtual lanes: 8 data + 1 management
- 256 to 4Kbyte MTU
- Adaptive Routing
- Congestion control
- Port Mirroring
- 4X48K entry linear forwarding data base

MANAGEMENT PORTS

- Dual 10/100/1000 Ethernet ports
- RS232 port over DB9
- USB port
- I²C port on the power supply side

DEVICE MANAGEMENT

- CLI or SNMP

FABRIC MANAGEMENT

- On-board SM for fabrics up to 648 nodes
- Unified Fabric Manager (UFM) Agent

CONNECTORS AND CABLING

- QSFP connectors
- Passive/Active copper or fiber cables
- Fiber media adapters

INDICATORS

- Per port status LED Link, Activity
- System status LEDs: System, fans, power supplies
- Port Error LED
- Unit ID LED**

PHYSICAL CHARACTERISTICS

- Dimensions: 1.72"H x 16.84"W x 24.7"D
- Weight: 20.5 Lbs (9.3 Kgs)

POWER SUPPLY

- Dual redundant slots
- Hot plug operation
- Input range: 100 - 240VAC
- Frequency: 50-60Hz, single phase AC

COOLING

- Front-to-rear or rear-to-front cooling option
- Hot-swappable fan unit
- Auto-heat sensing for silent fan operation

POWER CONSUMPTION

- FDR - Typical power consumption:
- Passive cable - 127W
 - Active cable - 231W

COMPLIANCE

SAFETY

- US/Canada: cTUVus
- EU: IEC60950
- International: CB

EMC (EMISSIONS)

- USA: FCC, Class A
- Canada: ICES, Class A
- EU: EN55022, Class A
- EU: EN55024, Class A
- EU: EN61000-3-2, Class A
- EU: EN61000-3-3, Class A
- Japan: VCCI, Class A

ENVIRONMENTAL

- EU: IEC 60068-2-64: Random Vibration
- EU: IEC 60068-2-29: Shocks, Type I / II
- EU: IEC 60068-2-32: Fall Test

OPERATING CONDITIONS

- Operating 0°C to 45°C, Non Operating -40°C to 70°C
- Humidity: Operating 5% to 95%,
- Altitude: Operating -60 to 2000m,

ACOUSTIC

- ISO 7779
- ETS 300 753

OTHERS

- RoHS-6 compliant
- Rack-mountable, 1U
- 1-year warranty

Ordering Part Number	Description
MSX6036F-1SFR	SwitchX-based 36-port QSFP FDR 1U Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, Standard depth, Forward airflow*, RoHS-6
MSX6036F-1SRR	SwitchX-based 36-port QSFP FDR 1U Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, Standard depth, Reverse airflow*, RoHS-6
MSX6036T-1SFR	SwitchX-based 36-port QSFP FDR10 1U Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, Standard depth, Forward airflow*, RoHS-6
MSX6036T-1SRR	SwitchX-based 36-port QSFP FDR10 1U Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, Standard depth, Reverse airflow*, RoHS-6

Also available in short depth form factor. Consult your Mellanox Sales Representative for further details.

* Forward airflow is connector side outlet, Reverse airflow in connector side inlet.

**Available in future release



350 Oakmead Parkway, Suite 100, Sunnyvale, CA 94085
 Tel: 408-970-3400 • Fax: 408-970-3403
www.mellanox.com