

SX6025

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

SX6025 switch system provides the highest performing fabric solution in a 1U form factor by delivering 4Tb/s of non-blocking bandwidth with 170ns 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 SX6025 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 SX6025 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 SX6025 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. Whether used for parallel computation or as a converged fabric, the SX6000 family of switches provides the industry's best traffic-carrying capacity, making it easy to build clusters that can scale-out to thousands-of-nodes.

The SX6025 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.

Building Efficient Clusters & Grids

The SX6025 is the industry's most cost-effective building block for deploying high performance clusters and data centers. Whether looking at price-to-performance or energy-to-performance, the SX6025 offers superior performance, power and scale reducing capital and operating expenses providing the best return-on-investment.

HIGHLIGHTS

BENEFITS

- Industry-leading, switch platform in performance, power, and density
- Designed for energy and cost savings
- Low latency
- Granular QoS for Cluster, LAN and SAN traffic
- Maximizes performance by removing fabric congestions

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**
- Redundant power supplies and fan drawers
- RoHS-6 complaint

HARDWARE

MELLANOX SX6025

- 19" rack mountable chassis, 1U with redundant power supplies and Fan units
- 36 QSFP non blocking ports with aggregate throughput up to 4.032 Tb/s (FDR)
- Port-to-port latency 170ns

SWITCH SPECIFICATIONS

- Compliant with IBTA 1.21 and 1.3
- 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

- I²C (RJ45)
- System reset button

CONNECTORS AND CABLING

- QSFP connectors
- Passive copper or active 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

POWER CONSUMPTION

- FDR - Typical power consumption:
- Passive cable - 113W
- Active cable - 217W

COOLING

- Front-to-rear or rear-to-front cooling option
- Hot-swappable fan unit

COMPLIANCE

SAFETY

- US/Canada: cTUVus
- EU: IEC60950
- International: CB
- Russia: GOST-R
- Argentina: S-mark

POWER SUPPLIES

- China CCC
- Korea KCC

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
- Australia: C-TICK

ENVIRONMENTAL

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

ACCOUSTIC

- ISO 7779
- ETS 300 753

OPERATING CONDITIONS

- Operating 0°C to 45°C
- Humidity: Operating 5% to 95% non condensing
- Altitude: Operating -60 to 2000m

OTHERS

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

| Ordering Part Number | Description |
|----------------------|--|
| MSX6025F-1SFR | SwitchX-based 36-port QSFP FDR 1U Externally Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, Standard depth, Forward airflow*, RoHS-6 |
| MSX6025F-1BRR | SwitchX-based 36-port QSFP FDR 1U Externally Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, Short depth, Reverse airflow*, RoHS-6 |
| MSX6025T-1SFR | SwitchX-based 36-port QSFP FDR10 1U Externally Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, Standard depth, Forward airflow*, RoHS-6 |
| MSX6025T-1BRR | SwitchX-based 36-port QSFP FDR10 1U Externally Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, Short depth, Reverse airflow*, RoHS-6 |

* 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