SX6036 InfiniBand Switch

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

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SUSTAINED NETWORK PERFORMANCE

Built with Mellanox's sixth latest 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.

FDR InfiniBand technology moves from 8b/10b encoding to a 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 using Mellanox FDR-10 supporting 20% more bandwidth over QDR using the same cables/connectors designed for 40GbE.

WHY SOFTWARE DEFINED NETWORK (SDN)?

Data center networks have become exceedingly complex. IT managers cannot optimize the networks for their applications leading to high CAPEX/OPEX, low ROI and IT headaches. Mellanox InfiniBand SDN Switches ensure separation between control and data planes. InfiniBand enables centralized management and view of network. Enabled are programmability of the network by external applications as well as a cost effective, simple and flat interconnect infrastructure.

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.

VIRTUAL PROTOCOL INTERCONNECT® (VPI)

Virtual Protocol Interconnect (VPI) flexibility enables any standard networking, clustering, storage, and management protocol to seamlessly operate over any converged network leveraging a consolidated software stack. VPI simplifies I/O system design and makes it easier for IT managers to deploy infrastructure that meets the challenges of a dynamic data center.

MANAGEMENT

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

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.

HIGHLIGHTS

BENEFITS

– Software Defined Network (SDN) support

– Industry-leading, switch platform in performance, power and density

– Designed for energy and cost savings

– Quick and easy setup and management

– Maximizes performance by removing fabric congestion

– Fabric management for cluster and converged I/O applications

KEY FEATURES

– 36 FDR (56Gb/s) ports in a 1U switch

– Up to 4Tb/s aggregate switching capacity

– Compliant with IBTA 1.2.1 and 1.3

– FDR/FDR10 support for Forward Error Correction (FEC)

– InfiniBand to Ethernet Bridging

– Optional redundant power supplies and fan drawers

SPECIFICATIONS

Mellanox SX6036
– 19″ rack mountable chassis, 1U with optional redundant power supplies and Fan units
– 36 QSFP non blocking ports with aggregate data throughput up to 4.032Tb/s (FDR)
– Port-to-port latency 200ns

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

** Available in future releases

Management Ports
– Dual 10/100/1000 Ethernet ports
– RS232 port over DB9
– USB port

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 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: 20.5lb (9.3kg)

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 - 126W
– Active cable - 231W

COMPLIANCE

Safety
– CB
– cTUVus
– CE
– CU

Power Supplies
– China CCC
– Korea KCC

EMC (Emissions)
– CE
– FCC
– VCCI
– ICES
– RCM

Operating Conditions
– Operating 0ºC to 45ºC, Non Operating -40ºC to 70ºC
– Humidity: Operating 10% to 85%
– Altitude: Operating -60 to 3200m

Acoustic
– ISO 7779
– ETS 300 753

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

Table 1 - Part Numbers and Descriptions

OPN	Description
MSX6036F-1SFS	SwitchX®-2-based 36-port QSFP FDR 1U Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, Standard depth, P2C airflow, RoHS-6
MSX6036T-1SFS	SwitchX®-2-based 36-port QSFP FDR10 1U Managed InfiniBand switch system with a non-blocking switching capacity of 2.9Tb/s. 1PS, Standard depth, P2C airflow, RoHS-6
MSX6036F-1BRS	SwitchX®-2 based 36-port QSFP FDR 1U Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, short depth, C2P airflow, Rail Kit, RoHS6
MSX6036F-2SFS	SwitchX®-2 based 36-port QSFP FDR 1U Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 2PS, standard depth, P2C airflow, Rail Kit, RoHS6
MSX6036F-2SRS	SwitchX®-2 based 36-port QSFP FDR 1U Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 2PS, standard depth, C2P airflow, Rail Kit, RoHS6
MSX6036T-1BRS	SwitchX®-2 based 36-port QSFP FDR10 1U Managed InfiniBand switch system with a non-blocking switching capacity of 4Tb/s. 1PS, short depth, C2P airflow, Rail Kit, RoHS6

OPN	Description
MSX60-PF	300W Power supply with P2C airflow for MSX60xx and MSX10xx series switch systems
MSX60-PR	300W Power supply with C2P airflow for MSX60xx and MSX10xx series switch systems
UPGR-6036-GW	InfiniBand to Ethernet gateway software license for Mellanox 6036 Series Switch
LIC-Fabric-Inspector	Enhanced InfiniBand Diagnostics license

Note: 56GbE operation requires an additional license.

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