SWITCH SYSTEM

PRODUCT BRIEF

SX6015

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

SX6015 switch system provides the highest performing fabric solution in a 1U form factor by delivering up to 2Tb/s of non-blocking bandwidth with 200ns port-to-port latency.

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

Faster servers based on PCIe 3.0, 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 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.

Sustained Network Performance

Built with Mellanox's sixth generation SwitchX®-2 InfiniBand switch device, the SX6015 provides up to eighteen 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.

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. Programmability of the network by external applications and enable cost effective, simple and flat interconnect infrastructure.

Smart Switches for Smart Clusters

The SX6015 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 SX6015 supports reversible airflow making the design fit into data centers with different thermal designs. Optional 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 SX6015 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 SX6015 offers superior performance, power and scale reducing capital and operating expenses providing the best return-on-investment.

HIGHLIGHTS

BENEFITS

- Software Defined Network (SDN) support
- Industry-leading, switch platform in performance, power, and density
- Designed for energy and cost savings
- Low latency
- Maximizes performance by removing fabric congestions

KEY FEATURES

- 18 FDR (56Gb/s) ports in a 1U switch
- Up to 2Tb/s aggregate switching capacity
- Compliant with IBTA 1.2.1 and 1.3
- FDR/FDR10 support for Forward Error Correction (FEC)
- Port mirroring
- Optional redundant power supplies and fan drawers
- RoHS-6 complaint

HARDWARE

MELLANOX SX6015
- 19" rack mountable chassis, 1U with optional redundant power supplies and Fan units
- 18 QSFP non blocking ports with aggregate throughput up to 2Tb/s (FDR)
- Port-to-port latency 200ns

SWITCH SPECIFICATIONS
- Compliant with IBTA 1.2.1 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
- I^2C (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 - 103W
- Active cable - 142W

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

ACOUSTIC
- ISO 7779
- ETS 300 753

OPERATING CONDITIONS
- Operating 0ºC to 45ºC
- Non Operating -40ºC to 70ºC
- Humidity: Operating 10% to 85% non condensing
- Altitude: Operating -60 to 3200m

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

Ordering Part Number	Description
MSX6015F-1SFS	SwitchX®-2 based 18-port QSFP FDR 1U Externally Managed InfiniBand switch system with a non-blocking switching capacity of 2Tb/s. 1PS, Standard depth, P2C airflow*, RoHS-6
MSX6015F-1BRS	SwitchX®-2 based 18-port QSFP FDR 1U Externally Managed InfiniBand switch system with a non-blocking switching capacity of 2Tb/s. 1PS, Short depth, C2P airflow*, RoHS-6
MSX6015T-1SFS	SwitchX®-2 based 18-port QSFP FDR10 1U Externally Managed InfiniBand switch system with a non-blocking switching capacity of 1.45Tb/s. 1PS, Standard depth, P2C airflow*, RoHS-6
MSX6015T-1BRS	SwitchX®-2 based 18-port QSFP FDR10 1U Externally Managed InfiniBand switch system with a non-blocking switching capacity of 1.45Tb/s. 1PS, Short depth, C2P airflow*, RoHS-6
MSX60-PF	300W Power supply with P2C air flow for MSX60xx and MSX10xx series switch systems
MSX60-PR	300W Power supply with C2P air flow for MSX60xx and MSX10xx series switch systems

*Available in future release.
**P2C airflow is connector side outlet, C2P airflow in connector side inlet.

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