Mellanox®
TECHNOLOGIES

SX6536

648-port Non-blocking 56Gb/s InfiniBand Director Switch System

SX6536 switch system provides the highest-performing fabric solution in a 29U form factor factor by delivering 72.5Tb/s of non-blocking bandwidth with 165ns to 495ns 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.

Sustained Network Performance

Built with Mellanox's 5th generation SwitchX™ InfiniBand switch device, the SX6536 provides up to 648 56Gb/s full bi-directional bandwidth per port.

The SX6536 can scale as the number of nodes per cluster and the number of cores per node increases. This modular chassis switch provide an excellent price-performance ratio for medium to extremely large size clusters, along with the reliability and manageability expected from a director-class switch.

The SX6536 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 SX6536 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 SX6536 delivers director-class availability required for mission-critical application environments. The leaf, spine blades and management modules as well as the power supplies and fan units are all hot-swappable to help eliminate down time.

Integrated high-performance, low-latency gateways to Ethernet allows equipment consolidation**. Hardware-based InfiniBand routing allows unprecedented levels of scaling**.

Management

SX6536 comes with an onboard subnet manager, enabling simple, out-of-the-box fabric bring-up for up to 648 nodes. The SX6536 MLNX-OS™ software delivers complete chassis management, to manage the firmware, power supplies, fans, ports and other interfaces.

The SX6536 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. MLNX-OS provides a license activated embedded diagnostic tool called UFM-Diag to check node-node, node-switch connectivity and ensures the fabric health.

SX6536

HIGHLIGHTS

BENEFITS
– Industry leading, switch platform in performance, power, and density
– Unlimited scalability across storage, application and database servers
– Quick and easy setup and management
– Maximizes performance by removing fabric congestions

KEY FEATURES
– 648 FDR (56Gb/s) ports in a 29U switch
– 72.52 Tb/s aggregate switching capacity
– 165ns to 495ns switching latency
– Hardware-based routing
– Built-in gateways to Ethernet**
– Congestion control
– Quality of Service enforcement
– FDR/FDR10 support for Forward Error Correction (FEC)
– N+N power supply option order

MANAGEMENT
– Comprehensive chassis management
– Intuitive CLI and GUI for easy access
– Fully managed by Mellanox Unified Fabric Manager (UFM™)

** Available in future release

HARDWARE

MELLANOX SX6536

– 29U modular chassis
– 18 QSFP InfiniBand ports per blade, up to 56Gb/s per QSFP
– Aggregate data throughput 72.52 Tb/s
– 165ns to 495ns port latency

SWITCH SPECIFICATIONS

– Compliant with IBTA 1.21 and 1.3
– Up to 8 switch partitions**
– 256 to 4Kbyte MTU
– Adaptive Routing
– Congestion Control
– Port Mirroring
– 4x48K entry linear forwarding table

CONNECTORS AND CABLING

– QSFP+ connectors (SFF-8436 and INF-8438i compliant)
– Passive/Active copper or fiber cable
– Fiber media adapters

INDICATORS

– Per port status LEDs: Link, Activity
– System status LEDs:
  • *System, thermal, voltages, fans*
– Port Error LED
– UnitID LED**

POWER SUPPLY

Two Options:
– 1KW hot swappable units with N+2 slots for redundancy
– 1.6KW hot swappable units with N+N
– slots for redundancy (@220VAC only)
– Input range: 90-264VAC
– Frequency: 47-63Hz, single phase AC

COOLING

– Hot-swappable fan trays
– Front-to-rear air flow
– Auto-heat sensing fans

** Available in future release

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-003, 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 temperature: 10 to 45° C
– Humidity: 10-90% non-condensing

OTHERS

– RoHS-6 compliant
– 1-year warranty

Ordering Part Number	Description
MSX6536-10R	SwitchX, 72.5Tb/s, 648-port FDR/FDR10/QDR chassis switch, includes 8 fans and 10 power supplies, (N+2 configuration) RoHS-6
MSX6536-NR	SwitchX, 72.5Tb/s, 648-port FDR/FDR10/QDR chassis switch, includes 8 fans and 10 power supplies, (N+N configuration) RoHS-6
MSX6001FR	18-port FDR Leaf Blade, RoHS-6
MSX6001TR	18-port FDR10 Leaf Blade, RoHS-6
MSX6002FLR	36-port FDR VPI spine, RoHS-6
MSX6002TBR	36-port FDR10/QDR VPI spine, RoHS-6
MSX6000MAR	PPC460 management module, RoHS-6
MSX6000MBR	x86 management module, RoHS-6**

Please visit Mellanox's web site for more cable information, best usage practice and availability.

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