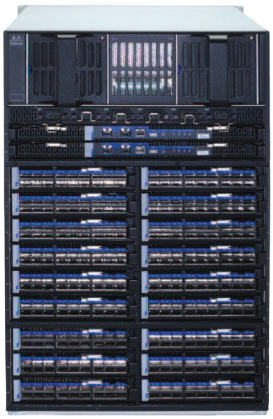
SWITCH SYSTEM

PRODUCT BRIEF

SX6518

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



SX6518

SX6518 switch system provides the highest-performing fabric solution in a 16U form factor factor by delivering 36.3Tb/s of non-blocking bandwidth with 170ns to 510ns 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.

Sustained Network Performance

Built with Mellanox's latest SwitchX® InfiniBand switch device, the SX6518 provides up to 324 56Gb/s full bi-directional bandwidth per port.

The SX6518 can scale as the number of nodes per cluster and the number of cores per node increases. This modular chassis switch provides an excellent price-performance ratio for medium to extremely large size clusters, along with the reliability and manageability expected from a director-class switch.

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 SX6518 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 SX6518 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.

Management

SX6518 comes with an onboard subnet manager, enabling simple, out-of-the-box fabric bring-up for up to 648 nodes. The MLNX-OS™ software delivers complete chassis management, to manage the firmware, power supplies, fans, ports and other interfaces. MLNX-OS provides a license activated embedded diagnostic tool called Fabric Inspector to check node-to-node, node-to-switch connectivity and ensures the fabric health.

The SX6518 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 applications 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
- Unlimited scalability across storage, application, and database servers
- Quick and easy setup and management
- Maximizes performance by removing fabric congestions
- IPv6 Ready

KEY FEATURES

- 324 FDR (56Gb/s) ports in a 16U switch
- 36.3 Tb/s aggregate switching capacity
- 170ns to 510ns switching latency
- Quality of Service enforcement
- FDR/FDR10 support for Forward Error Correction (FEC)
- N+N power supply option order

MANAGEMENT

- Comprehensive chassis management
- Intuituve CLI and GUI for easy access
- Fully managed by Mellanox Unified Fabric Manager (UFM)

** Available in future release

HARDWARE

MELLANOX SX6518
- 16U modular chassis
- 18 QSFP InfiniBand ports per blade, up to 56Gb/s per QSFP
- Aggregate data throughput 36.3 Tb/s
- 170ns to 510ns 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 copper or active 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
- 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

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 Information

Ordering Part Number	Description
MSX6518-NR	36.3Tb/s, 324-port FDR/FDR10/QDR chassis switch, includes 4 fans and 6 power supplies (N+N configuration), RoHS-6
MSX6001FR	SwitchX® 18 port FDR Leaf Blade, RoHS-6
MSX6001TR	SwitchX® 18 port FDR10 Leaf Blade, RoHS-6
MSX6002FLR	SwitchX® 36 port FDR VPI spine, RoHS-6
MSX6002TBR	SwitchX® 36 port FDR10/QDR VPI spine, RoHS-6
MSX6000MAR	PPC460 management module, RoHS-6
MSX6000MBR**	x86 management module, RoHS-6
LIC-Fabric-Inspector	Enhanced IB Diagnostics license

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

** Available in future release

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