



Mellanox SX6012

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

Mellanox SX6012 switch system provides the highest performing fabric solution in a 1U half-width form factor by delivering up to 1.3Tb/s of non-blocking bandwidth with 200ns port-to-port latency.

Benefits:

- 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 congestions
- Fabric Management for cluster and converged I/O applications

Key features:

- 12 FDR (56Gb/s) ports in a 1U switch
- Up to 1.3Tb/s aggregate switching halfwidth capacity
- Compliant with IBTA 1.2.1 and 1.3
- FDR/FDR10 support for Forward Error Correction (FEC)
- Side-by-side mounting capability

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, embedded system environments and fast storage will need every last bit of bandwidth delivered with Mellanox's next generation of FDR InfiniBand high-speed, low port density smart switches.

FDR

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 link speed supporting 20% more bandwidth over QDR using the same cables/connectors designed for 40 GbE.

Sustained Network Performance

Built with Mellanox's 6th generation SwitchX®-2 InfiniBand switch device, the SX6012 provides up to twelve 56Gb/s full bi-directional bandwidth per port. The SX6012 is an ideal choice for smaller departmental or back-end clustering uses with high-performance needs, such as storage, data base and GPGPU clusters.

Smart Switches for Smart Clusters

The SX6012 has no Field Replaceable Units (FRUs), which simplifies the usage and maintenance of the switch. All connectors and cables including the power connector are on the same side of the switch making it unnecessary to require access to the non-connector side of the switch. A unique rail mounting kit allows two SX6012 switches to be mounted side-by-side in the same 1U space while allowing the switches to be serviced independently using less rack space for redundant switch configurations.

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

SX6012 comes with an onboard subnet manager, enabling simple, out-of-the-box fabric bring-up for up to 648 nodes. The SX6012 MLNX-OS® software delivers complete chassis management, to manage the firmware, power supplies, fans, ports and other interfaces.



Specifications	
Mellanox SX6012	19" rack mountable chassis, 1U 12 QSFP non blocking ports with aggregate data throughput up to 1.344 Tb/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 4X48K entry linear forwarding data base
Management ports	100/1000 Ethernet port RS232 port over DB9 Mini USB
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 7.9"W x 15.7"D Weight: 6.6 Lb (2.98Kg)
Power supply	Input range: 100 - 240VAC Frequency: 50-60Hz, single phase AC
Cooling	Front-to-rear or rear-to-front cooling option Auto-heat sensing for silent fan operation
Power consumption	FDR - Typical power consumption: Passive cable: 126W Active cable: 152W

Compliance	
Safety	US/Canada: cTUVus EU: IEC60950 International: CB Russia: GOST-R Argentina: S-mark
Power supplies	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
Operating conditions	Operating 0°C to 45°C, Non Operating -40°C to 70°C 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

Ordering Part Number	Description
MSX6012F-1BRS	SwitchX®-2-based 12-port QSFP FDR 1U Managed InfiniBand switch system with a non-blocking switching capacity of 1.3Tb/s. 1PS, Short depth, Reverse airflow, RoHS-6, Rail Kit must be purchased separately
MSX6012F-2BFS	SwitchX®-2 based 12-port QSFP FDR 1U Managed InfiniBand switch system with a nonblocking switching capacity of 1.3Tb/s. 2PSUs, Short depth, Forward airflow, RoHS-6, Rail Kit must be purchased separately
MSX60-DKIT	Rack installation kit for SX6012 short depth 1U switches
UPGR-6012F-GW	InfiniBand to Ethernet gateway software license for Mellanox 6012 Switch

For sales and more information, please contact HPC@Dell.com



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