



SX6036G InfiniBand to Ethernet Gateway

36-port Non-blocking Managed 56Gb/s InfiniBand to 40GbE Ethernet Gateway

The SX6036G is a high-performance, low-latency 56Gb/s FDR InfiniBand to 40Gb/s Ethernet gateway.

SCALING-OUT DATA CENTERS WITH INFINIBAND TO ETHERNET GATEWAY

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 FDR InfiniBand to 40GbE high-speed smart gateways.

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.

With its high bandwidth, low latency and reduced overhead, InfiniBand is the ideal choice for speeding application performance while simultaneously consolidating network and I/O infrastructure. Combining InfiniBand and Ethernet into a single solution provides an ideal rack backbone for next generation data centers.

SUSTAINED NETWORK PERFORMANCE

Built with Mellanox's SwitchX®-based switches, the InfiniBand to Ethernet gateway software license or system, provides full port flexibility to choose between 56Gb/s InfiniBand to either 10, 40 and 56Gb/s Ethernet with low 400ns latency.

COST-SAVINGS

SX6036G, when combined with Mellanox's ConnectX®-3 host adapter family, delivers cost savings by integrating two networks on a single wire. Consolidating multiple networks on a single wire delivers both CAPEX and OPEX savings. OPEX savings are provided by reducing cabling complexity, reducing switch and server infrastructure and delivering a consistent and easy to use management software.

Mellanox's gateway system includes both InfiniBand and Ethernet switches on a single platform, simplifying the need for additional switches to connect to the gateway. Using Mellanox's gateway, a user can also benefit from a full end-to-end solution combined with Mellanox InfiniBand FDR 56Gb/s SX6000 switch series and Ethernet 40Gb/s SX1000 switch series.

SwitchX[®] 2 †

HIGHLIGHTS

BENEFITS

- Industry-leading, gateway platform in performance, power, and density
- High-performance connectivity to Ethernet-based services and resources
- Designed for energy and cost savings
- Quick and easy setup and management
- Fabric management for cluster and converged I/O applications

KEY FEATURES

- 36 56Gb/s ports in a 1U switch
- Up to 4Tb/s aggregate switching capacity
- 400ns latency between InfiniBand and Ethernet
- InfiniBand and Ethernet switch on a single platform
- Support L2 and L3 capabilities as Mellanox Ethernet switches
- Optional redundant power supplies and fan drawers

MANAGEMENT

SX6036G MLNX-OS® software delivers complete chassis management, to manage the firmware, power supplies, fans, ports and other interfaces.

SX6036G can also be coupled with Mellanox’s Unified Fabric Manager (UFM®) software for managing scale-out computing environments. UFM enables data center operators to efficiently provision, monitor and operate the modern data center fabric.

FEATURES

Mellanox SX6036G

- 19” rack mountable chassis, 1U with redundant power supplies and fan units
- 36 QSFP non-blocking ports with aggregate data throughput up to 4.032Tb/s (FDR)
- InfiniBand port-to-port latency 170ns
- Ethernet port-to-port latency 230ns

InfiniBand Switch Specifications

- Compliant with IBTA 1.21 and 1.3
- 9 virtual lanes: 8 data + 1 management
- 256 to 4Kbyte MTU
- 48K L2 forwarding entries

Ethernet Switch Specifications

- 48K L2 forwarding entries
- Static MAC

- 802.1w Rapid Spanning Tree Protocol
- 802.3ad Link Aggregation/LACP
- 802.3x Flow control
- 802.1Qbb Priority Flow Control (PFC)
- 802.1Qaz Enhanced Transmission Selection
- 802.1AB LLDP
- VLAN 802.1Q (4K)
- IGMP v1,v2, Snooping
- Access Control Lists (L2-L4)
- Jumbo Frames (9216 Bytes)
- sFlow
- Port Mirroring
- Management Ports
 - Dual 100/1000Mb/s Ethernet ports
 - RJ45 serial console port
 - USB port

Device Management

- CLI or SNMP

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 lb (9.3 kg)

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

- Typical power consumption:
- Passive cable - 126W
 - Active cable - 231W

* This section describes hardware features and capabilities. Please refer to the driver and firmware release notes for feature availability.

COMPLIANCE

Safety

- CB
- cTUVus
- CE
- CU

Power Supplies

- China CCC
- Korea KCC

EMC (Emissions)

- CE
- FCC
- VCCI
- ICES
- RCM

Operating Conditions

- Operating 0°C to 45°C
- Non-Operating -40°C to 70°C
- Humidity: Operating 5% to 95%
- Altitude: Operating -60m to 2000m

Acoustic

- ISO 7779
- ETS 300 753

Others

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

Table 1 - Part Numbers and Descriptions

OPN	Description
MSX6036G-2SFS	SwitchX®-2 based 36 QSFP ports, InfiniBand to Ethernet gateway system with a non-blocking switching capacity of 4Tb/s. 2 Power Supplies, Standard depth, Managed, PSU side to connector side airflow, Rail Kit and RoHS-6
MSX6036G-2SRS	SwitchX®-2 based 36 QSFP ports, InfiniBand to Ethernet gateway system with a non-blocking switching capacity of 4Tb/s. 2 Power Supplies, Standard depth, Managed, connector side to PSU side airflow, Rail Kit and RoHS-6
MSX60-PF	300W Power supply with power supply side to connector side air flow for MSX60xx and MSX10xx series switch systems
MSX60-PR	300W Power supply with connector side to power supply side air flow for MSX60xx and MSX10xx series switch systems
LIC-Fabric-Inspector	Enhanced InfiniBand Diagnostics license