



## SWITCH SYSTEM

# IS5031

## 18-port field upgradable to 36-port Non-blocking Managed 40Gb/s InfiniBand Switch System

The IS5031 switch system provides the highest-performing fabric solution in a 1RU form factor by delivering up to 2.88Tb/s of non-blocking bandwidth to High-Performance Computing and Enterprise Data Centers, with 100ns port-to-port latency. Built with Mellanox's 4th generation InfiniScale® IV InfiniBand switch device, the IS5031 provides up to 40Gb/s full bidirectional bandwidth per port. This stand-alone switch is available as an 18-port switch that can be field upgraded to a 36-port switch and is an ideal choice for top-of-rack leaf connectivity, connectivity to storage systems or for building small to medium sized clusters. The IS5031 is designed to carry converged LAN and SAN traffic with the combination of assured bandwidth and granular Quality of Service (QoS).

### Low Cost of Entry and Sustained Network Performance

The IS5031 with 18-ports enables low cost of entry with the ability to upgrade to 36-ports as the need arises. The IS5031 enables efficient computing with features such as static routing, adaptive routing, and advanced congestion management. These features ensure the maximum effective fabric bandwidth by eliminating congestion hot spots. Whether used for parallel computation or as a converged fabric, the IS5000 family of switches provides the industry's best traffic-carrying capacity.

### World-Class Design

The IS5031 is an elegant top of the rack design, that is designed for performance, serviceability, energy savings and high-availability. The design is optimized for fitting into industry-standard racks and also for scale-out computing solutions from industry leaders. The IS5031 supports reversible airflow making the design fit into data centers with different thermal designs. Redundant and hot swappable power supplies and fans provide high availability for both High-Performance Computing and Enterprise Data Center applications. Status LEDs for fans and power supply units are placed on both sides of the system for easy status identification. Quick start guide, rack mount kit, AC power cord and RJ45 to DB9 console cables are provided as part of the standard system providing new levels of out of the box experience and performance.

### FabricIT™ - The Fabric Manager

FabricIT™ delivers complete fabric management and chassis management. FabricIT fabric management running on the IS5031 enables managing up to 108 nodes in the fabric and provides fast setup for cluster bring-up, fabric-wide bandwidth & latency verification, and various diagnostic tools to check node-node, node-switch connectivity and cluster topology view. FabricIT chassis management is embedded in IS5031 and provides administrative tools to manage the firmware, power supplies, fans, ports, and other interfaces. Various threshold parameters can be set and the chassis can be managed inband and outband.



IS5031

## BENEFITS

- Industry-leading, switch platform in performance, power, and density
- Highest ROI - designed for energy and cost savings
- Ultra low latency
- Granular QoS for Cluster, LAN and SAN traffic
- Quick and easy setup and management
- Maximizes performance by removing fabric congestions
- Fabric Management for cluster and converged I/O applications

## KEY FEATURES

- 1.44Tb/s upgradable to 2.88Tb/s switching capacity
- Signal optimization for longer cable length
- Quality of Service enforcement
- Up to 6 virtual subnets
- Temperature sensors and voltage monitors
- Reversible air flow
- Redundant power supplies
- Replacable fan drawers
- Fan speed controlled by management software

### INFINIBAND

- IBTA Specification 1.2.1 compliant
- Integrated subnet manager agent
- Adaptive routing
- Congestion control
- 256 to 4Kbyte MTU
- 9 virtual lanes: 8 data + 1 management
- 48K entry linear forwarding data base
- Port Mirroring

### MANAGEMENT

- Fast and efficient fabric bring-up
- Fabric-wide bandwidth verification
- Comprehensive chassis management
- Mellanox API for 3rd party integration
- Intuitive CLI and GUI for easy access

**HARDWARE**

**INFINIBAND SWITCH**

- 18 ports upgradable to 36 ports
- Up to 40Gb/s per port
- Fully non-blocking architecture

**MANAGEMENT PORTS**

- RS232 Console (RJ45)
- Ethernet (RJ45)

**CONNECTORS AND CABLING**

- QSFP connectors
- Passive copper cable
- Active copper and fiber cables
- Fiber media adapters

**INDICATORS**

- Per port status LED Link, Activity
- System status LED System, fans, power supplies

**POWER SUPPLY**

- Dual redundant slots
- Hot plug operation
- Input range: 100 - 240VAC
- Frequency: 50-60Hz, single phase AC

**FANS**

- Replaceable fan tray
- Status LED location on the FRU
- Optional Reversible air flow
- Fan speed controlled through management software

**COMPLIANCE**

**SAFETY**

- US/Canada: cTUVus
- EU: IEC60950
- International: CB

**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

**ENVIRONMENTAL**

- EU: IEC 60068-2-64: Random Vibration
- EU: IEC 60068-2-29: Shocks, Type I / II
- EU: IEC 60068-2-32: Fall Test

**ACCOUSTIC**

- ISO 7779
- ETS 300 753

**OPERATING CONDITIONS**

- Operating 0°C to 45°C, Non Operating -40°C to 70°C
- Humidity: Operating 5% to 95%, Non Operating 5% to 95%
- Altitude: Operating -60 to 2000m, Non Operating -60 to 2000m
- Noise: 55dB - Noise reduction by controlling fan speed

**OTHERS**

- RoHS-5 compliant
- Rack-mountable, 1U
- 1-year warranty



Ordering Part Number	Description
MIS5031D-1SFC	InfiniScale® IV DDR InfiniBand Switch, 18 QSFP port upgradable to 36 ports, 1 Power Supply, Chassis Manager and FabricIT EFM support for 108 nodes, PSU side to connector side airflow standard depth (23.76") with rack rails
MIS5031Q-1SFC	InfiniScale® IV QDR InfiniBand Switch, 18 QSFP ports upgradable to 36 ports, 1 Power Supply, Chassis Manager and FabricIT EFM support for 108 nodes, PSU side to connector side airflow standard depth (23.76") with rack rails
MIS5031D-U036	FabricIT upgrade license to field upgrade MIS5031D from 18 ports to 36 ports
MIS5031Q-U036	FabricIT upgrade license to field upgrade MIS5031Q from 18 ports to 36 ports

Also available in short depth form factor. Consult your Mellanox Sales Representative for further details.



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