



SWITCH SYSTEM

PRELIMINARY

IS5100

108-port 20 and 40Gb/s InfiniBand Chassis Switch

The IS5100 switch provides the highest performing fabric solution by delivering high bandwidth and low-latency to Enterprise Data Centers and High-Performance Computing environments in a 6U chassis. Networks built with the IS5100 can carry converged traffic with the combination of assured bandwidth and granular quality of service.

World Class Modularity and Next Generation Scalability

Built with Mellanox's 4th generation InfiniScale® IV InfiniBand switch device, the IS5100 provides full bisectonal bandwidth up to 40Gb/s (per QSFP port). With up to 108 QSFP ports, this system is among the densest switching systems available. The IS5100 supports a superior scalable platform that scales as the number of nodes per cluster and the number of cores per node increases. This modular chassis switch is an ideal choice for building medium to large size clusters or for use as a core switch for large clusters.

Efficient Computing and Scalable I/O Consolidation

The IS5100 supports adaptive routing as well as static routing to reduce or eliminate congestion situations. Hardware-based adaptive routing dynamically and automatically re-routes traffic to alleviate congested ports and dynamically adjusts the network in real time. The granular Quality of Service (QoS) integrated into the IS5100 enables I/O consolidation over InfiniBand and provides efficient network management mechanisms for LAN and SAN protocols.

Whether used for parallel computation or as a converged fabric, the combination of high bandwidth, adaptive routing, congestion control and granular QoS provide the industry's best traffic carrying capacity.

Utility Computing

Virtual partitioning of a cluster enables efficient use of all of its computing resources. Allocating only the compute power that each client needs enables more clients on the cluster at one time. Clusters built on the IS5100 can run up to six separate subnets, securely segregating client processes while ensuring the highest productivity of the cluster.

High Availability

The IS5100 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.

FabricIT™ - The Fabric Manager

FabricIT™ delivers complete fabric management and chassis management. FabricIT chassis management is embedded in the IS5100 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.



IS5100

BENEFITS

- Highest ROI - energy efficiency, cost savings and scalable high performance
- High-performance fabric for parallel computation or I/O convergence
- Up to 108 Ports Modular Scalability
- High-bandwidth, low-latency fabric for compute-intensive applications

KEY FEATURES

- 8.64Tb/s switching capacity
- 100ns to 300ns switching latency
- Hardware-based routing
- Congestion control
- Quality of Service enforcement
- Temperature sensors and voltage monitors

INFINIBAND

- IBTA Specification 1.2 compliant
- Adaptive routing
- 256 to 4Kbyte MTU
- 9 virtual lanes: 8 data + 1 management
- 48K entry linear forwarding data base
- 4K entry multicast forwarding data base

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
- Up to 6 separate subnets with dynamic port allocation
- Port mirroring
- Diagnostic and debug tools

HARDWARE**INFINIBAND SWITCH**

- Up to 108 QSFP Ports
- Up to 40Gb/s per QSFP port
- Fully non blocking architecture

CONNECTORS AND CABLING

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

INDICATORS

- Per port status LEDs: Link, Activity
- System status LEDs: System, thermal, voltages, fans

POWER SUPPLY

- 1KW 48VDC hot-swappable units
- Two additional slots for optional redundancy
- Input range: 90-264VAC
- Frequency: 47-63Hz, single phase AC

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

ACOUSTIC

- ISO 7779
- ETS 300 753

OPERATING CONDITIONS

- Operating temperature: 10 to 45° C
- Humidity: 10-90% non-condensing

SPECIFICATIONS

- 6U modular chassis
- 18 QSFP InfiniBand ports per blade
- Up to 40Gb/s per QSFP
- Port speed auto-negotiation
- Up to 2W per QSFP for active cable or fiber module support
- Full bisectional bandwidth to all ports
- IBTA 1.2 compliant
- 2+1 redundant auto-sensing 110/220VAC power supplies
- Hot-swappable fan trays
- Port and system status LED indicators
- RoHS-5 compliant
- 1-year warranty

Ordering Part Number	Description
MIS5100D-3DNC	InfiniScale IV, 4.32Tb/s DDR InfiniBand Chassis Switch, 6 Leaf Slots, Managed
MIS5100Q-3DNC	InfiniScale IV, 8.64Tb/s QDR InfiniBand Chassis Switch, 6 Leaf Slots, Managed
MIS5001DC	InfiniScale IV, 18 + 18 port QSFP DDR 20Gb/s InfiniBand Leaf Blade
MIS5001QC	InfiniScale IV, 18 + 18 port QSFP QDR 40Gb/s InfiniBand Leaf Blade
MIS5600MDC	PowerPC460 Management Module

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



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