

InfiniBand Switch System Family

Highest Levels of Scalability,
Simplified Network Manageability,
Maximum System Productivity



Mellanox continues its leadership providing
InfiniBand Switch Systems – the highest performing
interconnect solution for Web 2.0, Big Data, Cloud Computing,
Enterprise Data Centers (EDC) and High-Performance Computing (HPC).

VALUE PROPOSITIONS

- Mellanox switches come with port configurations from 8 to 648 at speeds up to 56Gb/s per port with the ability to build clusters that can scale out to ten-of-thousands of nodes.
- Mellanox Unified Fabric Manager™ (UFM™) ensures optimal cluster and data center performance with high availability and reliability.
- Mellanox switches support Virtual Protocol Interconnect® (VPI) - allowing them to run seamlessly over both InfiniBand and Ethernet.
- Mellanox switches support LAN and SAN traffic consolidation with unlimited application scalability across database and storage servers.
- Mellanox switches delivers high bandwidth with low latency to get the highest server efficiency and application productivity.
- Best price/performance solution with error-free 40-56Gb/s performance.

Mellanox's family of InfiniBand switches delivers the highest performance and port density with a complete chassis and fabric management solution

to enable compute clusters and converged data centers to operate at any scale while reducing operational costs and infrastructure complexity. The Mellanox family of switches includes a broad portfolio of Edge and Director switches that range from 8 to 648 ports, and support 40-56Gb/s per port with the lowest latency. These switches allow IT managers to build the most cost-effective and scalable switch fabrics ranging from small clusters up to tens-of-thousands of nodes.

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.

BENEFITS

- *Built with Mellanox's 4th and 5th generation InfiniScale® and SwitchX® switch silicon*
- *Industry-leading energy efficiency, density, 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*

Edge Switches

8 to 36-port non blocking 40Gb/s and 56Gb/s InfiniBand Switch Systems

The Mellanox family of switch systems provide the highest-performing fabric solutions in a 1U form factor by delivering up to 4Tb/s of non-blocking bandwidth with the lowest port-to-port latency. These edge switches are an ideal choice for top-of-rack leaf connectivity or for building small to medium sized clusters. The edge switches, offered as externally managed or as managed switches, are designed to build the most efficient switch fabrics through the use of advanced InfiniBand switching technologies such as Adaptive Routing, Congestion Control and Quality of Service.

Director Switches

108 to 648-port Non-blocking 40Gb/s and 56Gb/s InfiniBand Switch Systems

Mellanox director switches provide the highest density switching solution, scaling from 8.64Tb/s up to 72.52Tb/s of bandwidth in a single enclosure, with low-latency and the highest per port speeds of up to 56Gb/s. Its smart design provides unprecedented levels of performance and makes it easy to build clusters that can scale out to thousands-of-nodes.

The InfiniBand director switches deliver 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.

Sustained Network Performance

Mellanox switch family enables efficient computing for clusters of all sizes from the very small to the extremely large while offering near-linear scaling in performance. Advanced features such as static routing, adaptive routing, and congestion management allows the switch fabric to dynamically detect and avoid congestion and to re-route around points of congestion. These features ensure the maximum effective fabric performance under all types of traffic conditions.

Reduce Complexity

Mellanox switches reduce complexity by providing seamless connectivity between InfiniBand, Ethernet and Fibre Channel based networks. You no longer need separate network technologies with multiple network adapters to operate your data center fabric. Granular QoS and guaranteed bandwidth allocation can be applied per traffic type. This ensures that each type of traffic has the resources needed to sustain the highest application performance.

Reduce Environmental Costs

Improved application efficiency along with the need for fewer network adapters allows you to accomplish the same amount of work with fewer, more cost-effective servers. Improved cooling mechanism and reduced power and heat consumption allow data centers to reduce the cost associated with physical space.

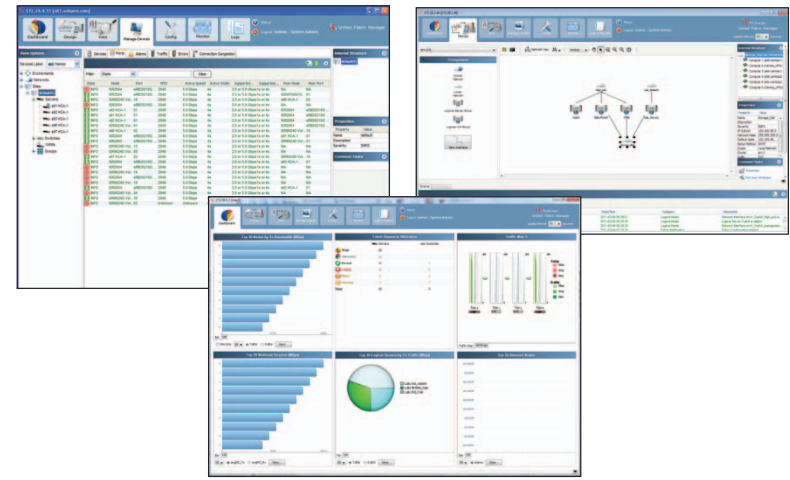
Enhanced Management Capabilities

Mellanox managed switches comes with an onboard subnet manager, enabling simple, out-of-the-box fabric bring up for up to 648 nodes. Mellanox FabricIT™ (IS5000 family) or MLNX-OS™ (SX6000 family) chassis management provides administrative tools to manage the firmware, power supplies, fans, ports, and other interfaces.

All Mellanox switches 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 application performance and ensures that the fabric is up and running at all times. MLNX-OS provides a license activated embedded diagnostic tool, Fabric Inspector, to check node-to-node, node-to-switch connectivity and ensures the fabric health



Chassis Management



UFM™ Software

Edge Switches



	IS5022	IS5023	IS5024	IS5025	SX6025
Ports	8	18	36	36	36
Height	1U	1U	1U	1U	1U
Switching Capacity	640Gb/s	1.44Tb/s	2.88Tb/s	2.88Tb/s	4.032Tb/s
Link Speed	40Gb/s	40Gb/s	40Gb/s	40Gb/s	56Gb/s
Interface Type	QSFP	QSFP	QSFP	QSFP	QSFP+
Management	No	No	No	No	No
Console Cables	No	No	No	No	No
PSU Redundancy	No	Optional	Optional	Optional	Optional
Fan Redundancy	No	Optional	Optional	Optional	Optional
Integrated Gateway	–	–	–	–	–



	SX6018	IS5030	IS5035	4036	4036E	SX6036
Ports	18	36	36	36	34 + 2Eth	36
Height	1U	1U	1U	1U	1U	1U
Switching Capacity	2.016Tb/s	2.88Tb/s	2.88Tb/s	2.88Tb/s	2.72Tb/s	4.032Tb/s
Link Speed	56Gb/s	40Gb/s	40Gb/s	40Gb/s	40Gb/s	56Gb/s
Interface Type	QSFP+	QSFP	QSFP	QSFP	QSFP	QSFP+
Management	Yes	Yes	Yes	Yes	Yes	Yes
	648 nodes	108 nodes	648 nodes	648 nodes	648 nodes	648 nodes
Management Ports	2	1	2	1	1	2
Console Cables	Yes	Yes	Yes	Yes	Yes	Yes
PSU Redundancy	Optional	Optional	Optional	Optional	Optional	Optional
Fan Redundancy	Optional	Optional	Optional	Yes	Yes	Optional
Integrated Gateway	Optional	–	–	–	Yes	Optional

FEATURE SUMMARY

HARDWARE

- 40-56Gb/s per port
- Full bisectional bandwidth to all ports
- IBTA 1.21 and 1.3 compliant
- QSFP connectors supporting passive and active cables
- Redundant auto-sensing 110/220VAC power supplies
- Per port status LED Link, Activity
- System, Fans and PS status LEDs
- Hot-swappable replaceable fan trays

MANAGEMENT

- Mellanox Operating System (MLNX-OS/
FabricT)
 - *Switch chassis management*
 - *Embedded Subnet Manager (648 nodes)*
 - *Error, event and status notifications*
 - *Quality of Service based on traffic type and service levels*
- Coupled with Mellanox Unified Fabric Manager (UFM)
 - *Comprehensive fabric management*
 - *Secure, remote configuration and management*
 - *Performance/provisioning manager*
- Fabric Inspector
 - *Cluster diagnostics tools for single node, peer-to-peer and network verification*

COMPLIANCE

SAFETY

- USA/Canada: cTUVus
- EU: IEC60950
- International: CB Scheme
- Russia: GOST-R
- Argentina: S-mark

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 5% to 95%
- Altitude: Operating -60 to 2000m

ACCOUSTIC

- ISO 7779
- ETS 300 753

OTHERS

- RoHS-6 compliant
- 1-year warranty



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