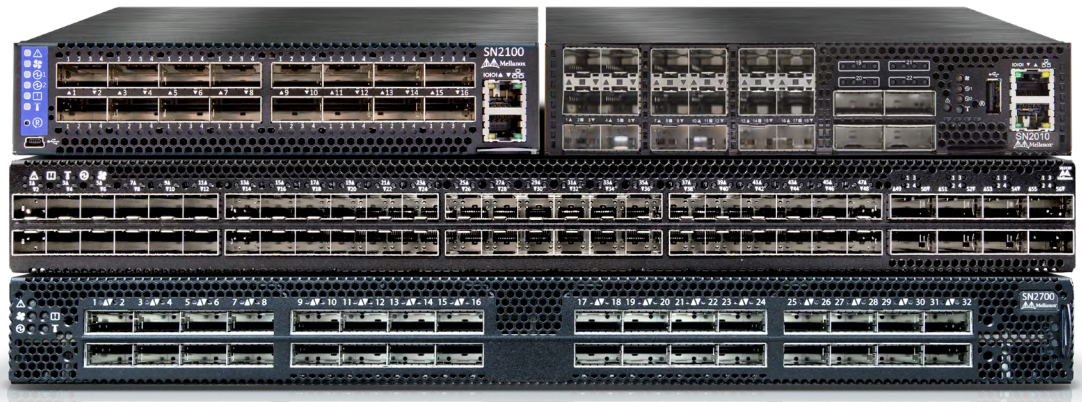


SN2000 Series

Mellanox Spectrum®-based 1/10/25/40/50/100GbE Open Ethernet Platforms

HIGHLIGHTS

- Freedom of NOS choice, no vendor lock-in
- Forms a predictable data center
- Zero packet loss (learn more)
- Future proof solution ; enhanced scalability
- Supports speeds of 1/10/25/40/50 and 100GbE
- SN2100 and SN2010 have a unique, half-width, TOR form factor
- Throughput of up to 6.4Tb/s
- Sub 300ns, industry leading, true, cut-through latency
- 16MB dynamically-shared, flexible packet buffering
- Lowest power, under 5W per 100GbE port

Overview

The SN2000 switch series is comprised of ONIE (Open Network Install Environment) based platforms which support the mounting of a multitude of operating systems and utilize the advantages of Open Networking and the Mellanox Spectrum®ASIC capabilities.

The SN2000 switches are ideal for leaf and spine data center network solutions, allowing maximum flexibility, with port speeds spanning from 10Gb/s up to 100Gb/s per port and port density that enables full rack connectivity to any server at any speed. The uplink ports allow a variety of blocking ratios that suit any application requirement.

The SN2000 series introduces the world's lowest latency for a 100GbE switching and routing element, and does so while having the lowest power consumption in the market. With the SN2000 series, the use of 25, 40, 50 and 100GbE in large scale is enabled without changing the power infrastructure facilities.

The SN2000 series offers three modes of operation:

- Preinstalled with Mellanox Onyx (successor to MLNX-OS Ethernet), a home-grown operating system utilizing common networking user experiences and an industry standard CLI.
- Preinstalled with Cumulus™ Linux, a revolutionary operating system, taking the Linux user experience from servers to switches and providing a rich routing functionality for large scale applications.
- Bare metal including ONIE image ready to be installed with the aforementioned or other ONIE-mounted operating systems.

What is Open Ethernet?

The current landscape of proprietary Ethernet switches limits the foundation of compute and storage clouds and Web 2.0 infrastructures. The "Open Ethernet" initiative is an alternative approach to traditional closed-code Ethernet switches that provides customers with full flexibility and freedom to custom-design their data center in order to optimize utilization, efficiency, and overall return on investment.

The Open Ethernet initiative is based on a complete separation between the switch hardware and the switch software. In simple terms, it allows IT managers and data center planners the option to make independent selections with regard to their switching equipment and to "mix and match" offerings from different equipment vendors to achieve optimal configuration and have better control of both capital and operational expenditures.

The hardware drivers expose Open API, which is a standard, open interface that allows integration into any Open Ethernet protocol and application. Examples of such applications are the Quagga routing suite, OpenFlow agent, or a vendor-developed application.

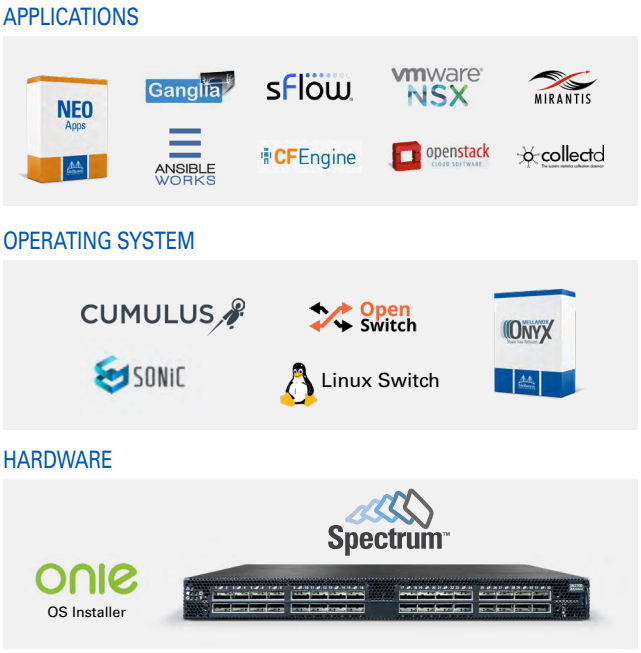


Figure 1. Open Ethernet Operating System and Hardware

ONIE and Mellanox Spectrum Linux Switch

The Open Network Install Environment (ONIE) is an Open Compute Project open source initiative driven by a community to define an open "install environment" for bare metal network switches, such as the Mellanox SN2000 series. ONIE enables a bare metal network switch ecosystem where end users have a choice of different network operating systems. Any Network Operation System (NOS) such as Microsoft® SONiC or Dell® EMC OpenSwitch which runs on top of ONIE can be easily deployed with the SN2000 series.

Spectrum Linux Switch enables users to natively install and use any standard Linux distribution as the switch operating system. Spectrum Linux Switch is based on Switchdev, a Linux kernel driver model for Ethernet switches. It breaks the dependency of using vendor-specific, closed-source software development kits (SDK). The open-source Linux driver is developed and maintained in the Linux kernel, replacing proprietary APIs with standard Linux kernel interfaces to control the switch hardware. This allows off-the-shelf Linux-based networking applications to operate on the Spectrum switch for L2 switching and L3 routing, including open source routing protocol stacks, such as Quagga, Bird and XORP, OpenFlow applications, or user-specific implementations.

Mellanox Onyx®

Mellanox Onyx (successor to MLNX-OS Ethernet) is a high performance, flexible and cloud-scale switch operating system, designed for the demands of next-generation data centers. Whether building a robust storage fabric, cloud, financial or media & entertainment fabric, customers can leverage the flexibility of Onyx to tailor their network platform to their environment.

With built-in workflow automation, monitoring and visibility tools, such as WJH advanced streaming telemetry technology providing real-time network visibility including actionable details on abnormal network behavior, enhanced high availability mechanisms, and more, Mellanox Onyx simplifies network processes and workflows, increasing efficiencies and reducing operating expenses and time-to-service.

Cumulus-Linux

Cumulus Linux embodies native Linux networking. Supercharged versions of the kernel and other networking-related packages encompass the latest industry thinking in networking while retaining compatibility with the full range of software available in Debian. The SN2000 series running Cumulus Linux provides standard networking functions such as bridging, routing, VLANs, MLAGs, IPv4/IPv6, OSPF/BGP, access control, VRF and VXLAN overlays. Cumulus-Linux running on top of Mellanox SN2000 series is a perfect fit for customers with a need for automated-cloud deployments, Layer-3 to the server deployments and "infrastructure as code" data-centers.

SONiC

Microsoft Software for Open Networking in the Cloud (SONiC) is the first solution to break monolithic switch software into multiple containerized components. SONiC enables fine-grained failure recovery and in-service upgrades with zero downtime. At its core, SONiC is aimed at cloud networking scenarios, where simplicity and managing at scale are the highest priority. All together with monitoring and diagnostic capabilities, SONiC is a perfect fit for the Mellanox SN2000 series.

Docker Containers

A docker container enables you to pack any piece of software and run it in an isolated container on top of the Linux operating system. In contrary to VMs which required a full copy of the operating system, containers bundle only libraries and settings required by the software and, therefore, are much lighter and more efficient. Dockers can be used to run and manage various applications side-by-side in isolated containers and get better compute density, enabling faster and secure delivery of new features. Mellanox Onyx support enables the customer to share selected storage spaces between the various containers and Onyx itself.

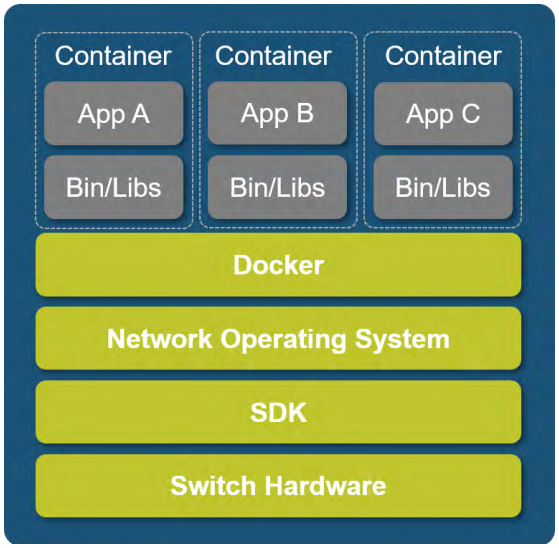


Figure 2. Docker Containers Support

VXLAN and EVPN

Modern data centers are moving to a layer 3 fabric which means running a routing protocol, such as BGP or OSPF, between the leaf and spine switches. In order to provide layer 2 connectivity between hosts and VMs on different racks as well as maintain multi-tenant separation, a layer 2 overlay solution is needed. VXLAN is the de facto technology for implementing network virtualization in the data center, enabling layer 2 segments to be extended over an IP core (the underlay). The initial definition of VXLAN did not include any control plane and relied on a flood-and-learn approach for MAC address learning. Practical deployments of VXLAN without a control plane often use a controller. With Cumulus Linux, Ethernet Virtual Private Network (EVPN) is a standards-based control plane for VXLAN that allows the building and deploying of VXLANs at scale, removing the vendor-specific controller dependency. Cumulus EVPN supports redundancy, traffic engineering, multi-tenant separation, and fast convergence for host and VM mobility — all while interoperating between vendors.

High Availability

The Mellanox SN2000 series switches were designed for high availability from both a software and hardware perspective.
Key high availability features include:

- 1+1 hot-swappable power supplies and four N+1 hot-swap fans (supported on SN2700 and SN2410)
- Color coded PSUs and fans
- Up to 64 10/25/40/50/100GbE ports per link aggregation group
- Multi-chassis LAG for active/active L2 multi-pathing
- 64-way ECMP routing for load balancing and redundancy

End-to-end 100GbE Solution

The SN2000 is part of Mellanox's complete end-to-end solution which provides 10GbE through 100GbE interconnectivity within the data center. Other devices in this solution include ConnectX® network interface cards and LinkX® copper or fiber cabling. This end-to-end solution is topped with Mellanox NEO®, a management application that relieves some of the major obstacles when deploying a network. NEO enables a fully certified and interoperable design, speeds up time to service and eventually speeds up ROI.

The SN2000 series introduces superior hardware capabilities including dynamic flexible shared buffers and predictable wire speed performance with no packet loss for any packet size. While the SN2000 Ethernet switch series is aimed for the 25/50/100GbE market, Mellanox offers similar systems for the 10/40GbE market. SN2000B switches are priced comfortably for the 10/40GbE market and provide the superior feature set of Spectrum.

The SN2000 series supports all standard compliances and is fully interoperable with third party systems.

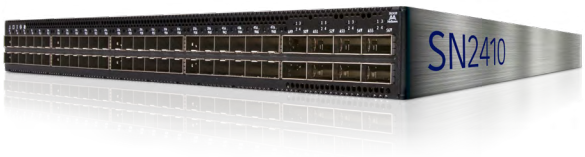
Mellanox Spectrum® Systems Overview

The Mellanox SN2000 series come in three different configurations. All powered by the Spectrum™ ASIC, each configuration delivers high performance combined with feature-rich layer 2 and layer 3 forwarding, suited for both top-of-rack leaf and fixed configuration spines.

Front side view

SN2700

The SN2700 carries a huge throughput of 6.4Tb/s, 32 ports at 100GbE, with a landmark 4.76Bpps processing capacity in a compact 1RU form factor. With port speeds spanning from 10Gb/s to 100Gb/s per port and a wide choice of QSFP transceivers and cables support. Mellanox SN2700 supports flat latency of 300ns in cut-through mode, and a shared 16 MB packet buffer pool that is allocated dynamically to ports that are congested.



SN2410

The SN2410 has 8 ports running at 100GbE (can be split to 16 ports running 50GbE) and 48 ports running at 25GbE, carrying throughput of 4Tb/s with a 2.97Bpps processing capacity in a compact 1RU form factor. The SN2410 switch is an ideal top-of-rack (ToR) solution, allowing maximum flexibility, with port speeds spanning from 10Gb/s to 100Gb/s per port. Its optimized port configuration enables high-speed rack connectivity to any server at 10GbE or 25GbE speeds. The 100GbE uplink ports allow a variety of blocking ratios that suit any application requirement.

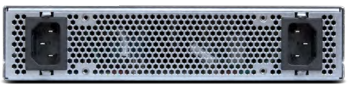
SN2100

The SN2100 carries a unique design to accommodate the highest rack performance. Its design allows side-by-side placement of two switches in a single 1RU slot of a 19" rack, delivering high availably to the hosts. The SN2100 accommodates 16 ports running at 100GbE, with throughput of 3.2Tb/s and a 2.38Bpps processing capacity.

SN2010

The SN2010 switch is the ideal top of rack (ToR) solution for small hyper-converged and storage deployments. Packed with 18 ports of 10/25GbE and 4 ports of 40/100GbE, the SN2010 can deliver up to 1.7Tb/s with 1.26Bpps processing capacity in a compact half width 1RU form factor.

Rear side view



Technical Specifications

Layer 2 Features	Layer 3 Features	Management and Automation
Multi Chassis LAG (MLAG)	64 VRFs	ZTP
IGMP V2/V3, Snooping, Querier	IPv4 & IPv6 Routing inc Route maps:	Ansible, SALT Stack, Puppet
VLAN 802.1Q (4K)	BGP4, OSPFv2	FTP \ TFTP \ SCP
Q-In-Q	PIM-SM & PIM-SSM (inc PIM-SM over MLAG)	AAA , RADIUS \ TACACS+ \ LDAP
802.1W Rapid Spanning Tree	BFD (BGP, OSPF, static routes)	JSON & CLI , Enhanced Web UI
• BPDU Filter, Root Guard	VRRP	SNMP v1,2,3
• Loop Guard, BPDU Guard	DHCPv4/v6 Relay	In-band Management
802.1s Multiple STP	Router Port, int Vlan, NULL Interface for Routing	DHCP, SSHv2, Telnet
PVRST+ (Rapid Per VLAN STP+)	ECMP, 64-way	SYSLOG
802.3ad Link Aggregation (LAG) & LACP	IGMPv2/v3 Snooping Querier	10/100/1000 ETH RJ45 MNG ports
• 32 Ports/Channel - 64 Groups Per System		USB Console port for Management
Port Isolation		Dual SW image
LLDP		Events history
Store & Forward / Cut-through mode of work		ONIE
HLL		
10/25/40/50/56/100GbE		
Jumbo Frames (9216 BYTES)		

Quality of Service (QoS)	Monitoring & Telemetry	Security
802.3X Flow Control	What Just Happened (WJH)™	USA Department of Defense certification – UC APL
WRED, Fast ECN & PFC	sFlow	System Secure Mode - FIPS 140-2 compliance
802.1Qbb Priority Flow Control	Real time queue depth histograms & thresholds	Storm Control
802.1Qaz ETS	Port Mirroring (SPAN & ERSPAN)	Access Control Lists (ACLs L2-L4 & user defined)
DCBX – App TLV support	Enhanced Link & Phy Monitoring	802.1X - Port Based Network Access Control
Advanced QoS-Qualification, Rewrite, Policers – 802.1AB	BER Degradation Monitor	SSH server strict mode - NIST 800-181A
Shared buffer management	Enhanced health mechanism	CoPP (IP filter)
	3rd party integration (Splunk, etc)	Port Isolation

Synchronization	Network Virtualization	Software Defined Network (SDN)
PTP IEEE-1588 (SMPTE profile)	VXLAN EVPN – L2 stretch use case	OpenFlow 1.3:
NTP	VXLAN Hardware VTEP – L2 GW	• Hybrid
	Integration with VMware NSX & OpenStack, etc	• Supported controllers: ODL, ONOS, FloodLight, RYU, etc.

Docker Container
Full SDK access through the container
Persistent container & shared storage

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

Standards	SNMP MIBs	
802.1D Bridging and Spanning Tree	RFC 4001 INET-ADDRESS-MIB	RFC 4292 IP-FORWARD-MIB
802.1p QOS	IANAifType-MIB	RFC 2790 HOST-RESOURCES-MIB
802.1Q VLAN Tagging	RFC 2863 IF-MIB	RFC 1213
802.1w Rapid Spanning Tree	RFC 4318 RSTP-MIB	SNMPV2-CONF
802.1s Multiple Spanning Tree Protocol	LLDP-MIB 802.1AB-2005	RFC 2579 SNMPV2-TC MIB
802.1AB Link Layer Discovery Protocol	RFC 4363 Q-BRIDGE-MIB	RFC 3417 SNMPV2-TM MIB
802.1Qaz ETS	RFC 4188 BRIDGE-MIB	RFC 3826 SNMP-USM-AES-MIB
802.1Qbb PFC	RFC 4133 ENTITY-MIB	Mellanox SMI MIB
802.3ad Link Aggregation with LACP	RFC 3433 ENTITY-SENSOR-MIB	Mellanox IF-VPI-MIB
802.3ba 40 and 100 Gigabit Ethernet	RFC 4268 ENTITY-STATE-MIB	Mellanox enhanced ENTITY-MIB
802.3x Flow Control	RFC 2572 SNMP-MPD-MIB	Mellanox Power-Cycle-MIB
1000BASE-KX	RFC 4293 IP-MIB	Mellanox SW-Update-MIB
802.3ae 10 Gigabit Ethernet	RFC 4022 TCP-MIB	Mellanox Config-MIB
	RFC 4113 UDP-MIB	

Specifications

Switch Model	SN2700	SN2410	SN2100	SN2010
Connectors	32 QSFP28 100GbE	48 SFP28 25GbE + 8 QSFP28 100GbE	16 QSFP28 100GbE	18 SFP28 25GbE + 4 QSFP28 100GbE
Max 100GbE ports	32	8	16	4
Max 40GbE ports	32	8	16	4
Max 25GbE ports	64	64	64	34
Max 10GbE ports	64	64	64	34
Throughput	6.4Tb/s	4Tb/s	3.2Tb/s	1.7Tb/s
Packet Per Second	4.76Bpps	2.97Bpps	2.38Bpps	1.26Bpps
Latency	300ns	300ns	300ns	300ns
CPU	Dual-core x86	Dual-core x86	ATOM x86	ATOM x86
System Memory	8GB	8GB	8GB	8GB
SSD Memory	32GB	32GB	16GB	16GB
Packet Buffer	16MB	16MB	16MB	16MB
100/100 Mgmt Ports	1	1	1	1
Serial Ports	1 RJ45	1 RJ45	1 RJ45	1 RJ45
USB Ports	1	1	1 Mini USB	1 Mini USB
Hot-Swap Power Supplies	2 (1+1 redundant)	2 (1+1 redundant)	No	No
Hot-Swappable Fans	4 (N+1 redundant)	4 (N+1 redundant)	No	No
Reversible Airflow Option	Yes	Yes	Yes	Yes
Power Supplies	Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A	Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A	Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A	Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A
Typical Power (ATIS)	150W	165W	94W	57W
Size (W x H x D)	1.72" x 16.84" x 27" (43.9mm x 427.8mm x 686mm) Short Depth: 1.72" x 16.84" x 17" (43.9mm x 428mm x 432mm)	1.72" x 17.24" x 17" (43.9mm x 438mm x 436mm)	1.72" x 7.87" x 20" (43.9mm x 200mm x 508mm)	1.72" x 7.87" x 20" (43.9mm x 200mm x 508mm)
Weight	7.7kg (18.4lb), Short 2xDC 11.1kg (24.5lb) Standard, 2xAC	8.52kg (18.8lb)	4.54kg (10lb)	4.54kg (10lb)

Supported Transceivers & Optical Fiber and Copper Cables	Interface Type	Description	SKU
100GbE NRZ QSFP28	100BASE-CR4 copper	0.5m-5m LSZH DAC	MCP1600-C0xxxxxx
	100BASE-AOC	3m-100m	MFA1A00-CXXX
	100BASE-SR4	850nm, MPO, up to 100m	MMA1B00-C100D
	100BASE-PSM4	1310nm, MPO, up to 500m	MMS1C10-CM
	100BASE-LR4	1310nm, LC-LC, up to 10km	MMA1L10-CR
	100BASE-CWDM4	1310nm, LC-LC, up to 2km	MMA1L30-CM
	100GbE to 4 x 25GbE SFP28	1m-5m DAC	MCP7F00-A0xxxxxx
	100GbE to 4 x 25GbE SFP28	3m-30m AOC	MFA7A50-Cxxx
	100GbE to 2 x 50GbE QSFP28	1m-5m DAC	MCP7H00-G0xxxxxxx
	100GbE to 2 x 50GbE QSFP28	3m-20m AOC	MFA7A20-Cxxx
	100GbE to 25GbE	QSA28 pluggable adapter	MAM1Q00A-QSA28
40GbE QSFP	40BASE-CR4	1m-5m DAC	MC2210130-00X
	40BASE-AOC	3m-100m	MC2210310-XXX
	40BASE-SR4	850nm, MPO, up to 100m	MMA1B00-B150D
		850nm, MPO, up to 300m	MC2210411-SR4E
	40BASE-LR4	1310nm, LC-LC, up to 10km	MC2210511-LR4
	40GbE to 4 x 10GbE	1m-5m DAC	MC26091XX-00X
	40GbE to 10GbE	QSA pluggable adapter	MAM1Q00A-QSA
25GbE SFP28	25BASE-CR	0.5m-5m DAC	MCP2M00-A0xxxxxxx
	25BASE-AOC	3m-100m	MFA2P10-AXXX
	25BASE-SR	850nm, LC-LC, up to 100m	MMA2P00-AS
	25BASE-LR	1310nm, LC-LC, up to 10km	MMA2L20-AR
10GbE SFP+	10BASE-CR	1m-7m DAC	MC3309xxx-00X
	10BASE-SR	850nm, LC-LC, up to 300m	MFM1T02A-SR
	10BASE-LR	1310nm, LC-LC, up to 10km	MFM1T02A-LR

Standard Compliance	
Safety	CB
	cTUVus
	CE
	CU
EMC	CE
	FCC
	VCCI
	ICES
	RCM
Operating Conditions	Operating 0ºC to 40ºC
	Non-Operating -40ºC to 70ºC
Relative Humidity	5% to 85%
Operating Altitude	0 – 2000m
RoHS Compliant	

Table 1 - SN2700 Series Part Numbers & Descriptions	
MSN2700-CS2F	Mellanox Spectrum-based 100GbE 1U Open Ethernet Switch with Onyx, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit
MSN2700-CS2R	Mellanox Spectrum-based 100GbE 1U Open Ethernet Switch with Onyx, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit
MSN2700-CS2FC	Mellanox Spectrum-based 100GbE 1U Open Ethernet Switch with Cumulus Linux, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit
MSN2700-CS2RC	Mellanox Spectrum-based 100GbE 1U Open Ethernet Switch with Cumulus Linux, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit
MSN2700-CS2FO	Mellanox Spectrum-based 100GbE 1U Open Ethernet switch with ONIE, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit
MSN2700-CS2RO	Mellanox Spectrum-based 100GbE 1U Open Ethernet switch with ONIE, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit
MSN2700-CBBFO	Mellanox Spectrum-based 100GbE 1U Open Ethernet Switch with ONIE, 32 QSFP28 ports, 2 power supplies (DC), x86 CPU, short depth, P2C airflow, Rail Kit
MSN2700-BS2F	Mellanox Spectrum-based 40GbE 1U Open Ethernet Switch with Onyx, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit
MSN2700-BS2R	Mellanox Spectrum-based 40GbE 1U Open Ethernet Switch with Onyx, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit
MSN2700-BS2FC	Mellanox Spectrum-based 40GbE 1U Open Ethernet Switch with Cumulus Linux, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit
MSN2700-BS2RC	Mellanox Spectrum-based 40GbE 1U Open Ethernet Switch with Cumulus Linux, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit
MSN2700-BS2FO	Mellanox Spectrum-based 40GbE 1U Open Ethernet switch with ONIE, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit
MSN2700-BS2RO	Mellanox Spectrum-based 40GbE 1U Open Ethernet switch with ONIE, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit

Table 2 - SN2410 Series Part Numbers & Descriptions	
MSN2410-CB2F	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Onyx, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow, Rail Kit
MSN2410-CB2R	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Onyx, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow, Rail Kit
MSN2410-CB2FC	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow, Rail Kit
MSN2410-CBBRC	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (DC), x86 CPU, short depth, C2P airflow, Rail Kit
MSN2410-CB2RC	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow, Rail Kit
MSN2410-CB2FO	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with ONIE, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow, Rail Kit
MSN2410-CB2RO	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with ONIE, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow, Rail Kit
MSN2410-BB2F	Mellanox Spectrum-based 10GbE/100GbE 1U Open Ethernet switch with Onyx, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow, Rail Kit
MSN2410-BB2R	Mellanox Spectrum-based 10GbE/100GbE 1U Open Ethernet switch with Onyx, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow, Rail Kit
MSN2410-BB2FC	Mellanox Spectrum-based 10GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow, Rail Kit
MSN2410-BB2RC	Mellanox Spectrum-based 10GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow, Rail Kit
MSN2410-BBBFC	Mellanox Spectrum-based 10GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (DC), x86 CPU, short depth, P2C airflow, Rail Kit
MSN2410-BB2FO	Mellanox Spectrum-based 10GbE/100GbE 1U Open Ethernet switch with ONIE, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow, Rail Kit
MSN2410-BB2RO	Mellanox Spectrum-based 10GbE/100GbE 1U Open Ethernet switch with ONIE, 48 SFP28 ports and 8 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow, Rail Kit

Table 3 - SN2100 Series Part Numbers & Descriptions	
MSN2100-CB2F	Mellanox Spectrum-based 100GbE 1U Open Ethernet Switch with Onyx, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2100-CB2R	Mellanox Spectrum-based 100GbE 1U Open Ethernet Switch with Onyx, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow. Rail Kit must be purchased separately
MSN2100-CB2FC	Mellanox Spectrum-based 100GbE 1U Open Ethernet Switch with Cumulus Linux, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2100-CB2RC	Mellanox Spectrum-based 100GbE 1U Open Ethernet Switch with Cumulus Linux, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow. Rail Kit must be purchased separately
MSN2100-CB2RO	Mellanox Spectrum-based 100GbE 1U Open Ethernet switch with ONIE, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow. Rail Kit must be purchased separately
MSN2100-CB2FO	Mellanox Spectrum-based 100GbE 1U Open Ethernet switch with ONIE, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2100-BB2F	Mellanox Spectrum-based 40GbE 1U Open Ethernet Switch with Onyx, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2100-BB2R	Mellanox Spectrum-based 40GbE 1U Open Ethernet Switch with Onyx, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow. Rail Kit must be purchased separately
MSN2100-BB2FC	Mellanox Spectrum-based 40GbE 1U Open Ethernet Switch with Cumulus Linux, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2100-BB2RC	Mellanox Spectrum-based 40GbE 1U Open Ethernet Switch with Cumulus Linux, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow. Rail Kit must be purchased separately
MSN2100-BB2FO	Mellanox Spectrum-based 40GbE 1U Open Ethernet switch with ONIE, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2100-BB2RO	Mellanox Spectrum-based 40GbE 1U Open Ethernet switch with ONIE, 16 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow. Rail Kit must be purchased separately

Table 4 - SN2010 Series Part Numbers & Descriptions	
MSN2010-CB2F	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Onyx, 18 SFP28 ports and 4 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2010-CB2R	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Onyx, 18 SFP28 ports and 4 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow. Rail Kit must be purchased separately
MSN2010-CB2FC	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 18 SFP28 ports and 4 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2010-CB2RC	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 18 SFP28 ports and 4 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow. Rail Kit must be purchased separately
MSN2010-CB2FO	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with ONIE, 18 SFP28 ports and 4 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2010-CB2RO	Mellanox Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with ONIE, 18 SFP28 ports and 4 QSFP28 ports, 2 power supplies (AC), x86 CPU, short depth, C2P airflow. Rail Kit must be purchased separately

Table 5 - Spare Power Supplies & Fan Modules	
MTEF-PSF-AC-A	Spare 460W AC power supply w/P2C air flow
MTEF-PSR-AC-A	Spare 460w AC power supply w/C2P air flow
MTEF-FANF-A	Spare fan module w/P2C air flow
MTEF-FANR-A	Spare fan module w/C2P air flow

Table 6 - Rack (and Spare Rack) Installation Kits	
MTEF-KIT-D	Rack installation kit for SN2100/SN2010 series short depth 1U switches
MTEF-KIT-SP	Spare rack installation kit for SN2410 series to be mounted into standard depth racks
MTEF-KIT-BP	Spare rack installation kit for SN2410 series to be mounted into short depth racks
MTEF-KIT-A	Spare rack installation kit for SN2700 series to be mounted into short or standard depth racks

Warranty Information

The Mellanox SN2000 series switches come with a one-year limited hardware return-and-repair warranty, with a 14 business day turnaround after the unit is received. For more information, please visit the Mellanox Technical Support User Guide.

Additional Information

Support services including next business day and 4-hour technician dispatch are available. For more information, please visit the Mellanox Technical Support User Guide. Mellanox offers installation, configuration, troubleshooting and monitoring services, available on-site or remotely delivered. For more information, please visit the Mellanox Global Services web site.

350 Oakmead Parkway, Suite 100, Sunnyvale, CA 94085
Tel: 408-970-3400 • Fax: 408-970-3403
www.mellanox.com

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