NVIDIA SPECTRUM SN2000 SERIES SWITCHES

Open networking switches

The NVIDIA® Spectrum™ SN2000 series switches are the 2nd generation of NVIDIA switches, purpose-built for leaf/spine/super-spine datacenter applications. Allowing maximum flexibility, SN2000 series provides port speeds spanning from 1 to 100GbE, with a port density that enables full rack connectivity to any server at 1/20/25/40/50/100GbE speeds. In addition, the uplink ports allow a variety of blocking ratios to suit any application requirement.

The SN2000 series is ideal for building wire-speed and cloud-scale layer-2 and layer-3 networks. The SN2000 platforms deliver high performance, consistent low latency along with support for advanced software defined networking features, making it the ideal choice for web scale IT, cloud, hyperconverged storage and data analytics applications.

Network Disaggregation: Open Ethernet

Open Ethernet breaks the paradigm of traditional switch systems, eliminating vendor lock-in. Open Ethernet offers customers the flexibility and freedom to use a choice of operating systems on top of Ethernet switches, thereby re-gaining control of the network, and optimizing utilization, efficiency and overall return on investment.

Encouraging an ecosystem of open source, standard network solutions, Open Ethernet allows IT managers and data center planners the option to make independent selections with regard to their switching equipment. They can "mix and match" offerings from different equipment vendors to achieve optimal configuration and have better control of capital and operational expenditures.

With a range of system form factors, and a rich software ecosystem, SN2000 series allows you to pick and choose the right components for your data center.

SN2000 Platforms

SN2000 series platforms are powered by the Spectrum ASIC and available in 4 configurations. Each delivers high performance combined with feature-rich layer 2 and layer 3 forwarding—ideal for both top-of-rack leaf and fixed configuration spines. 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, NVIDIA offers similar systems for the 10/40GbE market: SN2000B switches are priced comfortably for the 10/40 GbE market and provide the superior feature set of NVIDIA Spectrum. The SN2000 series are standards compliant and fully interoperable with third party systems.

Visibility

- WHAT JUST HAPPENED?® (WJH) telemetry dramatically reduces mean time to issue resolution by providing answers to: When, What, Who, Where and Why
- Hardware-accelerated histograms track and summarize queue depths at sub-microsecond granularity
- Inband Network Telemetry (INT)-ready hardware
- Streaming Telemetry
- Up to 256K shared forwarding entries

Performance

- Fully shared packet buffer provides a fair, predictable and high bandwidth data path
- Consistent and low cut-through latency
- Intelligent hardware-accelerated data movement, congestion management and load balancing for RoCE and Machine learning applications that leverage GPUDirect®
- Best-in-class VXLAN scale—6X more tunnels and tunnel endpoints

Agility

- Comprehensive Layer-2, Layer-3 and RoCE
- Advanced network virtualization with high performance single pass VXLAN routing and IPv6 segment routing
- Programmable pipeline
- Deep Packet Inspection – 512B deep

SN2700

The SN2700 carries a huge throughput of 3.2Tb/s, 32 ports at 100GbE, with a landmark 4.76Bpps processing capacity in a compact 1RU form factor. With port speeds spanning from 1 to 100GbE per port and a wide choice of QSFP transceivers and cables support. NVIDIA SN2700 supports flat latency of 300ns in cut-through mode, and a shared 16MB 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 a throughput of 2Tb/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 10GbE to 100GbE per port. Its optimized port configuration enables high-speed rack connectivity to any server at 10 or 25GbE speeds. The 100GbE uplink ports allow a variety of blocking ratios that suit any application requirement.

SN2100

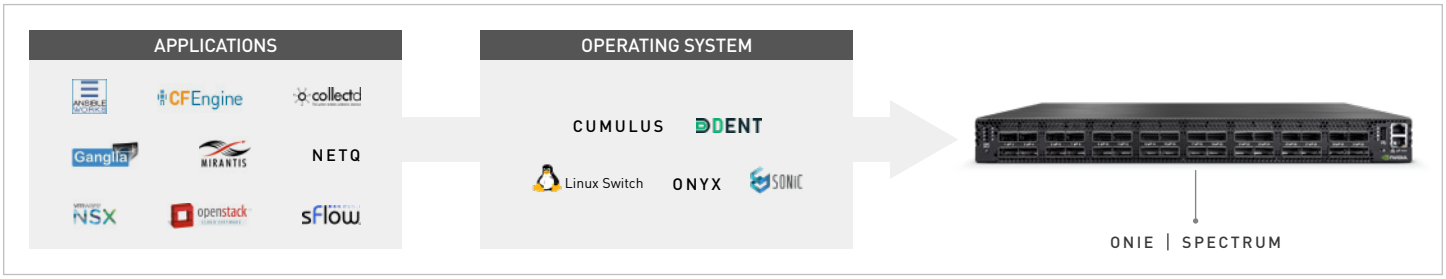
The SN2100 carries a unique design to accommodate the highest rack performance. Its design allows side-by-side placement of two switches in a single 1RU slot of a 19" rack, delivering high availability to the hosts. The SN2100 accommodates 16 ports running at 100GbE, with throughput of 1.6Tb/s and a 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 850GbE with 1.26Bpps processing capacity in a compact half width 1RU form factor

Platform Software Options

- The SN2000 series platforms are factory available in three different flavors:
- Pre-installed with NVIDIA Cumulus Linux™, a revolutionary operating system that takes the Linux user experience from servers to switches, and provides a rich routing functionality for large scale applications.
- Pre-installed with NVIDIA Onyx™, a home-grown operating system, with a classic CLI interface.
- Bare metal including ONIE image, installable with any ONIE-mounted OS. ONIE-based platforms utilize the advantages of Open Networking and the Spectrum ASIC capabilities.



High Availability

- NVIDIA 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 1/10/25/40/50/100GbE ports per link aggregation group
- Multi-chassis LAG for active/active L2 multipathing
- 64-way ECMP routing for load balancing and redundancy

SN2000 Series: A Rich Software Ecosystem

Cumulux-Linux

NVIDIA Cumulus Linux is a powerful open network operating system enabling advanced automation, customization and scalability using web-scale principles like the world's largest data centers. It accelerates networking functions and provides choice from an extensive list of supported switch models including NVIDIA Spectrum based switches. Cumulus Linux was built for automation, scalability and flexibility, allowing you to build data center and campus networks that ideally suits your business needs. Cumulus Linux is the only open network OS that allows you to build affordable and efficient network operations like the world's largest data center operators, unlocking web-scale networking for businesses of all sizes.

Onyx

Onyx is a high performance switch operating system, with a classic CLI interface. Whether building a robust storage fabric, cloud, financial or media and 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, enhanced high availability mechanisms, and more, Onyx simplifies network processes and workflows, increasing efficiencies and reducing operating expenses and time-to-service.

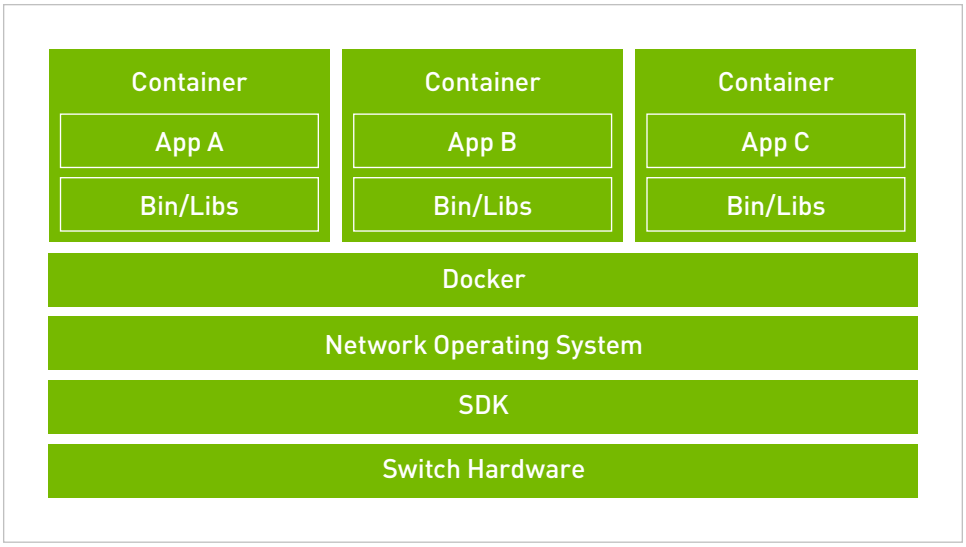
Microsoft SONiC

SONiC was designed for cloud networking scenarios, where simplicity and managing at scale are the highest priorities. NVIDIA fully supports the Pure Open Source SONiC from the SONiC community site on all of the SN2000 series switch platforms. With advanced monitoring and diagnostic capabilities, SONiC is a perfect fit for the NVIDIA SN2000 series. Among other innovations, SONiC on SN2000 series enables fine-grained failure recovery and in-service upgrades (ISSU), with zero downtime.

DOCKER Containers

NVIDA fully supports the running of third party containerized applications on the switch system itself. The third party application has complete access to the bare-metal switch via its direct access to the SDK. The switch has tight controls over the amount of memory and CPU cycles each container is allowed to use, along with fine grained monitoring of those resources.

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



Docker Containers Support

ONIE

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 Spectrum SN2000 series.
ONIE enables a bare metal network switch ecosystem where end users have a choice of different network operating systems.

Llinux Switch and Dent

Linux Switch enables users to natively install and use any standard Linux distribution as the switch operating system, such as DENT, a Linux-based networking OS stack that is suitable for campus and remote networking. Linux Switch is based on a Linux kernel driver model for Ethernet switches (Switchdev). It breaks the dependency of using vendor-specific, closed-source software development kits. 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 NVIDIA Spectrum-based switches for L2 switching and L3 routing, including open source routing protocol stacks, such as FRR (Quagga), Bird and XORP, OpenFlow applications, or user-specific implementations.

Cumulus NetQ

NVIDIA® Cumulus NetQ™ is a highly-scalable, modern, network operations tool set that provides visibility, troubleshooting and lifecycle management of your open networks in real time. NetQ delivers actionable insights and operational intelligence about the health of your data center and campus networks — from the container or host, all the way to the switch and port, enabling a NetDevOps approach. NetQ is the leading network operations tool that utilizes telemetry for deep troubleshooting, visibility and automated workflows from a single GUI interface, reducing maintenance and network downtimes. With the addition of full lifecycle management functionality, NetQ now combines the ability to easily upgrade, configure and deploy network elements with a full suite of operations capabilities, such as visibility, troubleshooting, validation, trace and comparative look-back functionality.

Build your Cloud Without Compromise

Groundbreaking Performance

Packet buffer architecture has a major impact on overall switch performance. The Spectrum packet buffer is monolithic and fully shared across all ports, supporting cut-through line rate traffic from all ports, without compromising scale or features. With its fast packet buffer, Spectrum is able to provide a high performance fair and bottleneck-free data path for mission-critical applications.

Pervasive Visibility

Spectrum provides deep and contextual network visibility, which enables network operators to proactively manage issues and reduce mean time to recovery or innocence. WJH leverages the underlying silicon and software capability to provide granular and event-triggered information about infrastructure issues. In addition, the rich telemetry information from Spectrum is readily available via open APIs that are integratable with third party software tools and workflow engines.

Unprecedented Agility

For modern data center infrastructure to be software defined and agile, both its compute and network building blocks need to be agile. Spectrum features a unique feature rich and efficient packet processing pipeline that offers rich data center network virtualization features without compromising on performance or scale. Spectrum has a programmable pipeline and a deep packet parser/editor that can process payloads up to the first 512B. Spectrum supports single pass VXLAN routing as well as bridging.

Massive Scale

The number of endpoints in the data center is increasing exponentially. With the current shift from virtual machine-based architectures to container-based architectures, the high-scale forwarding tables required by modern data centers and mega-clouds increase by up to an order of magnitude or more. To answer the needs for scalability and flexibility, Spectrum uses intelligent algorithms and efficient resource sharing, and supports unprecedented forwarding table, counters and policy scale.

End-to-End 100 GbE Solution

The SN2000 is part of NVIDIA complete end-to-end solutions providing 10 through 100GbE interconnectivity within the data center. Other devices in this solution include ConnectX® network interface cards and LinkX® copper or fiber cabling.

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 50GbE ports	64	16	32	8
Max 40GbE ports	32	8	16	4
Max 25GbE ports	64	64	64	34
Max 10GbE ports	64	64	64	34
Throughput	3.2Tb/s	2Tb/s	1.6Tb/s	850GbE
Packet Per Second	4.7Bpps	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 redundan t)	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)

Spare Power Supplies and Fan Modules	
MTEF-PSF-AC-A	Spare 460W AC power supply P2C airflow
MTEF-PSR-AC-A	Spare 460w AC power supply C2P airflow
MTEF-FANF-A	Spare fan module w/P2C airflow
MTEF-PSF-AC-I	Spare 550W AC power supply P2C airflow
MTEF-PSR-AC-I	Spare 550W AC power supply C2P airflow
MTEF-FANR-A	Spare fan module w/C2P airflow

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

Supported Transcievers and Cables

Supported Transceivers and 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
	100BASE-SWDM4 850nm	LC-LC, up to 100m	FTLC9152RGPL
	100BASE-ER	1310nm, LC-LC, up to 40km	SPQ-CE-ER-CDFL-M
	100BASE-DR1	1310nm, LC-LC, up to 500m	MMS1V70-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	

SN2700 Series Part Numbers and Descriptions	
MSN2700-CS2F	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	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	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	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	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	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	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	Spectrum-based 40GbE 1U Open Ethernet Switch with NVIDIA Onyx, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit
MSN2700-BS2R	Spectrum-based 40GbE 1U Open Ethernet Switch with NVIDIA Onyx, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit
MSN2700-BS2FO	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	Spectrum-based 40GbE 1U Open Ethernet switch with ONIE, 32 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit

SN2410 Series Part Numbers and Descriptions	
MSN2410-CB2F	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	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	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	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	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	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	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	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	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	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	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	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	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	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

SN2100 Series Part Numbers and Descriptions	
MSN2100-CB2F	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	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	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	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	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	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	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	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	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	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	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	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

SN2010 Series Part Numbers and Descriptions	
MSN2010-CB2F	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	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	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	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-CB2F3C	Spectrum-based 25GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 18 SFP28 ports and 4 QSFP28 ports, 2 Power Supplies (AC), x86 CPU, 32G RAM and 30G SSD, short depth, P2C airflow. Rail Kit must be purchased separately
MSN2010-CB2FO	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	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

Warranty Information

NVIDIA 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 **NVIDIA Technical Support User Guide**.

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

Learn more

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