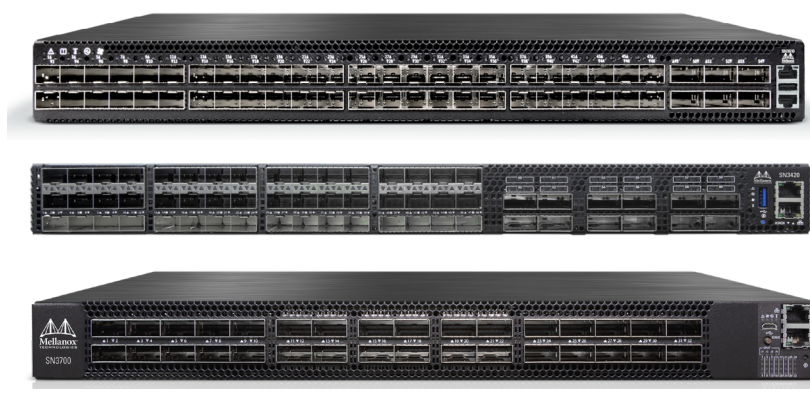




# SN3000 Series

The Ideal Data Center Switch for Cloud, Ethernet Storage Fabrics, and Machine Learning Solutions

Based on Mellanox Spectrum-2 ASIC, the SN3000 series switches support industry-leading features and performance at speeds 1GbE through 400GbE.

## SN3000 SWITCHES - BUILD YOUR CLOUD NETWORK WITHOUT COMPROMISE

### Features without Compromise

- Advanced Network Virtualization with high performance single pass VXLAN routing and IPv6 segment routing
- Comprehensive Layer-2, Layer-3 and RoCE
- Programmable Pipeline with the ability to programmatically parse, process and edit packets
- Deep Packet Inspection - 512B Deep
- Cloud Scale NAT – 100K+ sessions

### Performance without Compromise

- Fully shared packet buffer provides fair, predictable and high-performance data path - essential for scale out software defined storage and modern multi-tenant cloud deployments
- Robust RoCE transport to power NVMe over fabric and Machine Learning applications that leverage GPUDirect
- Consistent and low cut-through latency

### Scale without Compromise

- Best in class VXLAN scale with 10X more tunnels and tunnel endpoints than other solutions
- 512K shared forwarding entries that can be flexibly shared across ACL, LPM routes, Host routes, MAC, ECMP and Tunnel applications

### Visibility without Compromise

- Reduced Mean Time to Recovery/Innocence.
  - Detailed and contextual telemetry with What Just Happened (WJH)
  - Instant answers to issues: When, What, Who, Where and Why
- Hardware-accelerated histograms track and summarize queue depths at sub-microsecond granularity, avoiding false-alerts common to simple watermarks/thresholds
- Inband Network Telemetry (INT)-ready hardware
- Streaming Telemetry
- 512K on-chip flow counters

## OVERVIEW

The SN3000 series switches are the 3rd generation of Mellanox Spectrum switches purpose-built for leaf/spine datacenter applications. Allowing maximum flexibility, SN3000 series provides port speeds spanning from 1 GbE to 400GbE, and a port density that enables full rack connectivity to any server at any speed. In addition, the uplink ports allow a variety of blocking ratios to suit any application requirement.

The SN3000 series is ideal for building wire-speed and cloud-scale layer-2 and layer-3 networks. The SN3000 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. Instead of forcing network operators to use the specific software that is provided by the switch vendor, Open Ethernet offers the flexibility 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.

Open Ethernet adopts the same principles as standard open solutions for servers and storage, and applies them to the world of networking infrastructure. It encourages an ecosystem of open source, standard network solutions. These solutions can then be easily deployed into the modern data center across network equipment that eases management and ensures full interoperability.

With a range of system form factors, and a rich software ecosystem, SN3000 series allows you to pick and choose the right components for your data center.

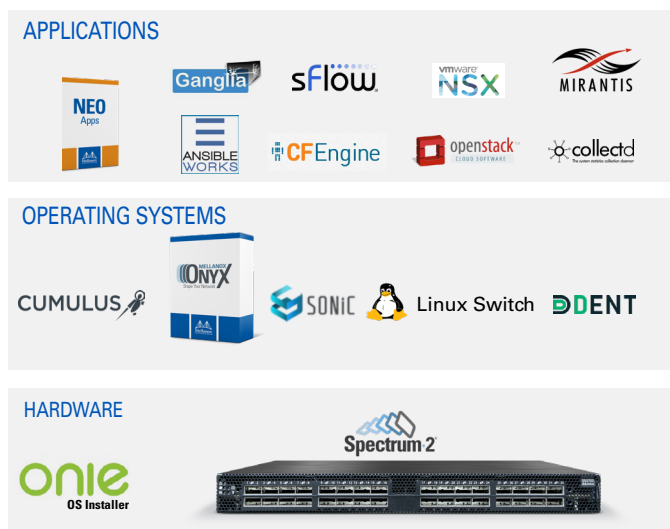


Figure 1. Open Ethernet Operating System and Hardware

## SN3000 PLATFORMS

Mellanox SN3000 series platforms are based on the high-performance Mellanox Spectrum-2 ASIC with a switching capacity of 6.4 Tb/s. SN3000 platforms are available in a range of configurations, each delivering high performance combined with feature-rich layer 2 and layer 3 forwarding, ideally suited for both top-of-rack leaf and fixed configuration spines. The Mellanox SN3000 series provides full wire speed, cut through-mode latency, on-chip fully-shared 42MB packet buffering, and flexible port use in addition to advanced capabilities. Combining a wide range of innovations in the area of programmability, telemetry, and tunneling with industry leading performance, Mellanox SN3000 series is capable of addressing today's data center's complex networking requirements.

## Front panel views



### SN3700

Mellanox SN3700 spine/super-spine offers 32 ports of 200GbE in a compact 1U form factor. It enables connectivity to endpoints at different speeds and carries a throughput of 12.8Tb/s, with a landmark 8.33Bpps processing capacity. As an ideal spine solution, the SN3700 allows maximum flexibility, with port speeds spanning from 10GbE to 200GbE per port.



### SN3700C

Mellanox SN3700C is a 1U 32-port 100GbE spine that can also be used as a high density 10/25GbE leaf when used with splitter cables. SN3700C allows for maximum flexibility, with ports spanning from 1GbE to 100GbE and port density that enables full rack connectivity to any server at any speed, and a variety of blocking ratios. SN3700C ports are fully splittable to up to 128 x 10/25GbE ports.



### SN3510\*

Equipped with 48 ports of 1/25/50GbE and 6 ports of up to 400GbE, SN3510 is an ideal leaf platform. The 400GbE ports can optionally be split into up to 48 ports running 50GbE and the platform can deliver a total throughput of up to 9.6Tb/s with 7.16Bpps processing capacity in a compact 1U form factor. As data center switching architectures increasingly adopt 400GbE, SN3510 offers a cost-effective and high performance top-of-rack solution. Equipped with QSFP-DD ports, SN3510 enables seamless use of QSFP28/56 connections and future-proofs your data center.



### SN3420

As data-center switching architectures increasingly adopt 100GbE, the SN3420 offers a high-performance, cost-effective way to evolve host connectivity from 10G to 25G. Equipped with 48 ports of 10/25GbE and 12 ports of up to 100GbE in a compact 1U form factor. The SN3420 is an ideal Top-of-Rack (ToR) switch platform, delivering a total throughput of up to 4.8Tb/s with a processing capacity of 3.58Bpps. The SN3420 enables the seamless use of QSFP28 connections for leaf-spine topology and future-proofing the data center.

\* Available in H2 2020

## PLATFORM SOFTWARE OPTIONS

SN3000 series platforms are available out of the factory in three different flavors:

- Preinstalled with Mellanox Onyx™, 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, installable with any ONIE-mounted OS. ONIE-based platforms utilize the advantages of Open Networking and the Mellanox Spectrum-2 ASIC capabilities.

## HIGH AVAILABILITY

Mellanox SN3000 series switches are designed with the following features for high availability both from a software and hardware perspective:

- 1+1 hot-swappable power supplies and N+1 hot-swappable fans
- Color coded PSUs and fans
- Up to 128x10/25/50GbE, 64x100GbE, 32x200GbE, or 6x400GbE
- Multi-chassis LAG for active/active L2 multi-pathing
- 64-way ECMP routing for load balancing and redundancy

## SN3000 SERIES: A RICH SOFTWARE ECOSYSTEM

**MELLANOX ONYX**  Mellanox Onyx  
Shape Your Network

Mellanox Onyx is a high performance, flexible and cloud-scale switch operating system, designed to meet 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 Mellanox Onyx to tailor their network platform to their environment. With built-in workflow automation, monitoring and visibility tools, enhanced high availability mechanisms, and more, Mellanox Onyx simplifies network processes and workflows, increasing efficiencies and reducing operating expenses and time-to-service.

Mellanox Onyx leverages capabilities of the SN3000 series to provide greater magnitudes of scale, with up to 512K ACLs, state-of-the-art telemetry, enhanced QoS, exceptional programmability that enables a flexible pipeline supporting both new and legacy protocols, a larger fully-shared buffer, and more.

## DOCKER CONTAINERS

Mellanox Onyx allows 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 complete access to the SDK. Alternately, the application can use JSON APIs to communicate with the system through the Mellanox Onyx operating system. Mellanox Onyx support enables the customer to share selected storage spaces between the various containers and Mellanox Onyx itself.

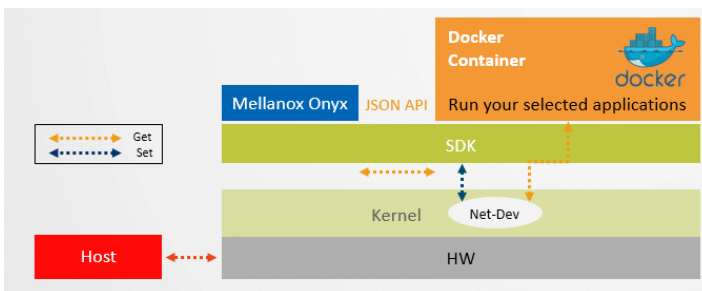


Figure 2. Docker Containers Support

**CUMULUS-LINUX** CUMULUS 

**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 SN3000 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 the Mellanox SN3000 series is a perfect fit for customers with a need for automated-cloud deployments, Routing on the Host deployments and “infrastructure as code” data centers.

# 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 Mellanox SN3000 series. ONIE enables a bare metal network switch ecosystem where end users have a choice of different network operating systems.

SONiC  SONiC

Microsoft open-source switch Operating System for Open Networking in the Cloud (SONiC) is the first solution to break monolithic switch software into multiple containerized components. 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 SN3000 series. Among other capabilities, SONiC on SN3000 series enables fine-grained failure recovery and in-service upgrades (ISSU), with zero downtime.

## LINUX SWITCH and LINUX 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 Mellanox 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.

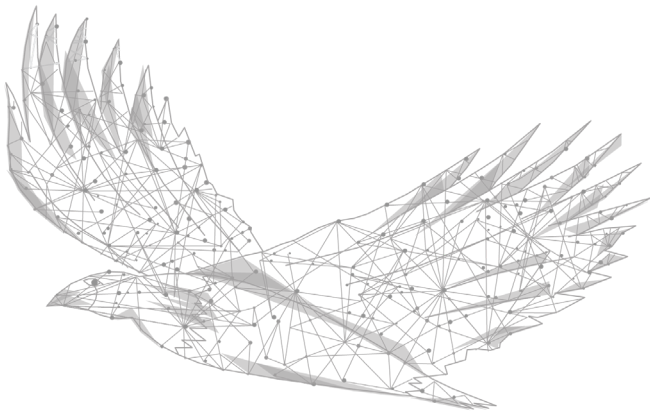
# MELLANOX SPECTRUM-2: BUILD YOUR CLOUD WITHOUT COMPROMISE

## PERFORMANCE WITHOUT COMPROMISE

Packet buffer architecture has a major impact on overall switch performance. The Mellanox Spectrum-2 packet buffer is fully shared across all ports, supporting cut-through line rate traffic from all ports, without compromising scale or features. With its fast packet buffer, Mellanox Spectrum-2 is able to provide a high-performance fair and bottleneck-free data path for mission-critical applications.

## PERVASIVE VISIBILITY FOR SIMPLIFIED OPERATIONS

Mellanox Spectrum-2 provides deep and contextual network visibility, which enables network operators to proactively manage issues and reduce mean time to recovery/innocence. Mellanox Spectrum's What Just Happened (WJH) feature leverages the underlying silicon and software capability to provide granular and event-triggered information about infrastructure issues. In addition, the rich telemetry information from Mellanox Spectrum-2 is readily available via open APIs that are integratable with third party software tools and work flow engines.



## FEATURES WITHOUT COMPROMISE

For modern data center infrastructure to be software defined and agile, both its compute and network building blocks need to be agile. Mellanox Spectrum-2 features a unique feature rich and efficient packet processing pipeline that offers rich Data Center Network virtualization features without compromising on performance or scale. Mellanox Spectrum-2 is a programmable pipeline and a deep packet parser/editor (can process payload up to the first 512B). Mellanox Spectrum-2 supports single pass VXLAN routing as well as bridging. Additionally, Mellanox Spectrum-2 supports advanced virtualization features such as IPv6 segment routing, and Network Address Translation (NAT).

## SCALE WITHOUT COMPROMISE

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 these needs for scalability and flexibility, Mellanox Spectrum-2 uses intelligent algorithms and efficient resource sharing, and supports unprecedented forwarding table, counters and policy scale.

- Fine-grained resource allocation to fit all specific needs, allowing up to 512K entries to be dynamically shared across MAC, ARP, IPv4/IPv6 routes, ACLs, ECMP, and Tunnels.
- An innovative algorithmic TCAM optimized for data centers and cloud environments, which can scale the number of rules to up to half a million rules.

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## END-TO-END SOLUTION

The SN3000 series is part of Mellanox's complete end-to-end solution which provides 1GbE through 400GbE interconnectivity within the data center. Other devices in this solution include ConnectX-based network interface cards and LinkX copper or fiber cabling. This end-to-end solution is topped with the Mellanox NEO 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 SN3000 series introduces superior hardware capabilities including dynamic flexible shared buffers and predictable wire-speed performance with no packet loss at any packet size. The SN3000 series supports all standard compliances and is fully interoperable with third party systems.

## MELLANOX ONYX FEATURE HIGHLIGHTS

| Layer 2                                                                                                   | Layer 3                                    | Management and Automation                |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------|
| Multi chassis LAG (MLAG), MLAG with STP support                                                           | User and management VRFs                   | ZTP                                      |
| IGMPv2/v3, Snooping, Querier                                                                              | IPv4 & IPv6 routing                        | Ansible, Puppet, SaltStack               |
| VLAN 802.1Q (4K)                                                                                          | BGP, MP-BGP, OSPFv2, route maps            | FTP / TFTP / SCP                         |
| Q-In-Q                                                                                                    | PIM-SSM, PIM-SM                            | AAA , RADIUS / TACACS+ / LDAP            |
| 802.1W Rapid Spanning Tree                                                                                | BFD                                        | JSON & CLI, Web UI                       |
| <ul style="list-style-type: none"> <li>BPDU Filter, Root Guard</li> <li>Loop Guard, BPDU Guard</li> </ul> | VRRP, Multi Active Gateway Protocol (MAGP) | SNMP v1,2,3                              |
| 802.1s Multiple STP                                                                                       | DHCPv4/v6 Relay                            | In-band and OOB management               |
| Rapid per VLAN STP and PVRST                                                                              | ECMP, 64-way                               | DHCP, SSHv2, Telnet                      |
| 802.3ad Link Aggregation (LAG) & LACP                                                                     | IGMPv2/v3 Snooping Querier                 | SYSLOG                                   |
| 802.1AB Link Layer Discovery Protocol (LLDP)                                                              | Consistent/Resilient Hashing*              | 10/100/1000 Mb/s Ethernet RJ45 mng ports |
| Store & forward / cut-through mode of work                                                                |                                            | USB                                      |
| Head of Queue LifeTime Limit (HLL)                                                                        |                                            | Console port for management              |
| Jumbo Frames (9216 Bytes)                                                                                 |                                            | Dual SW image                            |
| Storm Control                                                                                             |                                            | Events history                           |
|                                                                                                           |                                            | Open Network Install Environment (ONIE)  |

| Quality of Service (QoS)                                  | Monitoring & Telemetry                                                       | Security                                                     |
|-----------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|
| 802.3X Flow Control                                       | High Resolution Streaming Telemetry                                          | Storm Control                                                |
| WRED with Fast ECN                                        | What Just Happened (WJH) Root Cause Analysis                                 | Access Control Lists (ACLs L2-L4 & user defined)             |
| 802.1Qbb Priority Flow Control                            | sFlow                                                                        | 802.1X - Port Based Network Access Control                   |
| 802.1Qaz ETS                                              | Real time queue depth histograms & thresholds                                | Strict Security mode for DoD Apps & NIST 800 181A compliance |
| DCBX – App TLV support                                    | Port mirroring (SPAN & ERSPAN)                                               | Port Isolation                                               |
| Advanced QoS – Qualification, Rewrite, Policers – 802.1AB | Enhanced Link & Phy Monitoring                                               |                                                              |
| Simplified RoCE Configuration                             | BER degradation monitor                                                      |                                                              |
|                                                           | Single command shared buffer management 3rd party integration (Splunk, etc.) |                                                              |

| Synchronization               | Network Virtualization                         | Software Defined Network (SDN)                                                                                                                                              |
|-------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NTP                           | VXLAN eVPN                                     | OpenFlow 1.3:                                                                                                                                                               |
| PTP IEEE-1588 (SMPTE profile) | Integration with VMware NSX* & OpenStack, etc. | <ul style="list-style-type: none"> <li>True hybrid mode with programmable pipeline</li> <li>Supported controllers: ODL, ONOS, FloodLight, RYU, etc.</li> <li>NAT</li> </ul> |

| Docker Container                                                   |
|--------------------------------------------------------------------|
| Full SDK access through the container                              |
| Persistent container & shared storage                              |
| Container-secured mode of work:<br>limit CPU, memory and SSD usage |

\* Roadmap feature.

| Standards                              | SNMP MIBs                  | 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                                | 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              | SN3700                                                                  | SN3700C                                                                       | SN3510 <sup>††</sup>                                                    | SN3420                                                                  |
| Connectors                | 32 QSFP56 200GbE                                                        | 32 QSFP28 100GbE                                                              | 48 SFP56 50GbE +<br>6 QSFP-DD 400GbE                                    | 48 SFP28 25GbE +<br>12 QSFP28 100GbE                                    |
| Max. 400GbE Ports         | ---                                                                     | ---                                                                           | 6                                                                       | ---                                                                     |
| Max. 200GbE Ports         | 32                                                                      | ---                                                                           | 12                                                                      | ---                                                                     |
| Max. 100GbE Ports         | 64 <sup>†</sup>                                                         | 32                                                                            | 24 <sup>†</sup>                                                         | 12                                                                      |
| Max. 50GbE Ports          | 128*                                                                    | 64                                                                            | 48+48*                                                                  | 24                                                                      |
| Max. 40GbE Ports          | 32                                                                      | 32                                                                            | 12                                                                      | 12                                                                      |
| Max. 25GbE Ports          | 128                                                                     | 128                                                                           | 48+48                                                                   | 48+48                                                                   |
| Max. 10GbE Ports          | 128                                                                     | 128                                                                           | 48+48                                                                   | 48+48                                                                   |
| Max. 1GbE Ports           | 128                                                                     | 128                                                                           | 48+48                                                                   | 48+48                                                                   |
| Throughput                | 12.8Tb/s                                                                | 6.4Tb/s                                                                       | 9.6Tb/s                                                                 | 4.8Tb/s                                                                 |
| Packet Per Second         | 8.33Bpps                                                                | 4.76Bpps                                                                      | 7.16Bpps                                                                | 3.58Bpps                                                                |
| Latency                   | 425ns                                                                   | 425ns                                                                         | 425ns                                                                   | 425ns                                                                   |
| CPU                       | Quad-core x86                                                           | Dual-core x86                                                                 | Quad-core x86                                                           | Dual-core x86                                                           |
| System Memory             | 8GB                                                                     | 8GB                                                                           | 8GB                                                                     | 8GB                                                                     |
| SSD Memory                | 32GB                                                                    | 32GB                                                                          | 32GB                                                                    | 32GB                                                                    |
| Packet Buffer             | 42MB                                                                    | 42MB                                                                          | 42MB                                                                    | 42MB                                                                    |
| 100/1000Mb/s Mgmt Ports   | 1                                                                       | 1                                                                             | 1                                                                       | 1                                                                       |
| Serial Ports              | 1 RJ45                                                                  | 1 RJ45                                                                        | 1 RJ45                                                                  | 1 RJ45                                                                  |
| USB Ports                 | 1                                                                       | 1                                                                             | 1                                                                       | 1                                                                       |
| Hot-Swap Power Supplies   | 2 (1+1 redundant)                                                       | 2 (1+1 redundant)                                                             | 2 (1+1 redundant)                                                       | 2 (1+1 redundant)                                                       |
| Hot-Swappable Fans        | 6 (N+1 redundant)                                                       | 4 (N+1 redundant)                                                             | 6 (N+1 redundant)                                                       | 5 (N+1 redundant)                                                       |
| Reversible Airflow Option | Yes                                                                     | Yes                                                                           | Yes                                                                     | Yes                                                                     |
| Power Supplies            | Frequency: 50-60Hz<br>Input range: 100-264 AC<br>Input current 2.9-4.5A | Frequency: 50-60Hz<br>Input range: 100-264 AC<br>Input current 2.9-4.5A, DC** | Frequency: 50-60Hz<br>Input range: 100-264 AC<br>Input current 2.9-4.5A | Frequency: 50-60Hz<br>Input range: 100-264 AC<br>Input current 2.9-4.5A |
| Size (H x W x D)          | 1.72" x 16.84" x 22"<br>(44mm x 428mm x 559mm)                          | 1.72" x 16.84" x 22"<br>(44mm x 428mm x 559mm)                                | 1.72" x 16.84" x 22"<br>(44mm x 428mm x 559mm)                          | 1.72" x 16.84" x 17"<br>(44mm x 428mm x 432mm)                          |
| Weight                    | 11.1kg (24.5lb)                                                         | 11.1kg (24.5lb)                                                               | 8.52kg (18.8lb)                                                         | Contact Mellanox                                                        |

\* 50G PAM-4

<sup>†</sup> 2x50G PAM-4

\*\*Contact Mellanox

<sup>††</sup> Available in H2 2020

| Supported Transceivers & Optical Fiber and Copper Cables | Interface Type              | Description               | SKU               |
|----------------------------------------------------------|-----------------------------|---------------------------|-------------------|
| <b>400GbE PAM4</b><br>QSFP-DD                            | 400BASE-CR8 copper          | 0.5m-2m DAC               | MCP1660-W0xxxxx   |
|                                                          | 400BASE-SR8                 | 850nm, MPO16, up to 100m  | MMA1U50-WS        |
|                                                          | 400BASE-DR4                 | 1310nm, MPO, up to 500m   | MMS1V00-WM        |
|                                                          | 400BASE-AOC                 | 3m-100m                   | MFA1U60-Wxxx      |
|                                                          | 400GbE to 2 x 200GbE QSFP56 | 1m-2m DAC                 | MCP7H60-W0xxxxx   |
|                                                          | 400GbE to 4 x 100GbE QSFP56 | 1m-2m DAC                 | MCP7F60-W0xxxxx   |
|                                                          | 400GbE to 4 x 100GbE SFP-DD | 1m-2m DAC                 | MCP7F65-W0xxxxxx  |
|                                                          | 400GbE to 8 x 50GbE SFP56   | 1m-2m DAC                 | MCP7F80-W0xxxxx   |
| <b>200GbE PAM4</b><br>QSFP56                             | 200BASE-CR4 copper          | 0.5m-2m LSZH DAC          | MCP1650-V0xxxxx   |
|                                                          | 200BASE-AOC                 | 3m-100m                   | MFS1S00-Vxxxx     |
|                                                          | 200BASE-SR4                 | 850nm, MPO, up to 100m    | MMA1T00-VS        |
|                                                          | 200BASE-FR4                 | 1310nm, LC-LC, up to 2km  | MMS1W40-VM        |
|                                                          | 200GbE to 4 x 50GbE SFP56   | 1m-3m DAC                 | MCP7H70-V0xxxxx   |
|                                                          | 200GbE to 2 x 100GbE QSFP56 | 1m-3m DAC                 | MCP7H50-V0xxxxx   |
|                                                          | 200GbE to 50GbE             | QSA56 pluggable adapter   | MAM1Q00A-QSA56    |
| <b>100GbE NRZ</b><br>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      |
| <b>50GbE PAM4</b><br>SFP56                               | 50GBASE-SR                  | 850nm, LC, up to 100m     | Contact Mellanox  |
|                                                          | 50GBASE-AOC                 | 850nm, LC, up to 100m     | Contact Mellanox  |
|                                                          | 50GBASE-CR (DAC)            | Up to 3m, DAC             | MCP2M50-G0xxxxxxx |
| <b>40GbE</b><br>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      |
| <b>25GbE</b><br>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        |
| <b>10GbE</b><br>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       |

## Standards Compliance

|                      |                                                      |
|----------------------|------------------------------------------------------|
| Safety               | CB, CE, cTUVus, CU                                   |
| EMC                  | CE, ICES, FCC, RCM, VCCI                             |
| Operating Conditions | Operating: 0°C to 40°C; Non-Operating: -40°C to 70°C |
| Relative Humidity    | 5% to 85%                                            |
| Operating Altitude   | 0-3050m                                              |
| RoHS                 | RoHS compliant                                       |

## MSN3700 Series: 32 Ports of up to 200GbE

|               |                                                                                                                                                                     |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MSN3700-VS2F  | Mellanox Spectrum-2 based 200GbE 1U Open Ethernet Switch with Mellanox Onyx, 32 QSFP56 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, P2C airflow, Rail Kit |
| MSN3700-VS2R  | Mellanox Spectrum-2 based 200GbE 1U Open Ethernet Switch with Mellanox Onyx, 32 QSFP56 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, C2P airflow, Rail Kit |
| MSN3700-VS2FC | Mellanox Spectrum-2 based 200GbE 1U Open Ethernet Switch with Cumulus Linux, 32 QSFP56 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, P2C airflow, Rail Kit |
| MSN3700-VS2RC | Mellanox Spectrum-2 based 200GbE 1U Open Ethernet Switch with Cumulus Linux, 32 QSFP56 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, C2P airflow, Rail Kit |
| MSN3700-VS2FO | Mellanox Spectrum-2 based 200GbE 1U Open Ethernet Switch with ONIE, 32 QSFP56 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, P2C airflow, Rail Kit          |
| MSN3700-VS2RO | Mellanox Spectrum-2 based 200GbE 1U Open Ethernet Switch with ONIE, 32 QSFP56 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, C2P airflow, Rail Kit          |

## MSN3700C Series: 32 Ports of up to 100GbE

|               |                                                                                                                                                                                 |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MSN3700-CS2F  | Mellanox Spectrum-2 based 100GbE 1U Open Ethernet Switch with Mellanox Onyx, 32 QSFP28 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, P2C airflow, Rail Kit             |
| MSN3700-CS2R  | Mellanox Spectrum-2 based 100GbE 1U Open Ethernet Switch with Mellanox Onyx, 32 QSFP28 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, C2P airflow, Rail Kit             |
| MSN3700-CS2FC | Mellanox Spectrum-2 based 100GbE 1U Open Ethernet Switch Open Switch with Cumulus Linux, 32 QSFP28 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, P2C airflow, Rail Kit |
| MSN3700-CS2RC | Mellanox Spectrum-2 based 100GbE 1U Open Ethernet Switchwith Cumulus Linux, 32 QSFP28 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, C2P airflow, Rail Kit              |
| MSN3700-CS2FO | Mellanox Spectrum-2 based 100GbE 1U Open Ethernet Switchh with ONIE, 32 QSFP28 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, P2C airflow, Rail Kit                     |
| MSN3700-CS2RO | Mellanox Spectrum-2 based 100GbE 1U Open Ethernet Switch with ONIE, 32 QSFP28 ports, 2 Power Supplies (AC), Standard depth, x86 CPU, C2P airflow, Rail Kit                      |

## Supported SKUs

### MSN3510 Series: 48 Ports of up to 50GbE and 6 Ports of up to 400GbE\*

|               |                                                                                                                                                                                              |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MSN3510-WS2F  | Mellanox Spectrum-2 based 50GbE/400GbE 1U Open Ethernet switch with Mellanox Onyx, 48 SFP56 ports and 6 QSFP-DD ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit |
| MSN3510-WS2R  | Mellanox Spectrum-2 based 50GbE/400GbE 1U Open Ethernet switch with Mellanox Onyx, 48 SFP56 ports and 6 QSFP-DD ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit |
| MSN3510-WS2FC | Mellanox Spectrum-2 based 50GbE/400GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP56 ports and 6 QSFP-DD ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit |
| MSN3510-WS2RC | Mellanox Spectrum-2 based 50GbE/400GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP56 ports and 6 QSFP-DD ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit |
| MSN3510-WS2FO | Mellanox Spectrum-2 based 50GbE/400GbE 1U Open Ethernet switch with ONIE, 48 SFP56 ports and 6 QSFP-DD ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit          |

### MSN3420 Series: 48 Ports of up to 25GbE and 12 Ports of up to 100GbE

|               |                                                                                                                                                                                              |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MSN3420-CB2F  | Mellanox Spectrum-2 based 25GbE/100GbE 1U Open Ethernet switch with Onyx, 48 SFP28 ports and 6 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit           |
| MSN3420-CB2R  | Mellanox Spectrum-2 based 25GbE/100GbE 1U Open Ethernet switch with Onyx, 48 SFP28 ports and 12 QSFP28 ports, 2 power supplies (AC), x86 CPU, C2P airflow, Short-depth, Rail Kit             |
| MSN3420-CB2FC | Mellanox Spectrum-2 based 25GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP28 ports and 12 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, P2C airflow, Rail Kit |
| MSN3420-CB2RC | Mellanox Spectrum-2 based 25GbE/100GbE 1U Open Ethernet switch with Cumulus Linux, 48 SFP28 ports and 12 QSFP28 ports, 2 power supplies (AC), x86 CPU, standard depth, C2P airflow, Rail Kit |
| MSN3420-CB2FO | Mellanox Spectrum-2 based 25GbE/100GbE 1U Open Ethernet switch with ONIE, 48 SFP28 ports and 12 QSFP28 ports, 2 power supplies (AC), x86 CPU, P2C airflow, Short-depth, Rail Kit             |
| MSN3420-CB2RO | Mellanox Spectrum-2 based 25GbE/100GbE 1U Open Ethernet switch with ONIE, 48 SFP28 ports and 12 QSFP28 ports, 2 power supplies (AC), x86 CPU, C2P airflow, Short-depth, Rail Kit             |

\* Available in H2 2020

## Warranty Information

Mellanox SN3000 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](#).



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