

NVIDIA
NVIDIA Spectrum-6
SN6600
(920-9N63F-00RI-3C0)
Datasheet

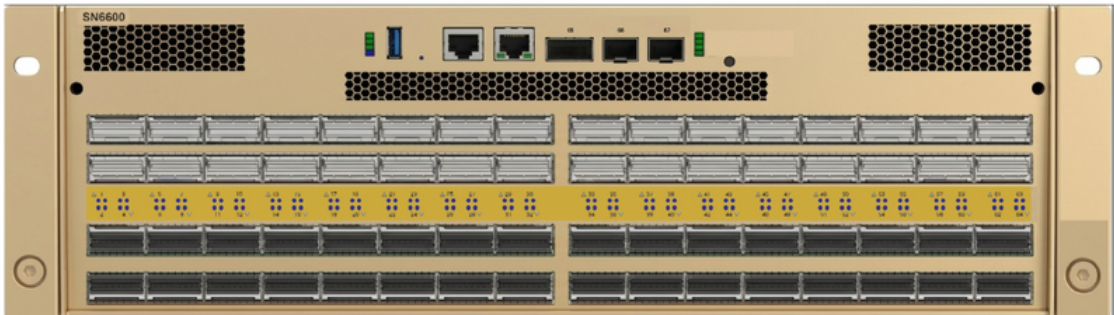
Product Overview

- The NVIDIA Spectrum-6 SN6600 is a 3U air-cooled Ethernet switch designed for high-bandwidth data-center, cloud, and AI factory fabrics.
- Its 64 OSFP interfaces support up to 128 x 800GbE logical connections, while one QSFP112 and two SFP28 interfaces provide additional connectivity options.
- The NVIDIA Spectrum-6 ASIC delivers 102.4Tbps of switching throughput and supports multiple documented breakout modes for dense Ethernet fabrics.
- The switch supports 128 x 800GbE, 256 x 400GbE, 512 x 200GbE, 512 plus 2 x 100GbE, and two 25/10/1GbE connections in documented configurations.
- Connector-to-Power airflow, five rear fan units, and four AC power supplies support continuous operation in a 19-inch EIA rack.
- With an 8-core x86 processor, DDR5 memory, NVMe storage, secure boot, and open Ethernet software options, the SN6600 is built for scalable network operation.

Product Highlights

- **128-Port 800GbE Scale:** The 64 OSFP interfaces support up to 128 logical 800GbE connections in the documented breakout configuration.
- **Flexible Breakout Modes:** The system supports 256 x 400GbE, 512 x 200GbE, 512 plus 2 x 100GbE, and two 25/10/1GbE connections.
- **102.4Tbps Spectrum-6 Throughput:** The NVIDIA Spectrum-6 ASIC provides 102.4Tbps of switching throughput for large-scale AI and cloud Ethernet fabrics.
- **Air-Cooled C2P Design:** Five rear fan units, N+1 fan redundancy, and Connector-to-Power airflow support high-density operation in a 3U chassis.

Detailed Features



NVIDIA Spectrum-6 SN6600 (920-9N63F-00RI-3C0)

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Component	Specification
System Model	NVIDIA Spectrum-6 SN6600
Official NVIDIA SKU	920-9N63F-00RI-3C0
Port Configuration	64 x OSFP, 1 x QSFP112, 2 x SFP28
Switching Capacity	102.4 Tbps
Power and Cooling	4 x AC power supplies, 200–240VAC input, air cooling

Spectrum-6 Switching Platform

The SN6600 combines the NVIDIA Spectrum-6 ASIC with a high-radix OSFP port system for demanding AI, cloud, and data-center Ethernet fabrics. Its 102.4Tbps switching throughput provides a foundation for high-volume east-west traffic and large leaf-spine deployments.

800GbE OSFP Connectivity

The switch provides 64 OSFP interfaces and supports up to 128 logical 800GbE connections in the documented operating model. OSFP-based connectivity supports high-speed optical modules and cables while keeping the system aligned with the Spectrum-6 interconnect ecosystem.

Breakout Flexibility

The documented configurations include 800GbE, 400GbE, 200GbE, and 100GbE operating modes. This allows a single platform to serve different fabric layers and to match link speed with server, accelerator, or spine connectivity requirements.

Auxiliary Data and Service Connectivity

One QSFP112 interface and two SFP28 interfaces extend the system beyond the main OSFP fabric. The switch also provides dedicated management and service interfaces for bring-up, monitoring, console access, and hardware maintenance.

Air-Cooled C2P Architecture

The SN6600 uses air cooling with Connector-to-Power airflow and port-side intake. Five rear fan units provide N+1 fan redundancy, helping maintain airflow continuity in a rack-scale deployment.

AC Power Redundancy

Four AC power supplies support the 200240VAC input design. The redundant power architecture is suited to data-center installations where service continuity and power-domain resilience are important.

Open Ethernet Operations

The SN6600 is part of NVIDIA's open Spectrum-6 Ethernet platform and supports secure boot and software choices used in open network operating environments. This gives operators flexibility in automation, monitoring, and lifecycle management.

3U EIA Rack Deployment

The 133.35 mm x 438 mm x 767 mm chassis is designed for a 19-inch EIA rack. The 3U air-cooled form factor provides room for high-density optical connectivity, service access, fans, and redundant AC power hardware.

Technical Specifications

Product Specifications

Feature	Value
User SKU	MLNX-SN6600
Official NVIDIA ordering SKU	920-9N63F-00RI-3C0
System model	SN6600
Product family	NVIDIA Spectrum-6 SN6000 Ethernet switch systems
Product type	3U air-cooled Ethernet switch
Switch ASIC	NVIDIA Spectrum-6
Port configuration	64 x OSFP, 1 x QSFP112, 2 x SFP28
Ports form factor	OSFP
Maximum 800GbE scale	128 ports of 800GbE
Maximum 400GbE scale	256 ports of 400GbE
Maximum 200GbE scale	512 ports of 200GbE
Maximum 100GbE scale	512 plus 2 ports of 100GbE



Feature	Value
Additional lower-speed scale	2 ports of 25GbE, 10GbE, or 1GbE
High-power support	64 OSFP ports up to 30W; 1 QSFP112 up to 10W; 2 SFP28 up to 2.5W each
Switching throughput	102.4 Tbps
CPU	8-core x86 processor
System memory	32 GB DDR5
Storage	80 GB NVMe SSD
PCIe	Gen4 x4
Management interfaces	RJ45 out-of-band management, RJ45 BMC, RJ45 RS232 serial console
USB interface	USB Type-A
Power input	200–240VAC
Power supplies	4 AC power supply units
Typical power with FRO	3.94 kW
Typical power with TRO	3.2 kW
Cooling	Air cooling
Airflow	Connector-to-Power, port-side intake
Fans	5 rear fan units, N+1 redundant
Form factor	3U
Mounting	19-inch EIA rack
Dimensions (H x W x D)	133.35 mm x 438 mm x 767 mm
Dimensions, imperial	5.25 in x 17.2 in x 30.1 in
Weight	52 kg
Operating temperature	0 to 35 °C ambient, ASHRAE A3
Non-operating temperature	-40 to 70 °C
Operating humidity	10% to 85%, non-condensing
Operating altitude	Up to 3050 m
Safety and EMC	CB, cTUVus, CE, CU, S_Mark, FCC, VCCI, ICES, RCM, BSMI, KCC, CQC
RoHS	RoHS compliant
Package contents	1 x system, 1 x rail kit, 1 x HAR000028 RS232 2 m DB9-to-RJ45 harness; power cords and cable retainers ordered separately



Feature	Value
Ordering configuration	Cumulus Linux Authentication; 64 OSFP; 1 QSFP112; 2 SFP28; 4 AC power supplies; 8-core CPU; Secure Boot; Connector-to-Power airflow; rail kit

Product Comparison

Feature	NVIDIA Spectrum-6 SN6600 / 920-9N63F-00RI-3C0	NVIDIA Spectrum-6 SN6600-LD / 920-9N62F-00LI-GC1	NVIDIA Spectrum-6 SN6810-LD / 920-9N64K-00LI-GC0
System model	SN6600	SN6600-LD	SN6810-LD
Chassis	3U	2U	2U
ASIC architecture	1 x Spectrum-6	1 x Spectrum-6	1 x Spectrum-6
Optical architecture	64 OSFP pluggable optics	64 OSFP pluggable optics	128 MMC-16 co-packaged optics
Auxiliary interfaces	1 x QSFP112 + 2 x SFP28	1 x QSFP112	1 x QSFP112
Maximum 800GbE scale	128	128	128
Maximum 400GbE scale	256	256	256
Maximum 200GbE scale	512	512	512
Maximum 100GbE scale	512 plus 2	512 plus 2	512 plus 2
Maximum throughput	102.4 Tbps	102.4 Tbps	102.4 Tbps
Power input	200–240VAC	48VDC busbar	48VDC busbar
Cooling	Air cooling	Liquid cooling	Liquid cooling
CPU	8-core x86	8-core x86	8-core AMD x86
System memory	32 GB DDR5	32 GB DDR5	32 GB DDR5
Storage	80 GB NVMe SSD	80 GB NVMe SSD	80 GB NVMe SSD
Dimensions (H x W x D)	133.35 x 438 x 767 mm	88 x 438 x 900 mm	87 x 438 x 900 mm



Feature	NVIDIA Spectrum-6 SN6600 / 920-9N63F-00RI-3C0	NVIDIA Spectrum-6 SN6600-LD / 920-9N62F-00LI-GC1	NVIDIA Spectrum-6 SN6810-LD / 920-9N64K-00LI-GC0
Weight	52 kg	33 kg	32.5 kg
Best-fit role	Air-cooled EIA rack spine or leaf	Liquid-cooled MGX AI leaf or spine	CPO AI leaf or spine

Accessories

Category	Accessories
Included Accessories	- SN6600 switch system - 1 x rail kit - 2 x ejector bars - HAR000028 RS232 2 m DB9-to-RJ45 harness
Optional Accessories	- AC power cords and cable retainers, ordered separately - Compatible OSFP, QSFP112, and SFP28 optical modules or cables



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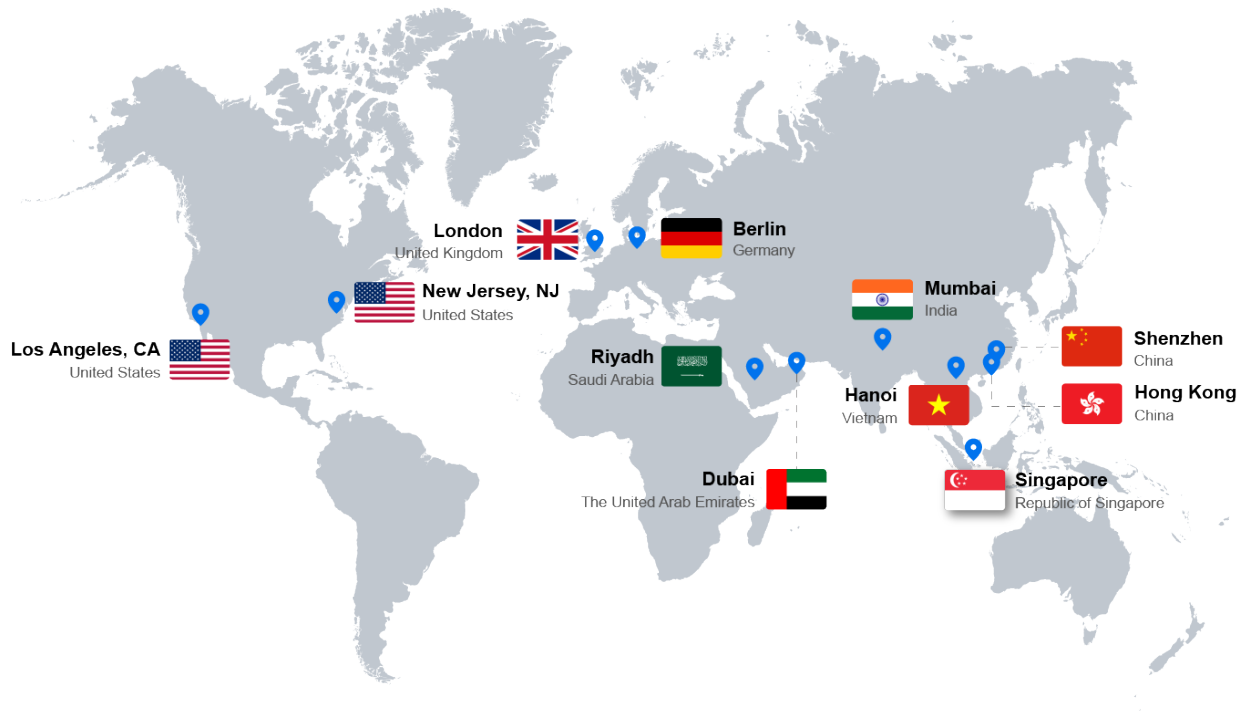
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