

Cisco Nexus 9300 Switch Datasheet



Router-Switch.com
Leading Network Hardware Supplier

CONTENT

Content	1
Overview	2
Appearance	2
Nexus 9300 switches characteristics	3
Cisco NX-OS Software Overview	7
Specification of Nexus 9300 series switches	9
Base model ordering information	12
Sources	12

Contact Us

Tel: +1-626-239-8066 (USA) +852-3050-1066 / +852-3174-6166 /

+852-9795-4940 (Hong Kong)

Fax: +852-3050-1066 (Hong Kong)

Email: cisco@router-switch.com (Sales Inquiries)

ccie-support@router-switch.com (CCIE Technical Support)

OVERVIEW

The Cisco Nexus® 9000 Series Switches include both modular and fixed-port switches that are designed to overcome these challenges with a flexible, agile, low-cost, application-centric infrastructure.

The Cisco Nexus 9300 platform consists of fixed-port switches designed for top-of-rack (ToR) and middle-of-row (MoR) deployment in data centers that support enterprise applications, service provider hosting, and cloud computing environments. They are Layer 2 and 3 nonblocking 10 and 40 Gigabit Ethernet switches with up to 2.56 terabits per second (Tbps) of internal bandwidth. (Figure 1).

APPEARANCE

Figure 1. Cisco Nexus 9300 Series Switches

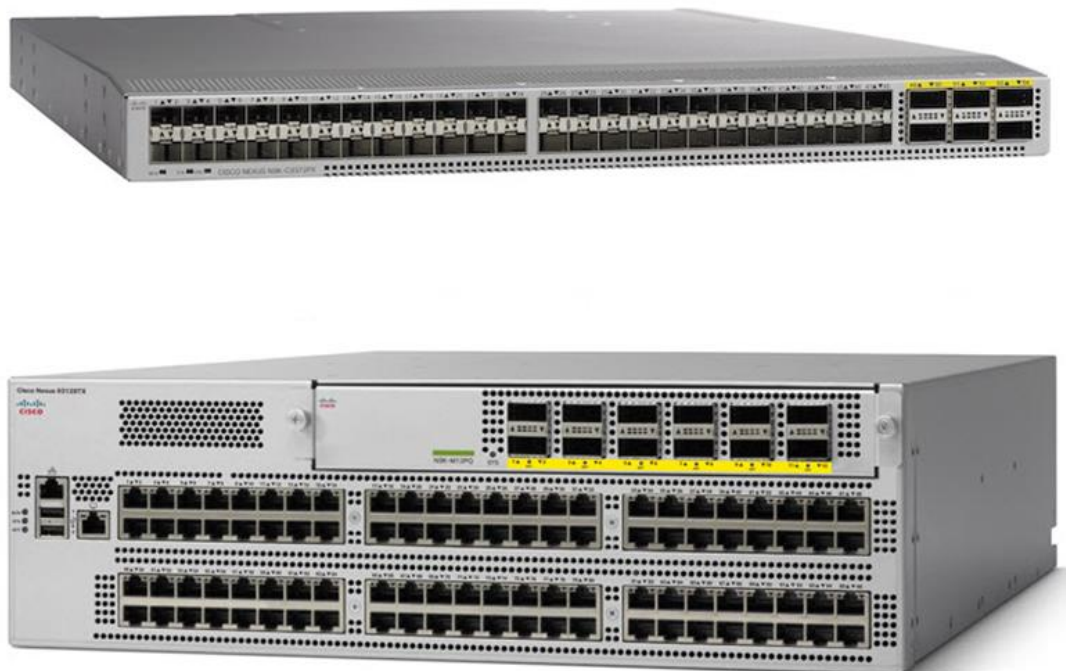


Table 1. Fixed-Port Switches

Model	Cisco 9332PQ	Nexus 9372PX and 9372PX-E	Cisco 9372TX and 9372TX-E	Nexus 93120TX
Ports	32 QSFP+ ports	48 fixed 1/10-Gbps SFP+ and 6 QSFP+ ports	48 fixed 1/10GBASE-T and 6 QSFP+ ports	96 fixed 1/10GBASE-T and 6 QSFP+ ports
Supported speeds	40 Gigabit Ethernet speeds	1/10 Gigabit Ethernet speeds	100 Megabit Ethernet and 1/10 Gigabit Ethernet speeds	100 Megabit Ethernet and 1/10 Gigabit Ethernet speeds
40 Gigabit Ethernet uplink port	-	6 fixed QSFP+ ports	6 fixed QSFP+ ports	6 fixed QSFP+ ports
	Advanced QSFP+ optics enable connectivity using existing 10 Gigabit Ethernet fiber.			
	The switch offers 25 MB of additional packet buffer space shared with all ports for more resilient operations.			
Power supplies (up to 2)	650-watt (W) AC, 930W DC, or 1200W HVAC/HVDC	650W AC, 930W DC, or 1200W HVAC/HVDC	650W AC, 930W DC, or 1200W HVAC/HVDC	1200W AC, 930W DC, or 1200W HVAC/HVDC
Typical power (AC & DC)	228W	210W	374.5W	542W

Maximum power (AC & DC)	508W	537W	694W	948W
Input voltage (AC)	100 to 240V	100 to 240V	100 to 240V	100 to 240V *PSU redundancy is not supported when used in 110V
Input voltage (HVAC)	200 to 277V	200 to 277V	200 to 277V	200 to 277V
Input voltage (DC)	-40V to -72V DC (min-max) -48V to -60V DC (nominal)	-40V to -72V DC (min-max) -48V to -60V DC (nominal)	-40V to -72V DC (min-max) -48V to -60V DC (nominal)	-40V to -72V DC (min-max) -48V to -60V DC (nominal)
Input voltage (HVDC)	-240 to -380V	-240 to -380V	-240 to -380V	-240 to -380V
Frequency (AC)	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz
Fans	4	4	4	2
Physical (H x W x D)	1.72 x 17.3 x 22.5 in. (4.4 x 43.9 x 57.1 cm)	1.72 x 17.3 x 22.5 in. (4.4 x 43.9 x 57.1 cm)	1.72 x 17.3 x 22.5 in. (4.4 x 43.9 x 57.1cm)	3.5 x 17.5 x 22.5 in. (8.9 x 44.5 x 57.1 cm)
Acoustics	49.1 dBA at 40% fan speed, 65.6 dBA at 70% fan speed, and	48.5 dBA at 40% fan speed, 64.9 dBA at 70% fan speed, and	48.6 dBA at 40% fan speed, 65.2 dBA at 70% fan speed, and	

	78.5 dB at 100% fan speed	77.8 dB at 100% fan speed	76.5 dB at 100% fan speed	
RoHS compliance	Yes	Yes	Yes	Yes

Table 2. Switches with Uplink Module Slot

Model	Cisco Nexus 9396PX	Cisco Nexus 9396TX	Cisco Nexus 93128TX
Ports	48 fixed SPF+ ports	48 fixed 1/10GBASE-T ports	96 fixed 1/10GBASE-T ports
Supported speeds	1/10 Gigabit Ethernet speeds	100 Megabit Ethernet and 1/10 Gigabit Ethernet speeds	100 Megabit Ethernet and 1/10 Gigabit Ethernet speeds
40 Gigabit Ethernet uplink ports	6 or 12 QFSP+ ports active through the uplink module	6 or 12 QFSP+ ports active through the uplink module	6 or 8 QSFP+ ports active through the uplink module
	Customers have the choice of either N9K-M6PQ or N9K-M12PQ for 40 Gigabit Ethernet uplink connectivity to aggregation or spine switches.		
100 Gigabit Ethernet uplink ports	Customer can have 100 Gigabit Ethernet uplink connectivity to spine switches or routers through the N9K-M4PC- uplink module, with CPF2 optics as well as the Cisco CPAK®100-Gbps module through converters.		
	The N9K-M4PC-CFP2 offers 5 MB of additional buffer space for each port.		
Power supplies (up to 2)	650W AC, 930W DC, or 1200W HVAC/HVDC	650W AC, 930W DC, or 1200W HVAC/HVDC	930W DC, or 1200W HVAC/HVDC

Typical power (AC)	232W	427W	582W
Maximum power (AC)	455W	712W	853W
Input voltage (AC)	100 to 240V	100 to 240V	100 to 120V (maximum output 800W)
			200 to 240V (maximum output 1200W)
Input voltage (HVAC)	200 to 277V	200 to 277V	200 to 277V
Input voltage (DC)	-48 to -60V	-48 to -60V	-48 to -60V
Input voltage (HVDC)	-240 to -380V	-240 to -380V	-240 to -380V
Frequency (AC)	50 to 60 Hz	50 to 60 Hz	47 to 63 Hz
Fans	3	3	3
Physical (H x W x D)	3.5 x 17.5 x 22.5 in. (8.9 x 44.5 x 57.1 cm)	3.5 x 17.5 x 22.5 in. (8.9 x 44.5 x 57.1 cm)	5.3 x 17.5 x 22.5 in. (13.3 x 44.5 x 57.1 cm)
Acoustics	68.3 dBA at 40% fan speed, 78.8 dBA at 70% fan speed, and 84.5 dB at 100% fan speed	68.3 dBA at 40% fan speed, 78.8 dBA at 70% fan speed, and 84.5 dB at 100% fan speed	71.4 dBA at 40% fan speed, 80.2 dBA at 70% fan speed, and 85.7 dB at 100% fan speed
RoHS compliance	Yes	Yes	Yes

Table 3. Cisco Nexus 9300 Platform Switch Features

Feature	Benefit
Predictable high performance	Latency of 1 to 2 microseconds with up to 1.28 Tbps of bandwidth enables customers to build a robust switch fabric scaling from as few as 200 10-Gbps server ports to more than 200,000 10-Gbps server ports.
Increased integrated buffer space	Up to a total of 50 MB of integrated shared buffer space allows better management of speed mismatch between access and uplink ports.
Designed for availability	Hot-swappable, redundant power supplies and fan trays increase availability.
Flexible airflow configuration	Port-side intake and port-side exhaust airflow configurations are both supported.
CPU, SSD, and memory	Dual-core 2.5-GHz x86 CPUs with 64-GB SSD drive and 16 GB of memory provide enhanced network performance.
Power efficiency	All Cisco Nexus 9000 Series power supplies are 80 Plus Platinum rated.
Advanced optics	Cisco offers a pluggable 40 Gigabit Ethernet QSFP+ transceiver that enables customers to use existing 10 Gigabit Ethernet data center cabling to support 40 Gigabit Ethernet connectivity. This technology facilitates adoption of 40 Gigabit Ethernet with no cable infrastructure upgrade cost.

CISCO NX-OS SOFTWARE OVERVIEW

NX-OS is a purpose-built data center operating system designed for performance, resiliency, scalability, manageability, and programmability at its foundation. It provides a robust and comprehensive feature set that meets the demanding requirements of virtualization and automation in present and future data centers.

The Cisco Nexus 9000 Series uses an enhanced version of NX-OS with a single binary image that supports every switch in the series, simplifying image management. The operating system is modular, with a dedicated process for each routing protocol, a design that isolates faults while increasing

availability. In the event of a process failure, the process can be restarted without losing state. The operating system supports hot and cold patching and online diagnostics.

Main features include the following:

- Power-On Auto Provisioning (POAP) automates the process of upgrading software images and installing configuration files on Cisco Nexus switches that are being deployed in the network for the first time.
- Intelligent API (iAPI) provides operators with a way to manage the switch through remote procedure calls (RPCs; JavaScript Object Notation [JSON] or XML) over HTTP/HTTPS infrastructure.
- Patching allows NX-OS to be upgraded and patched without any interruption in switch operations.
- Line-rate overlay support provides Virtual Extensible LAN (VXLAN) bridging and routing at full line rate, facilitating and accelerating communication between virtual and physical servers as well as between multiple data centers in a campus environment.
- Network traffic monitoring with Cisco Nexus Data Broker builds simple, scalable, and cost-effective network taps or Cisco Switched Port Analyzer (SPAN) aggregation for network traffic monitoring and analysis.
- Cisco Intelligent Traffic Director allows customers to build a highly scalable and flexible solution for hardware-based Layer 4 load balancing and traffic steering.

The software packaging for the Cisco Nexus 9000 Series offers flexibility and a comprehensive feature set while being consistent with Cisco Nexus access switches. The default system software has a comprehensive Layer 2 security and management feature set. To enable additional functions including Layer 3 IP unicast and IP multicast routing and Cisco Nexus Data Broker, you must install additional licenses. The licensing guide illustrates the software packaging and licensing available to enable advanced features.

SPECIFICATION OF NEXUS 9300 SERIES SWITCHES

Item	Cisco Nexus 9300 Platform
Maximum number of longest prefix match (LPM) routes	128,000
Maximum number of IP host entries	208,000
Maximum number of MAC address entries	96,000
Number of multicast routes	<ul style="list-style-type: none"> ● 32,000 (without virtual PortChannel [vPC]) ● 32,000 (with vPC)
Number of Interior Gateway Management Protocol (IGMP) snooping groups	<ul style="list-style-type: none"> ● 32,000 (without vPC) ● 32,000 (with vPC)
Maximum number of Cisco Nexus 2000 Series Fabric Extenders per switch	16
Number of access control list (ACL) entries	<ul style="list-style-type: none"> ● 4000 ingress ● 1000 egress
Maximum number of VLANs	4096
Maximum number of Virtual Routing and Forwarding (VRF) instances	1000
Maximum number of links in a PortChannel	32
Maximum number of ECMP paths	64
Maximum number of PortChannels	528
Number of active SPAN sessions	4

Maximum number of Rapid per-VLAN Spanning Tree (RPVST) instances	507
Maximum number of Hot-Standby Router Protocol (HSRP) groups	490
Maximum number of Multiple Spanning Tree (MST) instances	64
Maximum number of VXLAN tunnel endpoints (VTEP)	256
Operating temperature	32 to 104°F (0 to 40°C)
Nonoperating (storage) temperature	-40 to 158°F (-40 to 70°C)
Humidity	5 to 95% (noncondensing)
Altitude	0 to 13,123 ft (0 to 4000m)
Component	Weight
Cisco Nexus 93128TX without power supplies, fans, or uplink module	32.56 lb (14.8 kg)
Cisco Nexus 9396PX without power supplies, fans, or uplink module	22.45 lb (10.2 kg)
Cisco Nexus 9396TX without power supplies, fans, or uplink module	22.45 lb (10.2 kg)
Cisco Nexus 9372PX/9372PX-E without power supplies or fans	22.2 lb (10.1 kg)
Cisco Nexus 9372TX/9372TX-E without power supplies or fans	22.6 lb (10.25 kg)
Cisco Nexus 9332PQ without power supplies or fans	22 lb (10.0 kg)

Cisco Nexus 93120TX without power supplies or fans	26 lb (11.8 kg)
650W AC power supply: N9K-PAC-650W or N9K-PAC-650W-B	2.42 lb (1.1 kg)
Fan tray 1: N9K-C9300-FAN1 or N9K-C9300-FAN1-B	0.92 lb (0.4 kg)
1200W AC power supply: N9K-PAC-1200W or N9K-PAC-1200W-B	2.64 lb (1.2 kg)
Fan tray 2: N9K-C9300-FAN2 or N9K-C9300-FAN2-B	1.14 lb (0.5 kg)
Fan tray 3: N9K-C9300-FAN3 or N9K-C9300-FAN3-B	1.42 lb (0.64 kg)
930W DC power supply	2.42 lb (1.1 kg)
1200W HVDC/HVAC power supply	2.42 lb (1.10 kg)
Cisco Nexus M6PQ/M6PQ-E 40-Gbps uplink module (1 per switch)	2.0 lb (0.9 kg)
Cisco Nexus M12PQ 40-Gbps uplink module (1 per switch)	3.12 lb (1.4 kg)
Cisco Nexus M4PC-CFP2 100-Gbps uplink module (1 per switch)	2.6 lb (1.2 kg)
Fan tray 4: NXA-FAN-30CFM-B and NXA-FAN-30CFM-F	0.92 lb (0.4 kg)

BASE MODEL ORDERING INFORMATION

Part Number	Product Description
N9K-C9396PX	Nexus 9300 with 48p 1/10G SFP+ and 12p 40G QSFP
N9K-C9396TX	Nexus 9300 with 48p 100M/1/10G-T and 8p 40G QSFP
N9K-C93128TX	Nexus 9300 with 96p 100M/1/10G-T and 8p 40G QSFP
N9K-C93120TX	Nexus 9300 with 96p 100M/1/10G-T and 6p 40G QSFP
N9K-C9332PQ	Nexus 9300 with 32p 40G QSFP
N9K-C9372PX-E	Nexus 9300 with 48p 1/10G SFP+ and 6p 40G QSFP+
N9K-C9372TX-E	Nexus 9300 with 48p 100M/1/10G-T and 6p 40G QSFP+
N9K-C9372PX	Nexus 9300 with 48p 1/10G SFP+ and 6p 40G QSFP+
N9K-C9372TX	Nexus 9300 with 48p 100M/1/10G-T and 6p 40G QSFP+
N9K-M6PQ-E	Uplink Module for Nexus 9300, 6p 40G QSFP
N9K-M6PQ	Uplink Module for Nexus 9300, 6p 40G QSFP
N9K-M12PQ	Uplink Module for Nexus 9300, 12p 40G QSFP
N9K-M4PC-CFP2	Uplink Module for Nexus 9300, 4p 100G

SOURCES

<https://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/datasheet-c78-736967.html>