



Cisco Nexus 9200 Switch Datasheet



Router-Switch.com
Leading Network Hardware Supplier

CONTENT

Content	1
Overview	2
Appearance	2
Key Features and Benefits	3
NX-OS Software	4
Nexus 9200 Compare models	6
Specification of nexus 9200 series switches	7
Base model ordering information	11
Sources	11

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

Built on the latest Cisco®Cloud Scale technology, the Cisco Nexus®9200 platform consists of industry-leading ultra-high-density fixed-configuration data center switches with line-rate Layer 2 and 3 features that support enterprise and commercial applications, service provider hosting, and cloud computing environments. These switches support a wide range of port speeds with flexible combinations of 1/10/25/40/50/100-Gbps connectivity in compact form factors. Using the widely deployed industry-leading Cisco NX-OS Software operating system, the Cisco Nexus 9200 platform is designed for programmable fabric, which offers flexibility, mobility, and scale for service providers and Infrastructure-as-a-Service (IaaS) and cloud providers. It is also designed for the programmable network, which automates configuration and management for customers who want to take advantage of the DevOps operation model and tool sets. (Figure 1).

APPEARANCE

Figure 1. Cisco Nexus 9200 Series Switches





Key Features and Benefits

The Cisco Nexus 9200 platform provides the following features and benefits:

- **High performance and scalability**

- The platform provides wire-rate Layer 2 and 3 switching on all ports with up to 7.2 Tbps and over 5.35 bpps of bandwidth.
- With up to 30 MB of shared buffer, the platform is an excellent choice for scalable data centers and big data applications. The ability to fine tune buffer allocation for non-drop queues makes the Nexus 9200 an ideal platform for IP storage designs.

- **Virtual Extensible LAN (VXLAN)**

- The platform offers native line-rate VXLAN routing.
- The Border Gateway Protocol (BGP) Ethernet Virtual Private Network (EVPN) control plane provides scalable multitenancy and host mobility (refer to VXLAN Network with MP-BGP EVPN Control Plane for more information).

- **Hardware and software high availability**

- The 64-way Equal-Cost Multipath (ECMP) routing enables the use of Layer 3 fat-tree designs. This feature helps organizations prevent network bottlenecks, increase resiliency, and add capacity with little network disruption.

- Patching ensures undisruptive upgrade in most cases.

- The switches use hot-swappable Power-Supply Units (PSUs) and fans with N+1 redundancy.

- **Purpose-built NX-OS operating system with comprehensive, proven innovations**

- Open programmability supports built-in DevOps automation tools such as Puppet, Chef, and Ansible.

- Cisco NX-API supports a common programmatic approach across Cisco Nexus switches.

- Power-on autoprovisioning (POAP) enables touchless bootup and configuration of the switch, drastically reducing provisioning time.

- The onboard Python scripting engine enables automation and remote operations in the data center.

- Advanced buffer monitoring reports real-time buffer utilization per port and per queue, which allows organizations to monitor traffic bursts and application traffic patterns.

- Complete Layer 3 unicast and multicast routing protocol suites are supported, including BGP, Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Routing Information Protocol Version 2 (RIPv2), Protocol Independent Multicast Sparse Mode (PIM-SM), Source-Specific Multicast (SSM), and Multicast Source Discovery Protocol (MSDP).

- Segment routing allows the network to forward Multiprotocol Label Switching (MPLS) packets and perform traffic engineering without Resource Reservation Protocol (RSVP) Traffic Engineering (TE). It provides a control-plane alternative for increased network scalability and virtualization.

NX-OS SOFTWARE

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 loss of state. The operating system supports hot and cold patching and online diagnostics.

Main features include the following:

- 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.
- NX-API provides operators with a way to manage the switch through Remote Procedure Calls (RPCs; JavaScript Object Notation [JSON] or XML) over HTTP/HTTPS infrastructure.
- Support for customer applications through Python scripting, Bash shell, and Linux containers.
- Patching allows NX-OS to be upgraded and patched without any interruption in switch operations.
- Line-rate overlay support provides 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 test access points (TAPs) or Cisco Switched Port Analyzer (SPAN) aggregation for network traffic monitoring and analysis.

Cisco NX-OS Features and Benefits

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.

NEXUS 9200 COMPARE MODELS

Models	92160YC-X	9272Q	92304QC	9236C	92300YC
Useage	Top of rack	Top or rack, aggregation	Top of rack, aggregation	Access and Aggregation	Access
Form factor	1 RU	2 RU	2 RU	1 RU	>1 RU (2 in)
Throughput (Tbps)	3.2	5.76	6.08	7.2	6.0
Integrated NetFlow-capable	Yes	NA	NA	NA	NA
VXLAN	Bridging and routing	Bridging and routing	Bridging and routing	Bridging and routing	Bridging and routing
1 GE ports	64	NA	NA	NA	NA
10 GE Fiber ports	56	140	64	144	48
25 GE ports	56	NA	NA	144	48
40 GE ports	6	72	64	36	18
100 GE ports	4	NA	8	36	18
Latency (microseconds)	Less than 2	Less than 2	Less than 2	Less than 2	Less than 2
Buffer (MB)	20	30	30	30	30
AC power supply (Watts); 2 per switch	650	1200	1200	650	650

Models	92160YC-X	9272Q	92304QC	9236C	92300YC
Typical power (watts)	10-Gb - 150, 25-Gb - 170	310	305	275	216 (typical), 603 (max)
Minimum software version	NXOS-703I3.1	NXOS-703I3.1	NXOS-703I4.1	NXOS-703I4.1	NXOS-703I6.1
Orderable	Yes	Yes	Yes	Yes	Yes
SKU	N9K-C92160YC-X	N9K-C9272Q	N9K-92304QC	N9K-C9236C	N9K-C92300YC
Operating System	NX-OS	NX-OS	NX-OS	NX-OS	NX-OS

SPECIFICATION OF NEXUS 9200 SERIES SWITCHES

Item	Cisco Nexus 92160YC-X Switch	Cisco Nexus 9272Q Switch Cisco Nexus 92304QC Switch Cisco Nexus 9236C Switch Cisco Nexus 92300YC
Number of Longest Prefix Match (LPM) routes	Default: 6,000 LPM heavy mode: 650,000	Default: 6,000 LPM heavy mode: 262,000
Number of IP host entries	Default: 96,000 LPM heavy mode: 650,000	Default: 96,000 LPM heavy mode: 262,000
Number of MAC address entries	92,000	92,000
Number of multicast routes	Shipping: 8,000	Shipping: 8,000

	Maximum: 32,000	Maximum: 32,000
Number of Interior Gateway Management Protocol (IGMP) snooping groups	Shipping: 8,000 Maximum: 32,000	Shipping: 8,000 Maximum: 32,000
Number of Access Control List (ACL) entries	Per slice of the forwarding engine:4,000 ingress 2,000 egress Maximum: 8,000 ingress 4,000 egress Shipping: 7,164 ingress 3,580 egress	Per slice of the forwarding engine:4,000 ingress 2,000 egress Maximum: 24,000 ingress 12,000 egress Shipping: 21,492 ingress 10,740 egress
Maximum number of VLANs	3,967	3,967
Number of Virtual Routing and Forwarding (VRF) instances	Shipping: 1,000 Maximum: 16,000	Shipping: 1,000 Maximum: 16,000
Maximum number of links in a Port Channel	32	32
Maximum number of ECMP paths	64	64
Maximum number of ECMP groups	256	256
Maximum number of ECMP members	64,000	64,000
Maximum number of Port Channels	512	512

Number of active SPAN sessions	4	4
Number of VLAN's in Rapid per-VLAN Spanning Tree (RPVST) instances	3,967	3,967
Number of Hot-Standby Router Protocol (HSRP) groups	490	490
Number of Multiple Spanning Tree (MST) instances	64	64
Maximum Number of VxLAN Tunnel Endpoints (VTEPs)	256	256
Number of Network Address Translation (NAT) entries	1,023	1,023
Operating temperature	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)
Nonoperating (storage) temperature	-40 to 158°F (-40 to 70°C)	-40 to 158°F (-40 to 70°C)
Humidity	5 to 95% (noncondensing)	5 to 95% (noncondensing)
Altitude	0 to 13,123 ft (0 to 4000m)	0 to 13,123 ft (0 to 4000m)
Component	Weight	
Cisco Nexus 92160YC-X without power supplies or fans	14.12 lb (6.4 kg)	
Cisco Nexus 9272Q without power supplies or fans	24.6 lb (11.2 kg)	

Cisco Nexus 92304QC without power supplies or fans	25.4 lb (11.5 kg)
Cisco Nexus 9236C without power supplies or fans	18.2 lb (8.3 kg)
Cisco Nexus 92300YC without power supplies or fans	18.6 lb (8.4 kg)
1200W AC power supply	2.64 lb (1.2 kg)
650W AC power supply	2.42 lb (1.1 kg)
930W DC power supply	2.42 lb (1.1 kg)
1200W HVDC/HVAC power supply	2.42 lb (1.1 kg)
Fan tray: N9K-C9300-FAN3 or N9K-C9300-FAN3-B	1.42 lb (0.64 kg)
Fan tray: NXA-FAN-30CFM-F or NXA-FAN-30CFM-B	0.92 lb (0.4 kg)
Fan tray: NXA-FAN-35CFM-PE or NXA-FAN-35CFM-PI	0.92 lb (0.4 kg)

BASE MODEL ORDERING INFORMATION

Part Number	Product Description
N9K-C92160YC-X	Nexus 9200 with 48p 1/10G/25G SFP+ and 6p 40G QSFP or 4p 100G QSFP28
N9K-C9272Q	Nexus 9200 with 72p 40G QSFP+
N9K-C92304QC	Nexus 9200 with 56p 40G QSFP+ and 8p 100G QSFP28
N9K-C9236C	Nexus 9200 with 36p 40G 100G QSFP28
N9K-C92300YC	Nexus 9200 with 48p 10/25 Gbps and 18p 100G QSFP28

SOURCES

<https://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/datasheet-c78-735989.html>