

# Cisco Nexus 9364C Switch: Cisco NX-OS Fixed Spine Switch

## Product overview

Based on Cisco® Cloud Scale technology, the Cisco Nexus® 9300 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.

The next-generation Cisco Nexus 9364C Switch is the first 64-port 100-Gbps fixed switch on the market to offer a single Application-Specific Integrated Circuit (ASIC) architecture. The 9364C offers diversified connectivity with speed combinations of 1, 10, 40, and 100 Gbps for multiple use cases to meet the changing needs of virtualized data centers and automated cloud environments. Using the industry-leading Cisco NX-OS Software operating system, the 9364C spine switch offers flexibility, mobility, investment protection, and scale for service providers, enterprises, Infrastructure-as-a-Service (IaaS) solutions, and cloud providers. Designed for the programmable network, the NX-OS operating system automates configuration and management for customers who want to take advantage of the DevOps operation model and tool sets.

The product is designed to support innovative technologies such as Media Access Control Security (MACsec), Virtual Extensible LAN (VXLAN) tunnel endpoint VTEP-to-VTEP overlay encryption, and Streaming Statistics Export (SSX)<sup>1</sup>. MACsec is a security technology that allows traffic encryption at the physical layer and provides secure server, border leaf, and leaf-to-spine connectivity. SSX is hardware based, consisting of a module that reads statistics from the ASIC and sends them to a remote server for analysis. Through this application, users can better understand network performance without any impact on the switch control plane or CPU.

## Model

Table 1 summarizes the Cisco Nexus 9364C Fixed Spine Switch.

**Table 1.** Cisco Nexus 9300 Platform Switches

Model	Description
<b>Cisco Nexus 9364C Switch</b>	64 x 40/100-Gbps Quad Small Form-Factor Pluggable 28 (QSFP28) ports and 2 x 1/10-Gbps Enhanced SFP (SFP+) ports

\* Check the support and port configuration details in Table 2.

The 9364C spine switch with NX-OS supports up to 12.84 Tbps of bandwidth across 64 fixed 40/100-Gbps QSFP28 ports<sup>2</sup> and 2 fixed 1/10-Gbps SFP+ ports (Figure 1). The last 16 ports, marked in green, support wire-rate MACsec. The switch supports up to 4.3 billion packets per second (bps) in a 2-Rack-Unit (2RU) form factor, flexible Ternary Content-Addressable Memory (TCAM) templates, VXLAN routing, and buffer capacity of 40 MB.

<sup>1</sup> Software support is on the roadmap. See the latest release notes for additional information.

<sup>2</sup> Ports 1-64 do not support breakout.

**Figure 1.** Cisco Nexus 9364C Switch



## Specifications

Table 2 lists the specifications for the Cisco Nexus 9364C Switch. (Refer to the [Cisco NX-OS Software release notes](#) for feature support information.)

**Table 2.** Cisco Nexus 9364 Spine Switch specifications

Item	Specifications
<b>Physical</b>	<ul style="list-style-type: none"> <li>• 64 x 40/100-Gbps QSFP28 ports and 2 x 1/10-Gbps SFP+ ports</li> <li>• 1200 Watt (W) AC power supplies or 930W DC power supplies (up to 2)</li> <li>• 80 Plus Platinum-rated power supplies that provide at least 90% efficiency with 20% utilization</li> <li>• Port-side intake or port-side exhaust airflow direction</li> <li>• System memory: 32 GB</li> <li>• Solid-State Disk (SSD): 256 GB</li> <li>• USB: 1 port</li> <li>• RS-232 serial console ports: 1</li> <li>• Management ports: 2 (1 x 10/100/1000BASE-T and 1 x 1-Gbps SFP+)</li> <li>• Broadwell-DE CPU: 4 cores</li> </ul>
<b>Buffer</b>	<ul style="list-style-type: none"> <li>• 40 MB</li> </ul>
<b>Power and cooling</b>	<ul style="list-style-type: none"> <li>• Power: 1200W AC, 930W DC<sup>3</sup>, or 1200W HVAC/HVDC</li> <li>• Input voltage: 100 to 240V* AC or –40 to –72V DC (minimum and maximum), –48 to –60V DC (nominal)</li> <li>* Supports input voltage of 100 to 120V for maximum output of 800W, and 200 to 240V for maximum output of 1200W, PSU redundancy is not supported when used in 100-120V</li> <li>• Frequency: 50 to 60 Hz (AC)</li> <li>• Efficiency: 90% or greater (20 to 100% load)</li> <li>• RoHS compliance: Yes</li> <li>• Hot swappable: Yes</li> <li>• Port-side intake or port-side exhaust options</li> <li>• Typical power: 429W (AC)</li> <li>• Maximum power: 1245W (AC)</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• Physical (H x W x D): 3.38 x 17.37 x 22.27 in. (8.59 x 44.13 x 56.58 cm)</li> <li>• Weight: 36.9 lb 16.74kg with power supplies and fans, 27.4 lb, 12.43kg without power supplies and fans</li> <li>• Operating temperature: 32 to 104°F (0 to 40°C)</li> <li>• Nonoperating (storage) temperature: –40 to 158°F (–40 to 70°C)</li> <li>• Humidity: 5 to 85% (noncondensing)</li> <li>• Altitude: 0 to 13,123 ft (0 to 4000m)</li> </ul>
<b>Acoustics</b>	<ul style="list-style-type: none"> <li>• Fan speed at 40%: 76.7 dBA</li> <li>• Fan speed at 70%: 88.7 dBA</li> <li>• Fan speed at 100%: 97.4 dBA</li> </ul>
<b>Mean Time Between Failure (MTBF)</b>	<ul style="list-style-type: none"> <li>• 257,860 hours</li> </ul>

<sup>3</sup> 930W-DC PSU is supported in redundancy mode if 3.5W QSFP+ modules or Passive QSFP cables are used & the system is used in 40C ambient temp or less; for other optics or higher ambient temps, 930W-DC is supported with 2 PSU's in non-redundancy mode only

## 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.

Cisco Nexus 9000 Series Switches use 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:

- 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.
- Cisco [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.
- Customer applications are supported 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.

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. For a complete list of supported features, refer to [Cisco Feature Navigator](#).

## Performance and scalability

Table 3 lists the performance and scalability specifications for the Cisco Nexus 9364C Switch.

**Table 3.** Performance and scalability specifications

Item	Specifications
Maximum number of IPv4 Longest Prefix Match (LPM) routes	<ul style="list-style-type: none"><li>• Default: 7000</li><li>• LPM heavy*: 262,000</li></ul>
Maximum number of IPv4 host entries	<ul style="list-style-type: none"><li>• Default: 96,000</li><li>• LPM heavy*: 262,000</li></ul>
Maximum number of MAC address entries	92,000
Number of multicast routes	<ul style="list-style-type: none"><li>• Default: 8000</li><li>• LPM heavy*: 32,768</li></ul>

Item	Specifications
Number of Interior Gateway Management Protocol (IGMP) snooping groups	8000
Number of Access Control List (ACL) entries*	<ul style="list-style-type: none"> <li>• Per slice of the forwarding engine:</li> <li>• 4000 ingress</li> <li>• 2000 egress</li> <li>• Maximum: 16,000 ingress</li> <li>• 8000 egress</li> <li>• Shipping: 14,328 ingress</li> <li>• 7160 egress</li> </ul>
Maximum number of VLANs	3967
Maximum number of Virtual Routing and Forwarding (VRF) instances	1000
Maximum number of links in a port channel	32
Maximum number of Equal-Cost Multipath (ECMP) paths	64
Maximum number of ECMP groups	1024
Maximum number of port channels	64
Number of active SPAN sessions	4
Maximum number of Rapid Per-VLAN Spanning Tree (RPVST) instances	3967
Maximum number of Hot-Standby Router Protocol (HSRP) groups	490
Maximum number of Multiple Spanning Tree (MST) instances	64
Maximum number of VTEPs	256
Maximum number of static Network Address Translation (NAT) entries	1023
Maximum number of dynamic NAT entries	1023
Maximum number of static twice NAT entries	768
Maximum number of dynamic twice NAT entries	1023

\* LPM heavy values are the maximum numbers.

More templates and greater scalability are on the roadmap. Refer to the [Cisco Nexus 9000 Series Verified Scalability Guide](#) for the latest, exact scalability numbers validated for specific software.

## Regulatory standards compliance

Table 4 summarizes regulatory standards compliance for the platform.

**Table 4.** Regulatory standards compliance: Safety and EMC

Specification	Description
<b>Regulatory compliance</b>	Products should comply with CE Markings according to directives 2004/108/EC and 2006/95/EC.
<b>Safety</b>	<ul style="list-style-type: none"> <li>• UL 60950-1 Second Edition</li> <li>• CAN/CSA-C22.2 No. 60950-1 Second Edition</li> <li>• EN 60950-1 Second Edition</li> <li>• IEC 60950-1 Second Edition</li> <li>• AS/NZS 60950-1</li> <li>• GB4943</li> </ul>
<b>EMC: Emissions</b>	<ul style="list-style-type: none"> <li>• 47CFR Part 15 (CFR 47) Class A</li> <li>• AS/NZS CISPR22 Class A</li> <li>• CISPR22 Class A</li> <li>• EN55022 Class A</li> <li>• ICES003 Class A</li> <li>• VCCI Class A</li> <li>• EN61000-3-2</li> <li>• EN61000-3-3</li> <li>• KN22 Class A</li> <li>• CNS13438 Class A</li> </ul>

Specification	Description
	<b>Note:</b> Cisco Nexus N9K-C9364C passes EMC Radiated Emissions standards in all configurations, with the only exception being if more than 40 pluggable optics of Cisco part number 10-3142-02 (or 10-3142-01) are used.
<b>EMC: Immunity</b>	<ul style="list-style-type: none"> <li>• EN55024</li> <li>• CISPR24</li> <li>• EN300386</li> <li>• KN 61000-4 series</li> </ul>
<b>RoHS</b>	The product is RoHS-6 compliant with exceptions for leaded-Ball Grid-Array (BGA) balls and lead press-fit connectors.

## Supported optics: Pluggable

For details about the optical modules available and the minimum software release required for each supported optical module, visit

[https://www.cisco.com/en/US/products/hw/modules/ps5455/products\\_device\\_support\\_tables\\_list.html](https://www.cisco.com/en/US/products/hw/modules/ps5455/products_device_support_tables_list.html).

## Ordering information

Table 5 presents ordering information for the Cisco Nexus 9364C spine switch.

**Table 5.** Ordering information

Part number	Product description
<b>Hardware</b>	
<b>N9K-C9364C</b>	Nexus 9364C ACI Spine switch with 64p 40/100G QSFP28
<b>Fan options</b>	
<b>NXA-FAN-160CFM-PI</b>	Nexus Fan, 160CFM, port side intake airflow
<b>NXA-FAN-160CFM-PE</b>	Nexus Fan, 160CFM, port side exhaust airflow
<b>Power supply options</b>	
<b>NXA-PAC-1200W-PE</b>	Nexus 1200W AC PS, Port-side Exhaust
<b>NXA-PAC-1200W-PI</b>	Nexus 1200W AC PS, Port-side Intake
<b>N9K-PUV-1200W</b>	Nexus 1200W, 200-277AC, 240-380DC, Dual airflow PSU
<b>NXA-PDC-930W-PE</b>	Nexus 930W -48V DC PS, Port-side Exhaust
<b>NXA-PDC-930W-PI</b>	Nexus 930W -48V DC PS, Port-side Intake
<b>Power cords</b>	
<b>CAB-250V-10A-AR</b>	AC Power Cord - 250V, 10A - Argentina (2.5 meter)
<b>CAB-250V-10A-BR</b>	AC Power Cord - 250V, 10A - Brazil (2.1 meter)
<b>CAB-250V-10A-CN</b>	AC Power Cord - 250V, 10A - PRC (2.5 meter)
<b>CAB-250V-10A-ID</b>	AC Power Cord - 250V, 10A, South Africa (2.5 meter)
<b>CAB-250V-10A-IS</b>	AC Power Cord - 250V, 10A - Israel (2.5 meter)
<b>CAB-9K10A-AU</b>	Power Cord, 250VAC 10A 3112 Plug, Australia (2.5 meter)
<b>CAB-9K10A-EU</b>	Power Cord, 250VAC 10A CEE 7/7 Plug, EU (2.5 meter)
<b>CAB-9K10A-IT</b>	Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy (2.5 meter)
<b>CAB-9K10A-SW</b>	Power Cord, 250VAC 10A MP232 Plug, SWITZ (2.5 meter)
<b>CAB-9K10A-UK</b>	Power Cord, 250VAC 10A BS1363 Plug (13 A fuse), UK (2.5 meter)
<b>CAB-9K12A-NA</b>	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America (2.5 meter)
<b>CAB-AC-L620-C13</b>	North America, NEMA L6-20-C13 (2.0 meter)
<b>CAB-C13-C14-2M</b>	Power Cord Jumper, C13-C14 Connectors, 2 Meter Length (2 meter)
<b>CAB-C13-C14-AC</b>	Power cord, C13 to C14 (recessed receptacle), 10A (3 meter)
<b>CAB-C13-CBN</b>	Cabinet Jumper Power Cord, 250 VAC 10A, C14-C13 Connectors (0.7 meter)

Part number	Product description
<b>CAB-IND-10A</b>	10A Power cable for India (2.5 meter)
<b>CAB-N5K6A-NA</b>	Power Cord, 200/240V 6A North America (2.5 meter)
<b>Accessories</b>	
<b>N9K-C9300-RMK</b>	Nexus 9300 Rack Mount Kit
<b>N9K-C9300-ACK</b>	Nexus 9K Fixed Accessory Kit

## Warranty

The Cisco Nexus 9300 platform switches have a 1-year limited hardware warranty. The warranty includes hardware replacement with a 10-day turnaround from receipt of a Return Materials Authorization (RMA).

## Service and support

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco Nexus 9300 platform switches in your data center. The innovative Cisco Services offerings are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operation efficiency and improve your data center network. Cisco Advanced Services uses an architecture-led approach to help you align your data center infrastructure with your business goals and achieve long-term value. Cisco SMARTnet® Service helps you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources.

## Cisco Capital financing to help you achieve your objectives

Cisco Capital® financing can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce Capital Expenditures (CapEx), accelerate your growth, and optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital financing is available in more than 100 countries. [Learn more.](#)

## For more information

For more information about the Cisco Nexus 9000 Series and for the latest software release information and recommendations, please visit <https://www.cisco.com/go/nexus9000>.



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