

# Cisco Nexus 9500 Platform Line Cards and Fabric Modules

## Product Overview

The Cisco Nexus<sup>®</sup> 9500 switching platform (Figure 1), offers three modular options: the Cisco Nexus 9504 Switch with 4 slots, the Cisco Nexus 9508 Switch with 8 slots, and the Cisco Nexus 9516 Switch with 16 slots. All three switches use the same supervisor, system controller and power supplies. The Cisco Nexus 9500 Series consists of Layer 2 and 3 non-blocking Ethernet switches with backplane bandwidth of up to 115.2 Terabits per second (Tbps). The Cisco Nexus 9504, 9508, and 9516 Switches support 100 Megabit Ethernet and 1, 10, 25, 40, 50, and 100 Gigabit Ethernet interfaces through a comprehensive selection of modular line cards. Configurable with up to 2304 x 10 Gigabit Ethernet ports, 2048 x 25 Gigabit Ethernet ports, 576 x 40 Gigabit Ethernet ports, 1024 x 50 Gigabit Ethernet ports, or 512 x 100 Gigabit Ethernet ports, they provide ample capacity for both access- and aggregation-layer deployments.

**Figure 1.** Cisco Nexus 9000 Series Switches

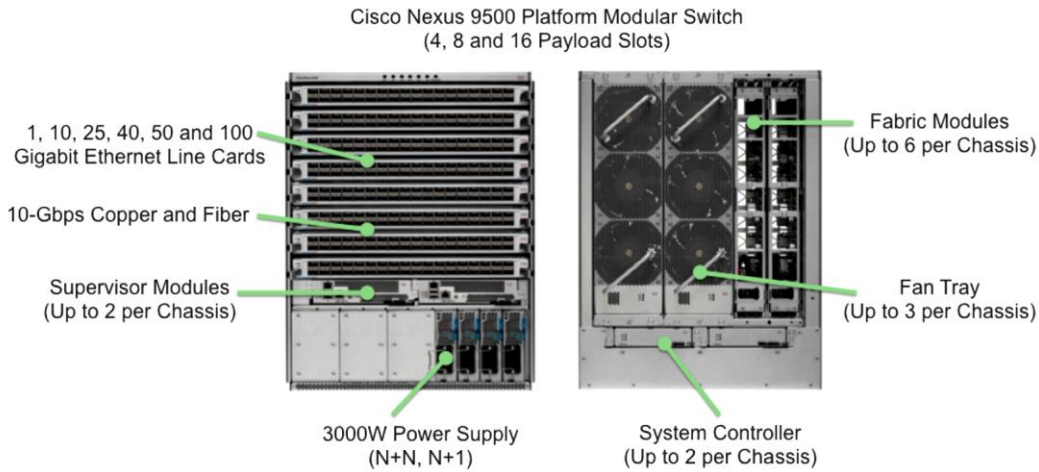


The Cisco Nexus 9000 Series offers two modes of operation. Organizations can use Cisco<sup>®</sup> NX-OS Software with the Cisco Nexus 9000 Series in standard Cisco Nexus switch environments (NX-OS mode). They can also use ACI mode, with hardware infrastructure ready to support the Cisco Application Centric Infrastructure (Cisco ACI<sup>™</sup>) solution, to take full advantage of an automated, policy-based, systems management approach using Cisco ACI. This data sheet covers standard Cisco Nexus 9500 platform deployment scenarios using NX-OS mode.

## Cisco Nexus 9500 Platform Components

The Cisco Nexus 9500 platform is built using the components illustrated in Figure 2 and described in the following sections.



**Figure 2.** Cisco Nexus 9500 Platform Components













### Cisco Nexus 9500 Platform Line Cards for Non-ACI Mode Deployments



The Cisco Nexus 9500 platform supports a variety of hot-swappable line cards (Table 1) optimized for datacenter deployments.

**Table 1.** Cisco Nexus 9500 Platform Line Cards

Line Card Type	Description
<b>100-Gbps Line Cards</b>	
<b>N9K-X9732C-FX: 100 Gigabit Ethernet Line Card</b> 	<ul style="list-style-type: none"> <li>• 32-port 100 Gigabit Ethernet Quad Small Form-Factor Pluggable 28 (QSFP28) line card</li> <li>• Every QSFP28 supports 1 x 100, 2 x 50, 1 x 40, 4 x 25, 4 x 10, and 1x1/10 Gigabit Ethernet</li> <li>• Powered by Cisco® Cloud Scale Technology</li> <li>• 160-MB buffer</li> <li>• Supports NX-OS mode</li> <li>• Supported in 4-, 8-, and 16- slot chassis</li> <li>• Requires 4 100-Gbps fabric modules (N9K-C95XX-FM-E or N9K-C95XX-FM-E2) for maximum bandwidth</li> <li>• Requires 5 100-Gbps fabric modules (N9K-C9516-FM-E2) for N+1 fabric module redundancy (Note: Fabric module redundancy requires a chassis with only N9K-X9732C-FX cards.)</li> <li>• Compatible with N9K-C9504-FM-E<sup>1</sup>, N9K-C9508-FM-E<sup>1</sup>, N9K-C9516-FM-E<sup>1</sup>, and N9K-C9516-FM-E2</li> </ul>
<b>N9K-X9736C-FX: 100 Gigabit Ethernet Line Card</b> 	<ul style="list-style-type: none"> <li>• 36-port 100 Gigabit Ethernet Quad Small Form-Factor Pluggable 28 (QSFP28) line card</li> <li>• Every QSFP28 supports 1 x 100, 2 x 50, 1 x 40, 4 x 25, 4 x 10, and 1x1/10 Gigabit Ethernet<sup>1</sup></li> <li>• Powered by Cisco® Cloud Scale technology</li> <li>• 160-MB buffer</li> <li>• Supports both NX-OS and ACI modes</li> <li>• Supported in 4-, 8-, and 16- slot chassis</li> <li>• Requires 5x 100-Gbps fabric modules (N9K-C95XX-FM-E) for maximum bandwidth (Note: 7.2Tbps bi-directional bandwidth with 5 fabric modules requires a chassis with only N9K-X9736C-FX cards.)</li> <li>• Compatible with N9K-C9504-FM-E, N9K-C9508-FM-E, N9K-C9516-FM-E, and N9K-C9516-FM-E2</li> </ul>

Line Card Type	Description
<p><b>N9K-X9736C-EX: 100 Gigabit Ethernet Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 36-port 100 Gigabit Ethernet Quad Small Form-Factor Pluggable 28 (QSFP28) line card</li> <li>• Every QSFP28 supports 1 x 100, 2 x 50, 1 x 40, 4 x 25, 4 x 10, and 1x1/10 Gigabit Ethernet<sup>1</sup></li> <li>• Powered by Cisco® Cloud Scale technology</li> <li>• 160-MB buffer</li> <li>• Supports NX-OS mode</li> <li>• Supported in 4-, 8-, and 16- slot chassis</li> <li>• Requires 4x 100-Gbps fabric modules (N9K-C95XX-FM-E) for maximum bandwidth</li> <li>• Support maximum 6.4 Tbps bi-directional fabric bandwidth</li> <li>• Compatible with N9K-C9504-FM-E, N9K-C9508-FM-E, and N9K-C9516-FM-E</li> </ul>
<p><b>N9K-X9732C-EX: 100 Gigabit Ethernet Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 32-port 100 Gigabit Ethernet Quad Small Form-Factor Pluggable 28 (QSFP28) line card</li> <li>• Every QSFP28 supports 1 x 100, 2 x 50, 1 x 40, 4 x 25, 4 x 10, and 1x1/10 Gigabit Ethernet</li> <li>• Powered by Cisco's Cloud Scale Technology</li> <li>• 160-MB buffer</li> <li>• Line rate for all packet sizes</li> <li>• Supports both NX-OS and ACI modes</li> <li>• Supported in 4-, 8-, and 16- slot chassis</li> <li>• Requires 4x 100-Gbps fabric modules (N9K-C950X-FM-E) for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM-E, N9K-C9508-FM-E, and N9K-C9516-FM-E</li> </ul>
<p><b>N9K-X9432C-S: 100 Gigabit Ethernet Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 32-port 100 Gigabit Ethernet QSFP28 line card</li> <li>• Every QSFP28 supports 1 x 100, 2 x 50, 1 x 40, 4 x 25 and 4x10 Gigabit Ethernet<sup>2</sup></li> <li>• 32-MB buffer</li> <li>• Line rate for packets greater than 250 bytes</li> <li>• Supports NX-OS mode</li> <li>• Supported in 4- and 8-slot chassis</li> <li>• Requires 4x fabric modules (N9K-C950X-FM-S) for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM-S and N9K-C9508-FM-S</li> </ul>
<b>40-Gbps Line Cards</b>	
<p><b>N9K-X9636PQ: 40 Gigabit Ethernet Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 36-port 40 Gigabit Ethernet QSFP+ line card</li> <li>• Non-blocking, 36-MB buffer</li> <li>• Line rate for all packet sizes</li> <li>• Supports NX-OS mode</li> <li>• Supported in 4- and 8-slot chassis</li> <li>• Requires 6x fabric modules for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM and N9K-C9508-FM</li> </ul>
<p><b>N9K-X9536PQ: 40 Gigabit Ethernet Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 36-port 40 Gigabit Ethernet QSFP+ line card</li> <li>• 104-MB buffer</li> <li>• Supports Virtual Extensible LAN (VXLAN) routing and bridging</li> <li>• 1.5:1 oversubscription</li> <li>• Supports NX-OS mode</li> <li>• Supported in 4-, 8-, and 16-slot chassis</li> <li>• Requires 3x fabric modules for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM, N9K-C9508-FM, and N9K-C9516-FM</li> </ul>

Line Card Type	Description
<p><b>N9K-X9432PQ: 40 Gigabit Ethernet Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 32-port 40 Gigabit Ethernet QSFP+ line card</li> <li>• 24-MB buffer</li> <li>• Line rate for packets greater than 200 bytes</li> <li>• Supports NX-OS mode</li> <li>• Supported in 4-, 8-, and 16-slot chassis</li> <li>• Requires 4x fabric modules for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM, N9K-C9508-FM, and N9K-C9516-FM</li> </ul>
<b>10/25-Gbps Fiber Line Cards</b>	
<p><b>N9K-X97160YC-EX: 1, 10 and 25 Gigabit Ethernet Access-Layer and 10, 40 and 100 Gigabit Ethernet Aggregation-Layer Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 48-port 1, 10 and 25 Gigabit Ethernet SFP+ with 4-port 100 Gigabit Ethernet QSFP+ line card</li> <li>• Powered by Cisco® Cloud Scale Technology</li> <li>• 80-MB buffer</li> <li>• Greater distance options for 25G deployments with FC and RS FEC</li> <li>• Supports VXLAN routing and bridging</li> <li>• Supports NX-OS mode</li> <li>• Supported in 4-, 8-, and 16-slot chassis</li> <li>• Requires 4x fabric modules for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM-E, N9K-C9508-FM-E, and N9K-C9516-FM-E</li> </ul>
<p><b>N9K-X9564PX: 1 and 10 Gigabit Ethernet Access-Layer and 10 and 40 Gigabit Ethernet Aggregation-Layer Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 48-port 1 and 10 Gigabit Ethernet SFP+ with 4-port 40 Gigabit Ethernet QSFP+ line card</li> <li>• Non-blocking, 104-MB buffer</li> <li>• Supports VXLAN routing and bridging</li> <li>• Supports NX-OS mode</li> <li>• Supported in 4-, 8-, and 16-slot chassis</li> <li>• Requires 3x fabric modules for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM, N9K-C9508-FM, and N9K-C9516-FM</li> </ul>
<p><b>N9K-X9464PX: 1 and 10 Gigabit Ethernet Access-Layer and 10 and 40 Gigabit Ethernet Aggregation-Layer Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 48-port 1 and 10 Gigabit Ethernet SFP+ with 4-port 40 Gigabit Ethernet QSFP+ line card</li> <li>• 12-MB buffer</li> <li>• Line rate for packets greater than 200 bytes</li> <li>• Supports NX-OS mode</li> <li>• Supported in 4-, 8-, and 16-slot chassis</li> <li>• Requires 4x fabric modules for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM, N9K-C9508-FM, and N9K-C9516-FM</li> </ul>
<b>10-Gbps Copper Line Cards</b>	
<p><b>N9K-X9788TC-FX: 1 and 10 Gigabit Ethernet Copper Access-Layer and 40/100 Gigabit Ethernet Aggregation-Layer Line Card</b></p> 	<ul style="list-style-type: none"> <li>• 48-port 1 and 10GBASE-T plus 4-port 40/100 Gigabit Ethernet QSFP28 line card</li> <li>• Powered by Cisco® Cloud Scale Technology</li> <li>• 80-MB buffer</li> <li>• Designed for End-of Row (EoR) and Middle-of-Row (MoR) environments</li> <li>• Supports VXLAN routing and bridging</li> <li>• Supports NX-OS mode</li> <li>• Supports 100 Megabit Ethernet, 1 Gigabit Ethernet, and 10GBASE-T copper cabling connectivity for server access</li> <li>• Supported in 4-, 8-, and 16-slot chassis</li> <li>• Requires 4x fabric modules for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM-E, N9K-C9508-FM-E, N9K-C9516-FM-E, and N9K-C9516-FM-E2</li> </ul>

Line Card Type	Description
<b>N9K-X9564TX: 1 and 10 Gigabit Ethernet Copper Access-Layer and 10 and 40 Gigabit Ethernet Aggregation-Layer Line Card</b> 	<ul style="list-style-type: none"> <li>• 48-port 1 and 10GBASE-T plus 4-port 40 Gigabit Ethernet QSFP+ line card</li> <li>• Nonblocking, 104-MB buffer</li> <li>• Supports VXLAN routing and bridging</li> <li>• Supports NX-OS mode</li> <li>• Supports 100 Megabit Ethernet, 1 Gigabit Ethernet, and 10GBASE-T copper cabling connectivity for server access</li> <li>• Supported in 4-, 8-, and 16-slot chassis</li> <li>• Requires 3x fabric modules for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM, N9K-C9508-FM, and N9K-C9516-FM</li> </ul>
<b>N9K-X9464TX2: 1 and 10 Gigabit Ethernet Copper Access-Layer and 10 and 40 Gigabit Ethernet Aggregation-Layer Line Card</b> 	<ul style="list-style-type: none"> <li>• 48-port 1 and 10GBASE-T plus 4-port 40 Gigabit Ethernet QSFP+ line card</li> <li>• 12-MB buffer</li> <li>• Line rate for packets greater than 200 bytes</li> <li>• Supports NX-OS mode</li> <li>• Supports 100 Megabit Ethernet, 1 Gigabit Ethernet, and 10GBASE-T copper cabling connectivity for server access</li> <li>• Supported in 4-, 8-, and 16<sup>1</sup>-slot chassis</li> <li>• Requires 4x fabric modules for maximum bandwidth</li> <li>• Compatible with N9K-C9504-FM, N9K-C9508-FM, and N9K-C9516-FM</li> </ul>

<sup>1</sup> Hardware capability. Check software release notes for latest information

## Cisco Nexus 9500 Platform Fabric Modules and Performance

The Cisco Nexus 9500 platform has a Clos fabric design that interconnects the line cards with rear-mounted fabric modules. All fabric cards are directly connected to all line cards. With load balancing across fabric cards, the architecture achieves optimal bandwidth distribution within the chassis. Cloud Scale Technology powered N9K-C95xx-FM-E enables 100 Gigabit Ethernet deployments (N9K-C9516-FM-E provides maximum of 50-Gbps per flow). See Table 2 for line card and fabric module compatibility information.

**Table 2.** Cisco Nexus 9500 Line Cards and Fabric Modules

Part Number	Product Description	Performance	Compatible Fabric Module	Required Fabric Modules for Maximum Bandwidth
<b>100-Gbps Line Cards</b>				
<b>N9K-X9732C-FX</b>	32-port 40/100 Gigabit Ethernet QSFP28 line card	6.4 Tbps 10.23 bpps	N9K-C95xx-FM-E N9K-C95xx-FM-E2	4
<b>N9K-X9736C-FX</b>	36-port 40/100 Gigabit Ethernet QSFP28 line card	7.2 Tbps 11.50 bpps	N9K-C95xx-FM-E N9K-C95xx-FM-E2	5
<b>N9K-X9736C-EX</b>	36-port 40/100 Gigabit Ethernet QSFP28 line card	7.2 Tbps 11.50 bpps	N9K-C95xx-FM-E N9K-C95xx-FM-E2	4
<b>N9K-X9732C-EX</b>	32-port 40/100 Gigabit Ethernet QSFP28 line card	6.4 Tbps 10.23 bpps	N9K-C95xx-FM-E N9K-C95xx-FM-E2	4
<b>N9K-X9432C-S</b>	32-port 40/100 Gigabit Ethernet QSFP28 line card	6.4 Tbps 7.03 bpps	N9K-C95xx-FM-S	4
<b>40-Gbps Line Cards</b>				
<b>N9K-X9636PQ</b>	36-port 40 Gigabit Ethernet QSFP+ line card	2.88 Tbps 4.29 bpps	N9K-C95xx-FM	6
<b>N9K-X9536PQ</b>	36-port 40 Gigabit Ethernet QSFP+ line card	2.88 Tbps 2.86 bpps	N9K-C95xx-FM	3
<b>N9K-X9432PQ</b>	32-port 40 Gigabit Ethernet QSFP+ line card	2.56 Tbps 2.86 bpps	N9K-C95xx-FM	4

Part Number	Product Description	Performance	Compatible Fabric Module	Required Fabric Modules for Maximum Bandwidth
<b>1/10/25-Gbps Fiber Line Cards</b>				
<b>N9K-X97160YC-EX</b>	48-port 1/10/25 Gigabit Ethernet SFP+ and 4-port 40/100 Gigabit Ethernet QSFP line card	1.6 Tbps 5.11 bpps	N9K-C95xx-FM-E N9K-C95xx-FM-E2	4
<b>N9K-X9564PX</b>	48-port 1/10 Gigabit Ethernet SFP+ and 4-port 40 Gigabit Ethernet QSFP+ line card	1.28 Tbps 1.9 bpps	N9K-C95xx-FM	3
<b>N9K-X9464PX</b>	48-port 10 Gigabit Ethernet SFP+ and SFP and 4-port 40 Gigabit Ethernet QSFP+ line card	1.28 Tbps 1.9 bpps	N9K-C95xx-FM	4
<b>1/10-Gbps Copper Line Cards</b>				
<b>N9K-X9788TC-FX</b>	48-port 1/10GBASE-T and 4-port 40/100 Gigabit Ethernet QSFP28 line card	1.76 Tbps	N9K-C95xx-FM-E N9K-C95xx-FM-E2	4
<b>N9K-X9564TX</b>	48-port 1/10GBASE-T and 4-port 40 Gigabit Ethernet QSFP+ line card	1.28 Tbps 1.9 bpps	N9K-C95xx-FM	3
<b>N9K-X9464TX2</b>	48-port 1/10GBASE-T and 4-port 40 Gigabit Ethernet QSFP+ line card	1.28 Tbps 1.9 bpps	N9K-C95xx-FM	4

**Notes:**

Tbps: Terabits per second  
 bpps: Billions of packets per second  
 mpps: Millions of packets per second

**Specifications**

Table 3 lists the specifications for the Cisco Nexus 9500 platform in a standard (NX-OS Mode) deployment. (Please check software release notes for feature-support information.)

**Table 3.** Product Specifications: Performance and Scalability

Item	Cisco Nexus X9400, X9500, and X9600 Line Cards	Cisco Nexus X9432C-S Line Card	Cisco Nexus X97xx-EX/FX Line Card
<b>Maximum number of Longest-Prefix-Match (LPM) routes</b>	128,000	128,000	V4: 600K (Shared with V4 Host Routes) V6: 300K (In addition to V4 Entries)
<b>Maximum number of IP host entries</b>	208,000	104,000	600K (Shared with V4 LPM)
<b>Maximum number of MAC address entries</b>	160,000	40,000 (104,000 <sup>4</sup> )	512,000 <sup>1</sup>
<b>Number of multicast routes</b>	<ul style="list-style-type: none"> <li>8,000 to 32,000 (without virtual port channel [vPC])</li> <li>4,000 to 32,000 (with vPC)</li> </ul>	32,000 (52,000 <sup>4</sup> )	32,000
<b>Number of Interior Gateway Management Protocol (IGMP) snooping groups</b>	<ul style="list-style-type: none"> <li>8,000 to 32,000 (without vPC)</li> <li>4,000 to 32,000 (with vPC)</li> </ul>	<ul style="list-style-type: none"> <li>8,000 to 32,000 (without vPC)</li> <li>4,000 to 32,000 (with vPC)</li> </ul>	<ul style="list-style-type: none"> <li>8,000 to 32,000 (without vPC)</li> <li>4,000 to 32,000 (with vPC)</li> </ul>
<b>Maximum number of VLANs</b>	4,096	4,096	4,096
<b>Maximum number of Virtual Routing and Forwarding (VRF) instances</b>	1,000	2,000	1000 (16K <sup>1</sup> )
<b>Maximum number of links in a port channel</b>	32	32	32
<b>Maximum number of ECMP paths</b>	64	64	64
<b>Maximum number of port channels</b>	512	512	512

Item	Cisco Nexus X9400, X9500, and X9600 Line Cards	Cisco Nexus X9432C-S Line Card	Cisco Nexus X97xx-EX/FX Line Card
Number of active Cisco Switched Port Analyzer (SPAN) sessions	4 to 32	4 to 32	4 to 32
Maximum number of Rapid per-VLAN Spanning Tree (RPVST) instances	507	507	507 (4K <sup>1</sup> )
Maximum number of Hot Standby Router Protocol (HSRP) groups	490	490	490
Maximum number of Multiple Spanning Tree (MST) instances	64	64	64
Maximum number of tunnel endpoints (VTEP) and VXLAN physical servers (per VLAN)	10,000	10,000	10,000

<sup>1</sup> Hardware capability. Please check the software release notes for the latest scale numbers

## Supported Optics Modules

For details about the available optics modules 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).

## Cisco NX-OS Software features and Benefits

Software for the Cisco Nexus 9000 Series offers flexibility and a comprehensive feature set for consistency with Cisco Nexus access switches. For a detailed information on licensing Cisco NX-OS Software features, visit:

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/nx-os/licensing/guide/b\\_Cisco\\_NX-OS\\_Licensing\\_Guide/b\\_Cisco\\_NX-OS\\_Licensing\\_Guide\\_chapter\\_01.html](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/nx-os/licensing/guide/b_Cisco_NX-OS_Licensing_Guide/b_Cisco_NX-OS_Licensing_Guide_chapter_01.html)

## Weight and Typical Power

Table 4 lists the weight and typical power consumption of the Cisco Nexus 9500 platform.

**Table 4.** Weight and Power Consumption

Component	Weight	Typical Power	Maximum Power
<b>Fabric Module</b>			
• N9K-C9504-FM	• 5.76 lb (2.6 kg)	• 95W	• 131W
• N9K-C9504-FM-E	• 6.6 lb (2.98 kg)	• 234W	• 313W
• N9K-C9504-FM-S	• 6.2 lb (2.81 kg)	• 171W	• 246W
• N9K-C9508-FM	• 9.59 lb (4.4 kg)	• 176W	• 251W
• N9K-C9508-FM-E	• 11.6 lb (5.28 kg)	• 455W	• 570W
• N9K-C9508-FM-S	• 10.80 lb (4.9 kg)	• 340W	• 400W
• N9K-C9516-FM	• 11.50 lb (5.2 kg)	• 330W	• 504W
• N9K-C9516-FM-E	• 22.7 lb (10.3 kg)	• 980W	• 1320W
• N9K-C9516-FM-E2	• 20.31 lb (9.21 kg)	• 439W	• 900W
<b>100-Gbps Line Cards</b>			
<b>Cisco Nexus X9732C-FX: 32-port 100/40 Gigabit Ethernet QSFP28 line card</b>	15 lb (6.8 kg)	520W	840W
<b>Cisco Nexus X9736C-FX: 36-port 100/40 Gigabit Ethernet QSFP28 Line Card</b>	14.38 lb (6.50 kg)	607W	720W

Component	Weight	Typical Power	Maximum Power
Cisco Nexus X9736C-EX: 36-port 100/40 Gigabit Ethernet QSFP28 line card	14.77 lb (6.7 kg)	632W	792W
Cisco Nexus X9732C-EX: 32-port 100/40 Gigabit Ethernet QSFP28 line card	12.13 lb (5.5 kg)	430W	720W
Cisco Nexus X9432C-S: 32-port 100/40 Gigabit Ethernet QSFP28 line card	12.30 lb (5.58 kg)	440W	504W
<b>40-Gbps Line Cards</b>			
Cisco Nexus X9636PQ: 36-port 40 Gigabit Ethernet QSFP+ line card	11.48 lb (5.2 kg)	260W	400W
Cisco Nexus X9536PQ: 36-port 40 Gigabit Ethernet QSFP+ line card	11.99 lb (5.44 kg)	360W	400W
Cisco Nexus X9432PQ: 32-port 40 Gigabit Ethernet QSFP+ line card	10.85 lb (4.92 kg)	240W	300W
<b>10/25-Gbps Fiber Line Cards</b>			
Cisco Nexus X97160YC-EX: 48-port 1/10/25 Gigabit Ethernet SFP+ and 4-port 40/100 Gigabit Ethernet QSFP+ line card	12.75 lb (5.78 kg)	415W	516W
Cisco Nexus X9564PX: 48-port 1/10 Gigabit Ethernet SFP+ and 4-port 40 Gigabit Ethernet QSFP+ line card	11.48 lb (5.2 kg)	300W	400W
Cisco Nexus X9464PX: 48-port 10 Gigabit Ethernet SFP+ and SFP and 4-port 40 Gigabit Ethernet QSFP+ line card	10.76 lb (4.88 kg)	160W	240W
<b>10-Gbps Copper Line Cards</b>			
Cisco Nexus X9788TC-FX: 48-port 1/10GBASE-T and 4-port 40/100 Gigabit Ethernet QSFP28 line card	13 lb (5.9 kg)	346W	684W
Cisco Nexus X9564TX: 48-port 1/10GBASE-T and 4-port 40 Gigabit Ethernet QSFP+ line card	12.58 lb (5.7 kg)	450W	540W
Cisco Nexus X9464TX2: 48-port 1/10GBASE-T and 4-port 40 Gigabit Ethernet QSFP+ line card	10.01 lb (4.54 kg)	288W	360W

## Mean Time between Failure

Table 5 lists the Mean Time Between Failure (MTBF) information for the Cisco Nexus 9500 platform.

**Table 5.** MTBF Information

Component	MTBF (Hours)
<b>Fabric Module</b>	
<ul style="list-style-type: none"> <li>• N9K-C9504-FM</li> <li>• N9K-C9504-FM-E</li> <li>• N9K-C9504-FM-S</li> <li>• N9K-C9508-FM</li> <li>• N9K-C9508-FM-E</li> <li>• N9K-C9508-FM-S</li> <li>• N9K-C9516-FM</li> <li>• N9K-C9516-FM-E</li> <li>• N9K-C9516-FM-E2</li> </ul>	<ul style="list-style-type: none"> <li>• 817,120</li> <li>• 651,120</li> <li>• 835,390</li> <li>• 797,010</li> <li>• 589,840</li> <li>• 560,000</li> <li>• 558,730</li> <li>• 552,880</li> <li>• 515,870</li> </ul>



Component	MTBF (Hours)
<b>100-Gbps Line Cards</b>	
Cisco Nexus X9732C-FX: 32-port 40/100 Gigabit Ethernet QSFP28 line card	505,870
Cisco Nexus X9736C-FX: 36-port 40/100 Gigabit Ethernet QSFP28 line card	413,150
Cisco Nexus X9736C-EX: 36-port 40/100 Gigabit Ethernet QSFP28 line card	435,710
Cisco Nexus X9732C-EX: 32-port 40/100 Gigabit Ethernet QSFP28 line card	405,240
Cisco Nexus X9432C-S: 32-port 40/100 Gigabit Ethernet QSFP28 line card	693,000
<b>40-Gbps Line Cards</b>	
Cisco Nexus X9636PQ: 36-port 40 Gigabit Ethernet QSFP+ line card	681,740
Cisco Nexus X9536PQ: 36-port 40 Gigabit Ethernet QSFP+ line card	551,400
Cisco Nexus X9432PQ: 32-port 40 Gigabit Ethernet QSFP+ line card	789,550
<b>10/25-Gbps Fiber Line Cards</b>	
Cisco Nexus X97160YC-EX: 48-port 1/10/25 Gigabit Ethernet SFP+ and 4-port 40/100 Gigabit Ethernet QSFP+ line card	439,920
Cisco Nexus X9564PX: 48-port 1/10 Gigabit Ethernet SFP+ and 4-port 40 Gigabit Ethernet QSFP+ line card	462,510
Cisco Nexus X9464PX: 48-port 10 Gigabit Ethernet SFP+ and SFP and 4-port 40 Gigabit Ethernet QSFP+ line card	619,650
<b>10-Gbps Copper Line Cards</b>	
Cisco Nexus X9788TC-FX: 48-port 1/10GBASE-T and 4-port 40/100 Gigabit Ethernet QSFP28 line card	227,990
Cisco Nexus X9564TX: 48-port 1/10GBASE-T and 4-port 40 Gigabit Ethernet QSFP+ line card	393,420
Cisco Nexus X9464TX2: 48-port 1/10GBASE-T and 4-port 40 Gigabit Ethernet QSFP+ line card	504,520

## Regulatory Standards Compliance

Table 6 summarizes regulatory standards compliance for the Cisco Nexus 9500 platform.

**Table 6.** 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>
<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.

## Ordering Information

Table 7 provides ordering information for the Cisco Nexus 9500 platform.

**Table 7.** Ordering Information

Part Number	Product Description
<b>Hardware</b>	
<b>100-Gbps Line Cards</b>	
<b>N9K-X9732C-FX</b>	Nexus 9500 line card, 32p 100G QSFP aggregation line card
<b>N9K-X9736C-FX</b>	Nexus 9500 line card, 36p 100G QSFP aggregation line card
<b>N9K-X9736C-EX</b>	Nexus 9500 line card, 36p 100G QSFP aggregation line card
<b>N9K-X9732C-EX</b>	Nexus 9500 line card, 32p 100G QSFP aggregation line card
<b>N9K-X9432C-S</b>	Nexus 9500 line card, 32p 100G QSFP28 aggregation line card (Linerate >250 Bytes)
<b>40-Gbps Line Cards</b>	
<b>N9K-X9636PQ</b>	Nexus 9500 line card, 36p 40G QSFP aggregation line card (non-blocking) for 4 and 8 slot chassis
<b>N9K-X9536PQ</b>	Nexus 9500 line card, 36p 40G QSFP aggregation line card (1.5:1 Oversubscribed) for 4,8 and 16 slot chassis
<b>N9K-X9432PQ</b>	Nexus 9500 line card, 32p 40G QSFP aggregation line card (Linerate >200 Bytes) for 4,8 and 16 slot chassis
<b>10/25-Gbps Fiber Line Cards</b>	
<b>N9K-X97160YC-EX</b>	Nexus 9500 48p 1/10/25G SFP+ (non-blocking) plus 4p 40/100G QSFP line card for 4,8 and 16 slot chassis
<b>N9K-X9564PX</b>	Nexus 9500 48p 1/10G SFP+ (non-blocking) plus 4p QSFP line card for 4,8 and 16 slot chassis
<b>N9K-X9464PX</b>	Nexus 9500 line card, 48p 1/10G SFP+ (non-blocking) plus 4p QSFP line card for 4,8 and 16 slot chassis
<b>10-Gbps Copper Line Cards</b>	
<b>N9K-X9788C-FX</b>	Nexus 9500, 48p 1/10G-T plus 4p 40/100G QSFP28 line card (non-blocking) for 4,8 and 16 slot chassis
<b>N9K-X9564TX</b>	Nexus 9500, 48p 1/10G-T plus 4p QSFP line card (non-blocking) for 4,8 and 16 slot chassis
<b>N9K-X9464TX2</b>	Nexus 9500 line card, 48p 1/10G-T plus 4p QSFP line card (non-blocking) for 4,8 and 16 slot chassis
<b>Fabric Modules</b>	
<b>N9K-C9504-FM-E</b>	Fabric Module for Nexus 9504 with 100G support, NX-OS and ACI spine
<b>N9K-C9504-FM-S</b>	Fabric Module for Nexus 9504 with 100G support, NX-OS only
<b>N9K-C9504-FM</b>	Fabric Module for Nexus 9504 chassis
<b>N9K-C9508-FM-E</b>	Fabric Module for Nexus 9508 chassis 100G support, NX-OS and ACI spine
<b>N9K-C9508-FM-S</b>	Fabric Module for Nexus 9508 chassis 100G support, NX-OS only
<b>N9K-C9508-FM</b>	Fabric Module for Nexus 9508 chassis
<b>N9K-C9516-FM</b>	Fabric Module for Nexus 9516 chassis
<b>N9K-C9516-FM-E</b>	Fabric Module for Nexus 9516 chassis 100G support (50G/flow), NX-OS
<b>N9K-C9516-FM-E2</b>	Fabric Module for Nexus 9516 chassis 100G support (100G/flow), NX-OS and ACI Spine

## Warranty

The Cisco Nexus 9500 platform has a 1-year limited hardware warranty. The warranty includes hardware replacement with a 10-day turnaround from receipt of a Return Materials Authorization (RMA).

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## Service and Support

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco Nexus 9500 platform in your data center. These 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 use 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. With this service, you can take advantage of the Cisco Smart Call Home service, which offers proactive diagnostics and real-time alerts on your Cisco Nexus 9500 platform switch.

Spanning the entire network lifecycle, Cisco Services offerings help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise.

## 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 you have 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, please visit <https://www.cisco.com/go/nexus9000>.



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