Cisco N9500 Classic Line Cards and Fabric Modules

© 2026 Cisco and/or its affiliates. All rights reserved.

Contents

Product overview	3
Cisco N9500 platform line cards	3
Cisco N9500 platform fabric modules and performance	5
Specifications	6
Mechanical specifications	7
Supported optics modules	8
Regulatory standards compliance	8
Ordering information	9
Warranty	10
Service and Support	10
Cisco Capital	11
For more information	11
Document history	11

© 2026 Cisco and/or its affiliates. All rights reserved.

Product overview

The Cisco N9500 switching platform (Figure 1) offers three modular chassis:

- Cisco N9500 4-slot switch
- Cisco N9500 8-slot switch
- Cisco N9500 16-slot switch



Figure 1.
Cisco N9500 Series Switch Chassis

The Cisco N9500 Series modular switches are capable of supporting up to 172.8 Terabits per second (Tbps) bandwidth with a comprehensive selection of line cards and fabric modules that provide 1-, 10-, 25-, 40-, 50-, and 100-Gigabit Ethernet interfaces.

Cisco N9500 platform line cards

The Cisco N9500 platform supports hot-swappable line cards and fabric modules optimized for data-center deployments. These line cards are built using a combination of Cisco® ASICs and merchant ASICs.

Table 1. Cisco N9500 Line Cards

Line card type	Description
100-Gbps line cards	
N9K-X9432C-S: 100 Gigabit Ethernet Line Card 	• 32-port 100-Gigabit Ethernet QSFP28 line card • Every QSFP28 supports 1 x 100, 2 x 50, 1 x 40, 4 x 25, and 4 x10 Gigabit Ethernet
40-Gbps line cards	
N9K-X9736PQ: 40 Gigabit Ethernet Line Card 	• 36-port 40-Gigabit Ethernet QSFP+ line card

© 2026 Cisco and/or its affiliates. All rights reserved.

Line card type	Description
N9K-X9636PQ: 40 Gigabit Ethernet Line Card 	• 36-port 40 -Gigabit Ethernet QSFP+ line card
N9K-X9536PQ: 40 Gigabit Ethernet Line Card 	• 36-port 40-Gigabit Ethernet QSFP+ line card • Supports Virtual Extensible LAN (VXLAN) routing and bridging • 1.5:1 oversubscription
N9K-X9432PQ: 40 Gigabit Ethernet Line Card 	• 32-port 40 Gigabit Ethernet QSFP+ line card
1/10-Gbps fiber line cards	
N9K-X9564PX: 1 and 10 Gigabit Ethernet and 10 and 40 Gigabit Ethernet Line Card 	• 48-port 1- and 10-Gigabit Ethernet SFP+ with 4-port 40-Gigabit Ethernet QSFP+ line card • Supports VXLAN routing and bridging
N9K-X9464PX: 1- and 10-Gigabit Ethernet and 10- and 40-Gigabit Ethernet Line Card 	• 48-port 1- and 10-Gigabit Ethernet SFP+ with 4-port 40-Gigabit Ethernet QSFP+ line card
10-Gbps copper line cards	
N9K-X9564TX: 1 and 10 Gigabit Ethernet Copper and 10 and 40 Gigabit Ethernet Line Card 	• 48-port 1 and 10GBASE-T plus 4-port 40-Gigabit Ethernet QSFP+ line card • Supports VXLAN routing and bridging • Supports 100-Megabit Ethernet, 1-Gigabit Ethernet, and 10GBASE-T copper cabling connectivity for server access
N9K-X9464TX2: 1 and 10 Gigabit Ethernet Copper and 10 and 40 Gigabit Ethernet Line Card 	• 48-port 1 and 10GBASE-T plus 4-port 40-Gigabit Ethernet QSFP+ line card • Line rate for packets greater than 200 bytes • Supports 100-Megabit Ethernet, 1-Gigabit Ethernet, and 10GBASE-T copper cabling connectivity for server access

© 2026 Cisco and/or its affiliates. All rights reserved.

Cisco N9500 platform fabric modules and performance

The Cisco N9500 platform is designed as a Clos fabric that interconnects each line card directly with each rear-mounted fabric module. All traffic between the line cards is load balanced across all fabric modules, providing optimal bandwidth distribution within the chassis. This load-balancing capability provides enhanced system reliability and redundancy. The switch continues to operate even in the event of a loss of a fabric module, albeit at a lower capacity, as the remaining fabric modules continue to provide switching capacity to the line cards.

Table 2. Cisco N9500 Line Cards and Fabric Modules Compatibility

Line card/FM	FM required for max bandwidth	Performance	Packet buffer	C9504-FM	C9508-FM	C9516-FM
X9736PQ	6	2.8 Tbps	42 MB	ACI Spine	ACI Spine	ACI Spine
X9636PQ	6	2.88 Tbps 4.29 bpps	36 MB	NX-OS	NX-OS	NX-OS
X9536PQ	3	2.88 Tbps 2.86 bpps	104 MB	NX-OS	NX-OS	NX-OS
X9432PQ	4	2.56 Tbps 2.86 bpps	24 MB	NX-OS	NX-OS	NX-OS
X9564PX	3	1.28 Tbps 1.9 bpps	104 MB	NX-OS	NX-OS	NX-OS
X9464PX	4	1.28 Tbps 1.9 bpps	12 MB	NX-OS	NX-OS	NX-OS
X9564TX	3	1.28 Tbps 1.9 bpps	104 MB	NX-OS	NX-OS	NX-OS
X9464TX2	4	1.28 Tbps 1.9 bpps	12 MB	NX-OS	NX-OS	NX-OS

Line card/FM	FM required for max bandwidth	Performance	Packet buffer	C9504-FM-S	C9508-FM-S
X9432C-S	4	6.4 Tbps 7.03 bpps	32 MB	NX-OS	NX-OS

Notes:

Tbps: terabits per second

bpps: billions of packets per seconds

© 2026 Cisco and/or its affiliates. All rights reserved.

Specifications

Table 3. Cisco N9500 Line Cards: Product Specifications – Performance and Scale

	NX9432C-S	NX9400, NX9500, NX9600 and NX97000
Number of Longest-Prefix-Match (LPM) routes	Up to 128,000	Up to 128,000
Number of IP host entries	Up to 208,000	Up to 104,000
Number of MAC address entries	Up to 160,000	Up to 104,000
Number of multicast routes	With VPC: 4000 to 32,000 Without VPC: 8000 to 32,000	Up to 52,000
Number of Interior Gateway Management Protocol (IGMP) snooping groups	With VPC: 4000 to 32,000 Without VPC: 8000 to 32,000	With VPC: 4000 to 32,000 Without VPC: 8000 to 32,000
Number of VLANs	Up to 4096	Up to 4096
Number of Virtual Routing and Forwarding (VRF) instances	Up to 1000	Up to 2000
Number of port channels	Up to 512	Up to 512
Number of port channel links	Up to 32	Up to 32
Number of ECMP paths	Up to 64	Up to 64
Number of active Cisco Switched Port Analyzer (SPAN) sessions	4 to 32	4 to 32
Number of Multiple Spanning Tree (MST) instances	Up to 64	Up to 64
Number of Rapid per-VLAN Spanning Tree (RPVST) instances	Up to 507	Up to 507
Number of Hot Standby Router Protocol (HSRP) groups	Up to 490	Up to 490
Number of tunnel endpoints (VTEP) and VXLAN physical servers (per VLAN)	Up to 10,000*	Up to 10,000

* applicable to X9500 Line cards only

© 2026 Cisco and/or its affiliates. All rights reserved.

Mechanical specifications

Table 4. Cisco N9500 Line Cards: Product Specifications – Mechanical

	X9432C-S	X9736PQ	X9636PQ	X9536PQ	X9432PQ
Weight	12.30 lb 5.58 kg	11.20 lb 5.08 kg	11.48 lb 5.2 kg	11.99 lb 5.44 kg	10.85 lb 4.92 kg
Typical power	440 W	197 W	260 W	360 W	240 W
Maximum power	509 W	211 W	400 W	400 W	300 W
Mean Time Between Failure (MTBF) hours	735,710	790,220	759,420	608,000	880,290
Hot swappable	Yes				
Airflow	Port-side intake				

	X9564PX	X9464PX	X9564TX	X9464TX2
Weight	11.48 lb 5.2 kg	10.76 lb 4.88 kg	12.58 lb 5.7 kg	10.01 lb 4.54 kg
Typical power	300 W	160 W	450 W	288 W
Maximum power	400 W	240W	540 W	350 W
MTBF hours	509,870	677,750	479,110	630,150
Hot swappable	Yes			
Airflow	Port -ide intake			

Table 5. Cisco N9500 Fabric Modules: Product Specifications – Mechanical

	N9K-C9504-FM	N9K-C9508-FM	N9K-C9516-FM	N9K-C9504-FM-S	N9K-C9508-FM-S
Capacity	1280 Gbps	2560 Gbps	5120 Gbps		
Weight	5.76 lb (2.6 kg)	9.59 lb (4.4 kg)	11.50 lb (5.2 kg)	5.76 lb (2.6 kg)	9.59 lb (4.4 kg)
Typical power	95 W	176 W	330 W	171 W	340 W
Maximum power	131 W	251 W	504 W	246 W	400 W
MTBF hours	995,020	911,040	650,780	1,011,860	902,860
Hot swappable	Yes				
Airflow	Port-side intake				

© 2026 Cisco and/or its affiliates. All rights reserved.

Supported optics modules

Each Cisco N9500 line card supports an extensive set of optic modules. The Cisco Transceiver Compatibility page (https://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-device-support-tables-list.html) provides the complete compatibility details.

Note

This data sheet specifies hardware capabilities only. Please refer to Cisco ACI or Cisco NX-OS software release notes and appropriate feature documentation for more details.

Regulatory standards compliance

Table 6. Regulatory Standards Compliance: Safety and EMC

Specification	Description
Regulatory compliance	Products should comply with CE Markings according to directives 2004/108/EC and 2006/95/EC
Safety	• UL 60950-1 Second Edition • CAN/CSA-C22.2 No. 60950-1 Second Edition • EN 60950-1 Second Edition • IEC 60950-1 Second Edition • AS/NZS 60950-1 • GB4943
EMC: Emissions	• 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR22 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A
EMC: Immunity	• EN55024 • CISPR24 • EN300386 • KN 61000-4 series

© 2026 Cisco and/or its affiliates. All rights reserved.

Specification	Description
RoHS	The product is RoHS-6 compliant with exceptions for leaded-Ball Grid-Array (BGA) balls and lead press-fit connectors.

Ordering information

Table 7. Cisco N9500 Line Cards: Ordering Information

Part number	Product description
N9K-X9432C-S	Cisco N9500 32p 100G QSFP28 line card
N9K-X9432C-S=	Cisco N9500 32p 100G QSFP28 line card (Spare)
N9K-X9736PQ	Cisco N9500 36p 40G QSFP ACI Spine line card
N9K-X9736PQ=	Cisco N9500 36p 40G QSFP ACI Spine line card (Spare)
N9K-X9636PQ	Cisco N9500 36p 40G QSFP aggregation line card
N9K-X9636PQ=	Cisco N9500 36p 40G QSFP aggregation line card (Spare)
N9K-X9536PQ	Cisco N9500 36p 40G QSFP aggregation line card (1.5:1 Oversubscribed)
N9K-X9536PQ=	Cisco N9500 36p 40G QSFP aggregation line card (1.5:1 Oversubscribed) (Spare)
N9K-X9432PQ	Cisco N9500 32p 40G QSFP aggregation line card
N9K-X9432PQ=	Cisco N9500 32p 40G QSFP aggregation line card (Spare)
N9K-X9564PX	Cisco N9500 48p 1/10G SFP+ plus 4p QSFP line card
N9K-X9564PX=	Cisco N9500 48p 1/10G SFP+ plus 4p QSFP line card (Spare)
N9K-X9464PX	Cisco N9500 48p 1/10G SFP+ plus 4p QSFP line card
N9K-X9464PX=	Cisco N9500 48p 1/10G SFP+ plus 4p QSFP line card (Spare)
N9K-X9564TX	Cisco N9500 48p 1/10G BaseT plus 4p QSFP line card
N9K-X9564TX=	Cisco N9500 48p 1/10G BaseT plus 4p QSFP line card (Spare)
N9K-X9464TX2	Cisco N9500 48p 1/10G BaseT plus 4p QSFP line card
N9K-X9464TX2=	Cisco N9500 48p 1/10G BaseT plus 4p QSFP line card (Spare)

© 2026 Cisco and/or its affiliates. All rights reserved.

Table 8. Cisco N9500 Fabric Modules: Ordering Information

Part number	Product description
N9K-C9504-FM	Cisco N9504 Fabric Module
N9K-C9504-FM=	Cisco N9504 Fabric Module (Spare)
N9K-C9508-FM	Cisco N9508 Fabric Module
N9K-C9508-FM=	Cisco N9508 Fabric Module (Spare)
N9K-C9516-FM	Cisco N9516 Fabric Module
N9K-C9516-FM=	Cisco N9516 Fabric Module (Spare)
N9K-C9504-FM-S	Cisco N9504 Fabric Module with 100G support
N9K-C9504-FM-S=	Cisco N9504 Fabric Module with 100G support (Spare)
N9K-C9508-FM-S	Cisco N9508 Fabric Module with 100G support
N9K-C9508-FM-S=	Cisco N9508 Fabric Module with 100G support (Spare)

Warranty

The Cisco N9500 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).

Service and Support

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco N9500 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 operational 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 N9500 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.

© 2026 Cisco and/or its affiliates. All rights reserved.

Cisco Capital

Flexible Payment Solutions to Help You Achieve Your Objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. Learn more.

For more information

For more information about the Cisco N9000 Series, please visit https://www.cisco.com/go/n9000.

Document history

New or revised topic	Described in	Date
Product name change	Throughout the data sheet	August 2026

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **https://www.cisco.com/go/offices**.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: https://www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

Printed in USA C78-741336-03 09/26

© 2026 Cisco and/or its affiliates. All rights reserved.