



Cisco

C9500-40X-10E

Datasheet



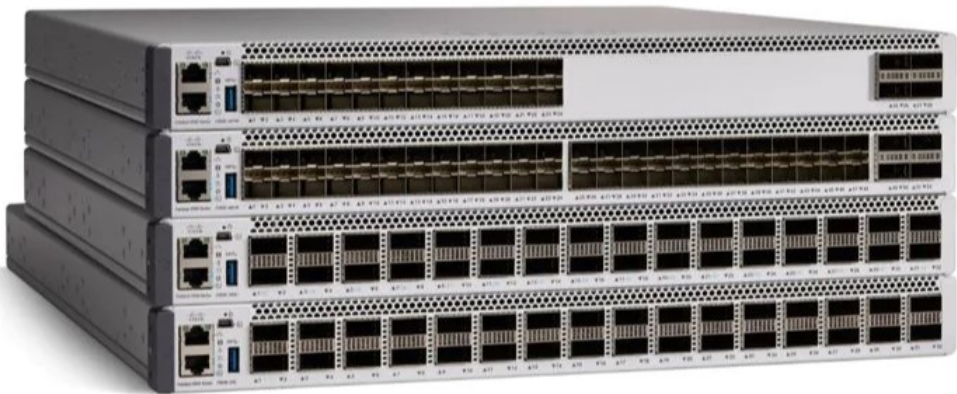
Product Overview

- The Cisco Catalyst 9500 Series is a flagship enterprise switching solution built to meet evolving business networking needs.
- It is ideal for campus core, enterprise aggregation, and large organization networks that require reliable scalability and strong security.
- Driven by Cisco’s powerful UADP ASIC, the C9500 features up to 40 × 10G SFP+ ports, high forwarding rates, and substantial buffer memory.
- Key differentiators include advanced routing support, StackWise Virtual for system-level virtualization, and seamless software-defined access features.
- The switch offers management options like Cisco Catalyst Center or Meraki Cloud, plus robust redundancy and high-availability technologies.
- For enterprises and operators, the C9500 Series delivers secure, agile connectivity that scales with hybrid workplaces and distributed applications.

Product Highlights

- **High Performance Enterprise Switching:** Delivers up to 6.4 Tbps switching capacity and 2 Bpps forwarding for mission-critical workloads.
- **Flexible High-Speed Ports:** Supports up to 48 non-blocking 10G SFP+ ports, plus versatile uplink and expansion options.
- **Time-Sensitive Networking:** Built-in AVB and IEEE 1588v2 PTP provide enhanced AV experience and precise time synchronization across applications.
- **StackWise Virtual and Cloud Options:** StackWise Virtual boosts resilience and bandwidth, supported by Meraki Cloud monitoring for easy management.

Detailed Features



C9500-40X-10E

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Component	Specification
Ports	40 × 10G SFP+
Switching Capacity	Up to 6.4 Tbps
Forwarding Rate	Up to 2 Bpps
CPU	Intel x86, 2.4 GHz
Power Supply	Field-replaceable, redundant, platinum-rated



Next-Generation ASIC Technology

Equipped with the Unified Access Data Plane (UADP) ASIC, the switch enables high-speed, low-latency processing. Advanced programmable pipelines and microengine capabilities support future-ready Layer 2/Layer 3 forwarding, ACLs, and QoS allocation, adapting to evolving business needs without hardware upgrades.

High Bandwidth Switching and Forwarding

With up to 6.4 Tbps switching capacity and 2 billion packets per second forwarding, this switch supports demanding data center and enterprise traffic loads. The unified buffer architecture provides up to 36 MB per ASIC, ensuring smooth performance even during network spikes or congestion periods.

Robust Application Hosting and Storage

The Intel 2.4-GHz x86 CPU is paired with up to 120 GB of USB 3.0 or 960 GB SATA SSD storage, providing a secure environment for hosting container-based network applications directly on the switch. This integration accelerates deployment of monitoring, security, or automation tools.

Flexible, High-Density Port Options

Supports up to 32 non-blocking 100G QSFP28, 40G QSFP+, 25G SFP28, and 48 non-blocking 10G SFP+ ports. The diverse port configuration is designed for seamless scalability, backward compatibility, and smooth migration to higher speeds for growing enterprise networks.

Scalable Layer 3 and Virtualization

The switch can store thousands of IPv4/IPv6 unicast and multicast routes and MPLS labels, supporting complex, large-scale Layer 3 deployments. StackWise Virtual allows two switches to operate as a single logical unit for high availability and elastic bandwidth.

Enhanced Time Synchronization and AV

Integrated support for IEEE 802.1ba AV Bridging and Precision Time Protocol (IEEE 1588v2) achieves sub-microsecond time synchronization, critical for AV, industrial, and real-time enterprise deployments.

Advanced Security, QoS and NAT Features

Comprehensive hardware support for both static/dynamic NAT, PAT, and refined Access Control Lists, bolstered by fine-tuned Quality of Service. This ensures strong segmentation, high bandwidth prioritization, and secure traffic management.

Energy-Efficient, Reliable Operation

Platinum-rated, hot-swappable AC/DC power supplies and field-replaceable fan trays guarantee high availability, energy efficiency, and easy maintenance, while Meraki Cloud monitoring brings intuitive remote operations to enterprise and branch deployments.

Technical Specifications

Product Specifications

Feature	Value
Product Description	9500 10Y DNA Essentials, HW
Dimensions (H x W x D)	1.73 x 17.5 x 21.52 in
Rack Units (RU)	1 RU
Minimum Software Requirement	Open Cisco IOS XE Software Release 16.6.1a
ASIC	UADP 2.0
Switching Capacity	Up to 960 Gbps
Forwarding Rate	Up to 720 Mpps
Total Number of MAC Addresses	Up to 64,000
Total Number of IPv4 Routes	Up to 64,000 indirect, Up to 80,000 host
Total Number of IPv6 Routes	Up to 32,000 indirect, Up to 40,000 host
Total Number of IPv4 Multicast Routes	Up to 32,000



Feature	Value
Total Number of IPv6 Multicast Routes	Up to 16,000
QoS ACL Scale	Up to 18,000
Security ACL Scale	Up to 18,000
FNF Entries	Up to 512,000
DRAM	16 GB
Flash	16 GB
VLAN IDs	4094
Total Switched Virtual Interfaces (SVIs)	4000
Jumbo Frame	9198 bytes
Safety Certifications	C9500-12Q, C9500-24Q, C9500-40X, C9500-16X •UL 60950-1 •CAN/CSA-C22.2 No. 60950-1 •EN 60950-1 •IEC 60950-1 •AS/NZS 60950-1 •GB4943 C9500-32C, C9500-32QC, C9500-24Y4C, C9500-48Y4C •IEC 60950-1 plus Am1, Am2, Am9, Am10, Am11, Am12 and all deviations and differences •AS/NZS 60950.1.2011 •CAN/CSA-C22.2 No. 60950-1-07 •GB 4943-95 •EN 60950-1; 2006 plus Am1, Am2, Am9, Am10, Am11, Am12 and all deviations and differences •NOM-019-SCFI-1998 •UL 60950-1, Second Edition
EMI and EMC Compliance	•47 CFR Part 15 Class A •CNS13438: 2006 Class A •EN 300 386 V1.6.1 •EN61000-3-2: 2014 •EN61000-3-3: 2013 •ICES-003 Issue 6: 2016 Class A •KN 32: 2015 Class A •TCVN 7189: 2009 Class A •EN 55032:2012/ AC:2013 Class A •EN 55032:2015 Class A •CISPR 32 Edition 2 Class A •V-2/2015.04 Class A •V-3/2015.04 Class A •CISPR24: 2010 + A1: 2015 •EN 300 386 V1.6.1 •EN55024: 2010 + A1: 2015 •KN35: 2015 •TCVN 7317: 2003
Input Voltage	90 to 264 VAC
Operating Temperature	32°F to 104°F (0°C to 40°C)
Storage Temperature	-4°F to 149°F (-20°C to 65°C)
Relative Humidity Operating and Nonoperating (Noncondensing)	Ambient (noncondensing) operating: 5% to 90% Ambient (noncondensing) nonoperating and storage: 5% to 95%
NEBS Criteria Levels	NEBS: •Normal operating temperature range: 5°C to 40°C (up to 1829 meters / 6000 ft) •Short term operating temperature range: -5°C to 55°C •Normal Relative Humidity range: 5% to 85% •Short term Relative Humidity range: 5% to 93% •Operating Altitude: up to 1829 m (6000 ft) at 55°C •ETSI 300-019 Requirements are covered under GR-63-CORE with some deviations. •SR-3580 NEBS level 3 (GR-63-CORE, to current issue, GR-1089-CORE, to current issue)



Feature	Value
Altitude	Operation up to 6000 feet at 55°C and 13,000 feet at 45°C
MTBF (hours)	277,310

Product Comparison

Feature	C9500-40X-10E	C9500-24Q-A	C9500-16X-2Q-A
Fixed Ports	40 × 10G SFP+	24 × 40G QSFP+	16 × 10G SFP+ and 2 × 40G QSFP+
Switching Capacity	Up to 6.4 Tbps	Up to 2.4 Tbps	Up to 1.28 Tbps
Forwarding Rate	Up to 2 Bpps	Up to 714 Mpps	Up to 950 Mpps
Layer 3 Routing Support	Yes	Yes	Yes
Virtualization (StackWise Virtual)	Yes	Yes	Yes
Redundant Power	Supported	Supported	Supported
Management	Cisco Catalyst Center / Meraki Cloud	Cisco Catalyst Center / Meraki Cloud	Cisco Catalyst Center / Meraki Cloud
Depth (inches)	21.52	21.52	21.52
Applications	Core/aggregation, large data networks	High-speed aggregation, backbone	Distribution, smaller core deployment

Accessories

Category	Accessories
Included Accessories	- Power Adapter - Mounting Brackets - Quick Start Guide
Optional Accessories	- SFP/SFP+ Transceivers - StackWise Virtual Licenses - Redundant Power Module



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References

[1] Cisco. (2023). Catalyst 9500 Series Switches Data Sheet. Retrieved from <https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-9500-series-switches/nb-06-cat9500-ser-data-sheet-cte-en.html>