



Cisco

C9500-48Y4C-EDU

Datasheet

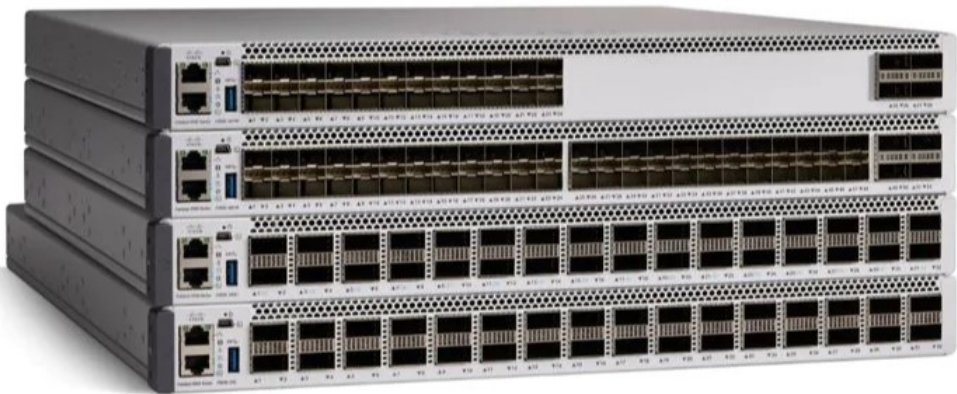
Product Overview

- Cisco's Catalyst 9500 Series is a top-tier enterprise switching solution, offering reliable core and aggregation network services.
- This platform is ideal for hybrid workforces, distributed offices, and businesses seeking secure, flexible deployments at scale.
- Key features include Cisco UADP ASIC architecture, robust switching with up to 3.2 Tbps throughput, and 48 flexible high-speed ports.
- Advanced technologies like StackWise Virtual, MPLS, and full Layer 2/3 routing set it apart in campus core environments.
- Flexible management through Cisco Catalyst Center or Meraki Cloud ensures smooth deployment, monitoring, and consistent security policies.
- Perfect for demanding core and edge scenarios, this switch drives efficiency, security, and performance for modern enterprise networking.

Product Highlights

- **High-Performance UADP ASIC:** Delivers up to 3.2 Tbps switching and strong Layer 2/3 forwarding with advanced programmable capability.
- **Flexible High-Speed Ports:** Supports 48 × 1/10/25G Ethernet and 4 × 40/100G uplinks, maximizing bandwidth and aggregation in the enterprise core.
- **Advanced Network Virtualization:** StackWise Virtual and multichassis EtherChannel deliver efficient system bandwidth and nonstop communications.
- **Accurate Time Sync & AV Support:** PTP (IEEE 1588v2) and integrated AVB improve timing accuracy and multimedia experience in distributed campus networks.

Detailed Features



C9500-48Y4C-EDU

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Component	Specification
Switching Capacity	Up to 3.2 Tbps
Forwarding Rate	Up to 1 Bpps
Ports	48 × 1/10/25G + 4 × 40/100G
ASIC	UADP 3.0
CPU	Intel 2.4-GHz x86



Next-Gen ASIC Architecture

Built on Cisco UADP 3.0 ASIC, the switch offers programmable pipelines and microengine capabilities, enabling tailored Layer 2/Layer 3 forwarding, ACL, and QoS. Its design supports evolving enterprise requirements for application performance and scalability.

Exceptional Switching Power

Achieves up to 3.2 Tbps switching capacity and up to 1 Bpps forwarding rate. This high throughput ensures congestion-free performance, supporting core, aggregation, edge, and data-intensive applications.

Large Unified Buffer

Equipped with up to 36 MB unified buffer per ASIC, allowing for efficient traffic handling and lossless operations, especially during high-volume bursts or multimedia transmissions common in enterprise cores.

Robust Computing & Storage

Driven by a 2.4 GHz Intel x86 CPU, supports USB 3.0 (up to 120 GB) or SATA SSD (up to 960 GB) for hosting container-based apps and network functions, enabling innovation and enhanced processing at the edge.

Versatile High-Speed Port Mix

Up to 48 nonblocking 10G/25G SFP+, 4 × 40G/100G uplinks, and support for QSFP28/56/+DD, giving deployment flexibility from edge to campus core, suited to various bandwidth and topology needs.

Advanced Layer 3 Routing and Tables

Rich support for scalable IPv4/IPv6 routing (up to 212,000 routes), multicast, and MPLS with large table sizes. Enables complex enterprise network architectures and seamless migration to IPv6.

Precision Time & AV Support

Hardware-level Precision Time Protocol (IEEE 1588v2) and built-in AV Bridging guarantee accurate synchronization and high-quality AV experience for industrial control or unified communications environments.

High Availability & Virtualization

StackWise Virtual, redundancy-ready power supplies, field-replaceable fans, and hardware-accelerated SSO/NSF ensure operational continuity, system-wide reliability, and simplified maintenance in mission-critical campuses.

Technical Specifications

Product Specifications

Feature	Value
Product Description	Catalyst 9500 48-port x 1/10/25G and 4-port 40/100G , EDU
Dimensions (H x W x D)	1.73 x 17.5 x 18.0 in
Rack Units (RU)	1 RU
Minimum Software Requirement	Cisco IOS XE Software Release 16.8.1a
ASIC	UADP 3.0
Switching Capacity	Up to 3.2 Tbps
Forwarding Rate	Up to 1 Bpps
Total Number of MAC Addresses	Up to 82,000
Total Number of IPv4 Routes	Up to 212,000 indirect + direct
Total Number of IPv4 Host/ARP	Up to 90,000
Total Number of IPv6 Routes	Up to 212,000 indirect + direct
Total Number of IPv6 Host	Up to 90,000
IPv4 Multicast Routes	Up to 32,000



Feature	Value
IPv6 Multicast Routes	Up to 32,000
QoS ACL Scale	Up to 16,000
Security ACL Scale	Up to 27,000
FNF Entries	Up to 98,000
DRAM	16 GB
Flash	16 GB
VLAN IDs	4094
Total SVIs	4000
Jumbo Frame	9216 bytes
Safety Certifications	UL 60950-1, CAN/CSA-C22.2 No. 60950-1, EN 60950-1, IEC 60950-1, AS/NZS 60950-1, GB4943
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 Min	32°F (0°C)
Operating Temperature Max	104°F (40°C)
Storage Temperature Min	-4°F (-20°C)
Storage Temperature Max	149°F (65°C)
Relative Humidity Operating	5% to 90% (non-condensing)
Relative Humidity Storage	5% to 95% (non-condensing)
NEBS Normal Operating Temp	5°C to 40°C (up to 1829 meters (6000 ft))
NEBS Short Term Operating Temp	-5°C to 55°C
NEBS Normal Relative Humidity	5% to 85%
NEBS Short Term Relative Humidity	5% to 93%
NEBS Operating Altitude	up to 1829 m (6000 ft) at 55°C
ETSI 300-019 Compliance	GR-63-CORE with deviations
SR-3580 NEBS level 3	GR-63-CORE, to current issue, GR-1089-CORE, to current issue
Altitude Max Operation	13,000 feet at 40°C



Feature	Value
MTBF (hours)	316,960 hours

Product Comparison

Feature	C9500-48Y4C-EDU	C9500-24Q-A	C9300-48UXM-E
Switching Capacity	Up to 3.2 Tbps	Up to 2.4 Tbps	Up to 1.04 Tbps
Forwarding Rate	Up to 1 Bpps	Up to 1 Bpps	Up to 772 Mpps
Fixed Ports	48 × 1/10/25G + 4 × 40/100G	24 × 40G	48 × 1G/2.5G/5G/10G + 2 × 40G/100G
Stacking Support	StackWise Virtual	StackWise Virtual	StackWise-480
Layer 3 Routing	Yes (IPv4, IPv6, multicast, MPLS)	Yes (IPv4, IPv6, MPLS)	Yes (IPv4, IPv6, multicast)
Modular Power Supply	Yes	Yes	Yes
Application Hosting	Yes (container support)	No	Yes (optional)
PTP/AVB Support	Yes	No	No
Management	Cisco Catalyst Center/ Meraki Cloud	Cisco Catalyst Center	Cisco DNA Center/Meraki Cloud

Accessories

Category	Accessories
Included Accessories	- AC Power Supply - Rack Mount Kit - Console Cable
Optional Accessories	- SFP+/QSFP Transceivers - Redundant Power Supply - Fan Tray



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References

[1] Cisco Systems. (2024). 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>