

Cisco

C9500-48Y4C-E

Datasheet



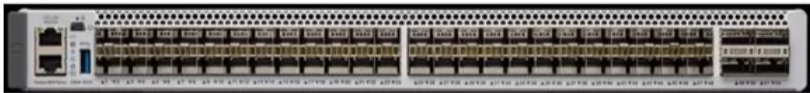
Product Overview

- The Cisco Catalyst 9500 Series is Cisco’s flagship line for fixed core and aggregation switching within enterprise networks.
- Built for enterprise businesses and service providers, it is ideal for hybrid workforces and distributed campuses.
- The switch features UADP or Silicon One Q200 ASICs, up to 12.8 Tbps switching capacity, and high-capacity deep buffering.
- It includes advanced support for virtualization, SD-Access, secure automation, and scalable cloud connectivity.
- Simplified management options, redundancy, and patching offer smooth operation and enhanced uptime for critical environments.
- Cisco Catalyst 9500 delivers future-ready switching, secure cloud integration, and high performance for evolving digital infrastructures.

Product Highlights

- **Next-Generation ASIC Platform:** Purpose-built Cisco Silicon One Q200 or UADP ASICs provide up to 12.8 Tbps switching capacity and up to 8 Bpps forwarding, ensuring high performance and efficiency.
- **Versatile High-Speed Ports:** Offers extensive port options: up to 60 × 10/25/50G SFP56 and 8 × 40/100/200/400G QSFP-DD, meeting diverse enterprise core and aggregation needs.
- **Virtualization and StackWise Support:** Cisco StackWise Virtual integrates system virtualization, multichassis EtherChannel, boosting system bandwidth and nonstop communication.
- **Advanced Cloud and Automation:** Supports Meraki cloud monitoring, automated provisioning, and advanced campus automation via Cisco IOS XE for streamlined network operations.

Detailed Features



C9500-48Y4C-E

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Component	Specification
Switch Ports	24 × 1/10/25G SFP28
Switching Capacity	Up to 3.2 Tbps
Forwarding Rate	Up to 1 Bpps
CPU/Memory	Intel x86, 16 GB DRAM
Power Supply	C9K-PWR-650WAC-R or C9K-PWR-930WDC-R



High-Performance Switching Fabric

Built on Cisco Silicon One Q200 ASIC and UADP ASICs, the Catalyst 9500 Series delivers up to 12.8 Tbps switching capacity and up to 8 Bpps forwarding performance. This results in reduced bottlenecks and instant packet forwarding whether at the campus core or aggregation layers. The architectural inclusion of up to 80 MB of dedicated buffer and 8 GB high-bandwidth buffer further optimizes data processing across varying workloads and burst traffic events.

Versatile Multi-Speed Port Architecture

The Catalyst 9500-48Y4C-E features a wide range of native nonblocking ports: up to 60 × 10/25/50G SFP56, 28 × 40/100G QSFP28, and 8 × 400G QSFP-DD. This flexibility supports seamless deployments for future-proofing as organizations grow their high-density, high-speed links without sacrificing reliability or performance in enterprise core and edge scenarios.

Resilient Redundancy and Power Options

Equipped with Platinum-rated AC/DC power supplies achieving over 90% efficiency and field-replaceable, N+1 redundant fan trays with flexible airflow, the Catalyst 9500 ensures stable operation even in harsh environments. These redundant components reduce the risk of downtime and provide a robust platform critical for mission-focused enterprise networks.

Comprehensive Security Integration

Hardware support for line-rate 256-bit 802.1ae MACsec and WAN-MACsec data encryption protects against internal and external threats. Flexible ACL and QoS tables, plus dual-stack IPv4/IPv6 hardware forwarding, guarantee robust data protection with seamless migration for secure enterprise network transformations.

Advanced Programmability and Automation

Cisco IOS XE enables model-driven programmability, on-box Python scripting, and API-driven configuration through NETCONF, RESTCONF, and gNMI (YANG models). Automated provisioning simplifies new deployments and upgrades, reducing manual effort and speeding rollout for distributed campuses and branches.

Virtualization and StackWise Virtual

StackWise Virtual technology supports multi-chassis virtualization, allowing multichassis EtherChannel for high resiliency and instant failover. This boosts throughput, simplifies network management, and maintains nonstop communication even during hardware upgrades or failures.

Intelligent Cloud Management

Native Meraki dashboard cloud monitoring and Cisco Catalyst Center compatibility provide visibility, configuration, and troubleshooting from anywhere. Integration with IOS XE makes seamless software upgrades, real-time model-driven telemetry, and continuous critical patching routine, boosting network reliability and ensuring faster issue detection and resolution.

Industry-Ready for Evolving Networks

Support for advanced Layer 2/Layer 3 routing, extensive MPLS/VPN features, multicast, LISP, and AVB/PTP protocols mean the Catalyst 9500-48Y4C-E is prepared for next-generation applications and time-sensitive services in smart campuses, data centers, and cloud edge architectures.

Technical Specifications

Product Specifications

Feature	Value
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 - indirect + direct	Up to 212,000
Total Number of IPv4 Host/ARP	Up to 90,000
Total Number of IPv6 Routes - indirect + direct	Up to 212,000
Total Number of IPv6 Host	Up to 90,000
QoS ACL Scale	Up to 16,000



Feature	Value
Security ACL Scale	Up to 27,000
FNF Entries	Up to 98,000
DRAM	16 GB
Flash	16 GB
VLAN IDs	4,000
Total Switched Virtual Interfaces (SVIs)	4,000
Jumbo Frame	9,216 bytes
Power Supply Selection	C9K-PWR-650WAC-R or C9K-PWR-930WDC-R
Dimensions (H x W x D)	1.73 x 17.5 x 18.0 in
Rack Units (RU)	1 RU
Input Voltage	90 to 264 VAC
Operating Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	min -4°F (-20°C)
Storage Temperature	max 149°F (65°C)
Relative Humidity (operating)	5% to 90%
Relative Humidity (non-operating)	5% to 95%
Altitude	Operation up to 13,000 feet at 40°C
MTBF (hours)	316,960

Product Comparison

Feature	C9500-48Y4C-E	C9500-24Y4C-E	C9300L-24P-4G-E
Fixed Ports	48 × 1/10/25G SFP28, 4 × 40/100G QSFP28	24 × 1/10/25G SFP28, 4 × 40/100G QSFP28	24 × 1G PoE+, 4 × 1G SFP
Switching Capacity	Up to 3.2 Tbps	Up to 2.0 Tbps	Up to 56 Gbps
Forwarding Rate	Up to 1 Bpps	Up to 1 Bpps	41.66 Mpps
Layer 3 Routing	Comprehensive (IPv4/IPv6/ MPLS/VRF)	Comprehensive (IPv4/IPv6/ MPLS/VRF)	Static/RIP/OSPF
Redundant Power	Supported, Platinum-rated	Supported, Platinum-rated	Supported
Programmability	IOS XE, model-driven, Python scripting	IOS XE, automation support	WebUI, basic automation



Feature	C9500-48Y4C-E	C9500-24Y4C-E	C9300L-24P-4G-E
Stacking/ Virtualization	StackWise Virtual, up to 2 switches	StackWise Virtual, up to 2 switches	StackWise support (up to 8)
Use Case	Core/aggregation in large enterprise	Core/aggregation in large enterprise	Access switching with PoE+ for SMB/branch

Accessories

Category	Accessories
Included Accessories	<ul style="list-style-type: none">- Power Adapter- Rack Mount Kit- Console Cable
Optional Accessories	<ul style="list-style-type: none">- SFP/SFP28/QSFP28 Transceivers- Redundant Power Supply- Fan Tray Module



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References

[1] Cisco. (2023). Cisco 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>