

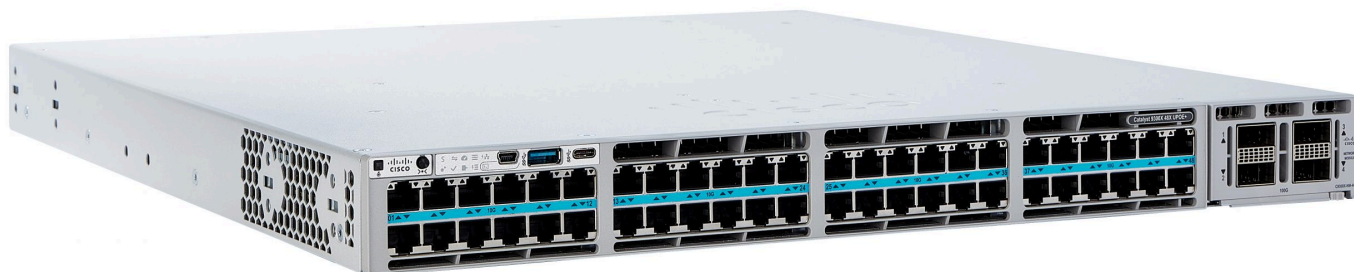
Catalyst 9300X-M Datasheet

Overview

The Catalyst 9300X-M addresses the most demanding enterprise applications by combining the simplicity of the Meraki dashboard with powerful switching hardware. To satisfy high-bandwidth applications and the deployment of high-speed 802.11ax/wifi-6 access points, the Catalyst 9300X-M provides multigigabit ports, 1TB stacking, and modular 10/25 or 40/100G uplinks. The Catalyst 9300X-M delivers resiliency with fast stack convergence and StackPower. The Catalyst 9300X-M provides Adaptive Policy using an over-the-wire tag which segments traffic into security groups to deliver scalable security. The Catalyst 9300X-M is integrated under the Meraki dashboard to provide a simply powerful solution to the most demanding wired access applications.

Adaptive Policy provides simple & scalable security policies to segment traffic using Security Groups. Security Groups are created in the dashboard using natural language such as "IOT device" & "Guest." The security policy intent (e.g., Permit or Deny) is then simply provisioned between Security Groups which results in the segmentation of each group's traffic. By making security policy management intuitive and scalable relative to legacy IP-address based Access Control Lists, Adaptive Policy empowers operators to confidently secure their network traffic independent of future network changes.

By pooling & distributing power across C9300X-Ms using a series of StackPower cables, StackPower provides simple and resilient power distribution across the stack.



A Catalyst 9300X switch can also be migrated to a Meraki-managed persona, where it would function as its Catalyst Meraki 9300X equivalent. For details on the migration process, please refer to our [Getting started: Cisco Catalyst 9300 with Meraki Dashboard](#) guide.

Models

| Number of Ports | Model | Description |
|-----------------|---------------|----------------------------|
| 12 Ports | C9300X-12Y-M | 12-port SFP28 Fiber switch |
| | C9300X-24Y-M | 24-port SFP28 Fiber switch |
| 24 Ports | C9300X-24HX-M | 24-port mGig UPoE+ switch |
| | C9300X-48TX-M | 48-port mGig switch |
| 48 Ports | C9300X-48HX-M | 48-port mGig UPoE+ switch |

| Number of Ports | Model | Description |
|-----------------|----------------|---------------------------|
| | C9300X-48HXN-M | 48-port mGig UPoE+ switch |

Features

| Category | Features |
|--|--|
| Highlights | <ul style="list-style-type: none"> • Layer-3 • 40G/100G or 10G/25G modular uplink options on all models • mGig support • 1T/480G Dual Dedicated Hardware Stacking Ports • 90W UPoE+ Support (802.3bt) • StackPower in a ring topology supporting upto 4 switches |
| Management | <ul style="list-style-type: none"> • Managed via Cisco Meraki Dashboard • Zero-touch remote provisioning (no staging needed) • Basic configuration capability via local management page • Detailed historical per-port and per-client usage statistics • Operating System, device, and hostname fingerprinting • Automatic firmware upgrades with scheduling control • SNMP and SYSLOG support for integration with other network management solutions* |
| Remote Diagnostics | <ul style="list-style-type: none"> • Email, SMS and Mobile push notification alerts¹ • Ping, traceroute, cable testing, and link failure detection with alerting • Remote packet capture • Dynamic and interactive network discovery and topology • Combined event and configuration change logs with instant search |
| Stacking | <ul style="list-style-type: none"> • Physically stack up to 8 switches with 1Tbps of stacking bandwidth on all models (backward compatible with 480G) • Virtual stacking supports thousands of switch ports in a single logical stack for unified management, monitoring, and configuration • Faster convergence • StackPower in a ring topology supporting upto 4 switches |
| Ethernet Switching Capabilities | <ul style="list-style-type: none"> • 802.1p Quality of Service, 8 queues (w/ 6 configurable for DSCP-to-CoS mapping) • 802.1Q VLAN and trunking support for up to 4,094 VLANs (1000 active VLANs with STP enabled) • Single Instance of 802.1s Multiple Spanning Tree Protocol (interoperable with RSTP, STP, PVST, RPVST) • STP Enhancements: BPDU guard, Root guard, Loop guard, UDLD • Broadcast storm control • 802.1ab Link Layer Discovery Protocol (LLDP) and Cisco Discovery Protocol (CDP) • 802.3ad Link aggregation with up to 8 ports per aggregate, multi-chassis aggregates supported on stacked switches |

| Category | Features |
|-----------------|--|
| | <ul style="list-style-type: none"> • Port mirroring • IGMP snooping for multicast filtering • MAC Forwarding Entries: 32K |
| Layer 3 | <ul style="list-style-type: none"> • Static routing, OSPFv2 • Multicast routing (PIM-ASM) • Warm Spare (VRRP) * • DHCP Server, DHCP Relay |
| Security | <ul style="list-style-type: none"> • Integrated multi-factor authentication for Dashboard management • Role-based access control (RBAC) with granular device and configuration control • Corporate wide password policy enforcement • IEEE 802.1X RADIUS and MAB, hybrid authentication and RADIUS server testing • Single-Host/Multi-Domain/Multi-Host/Multi Authentication • Port security: Sticky MAC, MAC whitelisting * • DHCP snooping, detection and blocking, Dynamic ARP Inspection • IPv4 and IPv6 ACLs • Secure Connect * • Adaptive Policy |



* Available in a future software release

Catalyst 9300/L/X-M Licensing

The Catalyst 9300-M license applies to all c9300 hardware platforms (c9300 / c9300L / c9300X) excluding the MS390. Catalyst 9300-M license structure includes two feature tiers: Enterprise and Advanced. As with all Meraki managed switches, every Catalyst 9300-M license is available in 1, 3, 5, 7, and 10 year terms.


| Catalyst 9300X-M License Structure | 12/24-Port | 48-port |
|------------------------------------|---------------|---------------|
| Advanced Features | LIC-C9300-24A | LIC-C9300-48A |
| Enterprise Features | LIC-C9300-24E | LIC-C9300-48E |


The features available with advanced licensing are:

- [Adaptive policy](#)
- [Netflow v10 \(IPFIX\) and Encrypted Traffic Analytics](#)
- Greater than 1,000 routes for OSPF



In the Co-term licensing model (most existing Organizations), an Organization must either have all Catalyst 9300/L/X-M Enterprise or all Catalyst

 9300/L/X-M Advanced licenses - they cannot be mixed. In the Per-device licensing model, a mix of Enterprise and Advanced can be added to a single Organization, but certain features may require all devices in a Network to have Advanced licenses, e.g. Adaptive Policy.

 **Note:** [MS390s](#) existing in the same co-term Organization will require the *same* license edition (either Enterprise or Advanced) as the Catalyst 9300/L/X-M. License types cannot be mixed and will result in an incompatible license error.


For more information on licensing, refer to [Meraki Licensing Models article](#).


[Subscription licensing](#) is also available for the Catalyst 9300-M switches

Technical Breakdown

Interfaces Specifications

| Model/Persona | Interfaces | Uplinks (SFP+, SFP28, QSFP+, QSFP28) | 1T/480G Hardware Stack Ports | Dedicated Management Interface | PoE/ UPoE Capabilities |
|--------------------|-------------------------------|--|---------------------------------|--------------------------------------|---------------------------|
| C9300X-12Y-M | 12 x 1/10/ 25G SFP28 Fiber | Modular | 2 | 1 | n/a |
| C9300X-24Y-M | 24 x 1/10/25G SFP28 Fiber | Modular | 2 | 1 | n/a |
| C9300X-24HX- M | 24 x mGig UPoE+ RJ45 | Modular | 2 | 1 | UPoE+ |
| C9300X-48TX-M | 48 x mGig RJ45 | Modular | 2 | 1 | n/a |
| C9300X-48HX- M | 48 x mGig UPoE+ RJ45 | Modular | 2 | 1 | UPoE+ |
| C9300X-48HXN- M | 48 x mGig UPoE+ RJ45 | Modular | 2 | 1 | UPoE+ |

 All models are available with modular uplinks that have been listed under the [Accessories](#) list. For supported SFP modules please refer the [SFP Datasheet](#).

 **Cabling Best Practices for Multi-Gigabit operations:** While Category-5e cables can support multigigabit data rates upto 2.5/5 Gbps, external factors such as noise, alien crosstalk coupled with longer cable/cable bundle lengths can impede reliable link operation. Noise can originate from cable bundling, RFI, cable movement, lightning, power surges and other transient event. It is recommended to use Category-6a cabling for reliable multigigabit operations as it mitigates alien crosstalk by design.

Physical Specifications

| Model | Dimensions (h x w x d) W/ Default Power Supply | Weight w/ Default Power Supply | Mount Type | Hot Swap Fans | Operating Temperature | Humidity |
|----------------|---|-----------------------------------|---------------|---------------|-----------------------|----------|
| C9300X-12Y-M | 1.73" x 17.5" x 19.2" (4.4 x 44.5 x 48.77cm) | 15.0 lb (6.80 kg) | 1U Rack Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| C9300X-24Y-M | 1.73" x 17.5" x 20.7" (4.4 x 44.5 x 52.6cm) | 16.2 lb (7.35 kg) | 1U Rack Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| C9300X-24HX-M | 1.73" x 17.5" x 20.63" (4.4 x 44.5 x 52.4cm) | 13.8 lb (6.25 kg) | 1U Rack Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| C9300X-48TX-M | 1.73" x 17.5" x 22.03" (4.4 x 44.5 x 55.9cm) | 14.6 lb (6.62 kg) | 1U Rack Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| C9300X-48HX-M | 1.73" x 17.5" x 22.03" (4.4 x 44.5 x 55.9cm) | 14.6 lb (6.62 kg) | 1U Rack Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| C9300X-48HXN-M | 1.73" x 17.5" x 20.63" (4.4 x 44.5 x 52.4cm) | 14.2 lb (6.44 kg) | 1U Rack Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |

Performance

| Model | Switching Capacity | Stacking Bandwidth | Forwarding rate |
|----------------|--------------------|--------------------|-----------------|
| C9300X-12Y-M | 1000 Gbps | 1 Tbps / 480 Gbps | 744.04 Mpps |
| C9300X-24Y-M | 2000 Gbps | 1 Tbps / 480 Gbps | 1488 Mpps |
| C9300X-24HX-M | 2000 Gbps | 1 Tbps / 480 Gbps | 327.38 Mpps |
| C9300X-48TX-M | 2000 Gbps | 1 Tbps / 480 Gbps | 1488 Mpps |
| C9300X-48HX-M | 2000 Gbps | 1 Tbps / 480 Gbps | 1488 Mpps |
| C9300X-48HXN-M | 2000 Gbps | 1 Tbps / 480 Gbps | 1488 Mpps |

Power Supply and Specifications

| Model | Default Power Supply | Hot Swap Power Supply | Available PoE W/ Primary PS | Available PoE W/ Secondary PS** | Power Load (idle/max) |
|----------------|----------------------|-----------------------|-----------------------------|---------------------------------|-----------------------|
| C9300X-12Y-M | PWR-C1-715WAC-P-M | Yes, Dual | n/a | n/a | 97.1 / 157.3 W |
| C9300X-24Y-M | PWR-C1-715WAC-P-M | Yes, Dual | n/a | n/a | 139.6 / 243.7 W |
| C9300X-24HX-M | PWR-C1-1100WAC-P-M | Yes, Dual | 735W | 1835W | 127.2 / 912.6 W |
| C9300X-48TX-M | PWR-C1-1100WAC-P-M | Yes, Dual | n/a | n/a | 184.3 / 269.8 W |
| C9300X-48HX-M | PWR-C1-1100WAC-P-M | Yes, Dual | 590W | 1690W | 178.9 / 672 W |
| C9300X-48HXN-M | PWR-C1-1100WAC-P-M | Yes, Dual | 690W | 1790W | 127.2 / 912.6 W |



** The PoE values are provided considering the secondary PS to be the default power supply of the respective model.

PSU configuration and PoE budgets

| Model | Primary PSU | PoE | With Secondary PSU | w/ 1900W Secondary PSU |
|----------------|--------------------|------|--------------------|------------------------|
| C9300X-24HX-M | PWR-C1-1100WAC-P-M | 735W | 1835W | 2160W |
| C9300X-48HX-M | PWR-C1-1100WAC-P-M | 590W | 1690W | 2490W |
| C9300X-48HXN-M | PWR-C1-1100WAC-P-M | 690W | 1790W | 2590W |

Package contents

In addition to the MS switch, each shipment includes the following.

- 1 x default power supply unit for the switch model (please refer to the [power supply and specifications](#) section)
- Rack mount brackets and screw kit
- 3 x Pre-installed fans.

Optional Accessories

| Accessory | Description | Supported Models |
|---------------------------|--|-----------------------|
| PWR-C1-715WAC-P-M | 715W AC Power Supply | C9300, C9300L, C9300X |
| PWR-C1-1100WAC-P-M | 1100W AC Power Supply | C9300, C9300L, C9300X |
| PWR-C1-1900WAC-P-M | 1900W AC Power Supply | C9300, C9300L, C9300X |
| C9300X-NM-2C-M | 2 x 40G/100G QSFP28 Uplink Module | C9300X |
| C9300X-NM-8Y-M | 8 x 1/10G/25G SFP28 Uplink Module | C9300X |
| STACK-T1-50CM-M | Catalyst Meraki 1T Stacking Cable, 0.5 Meter | C9300, C9300X |
| STACK-T1-1M-M | Catalyst Meraki 1T Stacking Cable, 1 Meter | C9300, C9300X |
| STACK-T1-3M-M | Catalyst Meraki 1T Stacking Cable, 3 Meter | C9300, C9300X |
| CAB-SPWR-30CM-M | Catalyst 9300/X-M 30CM StackPower Cable | C9300, C9300X |
| CAB-SPWR-150CM-M | Catalyst 9300/X-M 150CM StackPower Cable | C9300, C9300X |
| FAN-T2-M | System Fan | C9300, C9300X |
| 4PT-KIT-T2-M | Catalyst 9300-M Rack Mount Kit | C9300, C9300X |

Regulations and Compliance

| | |
|--------------------------------------|---|
| Electromagnetic Compatibility | FCC Part 15 (CFR 47) Class A, ICES-003 Class A, CISPR22 Class A, CNS13438, EN 300 386 V1.6.1, EN 55022 Class A, EN 61000-3-2, EN61000-3-3, KN 32, TCVN 7189 Class A, EN 55032, CISPR 32 Class A, V-2/2015.04, V-3/2015.04, VCCI-CISPR 32 Class A, CISPR24, EN 300 386 V1.6.1, EN 55024, KN35, TCVN 7317 |
| Certifications | |
| Safety | CAN/CSA-C22.2 No. 60950-1, UL 60950-1, EN 60950-1, IEC 60950-1, AS/NZS 60950.1 |
| Environmental | Reduction of Hazardous Substances (RoHS) |
| Warranty | Full lifetime hardware warranty with next-day advanced replacement included |

MTBF Rating

| Model | MTBF at 25°C |
|----------------|--------------|
| C9300X-12Y-M | 265,650 |
| C9300X-24Y-M | 249,350 |
| C9300X-24HX-M | 220,250 |
| C9300X-48TX-M | 206,480 |
| C9300X-48HX-M | 185,420 |
| C9300X-48HXN-M | 188,200 |

Installation Guide

For instructions on how to install and configure the C9300X series switch please refer the [C9300/L/X Series Installation Guide](#)