

Catalyst 9300L-M Datasheet

Overview

The Catalyst 9300L-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 9300L-M provides multigigabit ports, 320GB stacking with four fixed 10G uplinks. The Catalyst 9300L-M delivers resiliency with fast stack convergence. The Catalyst 9300L-M provides Adaptive Policy using an over-the-wire tag which segments traffic into security groups to deliver scalable security. The Catalyst 9300L-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.



A Catalyst 9300L switch can also be migrated to a Meraki-managed persona, where it would function as its Catalyst Meraki 9300L-M 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
24 Ports	C9300L-24T-4X-M	24-port 1 GbE Data with 4x 10G/1G fixed uplinks
	C9300L-24P-4X-M	24-port 1GbE PoE+ with 4x 10G/1G fixed uplinks
	C9300L-24UXG-4X-M	24-port UPOE, 8 mGig(10G/5G/2.5G/1G/100M) + 16 GbE(1G/100M/10M) with 4x 10G/1G fixed uplinks
48 Ports	C9300L-48T-4X-M	48-port 1 GbE Data with 4x 10G/1G fixed uplinks
	C9300L-48P-4X-M	48-port 1GbE PoE+ with 4x 10G/1G fixed uplinks, 715WAC
	C9300L-48PF-4X-M	48-port 1GbE PoE+ with 4x 10G/1G fixed uplinks, 1100WAC
	C9300L-48UXG-4X-M	48-port UPOE, 12 MGig(10G/5G/2.5G/1G/100M) + 36 GbE(1G/100M/10M) with 4x 10G/1G fixed uplinks

Features

Category	Features
Highlights	<ul style="list-style-type: none">• Layer-3• Four SFP+(10G/1G) fixed uplinks on all models• mGig support on UPOE models• 320G Dual Dedicated Hardware Stacking Ports• 60W UPoE Support (802.3bt)• Redundant hotswappable power supplies and replaceable fans
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 alerts• 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">• Optional stacking kit allowing 8 switches in a stack with 320Gbps of stacking bandwidth• Virtual stacking supports thousands of switch ports in a single logical stack for unified management, monitoring, and configuration• Faster convergence
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• Port mirroring• IGMP snooping for multicast filtering• MAC Forwarding Entries: 32K
Layer 3	<ul style="list-style-type: none">• Static routing, OSPFv2

Category	Features
	<ul style="list-style-type: none"> • 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	Fixed Uplinks (SFP+)	320G Hardware Stack Ports	Dedicated Management Interface	PoE/ UPoE Capabilities
C9300L-24T-4X-M	24 x 1GbE Data	4x 10G/1G SFP+	2	1	n/a
C9300L-24P-4X-M	24 x 24-port 1GbE PoE+	4x 10G/1G SFP+	2	1	30W PoE+
C9300L-24UXG-4X-M	24-port UPOE, 8 mGig(10G/5G/2.5G/1G/100M) + 16 GbE(1G/100M/10M)	4x 10G/1G SFP+	2	1	60W UPOE
C9300L-48T-4X-M	48-port 1 GbE Data with 4x 10G/1G fixed uplinks	4x 10G/1G SFP+	2	1	n/a
C9300L-48P-4X-M	48-port 1GbE PoE+ with 4x 10G/1G fixed uplinks	4x 10G/1G SFP+	2	1	30W PoE+
C9300L-48PF-4X-M	48-port 1GbE PoE+ with 4x 10G/1G fixed uplinks	4x 10G/1G SFP+	2	1	30W PoE+
C9300L-48UXG-4X-M	48-port UPOE, 12 MGig(10G/5G/2.5G/1G/100M) + 36 GbE(1G/100M/10M)	4x 10G/1G SFP+	2	1	60W UPOE



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
C9300L-24T-4X-M	1.73" x 17.5" x 17.7" (4.4 x 44.5 x 44.9cm)	14.93 lb (6.78 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300L-24P-4X-M	1.73" x 17.5" x 17.7" (4.4 x 44.5 x 44.9cm)	16.2 lb (7.35 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300L-24UXG-4X-M	1.73" x 17.5" x 19.2" (4.4 x 44.5 x 48.8cm)	15.73 lb (7.13 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300L-48T-4X-M	1.73" x 17.5" x 17.7" (4.4 x 44.5 x 44.9cm)	15.41 lb (7.0 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300L-48P-4X-M	1.73" x 17.5" x 17.7" (4.4 x 44.5 x 44.9cm)	15.46 lb (7.03 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300L-48PF-4X-M	1.73" x 17.5" x 19.2" (4.4 x 44.5 x 48.8cm)	15.48 lb (7.03 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300L-48UXG-4X-M	1.73" x 17.5" x 19.2" (4.4 x 44.5 x 48.8cm)	16.86 lb (7.65 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%

Performance

Model	Switching Capacity	Stacking Bandwidth	Forwarding rate Single / Stack
C9300L-24T-4X-M	128 Gbps	448 Gbps	95.23 / 333.33 Mpps
C9300L-24P-4X-M	128 Gbps	448 Gbps	95.23 / 333.33 Mpps
C9300L-24UXG-4X-M	272 Gbps	592 Gbps	202.38 / 440.47 Mpps
C9300L-48T-4X-M	176 Gbps	496 Gbps	130.95 / 369.05 Mpps

Model	Switching Capacity	Stacking Bandwidth	Forwarding rate Single / Stack
C9300L-48P-4X-M	176 Gbps	496 Gbps	130.95 / 369.05 Mpps
C9300L-48PF-4X-M	176 Gbps	496 Gbps	130.95 / 369.05 Mpps
C9300L-48UXG-4X-M	392 Gbps	712 Gbps	291.66 / 529.76 Mpps

Power Supply and Specifications

Model	Default Power Supply	Hot Swap Power Supply	Available PoE W/ Primary PS	PoE W/ Secondary PS**	PoE W/ 1100W Secondary PS	Power Load (idle/max)
C9300L-24T-4X-M	PWR- C1-350WAC-P- M	Yes, Dual	n/a	n/a	n/a	56.85 / 73.54 W
C9300L-24P-4X-M	PWR- C1-715WAC-P- M	Yes, Dual	505W	720W*	720W*	139.6 / 243.7 W
C9300L-24UXG-4X-M	PWR- C1-1100WAC-P- M	Yes, Dual	880W	1440W*	1440W*	68.98 / 1049.47 W
C9300L-48T-4X-M	PWR- C1-350WAC-P- M	Yes, Dual	n/a	n/a	n/a	60.97 / 86.77 W
C9300L-48P-4X-M	PWR- C1-715WAC-P- M	Yes, Dual	505W	1220W	1440W*	67.40 / 598.6 W
C9300L-48PF-4X-M	PWR- C1-1100WAC-P- M	Yes, Dual	890W	1440W*	1440W*	67.38 / 1023.56 W
C9300L-48UXG-4X-M	PWR- C1-1100WAC-P- M	Yes, Dual	675W	1775W	1775W	104.56 / 875.3 W



* Limited by port number and port rating (e.g. 24 PoE+ 30W ports = 720W)

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

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 (rack screws not included)
- 3 x Pre-installed fans.
- **STACKING NOTE:** The c9300L does NOT include stacking ports by default. Please order the C9300L-STAK-KIT2-M with every C9300L switch that you plan to deploy in a stack. That kit includes two stacking ports and a 50cm stacking cable.

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
C9300L-STAK-KIT2-M	Stack Kit for 9300L. Includes two adapters and one 50cm stack cable	C9300L Models Only
STACK-T3A-50CM-M	50 cm Stacking Cable Spare	C9300L Models Only
STACK-T3A-1M-M	1m Stacking Cable Spare	C9300L Models Only
STACK-T3A-3M-M	3M Stacking Cable Spare	C9300L Models Only
FAN-T2-M	System Fan	C9300, C9300L, C9300X
4PT-KIT-T2-M	Catalyst 9300-M Rack Mount Kit	C9300, C9300L, C9300X

SFP Modules

The following SFP/Fiber transceivers are supported. For detailed SFP specifications, refer to the [Meraki SFP datasheet](#). C9300L and C9300 share the same transceiver support.

Transceiver Model	Standard	Supported C9300-M platform
1 Gbps		
MA-SFP-1GB-SX	1000BASE-SX over OM1/2/3/4 up to distances of 1KM	C9300, C9300L, C9300X
MA-SFP-1GB-LX10	1000BASE-LX10 over OS1/0S2 up to distances of 10KM	
MA-SFP-1GB-TX	1000BASE-T up to distances of 100M	
10 Gbps		
MA-SFP-10GB-SR	10GBASE-SR over OM1/2/3/4 up to distances of 400 M	
MA-SFP-10GB-LR	10GBASE-LR over OS1/2 up to distances of 10 KM	C9300, C9300L, C9300X
MA-SFP-10GB-ER	10GBASE-ER over OS1/2 up to distances of 40 KM	
MA-SFP-10GB-ZR	10GBASE-ZR over OS1/2 up to distances of 80 KM	

MA-SFP-10GB-LRM	10GBASE-LRM over OM1/2/3, OS1/2 up to distances of 300 M	C9300, C9300L
40 Gbps		
MA-QSFP-40G-CSR4	QSFP-MPO12 over OM2/3/4 up to distances of 400 M	C9300, C9300L, C9300X
MA-QSFP-40G-SR-BD	QSFP Duplex LC over OM2/3/4 up to distances of 150 M	
100 Gbps		
MA-QSFP-100G-LR4	100GBASE-LR4 over OS1/2 up to distances of 10 KM	C9300, C9300L, C9300X
MA-QSFP-100G-SR4	100GBASE-SR4 over OM3/4/5 up to distances of 100 M	
Direct Attach		
MA-CBL-TA-1M	10GSFP+Cu Passive Twinax	C9300, C9300L, C9300X
MA-CBL-TA-3M		



NOTE: Catalyst 9300X switches do not support LRM modules.

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
C9300L-24T-4X-M	387,700

Model	MTBF at 25°C
C9300L-24P-4X-M	340,710
C9300L-24UXG-4X-M	332,640
C9300L-48T-4X-M	380,080
C9300L-48P-4X-M	309,020
C9300L-48PF-4X-M	298,880
C9300L-48UXG-4X-M	273,820

Installation Guide

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