Catalyst 9300-M Datasheet

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Overview

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The Catalyst 9300-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 9300-M provides multigigabit ports, 480G stacking, and modular 10/40G uplinks. The Catalyst 9300-M delivers resiliency with fast stack convergence and StackPower. The Catalyst 9300-M provides Adaptive Policy using an over-the-wire tag which segments traffic into security groups to deliver scalable security. The Catalyst 9300-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 C9300-Ms using a series of StackPower cables, StackPower provides simple and resilient power distribution across the stack.

A Catalyst 9300 switch can also be migrated to a Meraki-managed persona, where it would function as its Catalyst Meraki 9300 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	C9300-24T-M	24-port GbE switch
	C9300-24P-M	24-port GbE PoE+ switch
	C9300-24U-M	24-port GbE UPoE switch
	C9300-24UX-M	24-port mGbE UPoE switch
48 Ports	C9300-48T-M	48-port GbE switch
	C9300-48P-M	48-port GbE PoE+ switch
	C9300-48U-M	48-port GbE UPoE switch
	C9300-48UXM-M	36-port 2.5GbE + 12-port mGbE UPoE switch
	C9300-48UN-M	48-port 5GbE UPOE switch

Features

Category	Features
Highlights	• Layer-3 • 40G or 10G modular uplink options on all models • mGig support • Dual Dedicated 120G Hardware Stacking Ports • PoE+ and UPoE Support • StackPower in a ring topology supporting upto 4 switches
Management	• 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	• 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	• Physically stack up to 8 switches with 480 Gbps of stacking bandwidth on all models • 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	• 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	• Static routing, OSPFv2 • Multicast routing (PIM-ASM) • Warm Spare (VRRP) * • DHCP Server, DHCP Relay
Security	• 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-M Licensing

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 9300-M License Structure	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-M Enterprise or all Catalyst 9300-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.

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	Uplink 10/40GbE (SFP+, QSFP+)	120G Hardware Stack Port	Dedicated Management Interface	PoE/ UPoE Capabilities
C9300-24T-M	24 x 1GbE RJ45	Modular	2	1	n/a
C9300-24P-M	24 x 1GbE RJ45	Modular	2	1	PoE
C9300-24U-M	24 x 1GbE RJ45	Modular	2	1	UPoE
C9300-24UX-M	24 x 100M/1G/2.5G/5G/10G RJ45	Modular	2	1	UPoE
C9300-48T-M	48 x 1GbE RJ45	Modular	2	1	n/a
C9300-48P-M	48 x 1GbE RJ45	Modular	2	1	PoE
C9300-48U-M	48 x 1GbE RJ45	Modular	2	1	UPoE
C9300-48UXM-M	36 x 100M/1G/2.5G + 12 x 100M/1G/2.5G/5G/10G	Modular	2	1	UPoE
C9300-48UN-M	48 x 100M/1G/2.5G/5G	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	Mount Type	Hot Swap Fans	Operating Temperature	Humidity
C9300-24T-M	1.73” x 17.5” x17.7” (4.4 x 44.5 x 44.9cm)	16.03 lb (7.27 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300-24P-M	1.73” x 17.5” x17.7” (4.4 x 44.5 x 44.9cm)	16.33 lb (7.4 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300-24U-M	1.73” x 17.5” x 19.2” (4.4 x 44.5 x 44.8cm)	16.63 lb (7.54 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300-24UX-M	1.73” x 17.5” x 20.2” (4.4 x 44.5 x 51.3cm)	18.18 lb (8.25 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300-48T-M	1.73” x 17.5” x17.7” (4.4 x 44.5 x 44.9cm)	16.43 lb (7.45 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300-48P-M	1.73” x 17.5” x17.7” (4.4 x 44.5 x 44.9cm)	16.73 lb (7.59 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300-48U-M	1.73” x 17.5” x 19.2” (4.4 x 44.5 x 48.8cm)	17.03 lb (7.72 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300-48UXM-M	1.73” x 17.5” x 22.2” (4.4 x 44.5 x 56.4cm)	20.50 lb (9.34 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%
C9300-48UN-M	1.73” x 17.5” x 22.2” (4.4 x 44.5 x 56.4cm)	20.05 lb (9.09 kg)	1U Rack Mount	Yes, 3x	-5°C to 45°C	5 to 90%

Performance

Model	Switching Capacity	Stacking Bandwidth	Forwarding rate
C9300-24T-M	208 Gbps	480 Gbps	154.76 Mpps
C9300-24P-M	208 Gbps	480 Gbps	154.76 Mpps
C9300-24U-M	208 Gbps	480 Gbps	154.76 Mpps
C9300-24UX-M	640 Gbps	480 Gbps	476.19 Mpps
C9300-48T-M	256 Gbps	480 Gbps	190.48 Mpps
C9300-48P-M	256 Gbps	480 Gbps	190.48 Mpps
C9300-48U-M	256 Gbps	480 Gbps	190.48 Mpps
C9300-48UXM-M	580 Gbps	480 Gbps	431.54 Mpps
C9300-48UN-M	640 Gbps	480 Gbps	476.19 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)
C9300-24T-M	PWR-C1-350WAC-P-M	Yes, Dual	n/a	n/a	79.2 / 99 W
C9300-24P-M	PWR-C1-715WAC-P-M	Yes, Dual	445W	720W	84.1 / 554.4 W
C9300-24U-M	PWR-C1-1100WAC-P-M	Yes, Dual	830W	1440W	85.4 / 990.3 W
C9300-24UX-M	PWR-C1-1100WAC-P-M	Yes, Dual	560W	1440W	162.7 / 809.9 W
C9300-48T-M	PWR-C1-350WAC-P-M	Yes, Dual	n/a	n/a	83.9 / 109.9 W

C9300-48P-M	PWR-C1-715WAC-P-M	Yes, Dual	437W	1152W	92.6 / 555 W
C9300-48U-M	PWR-C1-1100WAC-P-M	Yes, Dual	822W	1800W	145 / 844.9 W
C9300-48UXM-M	PWR-C1-1100WAC-P-M	Yes, Dual	490W	1590W	218.5 / 785.5 W
C9300-48UN-M	PWR-C1-1100WAC-P-M	Yes, Dual	645W	1745W	157.9 / 843.8 W

ⓘ ** 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 and screw kit
- 3 x Pre-installed fans.

Optional Accessories

Accessory	Description	Supported Models
PWR-C1-350WAC-P-M	350W AC Power Supply	C9300-24-HW, C9300-48-HW
PWR-C1-715WAC-P-M	715W AC Power Supply	All Models
PWR-C1-1100WAC-P-M	1100W AC Power Supply	All Models
C9300-NM-2Q-M	2 x 40G Uplink Module	All Models
C9300-NM-8X-M	8 x 10G / 1G Uplink Module	All Models
STACK-T1-50CM-M	Catalyst Meraki 120G Stacking Cable, 0.5 Meter	All Models
STACK-T1-1M-M	Catalyst Meraki 120G Stacking Cable, 1 Meter	All Models
STACK-T1-3M-M	Catalyst Meraki 120G Stacking Cable, 3 Meter	All Models
CAB-SPWR-30CM-M	Catalyst 9300-M 30CM StackPower Cable	All Models
CAB-SPWR-150CM-M	Catalyst 9300-M 150CM StackPower Cable	All Models
FAN-T2-M	System Fan	All Models
4PT-KIT-T2-M	Catalyst 9300-M Rack Mount Kit	All Models

Regulations and Compliance

Electromagnetic Compatibility Certifications	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
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
C9300-24T-M	314,790
C9300-24P-M	299,000
C9300-24U-M	238,410
C9300-24UX-M	214,760
C9300-48T-M	305,870
C9300-48P-M	277,770
C9300-48U-M	227,410
C9300-48UXM-M	202,160
C9300-48UN-M	198,647

Installation Guide

For instructions on how to install and configure the C9300 series switch please refer the C9300 Series Installation Guide

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