

Meraki MS22 / MS42

Cloud Managed Gigabit PoE Switch Family



Overview

The Meraki MS line of cloud-managed access switches bring the benefits of cloud computing, including management simplicity, reduced complexity, and lower cost, to branch and campus networks.

A Fresh Approach

Meraki switches are built from the ground up to be easy to manage without compromising any of the power and flexibility traditionally found in enterprise-class switches.

For example, Meraki switches are managed through an elegant, efficient cloud interface, rather than a cryptic command line. To bring up a Meraki switch, just plug it in; there's no need for complicated configuration files.

In addition, Meraki's centralized management system gives administrators deep visibility into the network. See which switches are near capacity across hundreds of sites. Find all configuration changes made by a certain person with instant search. Locate a switch on a floor plan with one click.

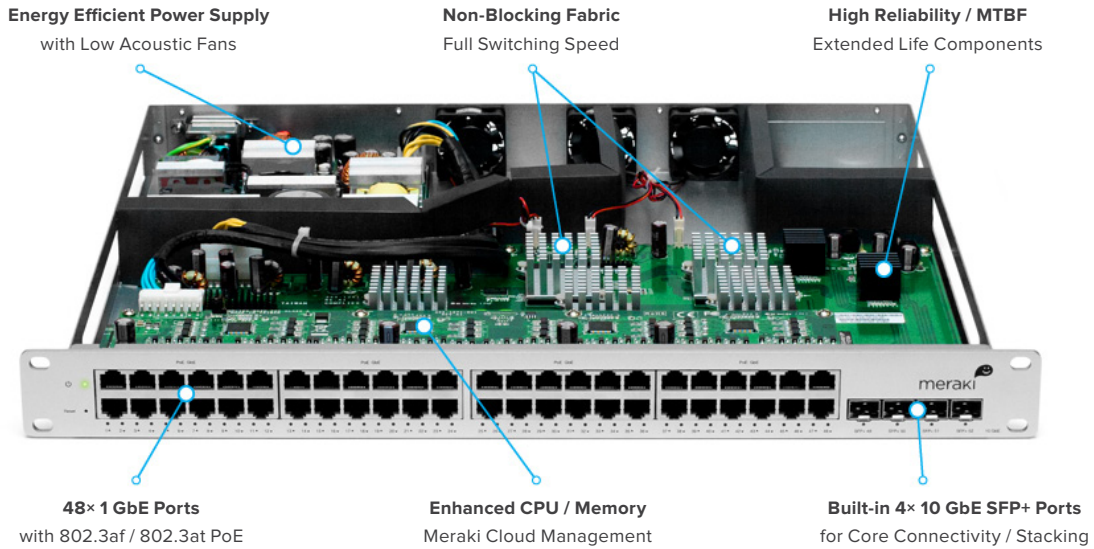
Industry-Leading Cloud Management

Cloud management has a number of benefits that make it easier to build networks large and small:

- Single pane of glass management of distributed switch deployments, wireless APs, and firewalls across multiple sites through the browser.
- Virtual stacking: manage up to 10,000 ports as one.
- Unified wireless and wired client device information (when used in conjunction with Meraki MR-series wireless LAN products).
- Layer 7 OS and hostname fingerprinting.
- Automatic cable testing to isolate physical layer issues.
- E-mail alerts upon power loss or configuration changes.
- Role-based administration and automatic, scheduled firmware upgrades, for PCI compliance.
- Regular feature updates and enhancements delivered on demand from the Meraki Cloud Controller.

Inside the Meraki MS

MS42P shown, features vary by model



Enterprise-Class Hardware

Meraki switches feature high-end hardware features without the high-end price, including:

- Four built-in small form-factor pluggable transceivers (SFP / SFP+)
- GbE and 10 GbE uplink ports for high-speed connectivity to aggregation layer switches or other upstream devices.
- Wire-speed switch fabric (up to 176 Gbps) and QoS queues per port for converged voice, video, and data deployments.
- Low power consumption, quiet acoustic designs, and shallow rack depth, which enable flexible deployment in wiring closets as well as offices and classrooms.
- 380 watt PoE budget with PoE+ support for powering APs, phones, cameras, and other PoE enabled devices.
- Lifetime hardware warranty and advanced replacement at no additional cost.

Full Enterprise Feature Set

Meraki switches include all of the traditional Ethernet features found on the highest end products, including:

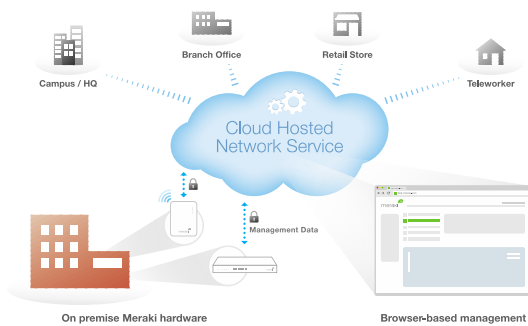
- Link aggregation for high-capacity trunking and stacking
- Broadcast storm protection, spanning tree, and other safeguards to guard against misconfigurations and reduce convergence time.
- Per port VLAN configuration
- Multiple administrative roles with sophisticated security policy management

Converged Voice, Video and Data Environments

The Meraki switch family is designed to unify data, voice, and video onto a single IP backbone. All Meraki switches support rich quality-of-service (QoS) functionality for prioritizing data, voice, and video traffic. The switches support eight class-of-service (CoS) queues on every port, enabling them to maintain end-to-end traffic prioritization.

PoE models provide 15.4 watts of power per port for VoIP telephones, IP security cameras, wireless access points (APs), and other IP devices. The Meraki MS switches also support standards-based 30 watt IEEE 802.3at for powering networked devices like multiple radio IEEE 802.11n APs and video phones that may require more power than available with IEEE 802.3af.

To ease deployment, the Meraki MS22 and MS42 switches support the industry-standard Link Layer Discovery Protocol (LLDP), enabling switches to automatically discover Ethernet-enabled devices, determine their power requirements and join the correct virtual LAN (VLAN).



Meraki Cloud Management Architecture

Switch ports

Search: [Advanced search > Help](#)

Switch ^	Port#	Name	Type	VLAN	Link	POE	Enabled	
<input type="checkbox"/>	3rd Floor - #1 - POE	1	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	2	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	3	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	4	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	5	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	6	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	7	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	8	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	9	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	10	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	11	access	20	auto	enabled	enabled	●
<input type="checkbox"/>	3rd Floor - #1 - POE	12	access	20	auto	enabled	enabled	●

Combined Views of Thousands of Ports

Network alerts

Enabled alerts Send an email alert if:

- A switch goes offline for more than minutes
- Configuration settings are changed

Automatic E-mail Alerts

Firmware upgrades

Upgrade window ⓘ Two hours starting:

[What is this?](#)

Firmware upgrade New firmware is available for your Meraki devices. They are scheduled to upgrade automatically on January 29 at 2:00 AM PST.

Scheduled Firmware Updates

Device Information

Port Information

Historical Usage

Detailed Views of Individual Devices

Cable test

Warning: this test will disrupt traffic to 100 or 10 Mbit devices.

Ports (eg. 1 or 1,2,3 or 1 - 3):

Port ^	Link speed	Length	Status	Pair 1	Pair 2	Pair 3	Pair 4
5	down	33 m	-	open	open	open	open
6	100fdx	36 m	OK	ok	ok	abnorm	abnorm
7	100fdx	72 m	OK	ok	ok	short	short
8	100fdx	27 m	OK	ok	ok	abnorm	ok

Role-based Administration for PCI Compliance

Meraki's Unified Software Architecture

The Meraki MS22 and MS42 switches run the same Meraki operating system used by Meraki's firewalls and wireless LAN products. The use of a common operating system allows Meraki to deliver a consistent experience across all product lines.

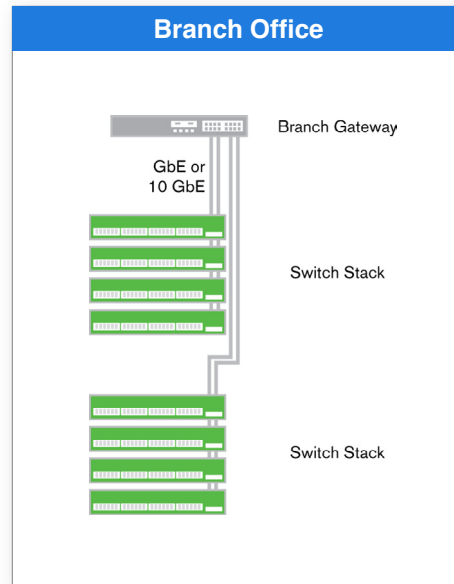
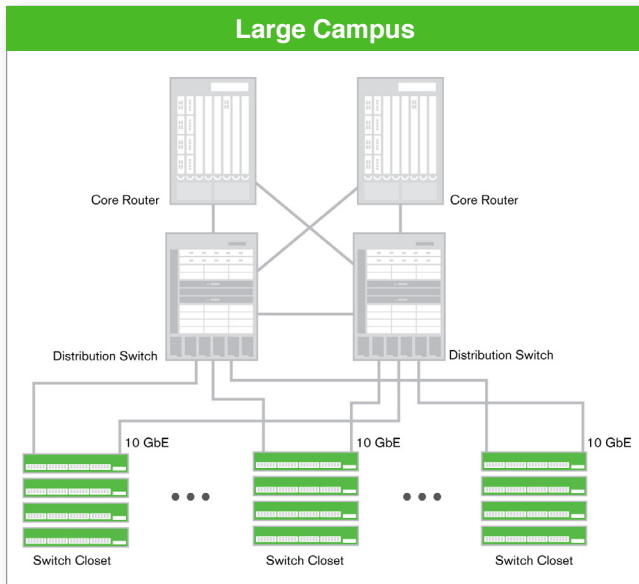
Simplified Management and Operations

Meraki's cloud managed architecture makes it simpler than ever to quickly provision and reconfigure switch ports with security, QoS, and other parameters. The Meraki Cloud Controller provides unified policies, event logs, and monitoring, which make it easy to manage and grow large network deployments.

By providing a complete, powerful set of management functions over the web, Meraki's Dashboard system eliminates the need for

proprietary command line configuration interfaces which require expensive or time consuming certifications. Meraki MS switches can be fully deployed and provisioned in minutes, without requiring any local configuration or staging. Additional or replacement switches can be sent to remote offices and installed by non-technical staff, saving thousands of dollars in time and travel expense.

The Meraki MS family also includes several remote diagnostic features, from network connectivity and cable integrity tests to latency measurement tools. For deep client troubleshooting, administrators can even enable remote pcap packet capture without any additional probes or hardware on site.



Designed for Reliability and Environmental Efficiency

The Meraki MS22 / MS42 switch family was designed for reliable, long-lived operation in wiring closet environments, which may be prone to high temperatures and limited ventilation. By minimizing total component count and only using proven switching silicon, Meraki is able to deliver mean time between failure (MTBF) ratings of over 475,000 hours on products such as the Meraki MS22.

Each Meraki switch also operates with a split-plane architecture, where silicon-based switching and data forwarding are separated from software-based control and management. By decoupling the underlying switching logic from control, each unit is able to deliver wire-speed switching even when advanced software features such as Layer 7 host and OS fingerprinting are enabled.

Finally, the highly integrated designs of Meraki MS22 / MS42 switches result in power and cooling savings in large deployment environments of 30-60% when compared with similar managed Gigabit switches.

Distributed Branches and Remote Sites

Meraki's cloud-based system makes it easy to manage a single switch, or thousands of distributed switches, from a single interface.

- Troubleshoot problems remotely, e.g., find which port has a bad cable attached.
- Add or replace switches without having to send a technician onsite. Switches automatically download their current configuration as soon as they are connected to the network.
- Receive email alerts or SMS messages whenever there's a problem at a remote site.

Campus Edge

MS switches are ideal for small and large scale campus deployments, where reliability, scalability, and managability are top priorities.

- Virtual Stacking lets administrators manage up to 10,000 ports in a single interface without having to pre-define stack members.
- 10 GbE cable SFP+ ports with link aggregation provide high speed connectivity to distribution or core switches.
- Get alerts when any switch fails or goes offline, before users complain.



Pluggable Optics for Meraki MS Switches

Lifetime Warranty with Next-day Advanced Replacement

Meraki MS22 and MS42 switches include a limited lifetime hardware warranty that provides next-day advance hardware switch replacement as long as the original purchaser owns the product. Meraki's simplified software and support licensing model also combines all software upgrades, centralized systems management and phone support under a single, easy-to-understand model.

For complete details, please visit www.meraki.com/support.

Accessories

The Meraki MS support pluggable optics for high-speed stacking and core connectivity. Meraki offers several standards-based Gigabit and 10 Gigabit pluggable modules. Each appliance has also been tested for compatibility with several third-party modules.

Accessories / Optics

Supported Meraki accessory modules for MS Switches (additional third-party optics are also supported):

Model	Description	Standard	Range	Compatibility
SFP-1GB-SX	Meraki 1 GbE SFP SX Fiber Module	1000BASE-SX	550m	MS22 / MS22P / MS42 / MS42P
SFP-10GB-SR	Meraki 10 GbE Short Range SFP+ Module	10GBASE-SR	400m	MS42 / MS42P
CBL-TA-1M	Meraki 10 GbE Twinax Cable with SFP+ Connectors	-	1m	MS42 / MS42P

Note: Meraki SFP-1GB-SX and SFP-10GB-SR use LC connectors.

Product Options

Four MS22 / MS42 switch models are available (see Specifications for additional details):

Model	Description	PoE Power	Idle Power	Full Load Power
MS22-HW	Cloud-Managed 24 Port Gigabit Switch	-	12W	22W
MS22P-HW	Cloud-Managed 24 Port Gigabit PoE Switch	380W	32W	465W
MS42-HW	Cloud-Managed 48 Port Gigabit Switch with 10G uplink	-	37W	58W
MS42P-HW	Cloud-Managed 48 Port Gigabit PoE Switch with 10G uplink	380W	53W	491W

Specifications

> Management

- Managed via the Web using the Meraki Cloud Controller
- Integrated with Meraki wireless, routing, and firewall management
- No-touch remote deployment (no staging needed)
- Detailed historical per-port and per-client usage statistics
- DHCP and hostname fingerprinting
- Automatic firmware upgrades

> Remote Diagnostics

- Email alerts
- Live remote packet capture
- Aggregated event and configuration change logs with instant search

> Scalable Stacking

- Unified configuration and monitoring of all switches
- Stack up to 10,000 switch ports in a single logical stack for unified management, monitoring, and configuration

> Ethernet Switching Capabilities

- 802.1p Quality of Service prioritization
- 802.1Q VLAN tagging for up to 4,096 VLANs
- 802.1D Spanning Tree Protocol (STP) and 802.1w Rapid Spanning Tree
- Broadcast storm control
- 802.1ab Link Layer Discovery Protocol (LLDP)
- 802.3ad Link aggregation with up to 8 ports per aggregate
- MAC forwarding entries: MS22/MS22P: 8,000; MS42/MS42P: 32,000

> Security

- Integrated two-factor authentication
- Role-based administration
- Corporate wide password policy enforcement

> Performance

- Non-blocking fabric
- 176 Gbps switching capacity on MS42 models; 88 Gbps on MS22
- 2.5 microsecond latency

> Interfaces on MS42/42P

- 48 x 10/100/1000BASE-T Ethernet RJ45
- 4 x SFP+ for Gigabit or 10 Gigabit uplink
- Auto negotiation and crossover detection (auto-MDIX crossover)

> Interfaces on MS22/22P

- 24 x 10/100/1000BASE-T Ethernet RJ45 (4 shared with SFP)
- 4 x SFP for Gigabit uplink
- Auto negotiation and crossover detection (auto-MDIX crossover)

> Power over Ethernet (POE Models):

- 802.3af (PoE) 15.4 W per port and 802.3at (PoE+) 25.5 W per port
- Maximum PoE output: 380 W
- PoE available on all ports simultaneously

> Power

- Power input: 100-240 VAC, 47-63 Hz
- Power consumption: 22 - 500 W

> Mounting

- Rack-mountable with included rack mount hardware
- Desktop-mountable with included feet

> Environment

- Operating temperature: 32 °F to 104 °F (0 °C to 40 °C)
- Humidity: 5 to 95% non-condensing
- Low acoustic noise for office environments

> Physical Dimensions

- Weight: 6.1/9/7.5/10.6 lb. (2.8/4.2/3.4/4.8 kg) for MS22/22P/42/42P
- Size: 17.4" (w) x 11.7" (l) x 1.8" (h) (44.1 x 29.9 x 4.4 cm) for MS22/MS42
- Size: 17.4" (w) x 15.0" (l) x 1.8" (h) (44.1 x 38.1 x 4.4 cm) for MS22P/MS42P

> Regulatory

- UL (US)
- IC (Canada)
- CE (Europe)
- C-Tick (Australia/New Zealand)
- RoHS

> Warranty

- Full lifetime hardware warranty with next-day advanced replacement included
- MTBF: 475,000/310,000 hours (MS22/MS22P)
- MTBF: 172,000/200,000 hours (MS42/MS42P)

> Ordering Information

Switch Hardware

MS22-HW	Meraki MS22 Cloud Managed 24 Port GigE Switch
MS22P-HW	Meraki MS22P Cloud Managed 24 Port GigE PoE Switch
MS42-HW	Meraki MS42 Cloud Managed 48 Port GigE Switch
MS42P-HW	Meraki MS42P Cloud Managed 48 Port GigE PoE Switch

Software Licenses and Support

LIC-MS-ENT-1YR	Meraki MS License and Support, 1 Year
LIC-MS-ENT-3YR	Meraki MS License and Support, 3 Years
LIC-MS-ENT-5YR	Meraki MS License and Support, 5 Years
LIC-MS-ENT-7YR	Meraki MS License and Support, 7 Years

Optics and Accessories

SFP-1GB-SX	Meraki 1 GbE SFP SX Fiber Module
SFP-10GB-SR	Meraki 10 GbE SFP+ Fiber Module
CBL-TA-1M	Meraki 10 GbE Twinax Cable with SFP+ Modules, 1 Meter