



802.11ac Wave 2 and Multigigabit Ethernet

Meraki technology brief

Next generation wireless is breaking the 1-gigabit barrier and driving a technology refresh all the way to the network core

During its early years, wireless network connectivity was regarded as best effort. However as more enterprises began depending on their wireless networks for daily tasks, whether an open-office environment, a large hospital system or a manufacturing floor, the demand exploded for reliable and fast wireless access.

Today's modern enterprise network is experiencing a proliferation of mobile devices, cloud-based technologies, media-rich applications, teleconference technologies and more. These trends are generating an insatiable thirst for high-bandwidth wireless access, driving the network industry to accelerate the development of faster wifi.

Advancements in wireless technologies are addressing this increasing demand. There are however some challenges when it comes to enabling a next generation wireless deployment capable of speeds that break the gigabit per second barrier. The most obvious one is the fact that most networks are built on 10/100/1000 ethernet backbones, using twisted-pair ethernet cabling to supply connections to edge devices and access points. This is where multigigabit ethernet comes in.



Evaluations available at
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“802.11ac wave2 and multigigabit switches have not just eliminated congestion, they have given our schools unparalleled access to the digital world – a must-have for today’s generation of students.”

– Jaymon Lefebvre, Director, IT Services - Wild Rose School Division

Wave 2 and Multigigabit technology

Meraki has introduced a line of Cloud-managed wireless and switch products that are designed to complement one another with multigigabit links. As with all Meraki products, these can be easily added to existing networks, and are extremely simple to manage via the Meraki Cloud.



MR53

Featuring the latest generation of WLAN technology, the MR53 incorporates 4-stream 4x4 802.11ac Wave 2 radios that support multi-user MIMO and 160 MHz channels. The high-throughput 2.4 GHz and 5 GHz client-serving radios are matched with a multigigabit Ethernet uplink to ensure bottleneck-free operation. The addition of a third radio for scanning and wireless security, and a Bluetooth Low Energy radio for emerging location-engagement and IoT uses make the MR53 a flexible, high-performance enterprise access point for mission critical high-density environments.

Product Specifications

- MR53-HW, Meraki MR53 Cloud-managed access point
- 4-stream 4x4 802.11ac Wave 2 radios, supporting 160 MHz channels and MU-MIMO
- Dedicated radio for real-time wireless security, spectrum analysis, and location analytics
- Integrated Bluetooth Low Energy radio for beaconing and IoT applications
- One multigigabit (100/1000/2.5G BASE-T) uplink port + one 10/100/1000 BASE-T uplink port
- Requires 802.3at PoE+ powering (reduced performance on 802.3af PoE power)



MS350-24X

Designed as an addition to the Meraki MS350 flagship layer 3 stackable access switch family, the MS350-24X has 24 ports, 8 of which are multigigabit capable and can support speeds of 1G/2.5G/5G/10G on supported cable types. This switch perfectly complements the MR53, which is multigigabit capable.

Product Specifications

- MS350-24X-HW, Cloud managed L3 enterprise access switch
- Physically stackable with all models in the MS350 family
- 16 x 1G BASE-T ports, 8 x multigigabit 100/1000/2.5/5/10G BASE-T ports
- UPoE (60W per port), 740W PoE Budget
- 4 x 10G Uplinks
- Hot-swappable power and fans



Multigigabit Ethernet

Enabling upgrades without new cabling requirements

Multigigabit ethernet is a new technology based on the work of the NBASE-T alliance that allows customers to use existing twisted-pair ethernet to drive speeds well beyond 1 Gigabit per second (Gbps). Without these advancements, customers would need to consider costly cable upgrades. Meraki currently offers multigigabit-capable products both in its MR wireless and MS switching portfolios.



Figure 1 Multigigabit technology can be used with existing cable types and lengths

Cable Type	1 GbE	2.5 GbE	5 GbE	10 GbE
Category 5e	✓	✓	✓	
Category 6	✓	✓	✓	✓ (55m)
Category 6a	✓	✓	✓	✓

Table 1: Cable types and data rates supported with Meraki Multigigabit Ethernet products

Learn More

Cisco Meraki offers cloud-managed enterprise networking products with a refreshingly simple approach. We recognize there are many factors to consider when updating a network, and we therefore strive to make every step along the way easy. Let us know how we can help!

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