



# Exploring Security & SD-WAN with Meraki MX

Cisco Meraki Cloud Networking Series

Speaker: Tony Carmichael

Hostess: Kara Sullivan | Cisco Networking Academy

11 October 2017

# Welcome to the 4th session of the Cisco Meraki Cloud Networking webinar series

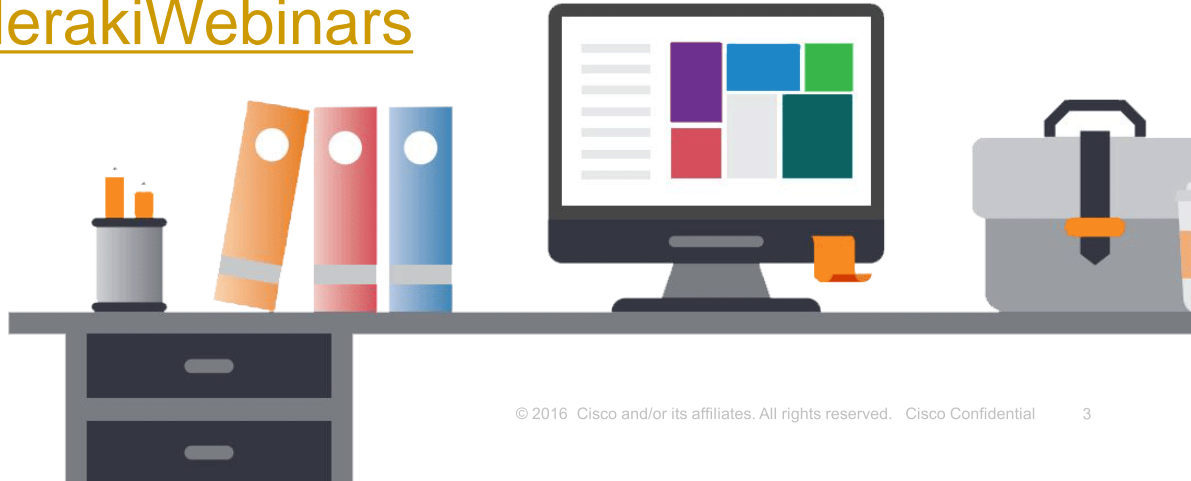
- Use the Q and A panel to ask questions.
- Use the Chat panel to communicate with attendees and panelists.
- A link to a recording of the session will be sent to all registered attendees.
- Please take the feedback survey at the end of the webinar.

# Cisco Meraki Cloud Networking Series

## PREVIOUS SESSIONS:

- Intro to Cloud Networking using Meraki
- Exploring Meraki Cloud Switching & Wireless
- Exploring Meraki Cloud Telephony & Vision

Access at: <http://bit.ly/MerakiWebinars>



# Intro to Cybersecurity Self-Enroll Course

## Introduction to Cybersecurity

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# Exploring Security and SD-WAN with Meraki MX

Simple, effective security and WAN Management



# Agenda

Welcome & Introduction

Why choose Meraki?

Product demo

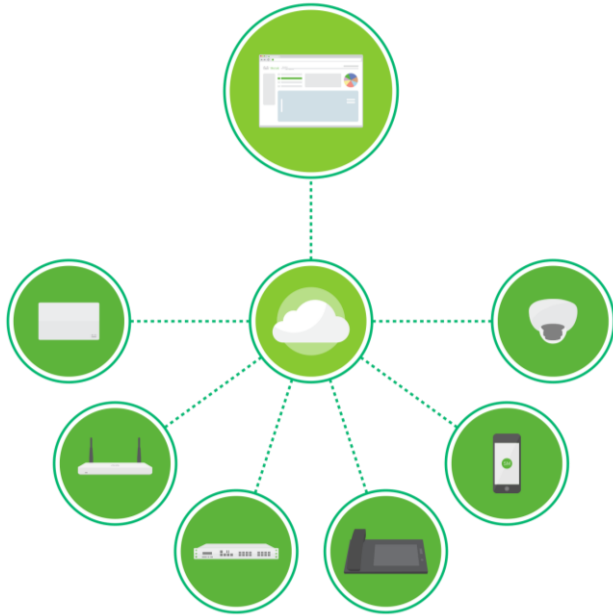
Product families

Careers at Meraki

Q&A

# About the Cisco Meraki MX

# Simplifying IT with cloud management



## A complete cloud managed IT solution

Wireless, switching, security, SD-WAN, communications, EMM, and security cameras

Integrated hardware, software, and cloud services

## Leader in cloud managed IT

Among Cisco's fastest growing portfolios

Over 140,000 unique customers

Over 2 million Meraki network devices online



# Benefits of a cloud managed solution



Security



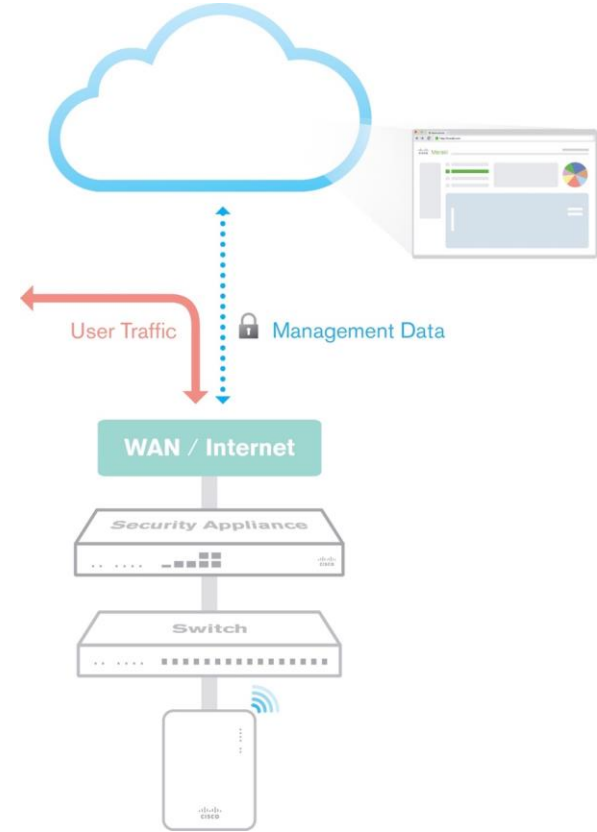
Reliability



Scalability



Future-proofing

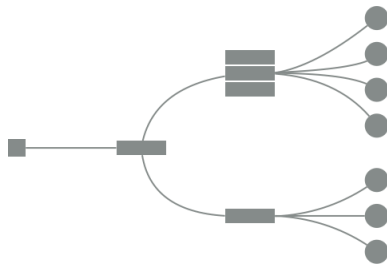


# A complete connectivity and threat management solution



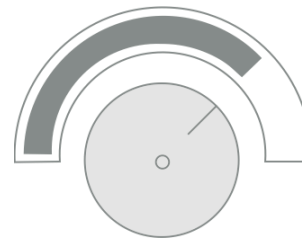
## Security

Next generation firewall  
AES encrypted VPN  
Intrusion prevention  
(IPS)  
Malware protection  
Geo-IP firewalling



## Networking

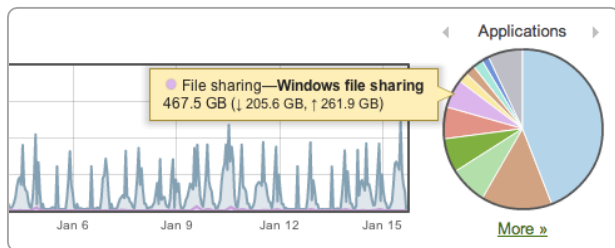
3G / 4G failover  
Branch routing  
WAN balancing and  
failover  
High Availability  
Intelligent path control



## Application Control

Bandwidth shaping  
URL content filtering  
Quality of Service  
control

# Why customers choose the Cisco Meraki MX



## Powerful security that's easy to implement

- Robust suite of Cisco Security technologies
- Intuitive GUI-based configuration
- Seamless updates from the cloud

## Exceptional scalability

- Zero-touch provisioning with cloud brokered VPN
- Easy centralized management with built-in remote troubleshooting tools
- Multi-location configuration templates

## Industry-leading visibility

- Fingerprints users, applications, devices, and threats
- Monitor one location or an entire deployment
- Unified monitoring and reporting with other Cisco Meraki technologies

# Security made simple

# Ironclad security

**Next Generation Firewall** Application aware firewalling

**Intrusion Prevention (IPS)** Based on Cisco Snort

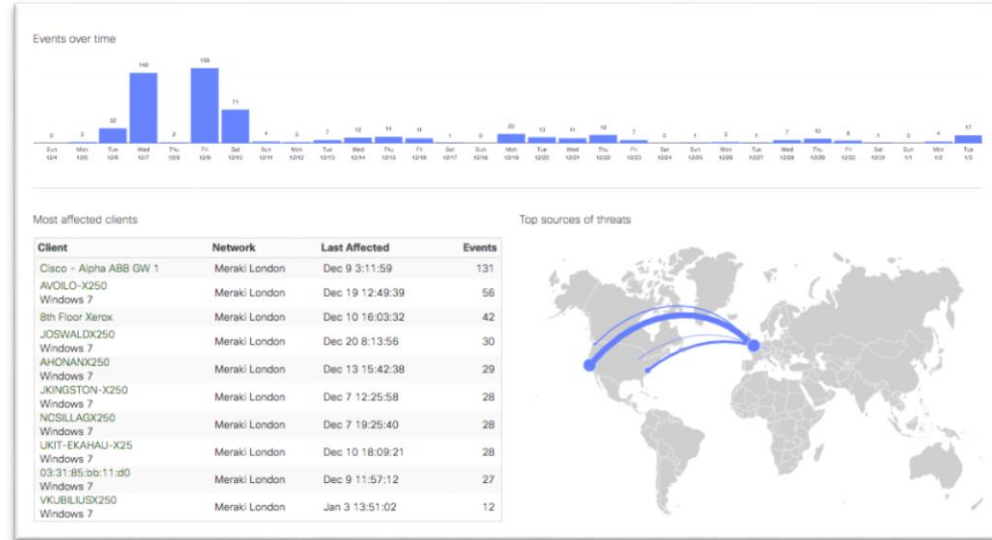
**URL Content Filtering** With over 80 categories and over 4 billion categorized URLs

**Geo-based security** Allow or block traffic by country

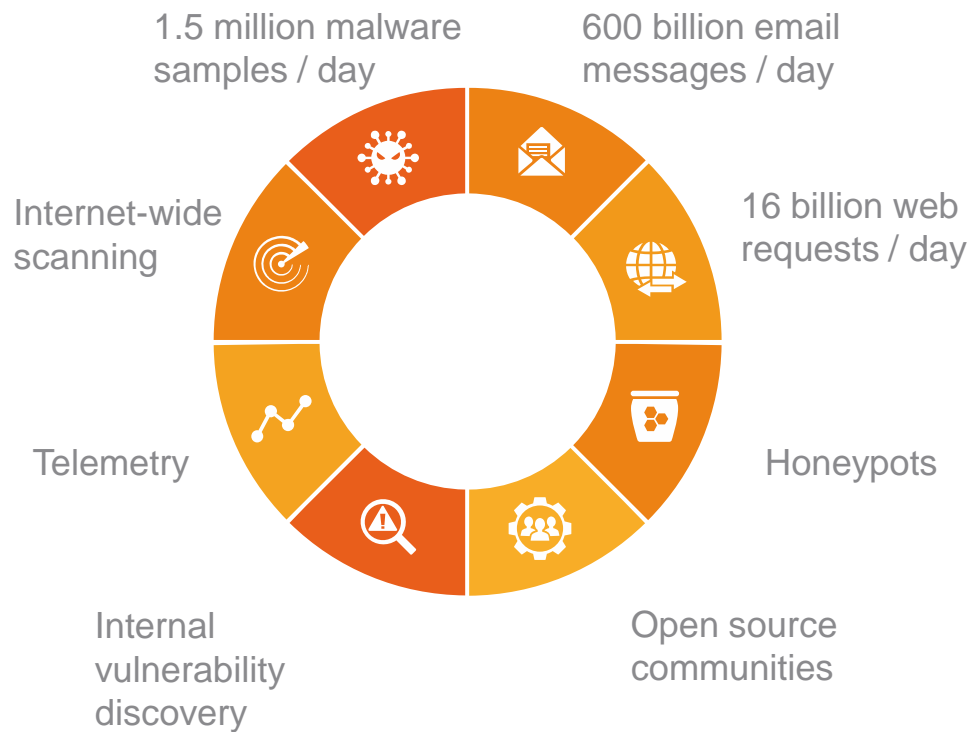
**Malware Protection** Cisco AMP and Threat Grid

**Automatic updates** Software and security updates delivered from the cloud

**PCI compliance** PCI 3.2 certified cloud management backend



# Backed by Cisco Talos threat intelligence



-  Over 250 full time threat researchers
-  Millions of telemetry agents
-  4 global data centers
-  Over 100 threat intelligence partners
-  Over 1100 threat traps

# Advanced Malware Protection for Meraki MX



## Enhanced Threat Defense

Automatic protection against an ever-growing list of known malicious files, plus malware sandboxing with Threat Grid



## Contextual Visibility

Security Center makes it easy to ensure you have the latest information about attacks on your network



## Rapid Detection

Automatic alerting when a downloaded file is found to be malicious after the fact



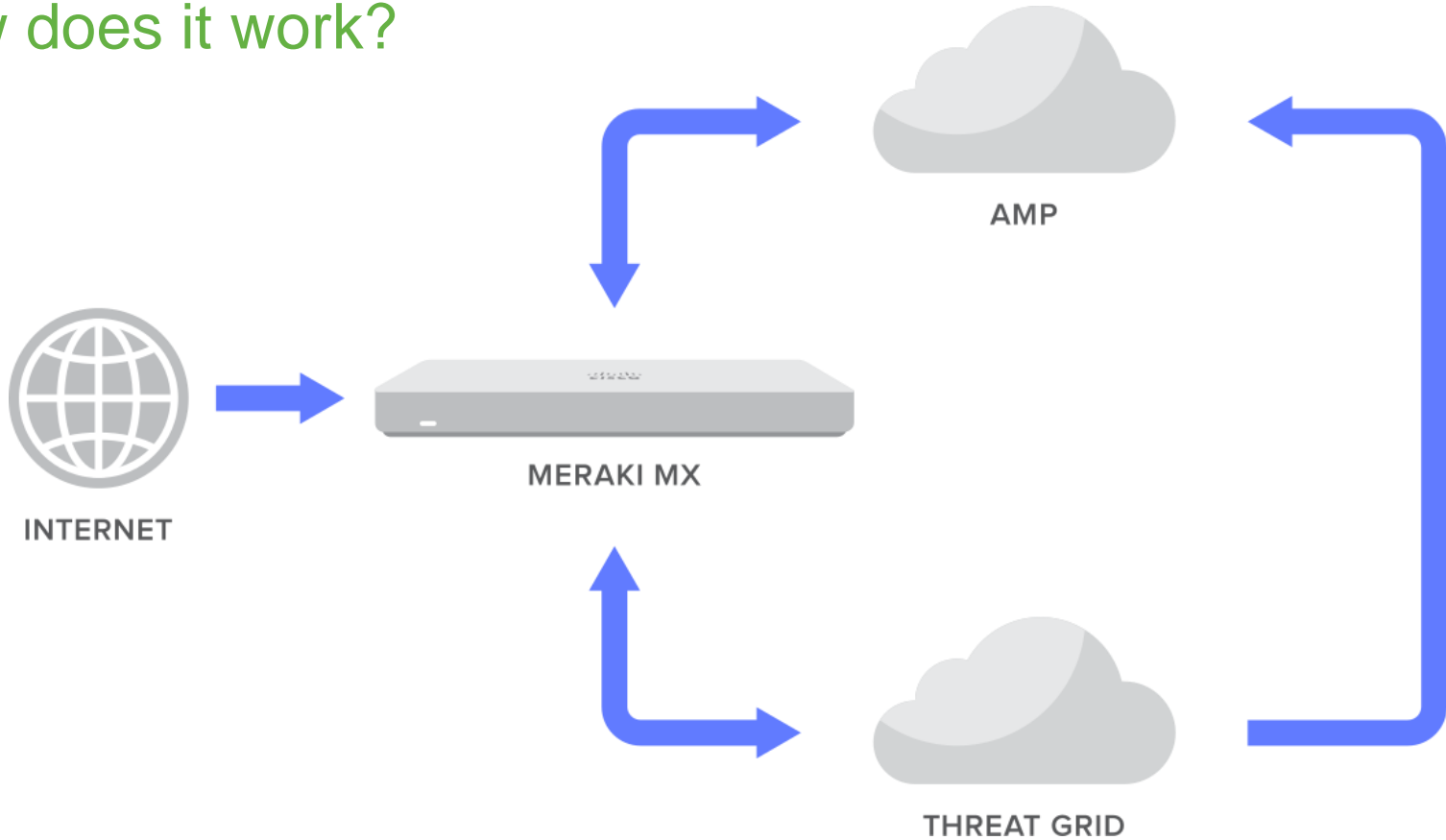
## Ease of Management

Enable best-in-class malware protection with just two clicks

- **220 million** known malicious files
- **407 million** known clean files
- **1.5 million** new incoming malware samples per day
- **1.6 million** devices using AMP globally
- **3.1 billion** lookup requests per day



# How does it work?

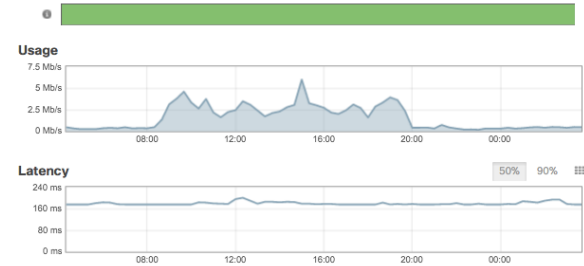
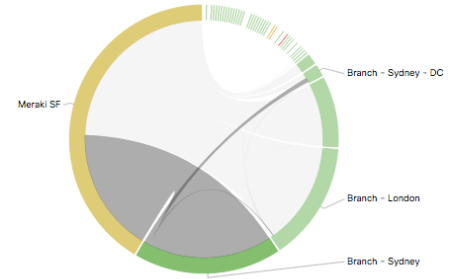




# Connectivity and SD-WAN

# Reliable, cost effective connectivity with Meraki SD-WAN

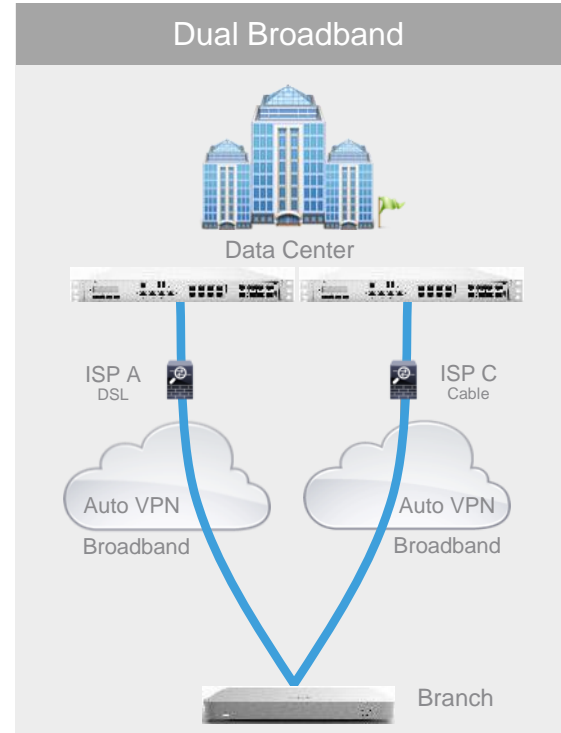
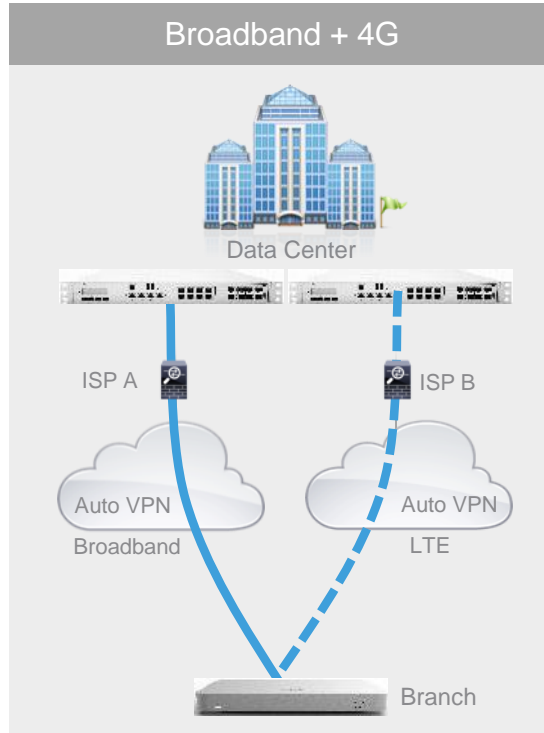
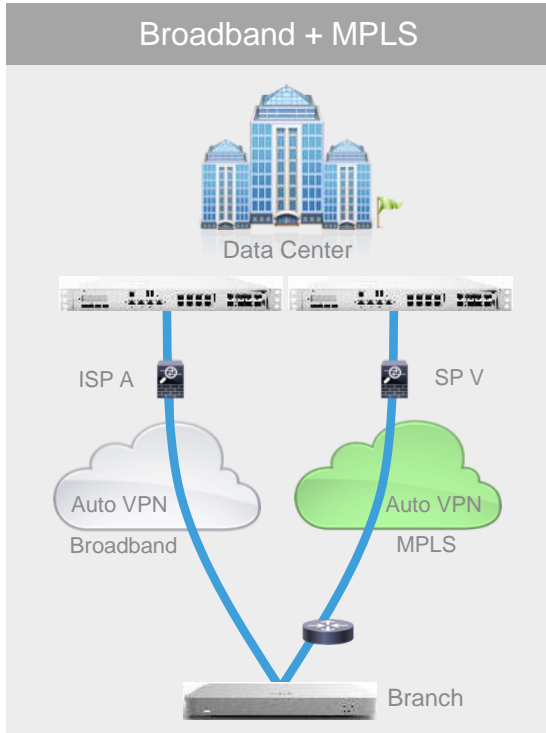
- Dual uplink ports** 2 uplink support on all MX models for load balancing and redundancy
- LTE failover** USB modem support in all models with automatic failover
- Site to site VPN** Cloud orchestrated VPN (Meraki Auto VPN) with load balancing and self-healing capabilities
- Intelligent path control** Policy based routing and performance based dynamic path selection
- Branch Routing** Automatic route distribution via Auto VPN  
OSPF route advertisement  
BGP support coming soon
- High Availability** Active/passive hardware redundancy
- Traffic shaping** Application bandwidth limiting and prioritization



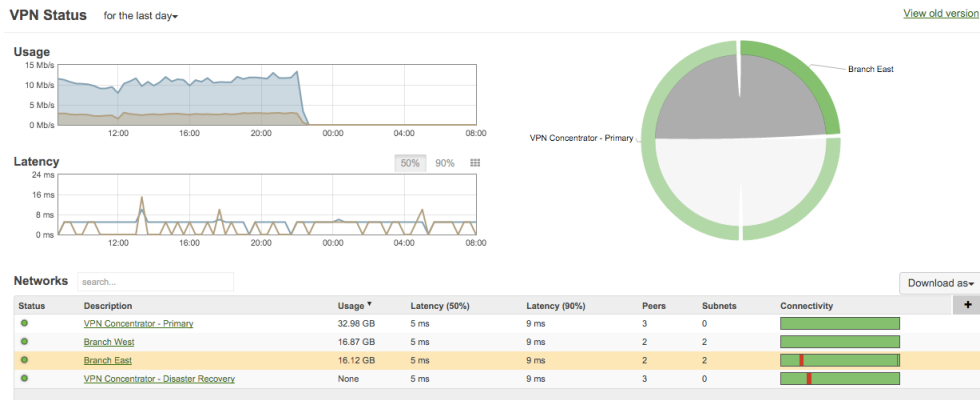
7 site-to-site peers 2 exported subnets 1 Non-Meraki peer

Status	Description	Usage	Latency (avg)	Connectivity *
●	Teleworker - Holly Mooneyham	None	0 ms	<div style="width: 100%;"></div>
●	Meraki SF	15.65 GB	0 ms	<div style="width: 100%;"></div>
●	Branch - Sydney - DC	562.4 MB	0 ms	<div style="width: 100%;"></div>
●	Branch - London	122.4 MB	0 ms	<div style="width: 100%;"></div>
●	Meraki SF - WAN	265.1 KB	0 ms	<div style="width: 100%;"></div>
●	Teleworker - Chris Hilsenbeck	None	204 ms	<div style="width: 100%;"></div>
●	Teleworker - Mick Johnson	None	170 ms	<div style="width: 100%;"></div>

# Connections that fit your business and location needs



# Automated site-to-site VPN (Auto VPN)



## Simple

Create VPN tunnels between locations with easy point-and-click interface, or apply configuration templates to enable and configure VPN at many locations at once

## Automatic

VPN configuration generated and deployed automatically from the cloud – create a mesh or hub-and-spoke topology with only a few clicks

## Resilient

Automatically adjusts to changes in order to maintain secure connectivity during an ISP or datacenter outage, hardware failure, or IP address update

# Application-aware intelligent path control

## Dual active VPN

Load balance your VPN traffic over your hybrid WAN

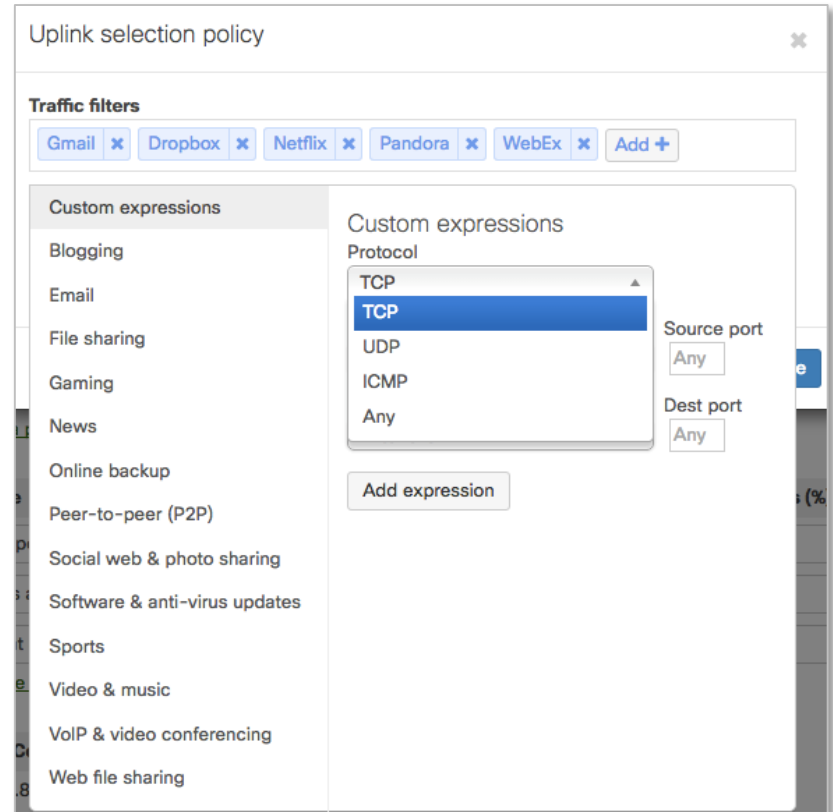
## Policy based routing

Select the preferred path for traffic based on protocol, port, source and destination IP, or even application

## Dynamic Path Selection

Select the best VPN tunnel for traffic automatically based on performance

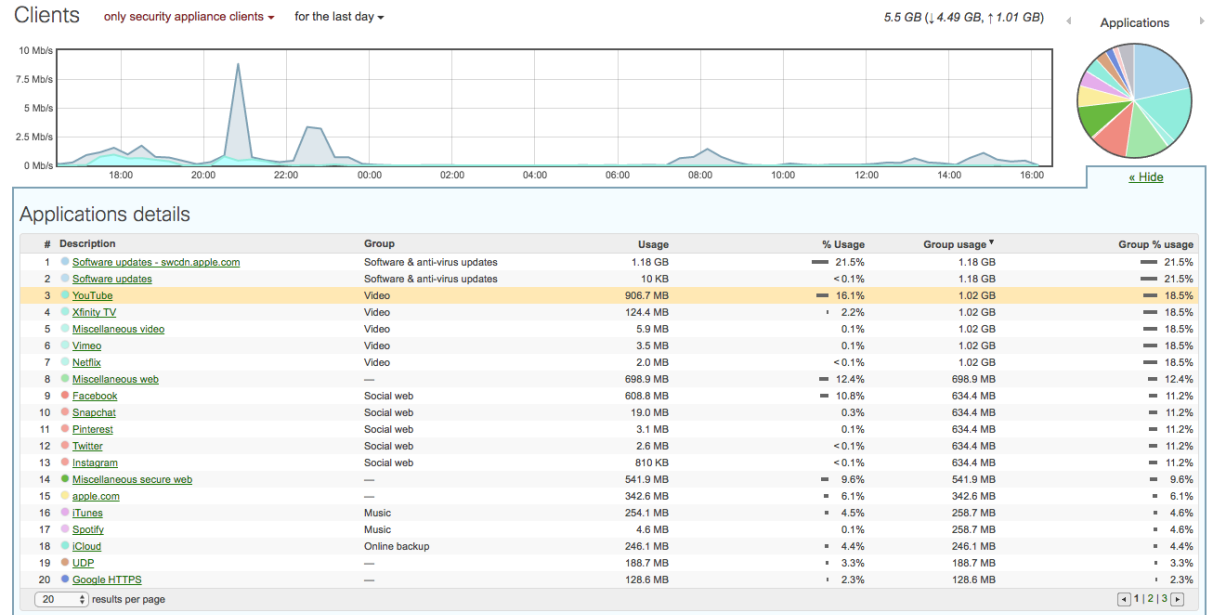
The only solution to combine cutting edge SD-WAN with industry leading security technology



# In-depth visibility

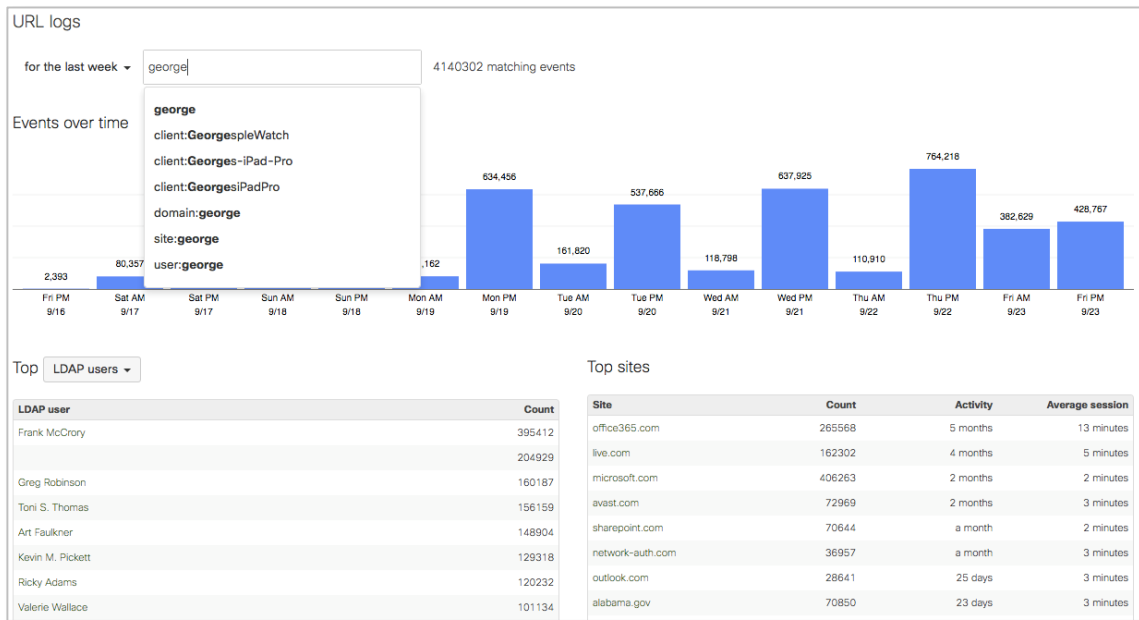
# Traffic monitoring and analytics

- View bandwidth usage by application or by client
- Highlight an application or a client to see their portion of total network bandwidth
- See a client's active time for specific applications
- Easily create policies to limit bandwidth for problematic users or applications



# URL logging

- See complete web browsing history
- Smart search to find the specific information you need
- Active Directory integration for user identification
- See data for one location or across all locations
- Export log data for aggregation if needed





# VPN health, bandwidth, and performance monitoring

- See VPN connection status between locations
- Monitor VPN bandwidth usage
- Track performance of VPN tunnels using built-in loss, latency, jitter, and MOS voice score reporting
- Live updating log of traffic flows and path decisions
- Compare historical performance to configured performance policies

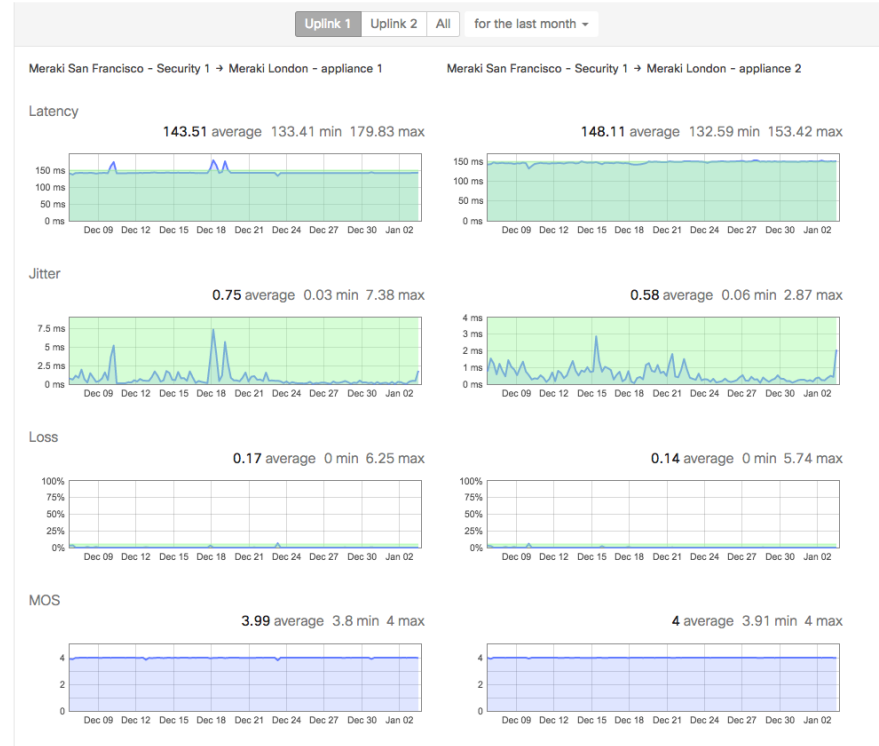
Meraki San Francisco - Security  
Meraki London - appliance

Custom performance classes

Name	Latency (ms)	Jitter (ms)	Loss (%)
Citrix	150	30	5

VPN flow preferences  
No VPN flow preferences

Modify VPN flow preferences on the [traffic shaping page](#)



# Email alerts from the cloud

- Fully integrated alerting - no need for an email server
- Customizable alerting – only get emails about the things you need to know about
- Get alerts if critical network clients go offline
- Configure alerting for all Cisco Meraki devices in one simple interface
- Send alerts to network administrators or custom recipients

Email alerts

Send alerts via email to

security appliance alerts

- The appliance goes offline for more than  minutes
- The primary uplink status changes
- Any DHCP lease pool is exhausted
- An IP conflict is detected
- Cellular connection state changes
- A rogue DHCP server is detected
- A warm spare failover occurs
- Monitored clients connect or disconnect from the LAN

switch alerts

Switch port alerts can be restricted to certain ports based on the tags associated with a port. You can add tags on the [Switch ports](#) page.

- A switch goes offline for more than  minutes
- Switch ports tagged "voip" goes down for more than  minutes
- Any switch port detects a cable error
- Any switch port changes link speed
- A new DHCP server is seen on the network

Wireless alerts

- A gateway goes offline for more than  minutes
- A repeater goes offline for more than  minutes
- A gateway becomes a repeater

Camera alerts

- A camera goes offline for more than  minutes

Other alerts

- Rogue APs are detected
- Configuration settings are changed

Client monitoring

Clients to monitor

# Demo

# Customer case studies

# Case study: Peet's Coffee & Tea



Artisan coffee roaster and specialty tea retailer, founded 1966 in Berkeley, CA

193 locations, ~4,000 employees

Branches using AutoVPN for site-to-site connectivity and control

Client monitoring, traffic analytics, Live Tools give complete visibility

Centralized control via Meraki dashboard dramatically reduces IT support load

# Case study: Kindred Healthcare



Largest diversified provider of post-acute care services in the United States

2000+ locations in 46 states, 75,000+ staff

Use 3G/4G uplinks to service branch locations when no broadband available

HIPAA compliant architecture

Layer 7 firewall, traffic shaping, and content filtering blocks peer-to-peer traffic and controls users and devices

# MX Product Portfolio

# Licensing that fits the business' needs



## Enterprise License

Next Generation Firewall

Site-to-site and client VPN

Intelligent path control

Link bonding and failover

Bandwidth shaping and QoS

Branch routing

Web caching

Active/Passive high availability



## Advanced Security License

All enterprise features, plus

Content filtering (with Google SafeSearch enforcement)

Cisco Advanced Malware Protection

Snort IDS/IPS

Threat Grid integration\*

Geo-based firewall rules

*\*additional Threat Grid subscription required*



# MX Portfolio – Fall 2017

## Teleworker



**Z1**

~5 users

802.11ac Wireless & PoE

FW throughput: 50-100 Mbps

**Z3**

## Small



**MX64**

~50 users

802.11ac wireless & PoE

FW throughput: 250 Mbps

**MX65**

## Medium Branch



**MX84**

~200 users

FW throughput: 500 Mbps

**MX100**

~500 users

FW throughput: 750 Mbps

## Large Branch, Campus or Concentrator



**MX250**

~2,000 users

FW throughput: 4 Gbps



**MX400**

~2,000 users

FW throughput: 1 Gbps



**MX450**

~10,000 users

FW throughput: 6 Gbps



**MX600**

~10,000 users

FW throughput: 1 Gbps

## Virtual



**vMX100 for AWS & Azure**

FW throughput: 750 Mbps

VPN & SD-WAN features

# The Meraki Full Stack



**MR**  
Wireless



**MX**  
Security and WAN



**MS**  
Switching



**Systems  
Manager**  
EMM



**MC**  
IP Telephony



**MV**  
Security  
Cameras

A complete cloud managed IT portfolio  
Single pane of glass management

# Technical Careers at Cisco Meraki

## Sales

Systems  
Engineering  
Solution  
Architecture

## Engineering

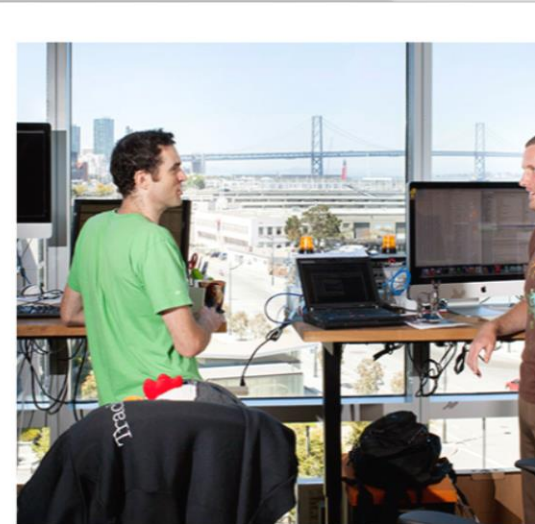
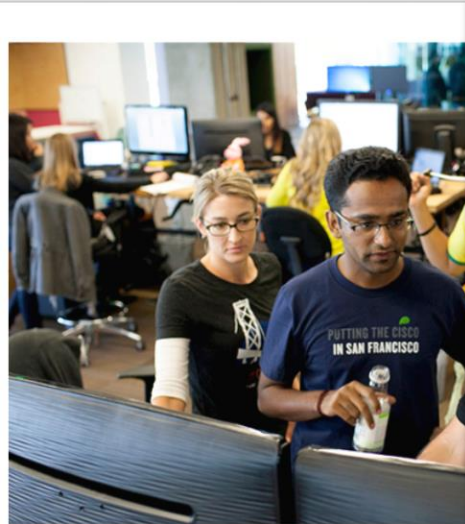
UX/UI  
Firmware  
Hardware

## Marketing

Product Marketing  
Webmaster

## Product Management

Product Specialist  
Product Manager



**Thank you**

# Q&A



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