cisco Live!
ALL IN

The bridge to possible

Cisco Meraki Secure SD-WAN

Arpitha Shetty
Product Manager, Cisco Meraki

BRKMER - 1001

About your speaker

Arpitha Shetty

arshetty@cisco.com
Product Manager,
Meraki Secure SD-WAN

Cisco Webex App

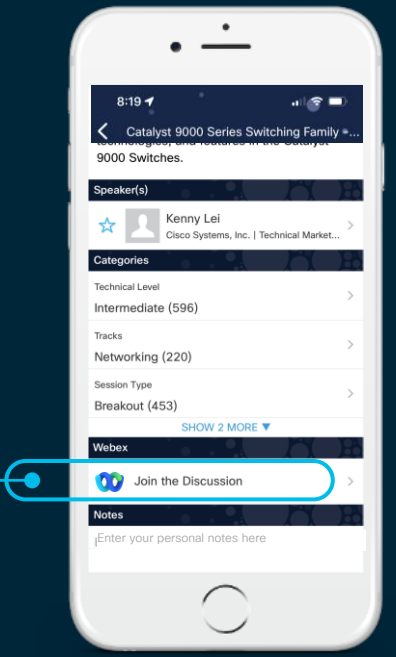
Questions?

Use Cisco Webex App to chat
with the speaker after the session

How

1. Find this session in the Cisco Live Mobile App
2. Click “Join the Discussion”
3. Install the Webex App or go directly to the Webex space
4. Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 17, 2022.



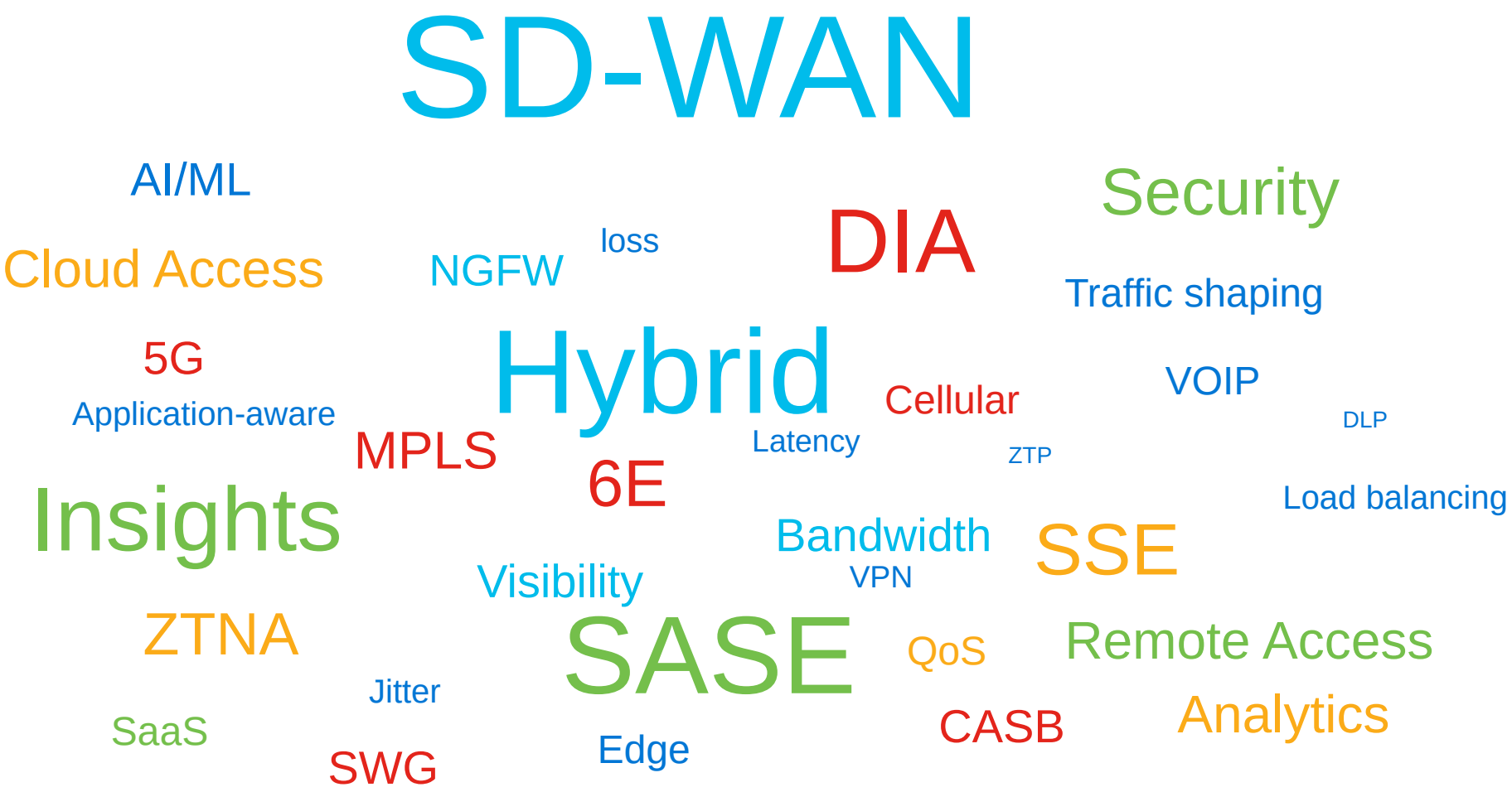
https://ciscolive.ciscoevents.com/ciscolivebot/#BRKMER-1001

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Agenda

1. Who? Why? What?
2. Drivers of innovation
3. Introduction to Meraki
4. The 3 pillars of innovation
5. Meraki SD-WAN Platforms
6. Programmability
7. Licensing
8. Key Takeaways

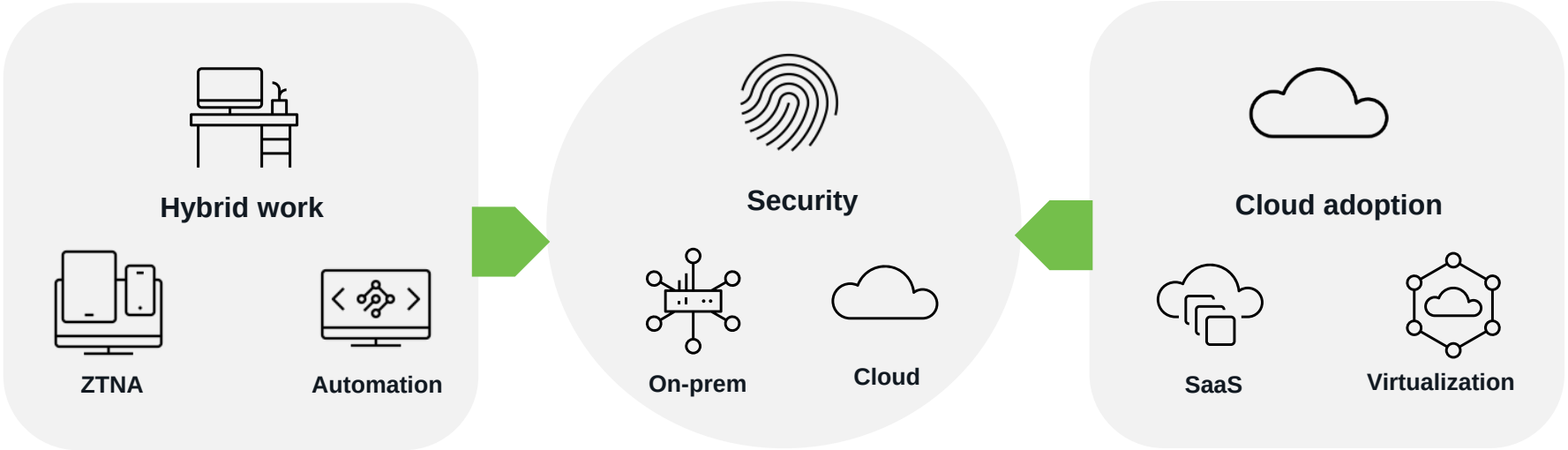
© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Drivers of innovation in the new Edge

Powering hybrid work



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Our Mission

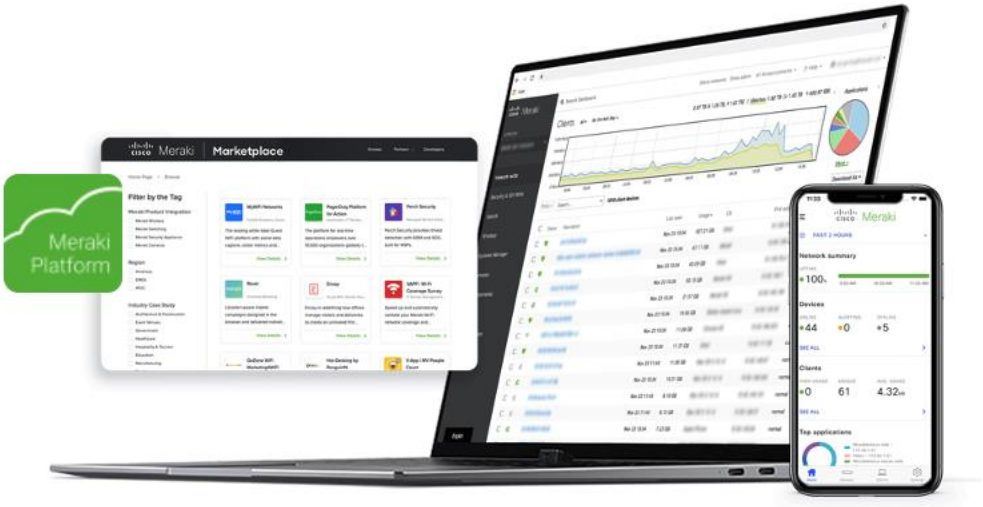
Connecting passionate people to their mission by **simplifying** the digital workplace.

Work **simple.**

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

The Meraki Platform

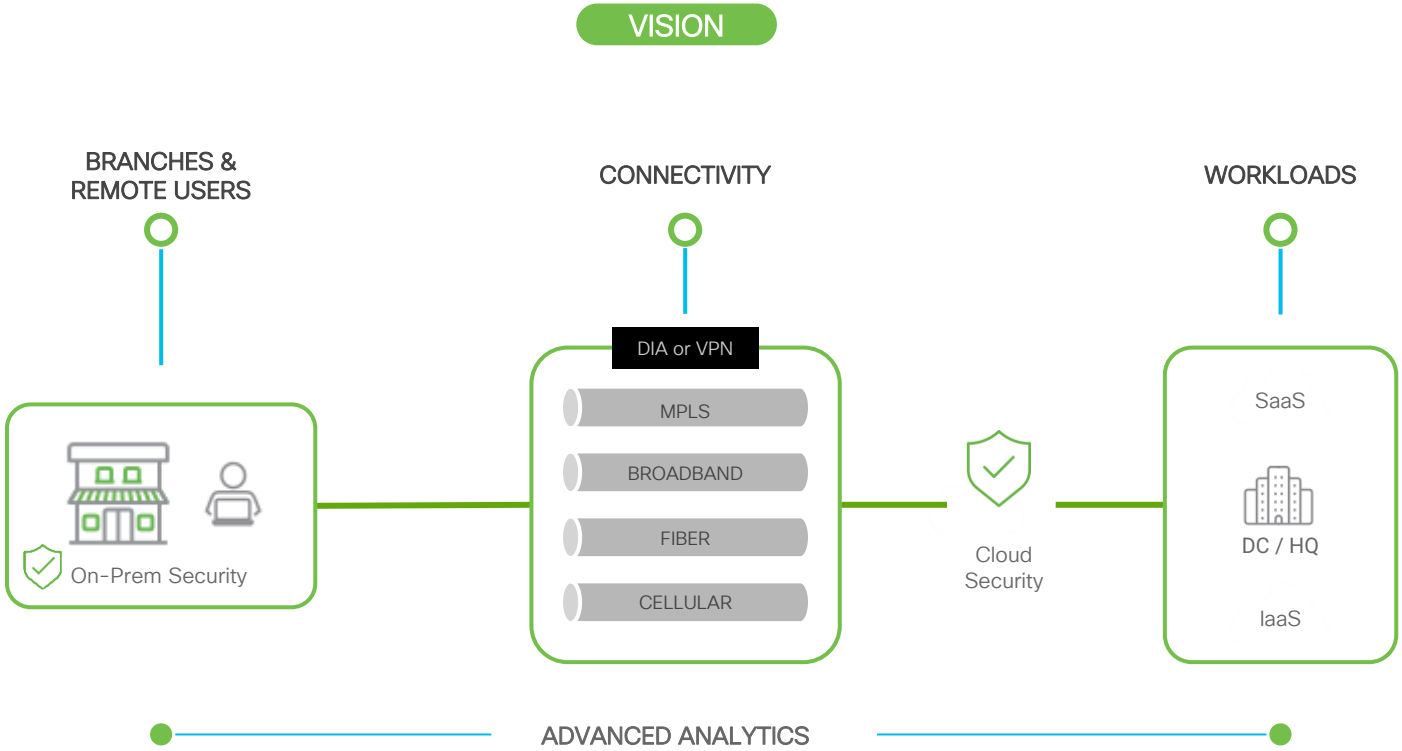
Software defined branch



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Secure Cisco SD-WAN Powered by Meraki

Powering hybrid work



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Meraki Secure SD-WAN

How we innovate

Connect

Connect anyone, anywhere

Secure

Natively integrated adv security

Automate

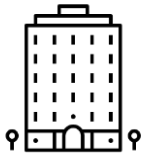
Analytics, powered by ML

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Connect

Connect anyone, anywhere

Delivering exceptional network experiences



Branch

Site to Site

Remote

Client

Cloud

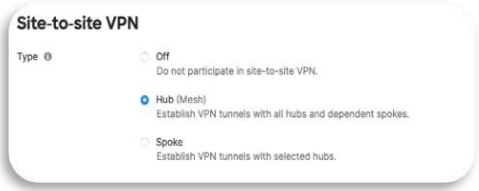
Cloud connectivity

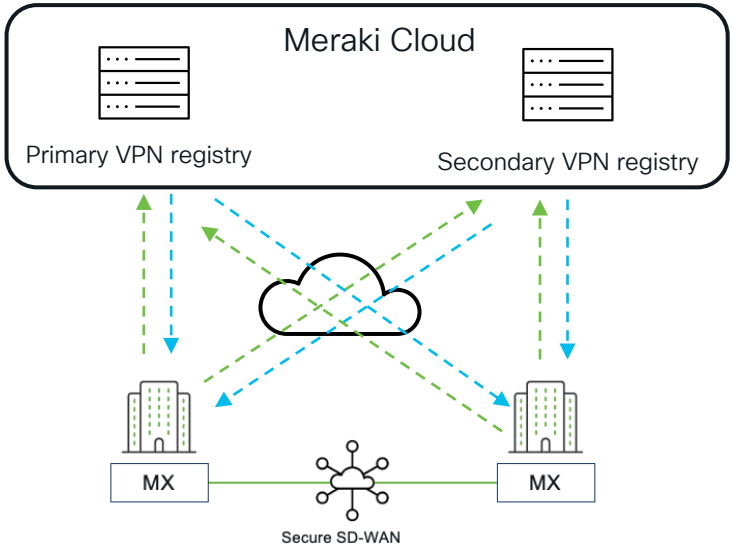
© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Site-to-site VPN

Intelligent connectivity with Meraki Auto VPN

- Secure SD-WAN in 3 clicks
- Automatically configured VPN parameters
- Self-healing redundancy



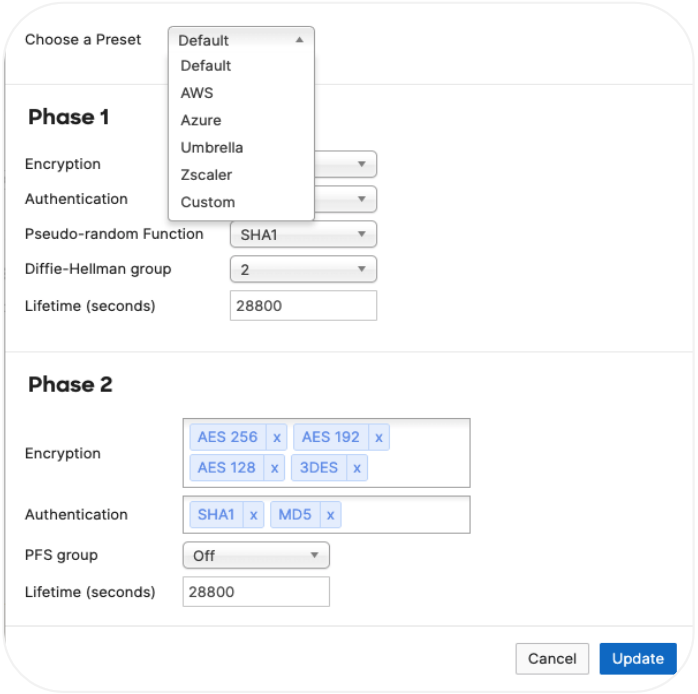


Peers	Usage	Latency	Connectivity Status

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Non-Meraki VPN Peer

Simplifying 3rd party integrations



Site-site VPN tunnels between a Meraki device and a Non-Meraki VPN endpoint

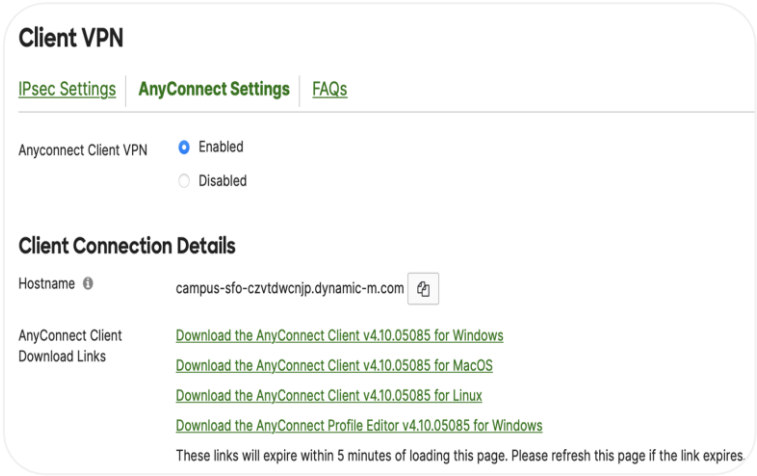
© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Client VPN

Simple and secure access

Flexibility to choose VPN based on security needs

- Cisco IPsec
- Cisco AnyConnect **NEW**



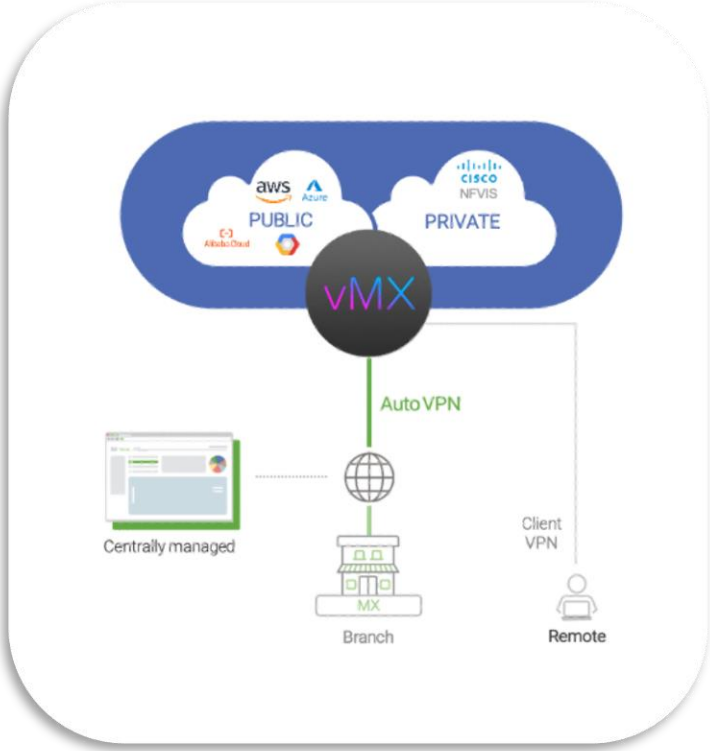
© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Meraki vMX

Extend the simplicity of SD-WAN to public clouds

- Site-to-site AutoVPN to public cloud
- Leverages SD-WAN for best path selection of traffic
- Supported in **all major public clouds**:

  AWS, Azure, GCP, Alibaba Cloud
- **Private cloud** support with Cisco NFVIS
- Supports on-demand client VPN for **remote users**

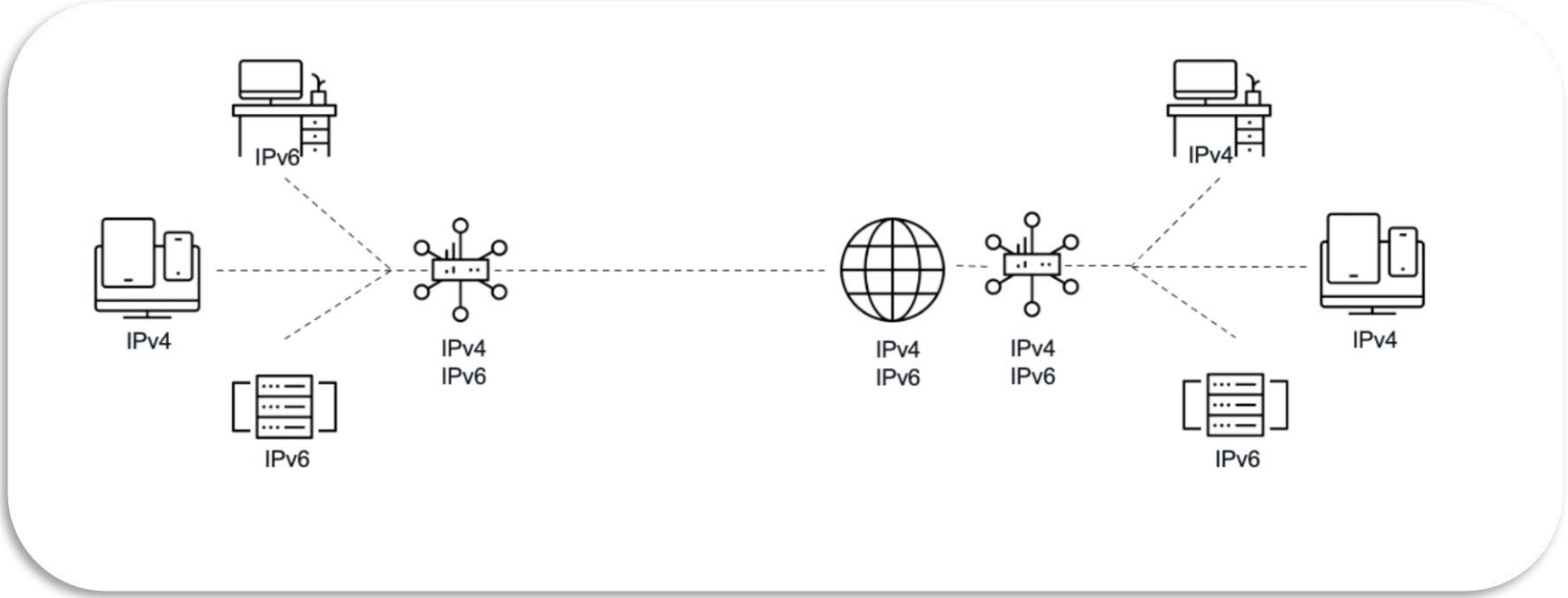


© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Dual Stack Support

Enabling IPv6 connectivity

NEW



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Limitations with WAN connectivity

Performance

Network closets inhibits optimal cellular signal for LTE embedded routers

Efficiency

Not all WAN options–MPLS, Broadband, and Fiber–are best suited for all use cases

Availability

Unavailability of wired internet connection or limited options for connectivity

Throughput

Dissatisfaction with available throughput and flaky regional ISP connectivity

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Meraki MG Series

Gigabit speeds and insights at your fingertips

MG41/MG21 Series

CAT 18/ CAT 6 connectivity

Signal strength

Signal quality

Loss/Latency

Network/Data Sessions

Carrier Aggregation

Roaming

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Pair MG with any Edge device or SD-WAN appliance

Ethernet

MG Cellular Gateways seamlessly transpose a wireless cellular signal to wired Ethernet for primary or failover connectivity.

MX Security and SD-WAN Appliances

Cisco: ISR, vEdge, Catalyst 8000 Series

Other vendors

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Ease of cellular with MG

Feature Highlights

IP67-rated and suited for **outdoor deployments**

Higher performance with primary or failover connectivity

Uninterrupted connectivity with dual SIM

Ultimate flexibility with mounting, antennas, and dual PoE options

Ease of global deployments with single SKU

Remotely monitor key stats and settings: SIM config, radio status etc.

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Postcards from the 5G Edge

Presenter: Bill Reilly

BRKMER – 2001

Monday, June 13th | 4:00 PM – 4:45 PM

Learn More

Secure

Natively integrated security suite along with seamless cloud integration

Advanced Security

Multi-functional security with analytics and insights

Meraki MX

On-prem security & SD-WAN

- Enhanced threat defense
- Contextual visibility
- Rapid detection & alerting
- Ease of management

Comprehensive, natively integrated security suite

Cisco Umbrella

Cloud Security

- Multiple layers of security from a single cloud-native service
- SSL decryption at scale
- DNS-layer security, Cloud-delivered firewall, SWG, CASB
- Advanced security with granular controls.

One-click integration of Cisco Umbrella with SD-WAN

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Security
Unified Threat Management

Next Gen Firewall

IDS/IPS

Content Filtering

Advanced Malware Protection (AMP)

Cisco Secure Malware Analytics (Threat Grid)

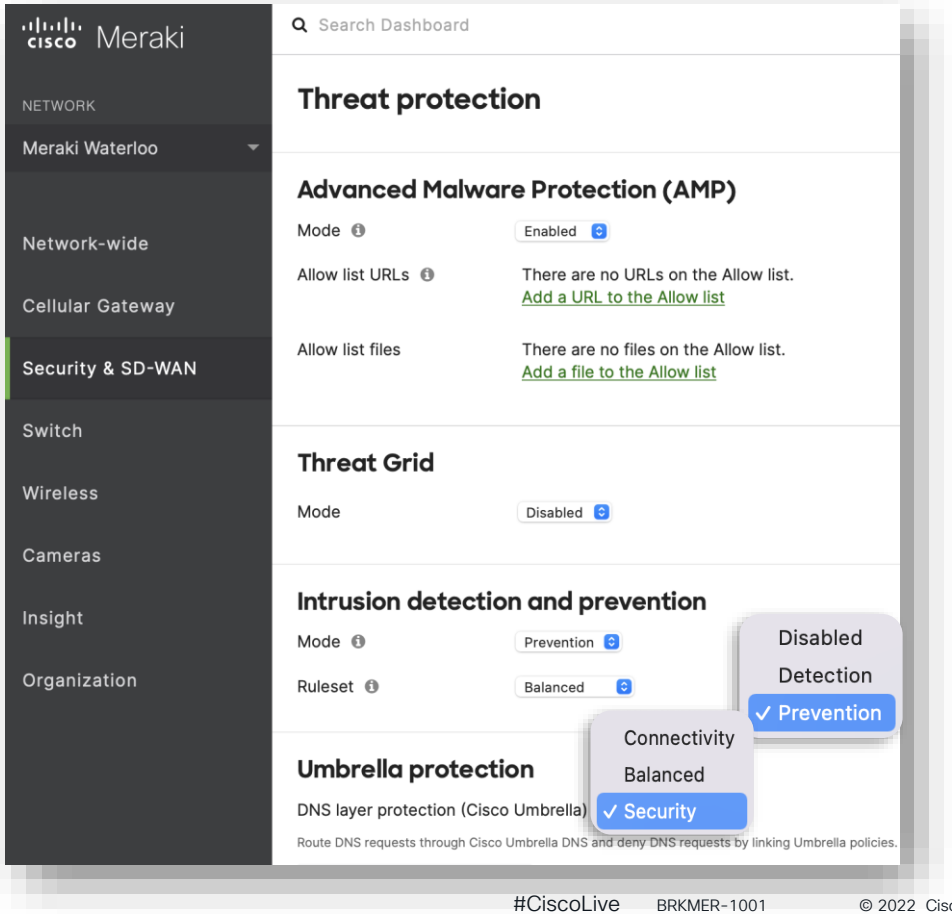
DNS Layer Protection (Cisco Umbrella)

TALOS

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Get Advanced security – in a few clicks

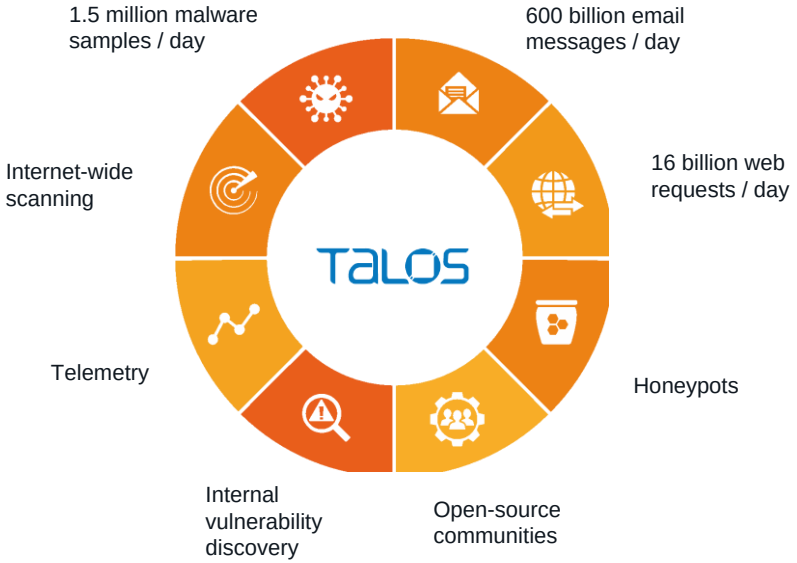
Dashboard View



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Meraki Secure SD-WAN

Informed by World-Renowned Cisco Talos Threat Intelligence



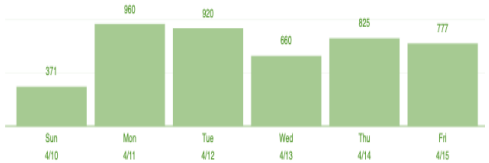
- Over 450 full time threat researchers
- Millions of telemetry agents
- 4 global data centers
- Over 100 threat intelligence partners
- Over 1,100 threat traps

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Security Center

Centralized view for all security events

Events over time



Most affected clients

Client	Network	Last Affected	Events
Alexander Fleming Meraki Network OS	San Francisco	Apr 24 13:55:43	5505
Rudolf Diesel Meraki Network OS	San Francisco	Apr 24 12:35:43	460

Most affected operating systems

OS	Events
unknown	7970
Meraki Network OS	5965

Top sources of threats

Most prevalent threats

Threat	Occurrences
SERVER-OTHER Exim unauthenticated remote code execution attempt	7625
EICAR	5965
SERVER-OTHER Exim unauthenticated remote code execution attempt	341
SSH_EVENT_RESPOVERFLOW	4

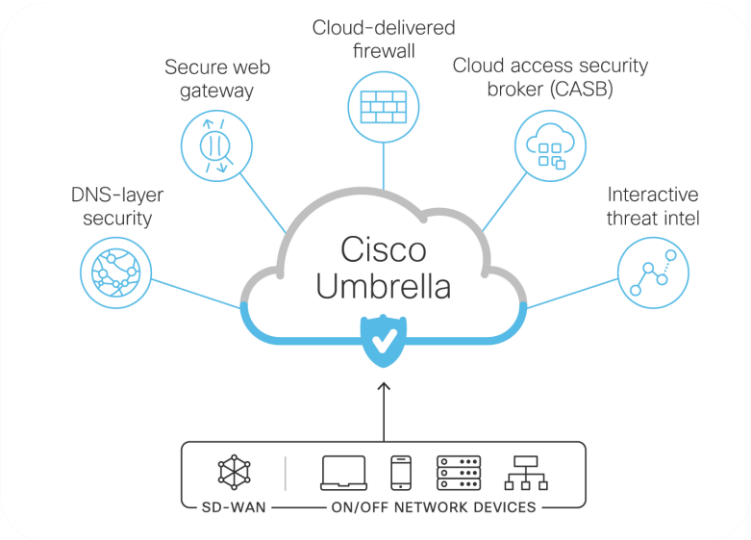
Threats across networks

Threat Name	Networks
EICAR	2
SERVER-OTHER Exim unauthenticated remote code execution attempt	1
SERVER-OTHER Exim unauthenticated remote code execution attempt	1

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Cisco Umbrella

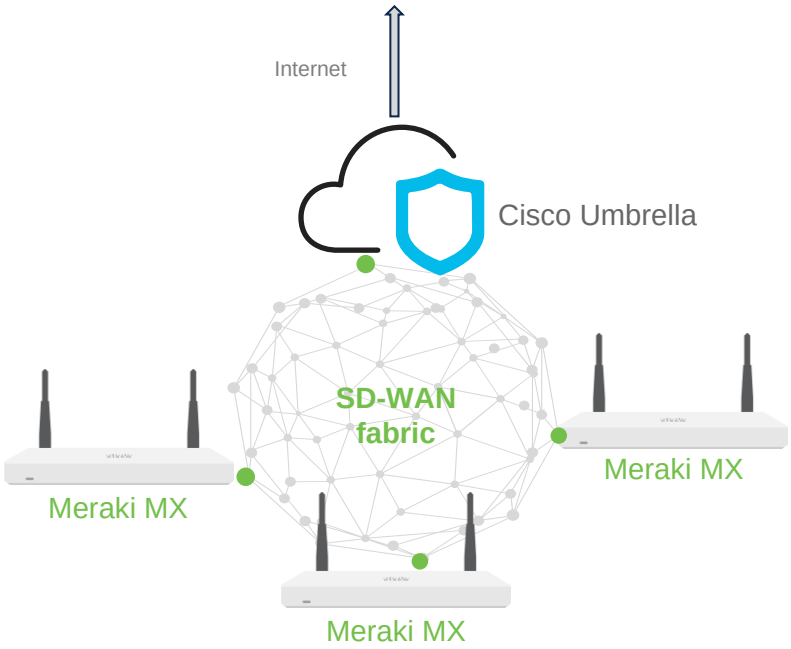
Meets diverse security requirements for distributed locations and users



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Supremely simple

THREE-CLICKS



Supremely secure

BEST-IN-CLASS

- ✓ Layer 7 firewall
- ✓ IDS/IPS
- ✓ Content filtering
- ✓ Malware protection
- ✓ Sandboxing
- ✓ AnyConnect remote VPN access
- ✓ Centralized enforcement, policy & reporting
- ✓ Site-to-site Auto VPN
- ✓ East-west security filtering
- ✓ URL filtering
- ✓ SSL decryption/inspection
- ✓ Data loss prevention (DLP)
- ✓ Remote browser isolation (RBI)
- ✓ Granular app control
- ✓ File type control
- ✓ SaaS tenant restrictions
- ✓ CASB

Easily **maximize productivity** with secure direct internet access

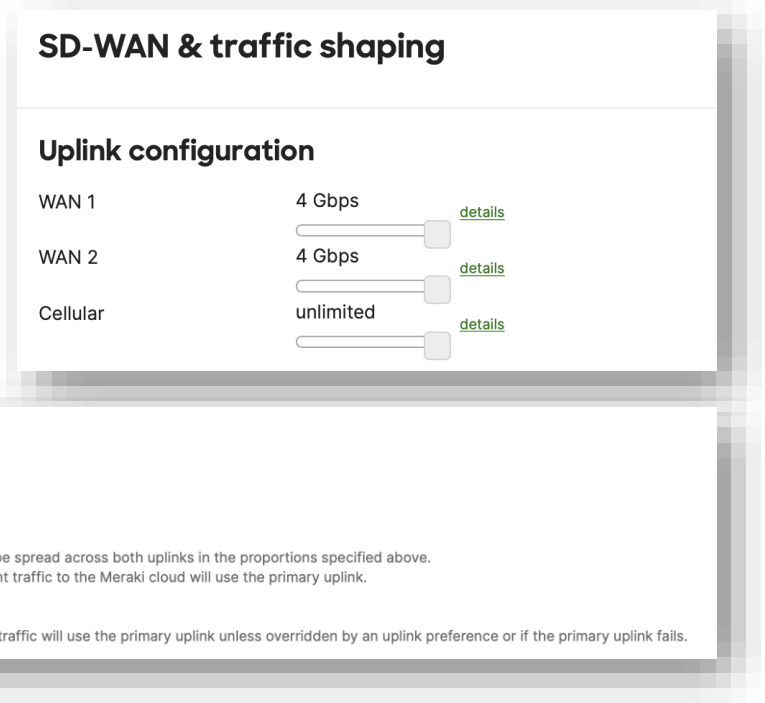
Automate

Meraki Secure SD-WAN & Analytics

cisco Live!

Multiple uplinks supporting SD-WAN

- Efficiently utilizing bandwidth on links available
- Flexibility to choose WAN1/WAN2 or Cellular as the primary uplink
- Load balancing vs uplink preference



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Policy Based Routing (PBR)

Best path for VPN traffic

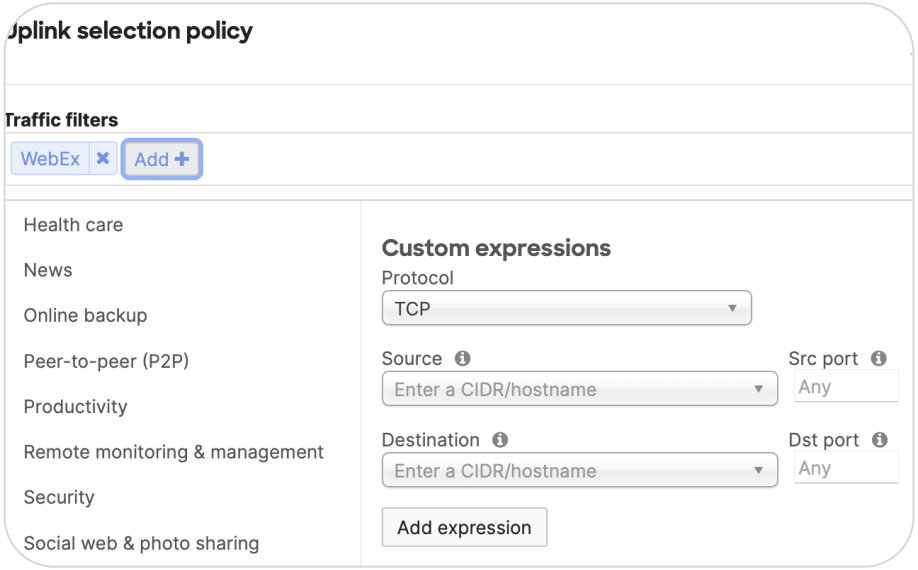
- Create policies to make routing decisions for VPN traffic
- Optimize the bandwidth available for VPN traffic
- Load balance traffic to use all available links

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

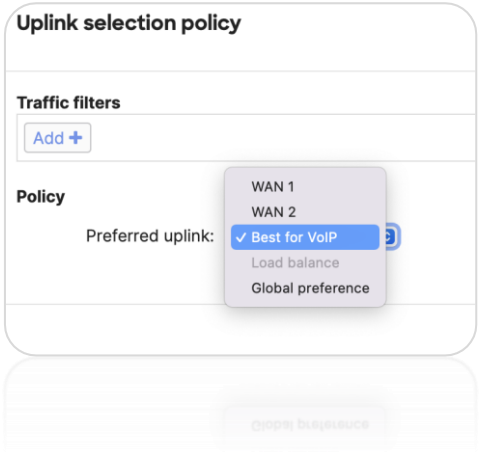
Policy based routing for VPN traffic

Best path for VPN traffic

1 Choose application/ custom expression



2 Set uplink policy



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Local Internet Breakout

AutoVPN Exclusion

- Offloading traffic from the branch or remote user sites
- Optimized bandwidth and experience for customers at the branch
- Improve end user experience

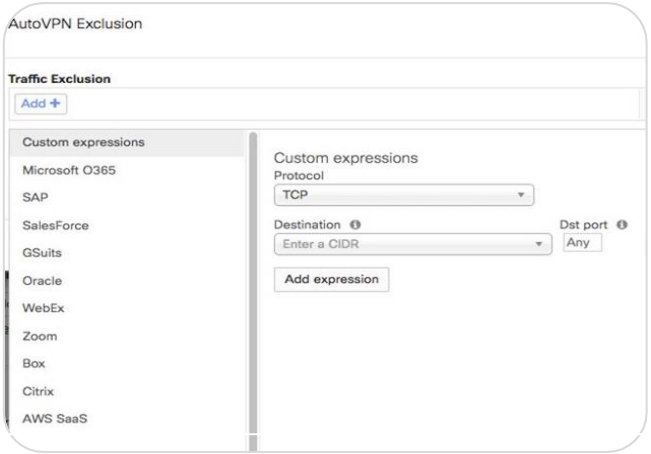
1. Review top 10 application list
2. Or use custom expressions
3. Choose Internet link

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

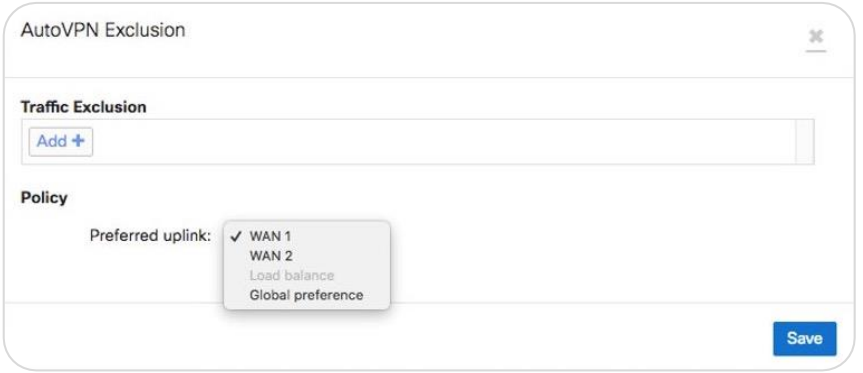
Local Internet Breakout for SaaS applications

Application and IP/URL Based

1 Choose application/ custom expression



2 Set uplink policy



- Seamless **one-click setup** for top applications
- Choose a preferred public Internet path

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

SD-WAN Internet Policies

NEW

SD-Internet

- Best path for critical applications
- Dynamic, performance-based path selection
- Improve end user application experience

1. Set policies for DIA traffic
2. Define custom performance class
3. Choose best performing uplink

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

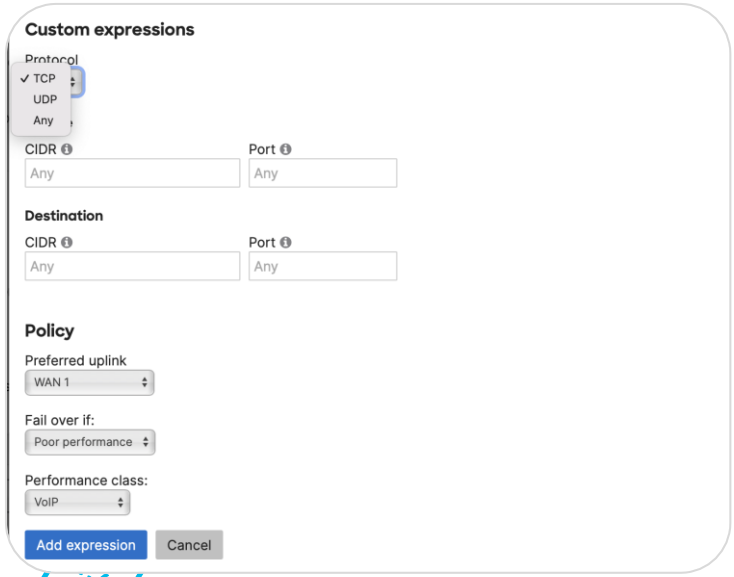
Performance-based path selection for Internet traffic

Define acceptable performance thresholds

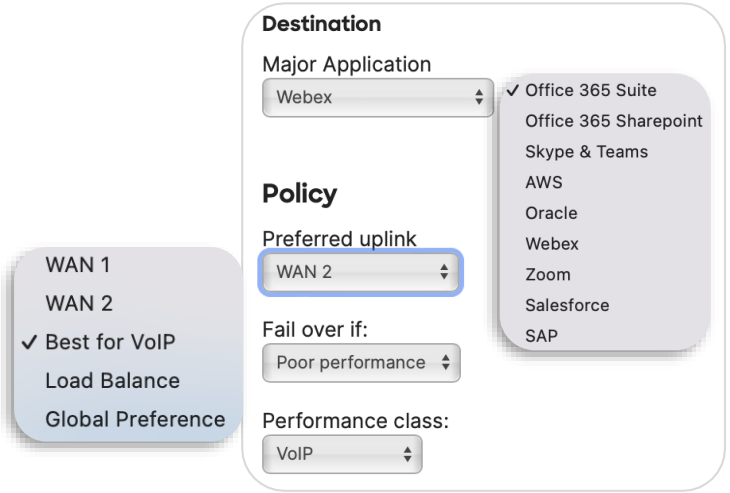
Name	Maximum latency (ms)	Maximum jitter (ms)	Maximum loss (%)
Telepresence	50	10	1

Create a new custom performance class...

Custom Expressions



Policies by application



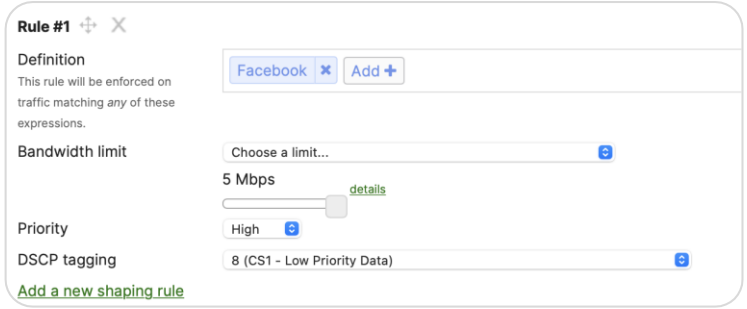
© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Traffic shaping rules

Default rules

Traffic Type	DSCP tag
SIP (Voice)	46 (EF - Expedited Forwarding, Voice)
All Advertising, All Software Updates, All Online Backups	10 (AF11 - High Throughput, Latency Insensitive, Low Drop)
WebEx, Skype	34 (AF41 - Multimedia Conferencing, Low Drop)
All Video & Music	18 (AF21 - Low Latency Data, Low Drop)

Customized rules



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

SD-WAN Analytics

Reduce troubleshooting time from hours to minutes

Web App Health

At-a-glance performance of critical applications across your LAN, WAN, and application server—wherever it is.

WAN Health

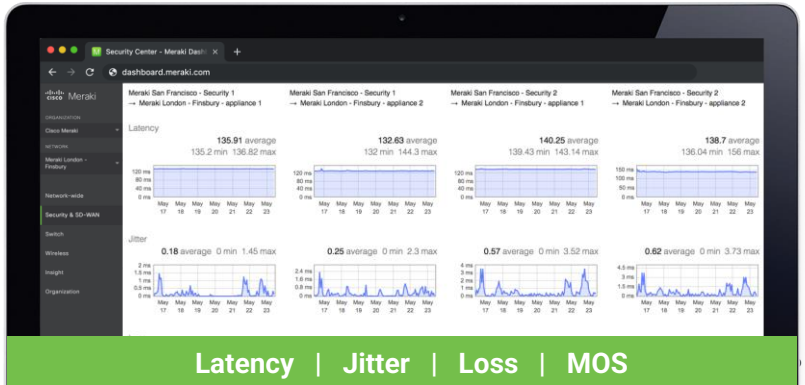
Monitor ALL of your organization's diverse uplinks, including cellular, and home-user uplinks, in one view.

VoIP Health

Track VoIP quality by provider and uplink with detailed hop-by-hop analysis.

Internet Outages

At-a-glance view of global internet health over the last 24 hours.

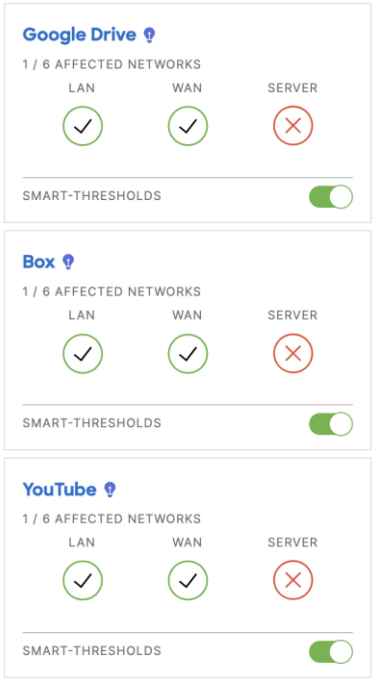


and/or its affiliates. All rights reserved. Cisco Public

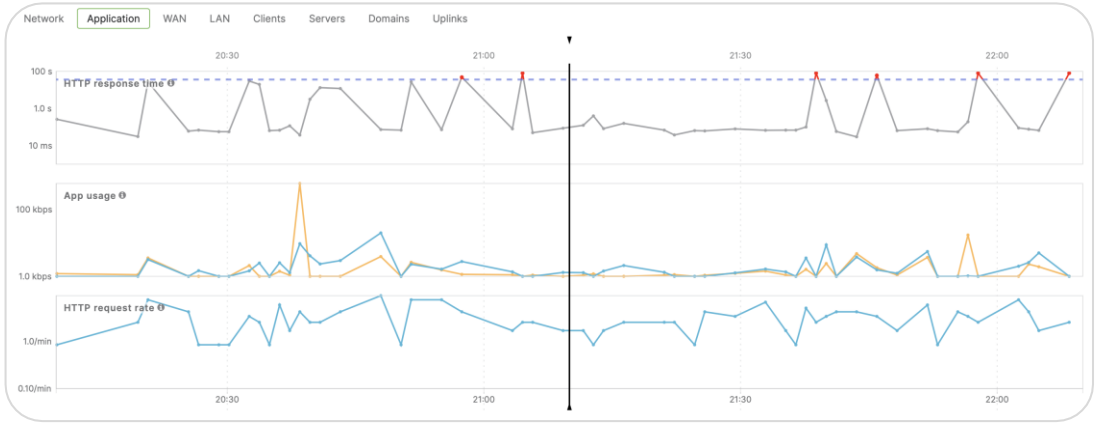
Web Application Health

End-to-end visibility for SaaS applications

Web App Health for all apps and networks



Trends



App Usage

Response time

Request rate

Domains

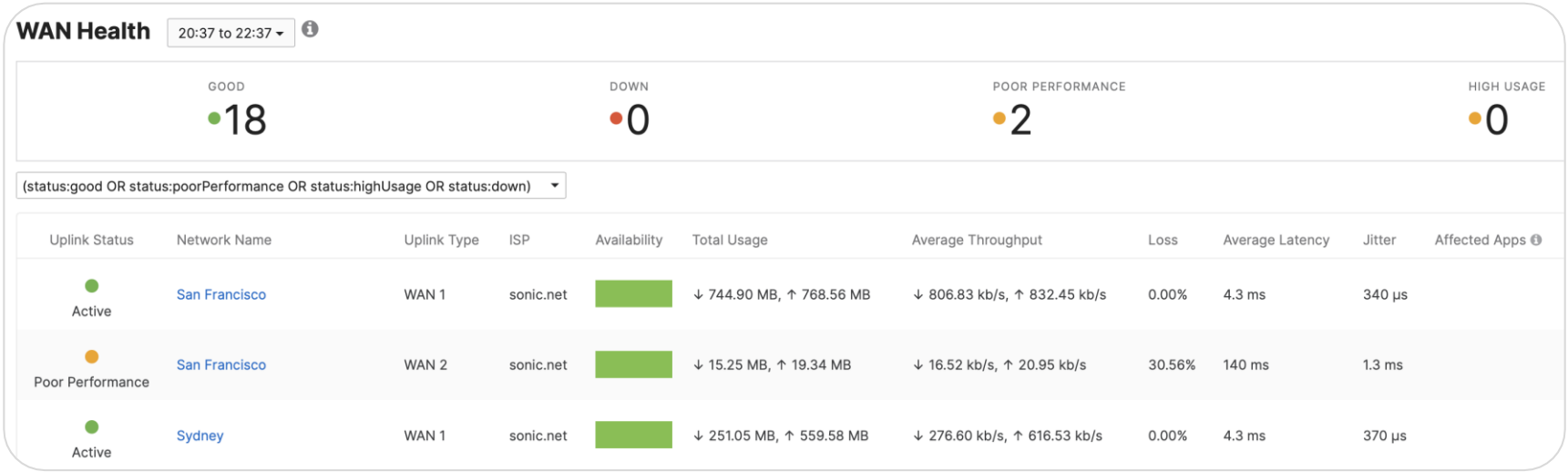
Clients

Uplinks

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

WAN Health

Monitor the health of all MX uplinks including cellular across all sites

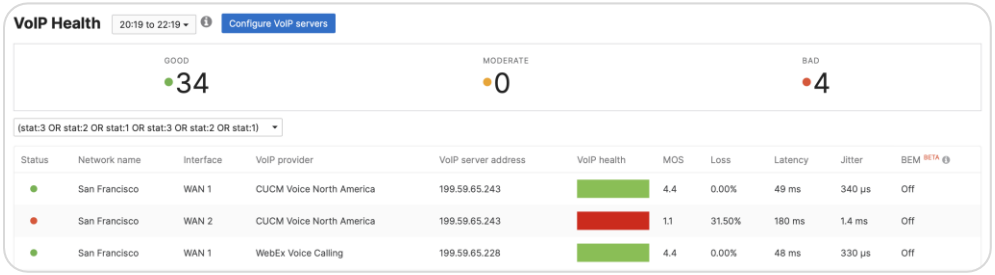


© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

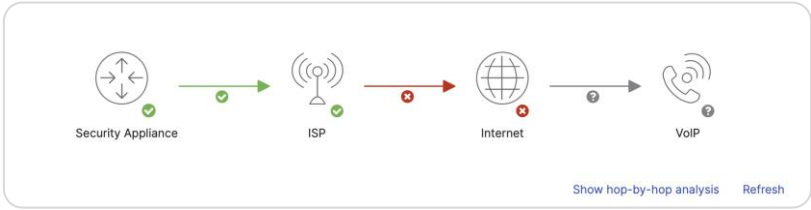
VoIP Health

Track the performance of SaaS and on-prem based VoIP services

Monitor the path to the VOIP server



Detailed hop-by-hop analysis



Active monitoring of VoIP servers

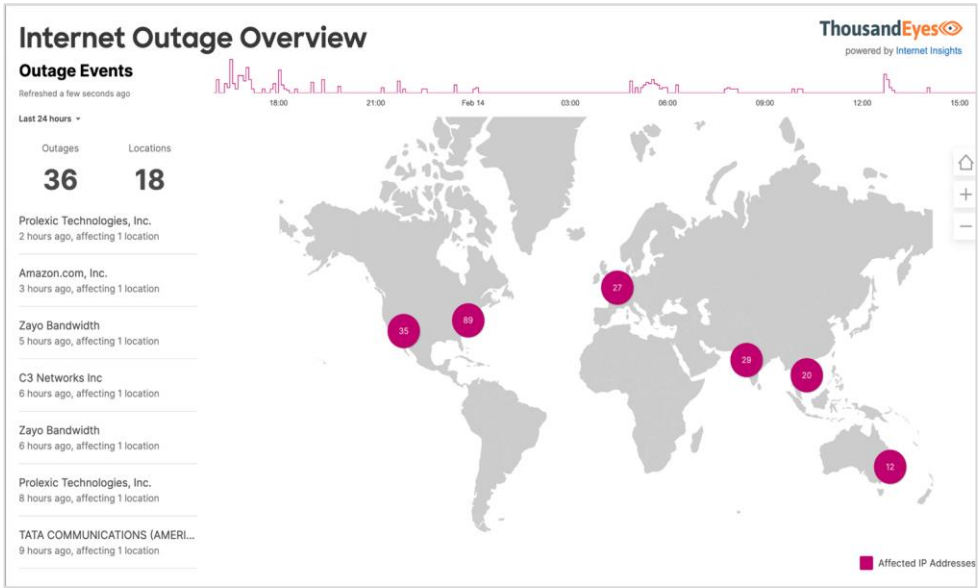
© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Internet Outages with ThousandEyes

Internet Insights powered by collective intelligence

NEW

- At-a-glance visualization of global internet health
- QoS patterns of internet services and their providers across the globe



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

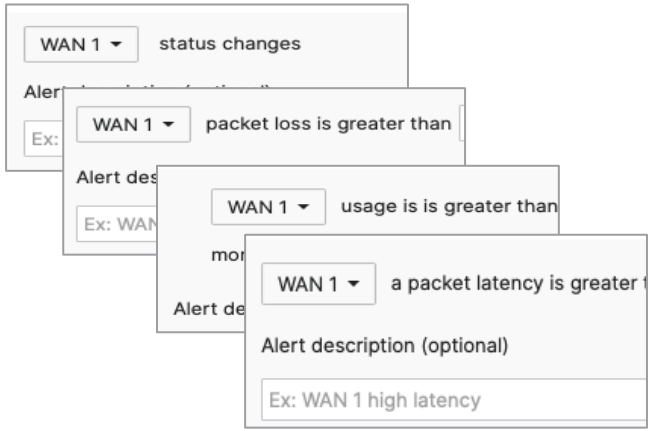
SD-WAN granular alerts

Reduce mean time to resolution

NEW

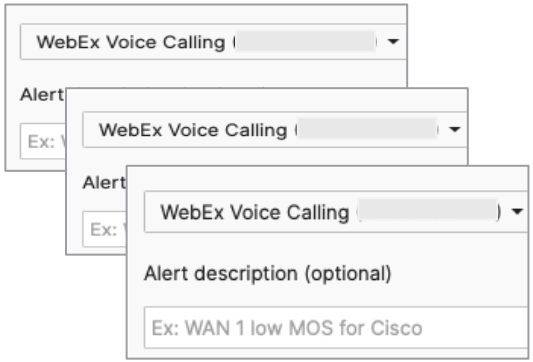
WAN Alerts

Uplink Status	Packet Loss	Uplink Utilization	Uplink Latency



VOIP Alerts

Packet Loss	Jitter	MOS



© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Connect and Secure with Meraki

Presenters: Avinash Ramesh & Vaibhav (VB) malik

BRKMER – 1003

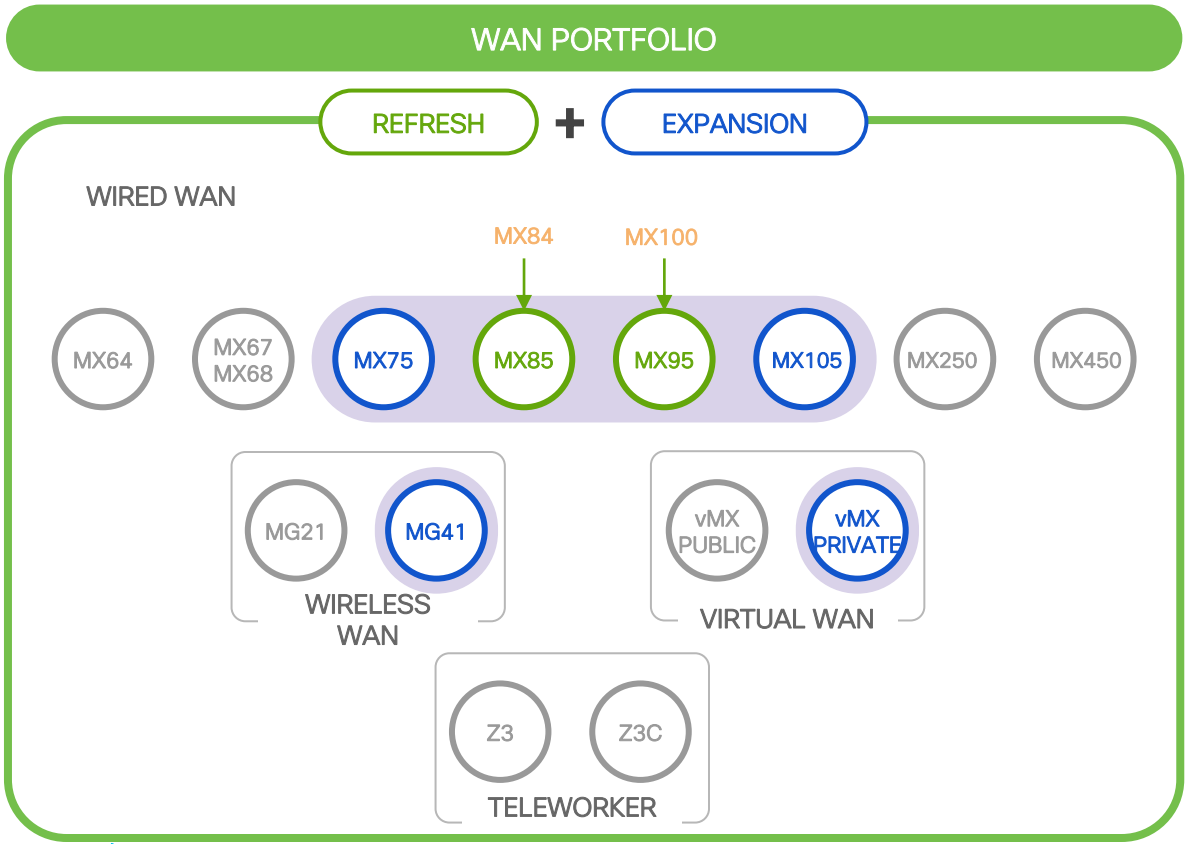
Tuesday, June 14th | 10:30 AM – 11:15 AM

Learn More

Meraki Platforms

A Model For Every Location

MX Security & SD-WAN Portfolio



CORE CAPABILITIES

- Sleek, low-profile design
- Gigabit throughput
- MX models with Integrated wireless, LTE modem
- PCI 3.2 compliance

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Programmability

The value of APIs

What can APIs do?

Mass Provisioning

Network Automation

Advanced Monitoring

Advanced Analytics

Cloud Integrations

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Licensing

A license for every use case

1:1 ratio of devices to licenses

Enterprise

Essential SD-WAN features

Secure connectivity & basic security

All I need is Auto VPN and a firewall

Advanced Security

All enterprise features plus:

Fully featured unified threat management

I connect to the internet, so I need UTM security too

Secure SD-WAN Plus

All advanced security features plus:

Advanced analytics with ML
Smart SaaS quality of experience

My business relies on SaaS/IaaS/DC served apps

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Secure SD-WAN Plus License

Secure SD-WAN packed with Best-in-class security and AI/ML driven Insights

Secure Connectivity

Site to site VPN
Client VPN
IP based local breakouts

Advanced Security

IDS/IPS
Content filtering
AMP/TG
DNS Security
Web search filtering
YouTube content restriction
Geo based firewall

Application QoE

Layer 7 deep packet inspection
Traffic shaping policies
App based local breakouts

Analytics

Web App Health
Smart Thresholds
WAN Health
VoIP Health
Internet Outages

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Key Takeaways

1. Unified cloud-management platform
2. Enterprise-grade security built into every MX
3. Seamless, Cloud connectivity with vMX and cloud-native security with Umbrella
4. Static and Dynamic SD-WAN policies for VPN and internet traffic & advanced analytics
5. Sleek, powerful platforms for every location

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Technical Session Surveys

- Attendees who fill out a minimum of four session surveys and the overall event survey will get Cisco Live branded socks!
- Attendees will also earn 100 points in the Cisco Live Game for every survey completed.
- These points help you get on the leaderboard and increase your chances of winning daily and grand prizes.

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Cisco Learning and Certifications

From technology training and team development to Cisco certifications and learning plans, let us help you empower your business and career. www.cisco.com/go/certs

Pay for Learning with Cisco Learning Credits

(CLCs) are prepaid training vouchers redeemed directly with Cisco.

Learn

Cisco U.
IT learning hub that guides teams and learners toward their goals

Cisco Digital Learning
Subscription-based product, technology, and certification training

Cisco Modeling Labs
Network simulation platform for design, testing, and troubleshooting

Cisco Learning Network
Resource community portal for certifications and learning

Train

Cisco Training Bootcamps
Intensive team & individual automation and technology training programs

Cisco Learning Partner Program
Authorized training partners supporting Cisco technology and career certifications

Cisco Instructor-led and Virtual Instructor-led training
Accelerated curriculum of product, technology, and certification courses

Certify

Cisco Certifications and Specialist Certifications
Award-winning certification program empowers students and IT Professionals to advance their technical careers

Cisco Guided Study Groups
180-day certification prep program with learning and support

Cisco Continuing Education Program
Recertification training options for Cisco certified individuals

Here at the event? Visit us at **The Learning and Certifications lounge at the World of Solutions**

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

Continue your education

- Visit the Cisco Showcase for related demos
- Book your one-on-one Meet the Engineer meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand

cisco Live!

© 2022 Cisco and/or its affiliates. All rights reserved. Cisco Public

The bridge to possible

Thank you

cisco Live!

cisco Live!
ALL IN