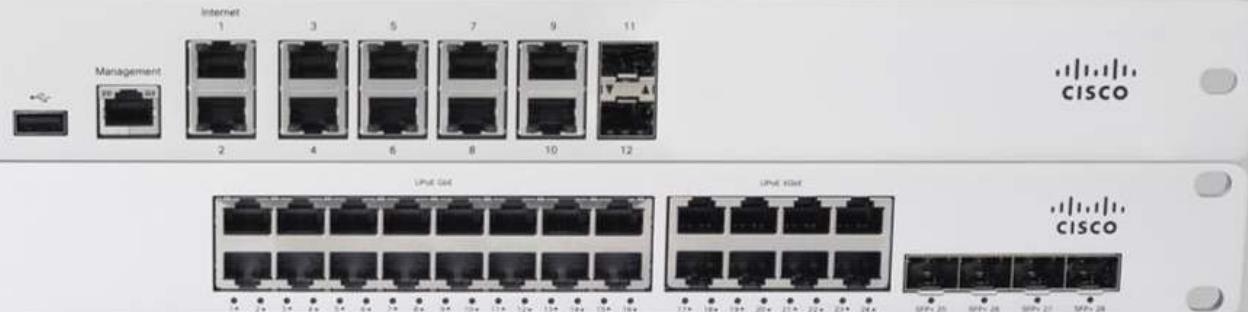


클라우드의 혁명 머라키(Meraki) 가장 쉬운 IT 솔루션

전상준 차장

sanjeon@cisco.com



Agenda



Meraki 란?

IT관리자의 고민 Meraki로 해결

Meraki 제품 및 기능소개

Meraki에 대해서 궁금한 점

Why Cisco Meraki?

IT 관리자의 고민 Meraki로 해결



IT 관리자의 고민 – 모니터링이 필요

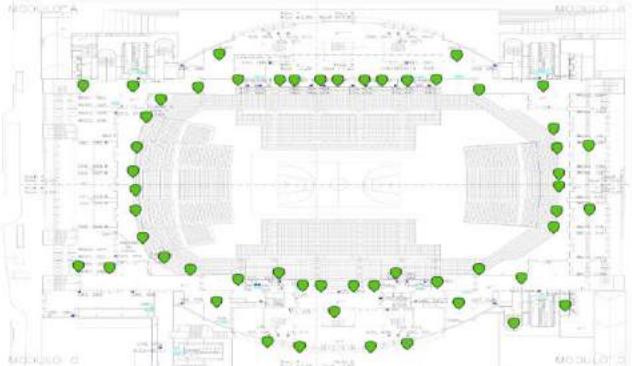
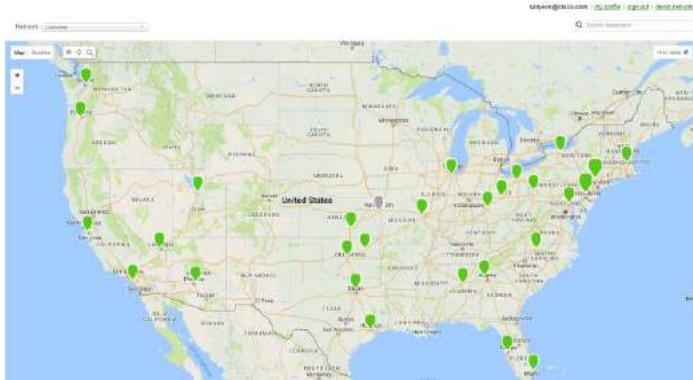
분산된 지점의 모니터링 시급

- 장애에 대해서 사전 준비
- 수많은 장비에 대한 모니터링 필요
- 트러블슈팅으로 많은 리소스



실시간 모니터링 가능

다양한 형태의 모니터링 가능



IT 관리자의 고민 – 네트워크 연결 구성파악

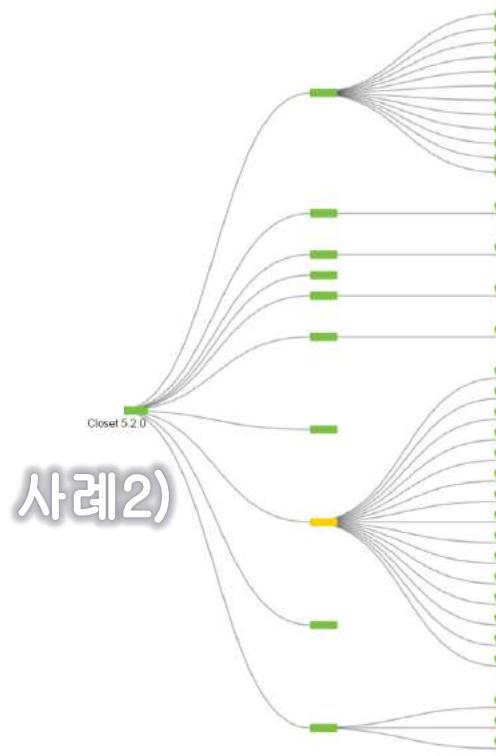
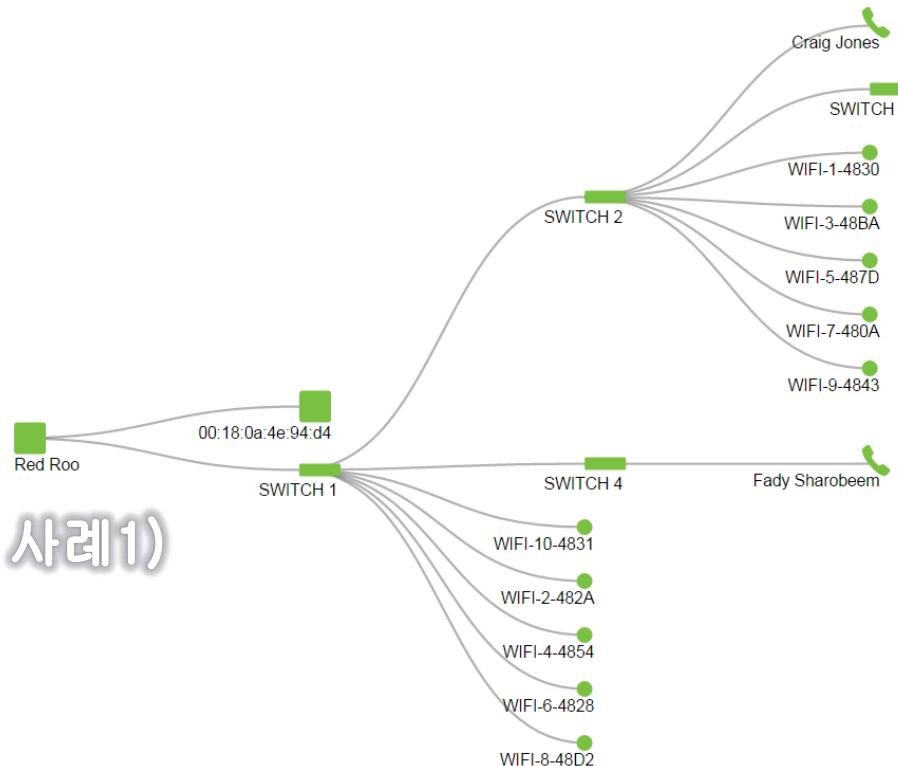
IT 담당자가 매뉴얼 작업

- 수동으로 구성도 작성
- 장비 구성 변경에 따른 업데이트
- 담당자가 아니라면 파악 어려움



네트워크 연결 구성파악 – 자동구성

IT 담당자가 아니더라도 쉽게 이해 / 별도 연결 구성 불필요



IT 관리자의 고민 - 트래픽 분석 필요

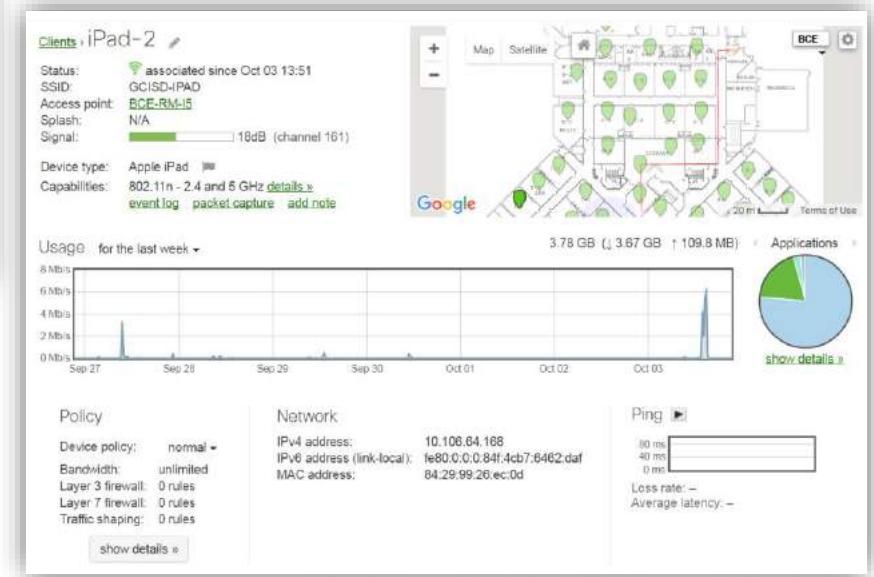
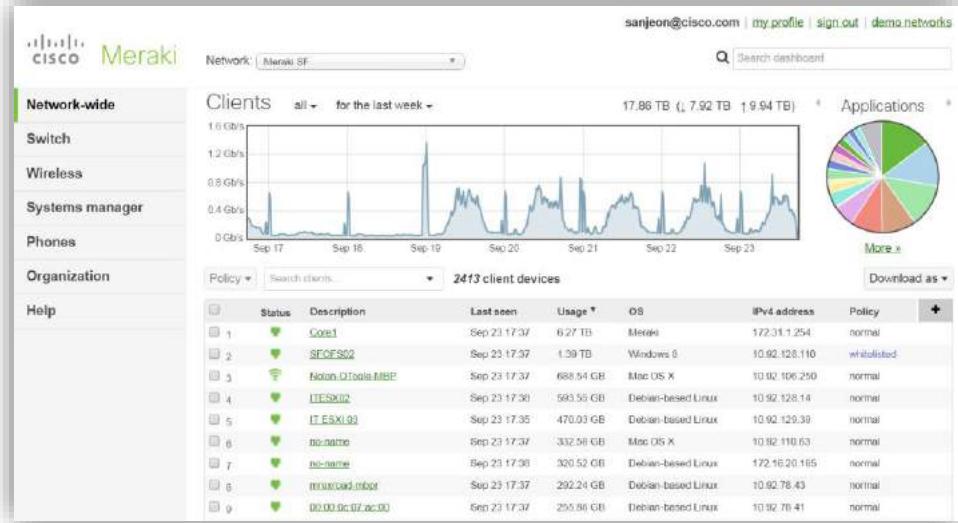
별도의 Collector가 있어야지 가능함

- 내부 트래픽에 대한 고민
- 장애 시 판단하기 쉽지 않음
- 트래픽을 볼 수 있어야만 조치 가능



트래픽 분석 가능

머라키의 어떤한 장비라도 트래픽이 파악 가능



IT 관리자의 고민 – 지방이나 해외지점 관리필요

리모트 장비의 파악 불가

- 지방이나 해외 지점 관리
- 리모트에서 장비 확인 한계
- 장비 상태 및 인터페이스 확인 필요



원격 관리 가능

리모트에서 원격 장비 정상유무 파악 – 라이브풀/패킷 캡쳐제공

Ports | Configure ports on this switch



The image shows a 5x10 grid of port status icons for a Cisco switch. The ports are numbered 1 through 52. Icons include lightning bolts (indicating link), green squares (indicating activity), and other symbols like a grey square or a small triangle.

Show port list »

Live tools

- Ping
- Cable test Warning: this test will disrupt traffic to 100 or 10 Mbit devices.
- Forwarding table
- Cycle port
- Wake client
- Throughput
- Blink LEDs

Ports (eg. 1 or 1,2,3 or 1 - 3): 5

Port	Link speed	Length ($\pm 3m$)	Status	Pair 1	Pair 2	Pair 3	Pair 4
5	1Gfdx	189 m	OK	ok	ok	ok	ok

Packet capture for access points ▾

Access point: All Access Points

Interface: Wired

Output: View output below

Duration (secs): 60

Ignore: broadcast packets multicast packets

Filter expression:

or

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IT 관리자의 고민 – 무선의 가시화 필요

무선 구성 및 트래픽 파악 어려움

- AP와 클라이언트 위치 파악 필요
- 시간대별 전파 범위 확인 필요
- 사용자 분석 필요



무선의 가시화 가능 – 장애처리도 쉽게

AP물리구성, Client위치, 전파의 범위까지 한번에



IT 관리자의 고민 – VPN 연결에 대한 지식 필요

설정을 위해 지점 방문 해야함

- VPN 구성 어려움
- 장비와 함께 지점 방문하여 설정
- 적어도 두 지점에서 함께 Test 진행함



VPN 연결에 대한 지식 불필요

두세번의 클릭만으로 VPN연결 – 설정을 위한 지점 방문 불필요

The screenshot shows the Cisco Meraki dashboard interface. The top navigation bar includes the Cisco Meraki logo, a dropdown menu for 'CisKoSE_Demo', and a location dropdown set to 'EN Lab'. On the left, a vertical sidebar lists 'Network-wide', 'Security appliance' (which is selected), 'Switch', and 'Help'. The main content area displays a message 'New in Dashboard: A brand new look for switches.' with a 'Read more' link. Below this, the 'Site-to-site VPN' section is shown. Under 'Type', the 'Off' option is selected, with the note 'Do not participate in site-to-site VPN.'. There are also two other options: 'Hub (Mesh)' and 'Spoke', each with their respective descriptions.

This screenshot shows the same Cisco Meraki dashboard as the previous one, but with additional content. It includes the same header and sidebar. The main content area now shows the 'Site-to-site VPN' configuration again, with the 'Spoke' type selected. Below it, a table titled 'Hubs' lists a single entry: 'Busan'. At the bottom, a table titled 'Local networks' shows a single row for 'Main subnet' with the value '192.168.111.0/24' and a 'no' dropdown next to it.

IT 관리자의 고민 – 내부에서 특정 장비로만 접속

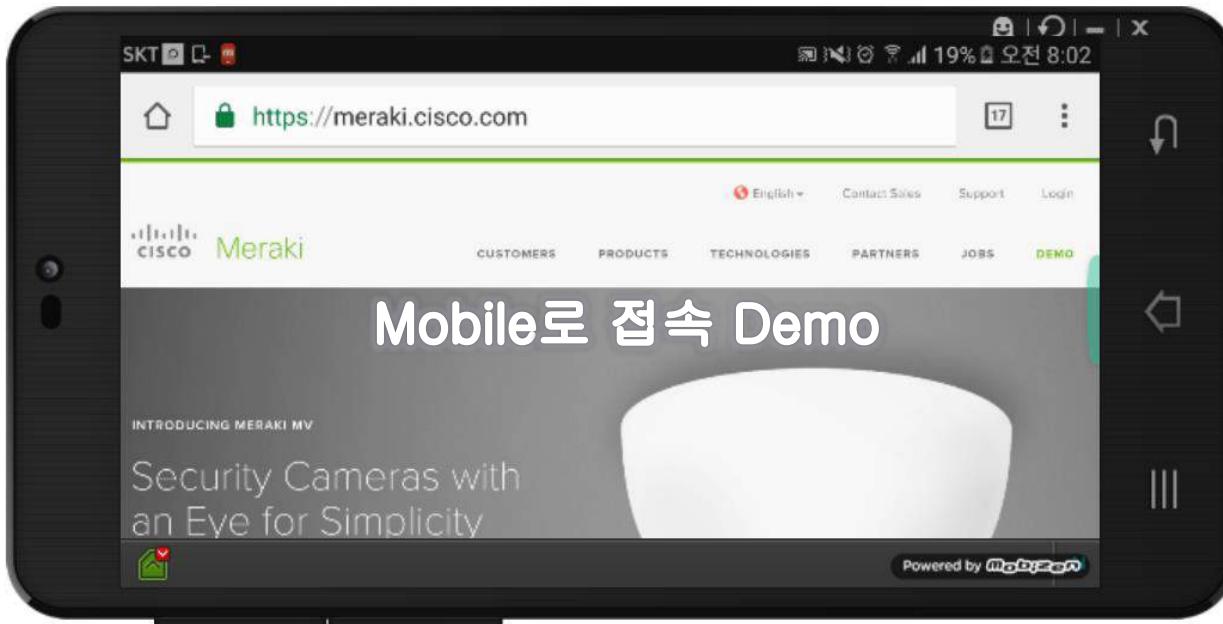
장비 확인을 위해서 컨솔이나 모니터링 툴 접속

- 설정을 위해서는 내부에서만 작업 가능
- 별도의 관리 Tool로 접속해야 함
- 접근할 수 있는 장비가 별도로 존재



Any Place & Any Device 접속 가능

내부에서 접속 또는 VPN접속 불필요



Cisco Meraki란?



Cisco Meraki 비전

100% Cloud 관리 기반 IT / 무한확장 가능



Cloud Managed WiFi

(2006)



MR Wireless LAN
802.11n/ac 무선랜
인도어/아웃도어

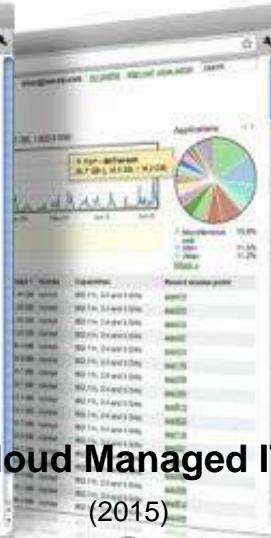


Cloud Managed Network

(2010)



MS Ethernet Switches
이더넷 스위치
PoE/ 1~10GE



Cloud Managed IT

(2015)



MX Security Appliances
지점 ~ 본사용
보안 어플라이언스



MC Communications
IP Phone

SM EMM
기업 모바일 관리
(EMM)



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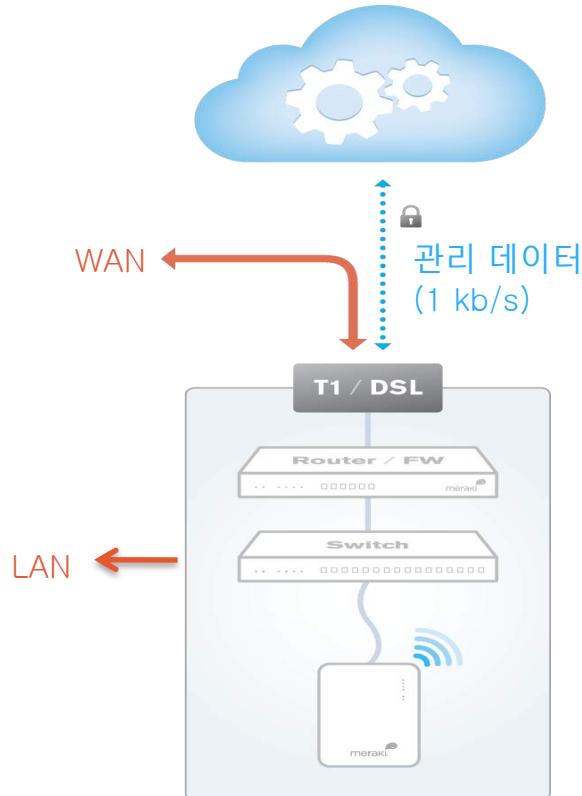
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3

Meraki Cloud 구조

가장 심플한 구성이지만 무한 확장 가능



Simple

Cloud License +
Meraki Hardware

Scalable

한계 없는 성능 및
네트워크 구성 수

Reliable

99.99% up-time SLA

Secure

어떠한 사용자 트래픽도
Cloud로 전송되지 않음

Current

SaaS 기반의 상시 업데이트를
통한 최신 버전 운용

머라키 제품 및 기능소개



머라카 무선 Access Point 제품군

MR시리즈 / 11ac wave2 출시

802.11ac 지원 AP

Indoor AP 제품군



MR18

2 Stream Triple-Radio
802.11a/b/g/n
600 Mbit/s



MR32

2 Stream Triple-Radio
802.11ac
1.2 Gbit/s



NEW
MR42

3 Stream Triple-Radio
802.11ac Wave 2
1.75 Gbit/s



NEW

MR52



MR53



4 Stream 4-Radio
802.11ac Wave 2
160 MHz / mGig (MR53)

Outdoor AP 제품군



MR62

Single-Radio
802.11b/g/n
300 Mbit/s



MR66

Dual-Radio
802.11a/b/g/n
600 Mbit/s



MR72

2 Stream Triple-Radio
802.11ac
1.2 Gbit/s



MR84



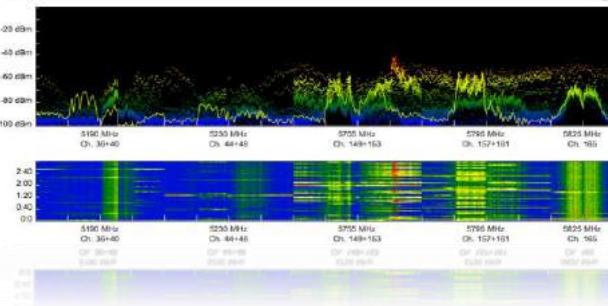
4 Stream 3-Radio
802.11ac Wave 2
160 MHz / mGig

머라키 무선의 특징

머라키 무선의 특징



사용자 / App별
트래픽 사용현황



Firewall

Layer 3 firewall rules

#	Policy	Protocol	Destination	Port	Comment
Allow	Any	Local LAN	Any	Wireless clients accessing LAN	
Allow	Any	Any	Any		Default rule

Layer 7 firewall rules

#	Policy	Application	Actions
1	Deny	Peer-to-peer (P2P)	All Peer-to-peer (P2P)

Add a layer 7 firewall rule

보안기능 &
트래픽 셰이핑 기능

CMX 기능 포함



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CMX 기능에 대한 분석

머라카 보안 UTM 제품군

MX시리즈

		Users	Unique features	Firewall throughput
Small branch				
	MX64/W	~50	<ul style="list-style-type: none"> – 802.11ac Wireless (MX64W) 	250 Mbps
	MX65/W NEW	~50	<ul style="list-style-type: none"> – 802.11ac Wireless (MX65W) – Built-in PoE+ (2 ports) 	250 Mbps
Medium branch 무선지원 UTM				
	MX84	~200	<ul style="list-style-type: none"> – Gigabit uplinks 	500 Mbps
	MX100	~500	<ul style="list-style-type: none"> – Gigabit uplinks 	750 Mbps
Large branch / campus				
	MX400	~2,000	<ul style="list-style-type: none"> – High-speed uplinks – Built-in redundancy – Modular interface 	1 Gbps
	MX600	~10,000	<ul style="list-style-type: none"> – High-speed uplinks – Built-in redundancy – Modular interface 	1 Gbps
Teleworker  Z1 <ul style="list-style-type: none"> – 1-5 users – Dual-radio wireless – FW throughput: 50 Mbps 				
For 재택 근무자				

머라카 UTM 제품군

MX시리즈

Site-to-site VPN

Type

Off

Do not participate in site-to-site VPN.

Hub (Mesh)

Establish VPN tunnels with all hubs and dependent spokes.

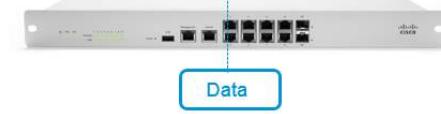
Spoke

Establish VPN tunnels with selected hubs.



WAN 1
보안된 VPN 터널 (active)
Latency / loss > threshold

WAN 2
보안된 VPN 터널 (active)
Latency / loss < threshold



최신 VPN연결

콘텐츠필터링 제공

다양한 모델 제공

트래픽쉐이핑

SDWAN 제공

#	Policy	Application	Actions
1	Deny	Peer-to-peer (P2P)	All Peer-to-peer (P2P)
2	Deny	Gaming	Zynga
3	Deny	Social web & photo sharing	MySpace

Category filtering

Blocked website categories

Abused Drugs ✕ Adult and Pornography ✕
Gambling ✕ Malware Sites ✕ Games ✕
SPAM URLs ✕

Uplink configuration

WAN 1

down (Mb/s) 500
up (Mb/s) 500

WAN 2

2 Gbps

Cellular

unlimited

Traffic shaping rules

Rule #1 ✕

Definition

This rule will be enforced on traffic matching *any* of these expressions

Bandwidth limit

YouTube ✕ Add +

Choose a limit...
2 Mbps

details

머라키 Switch 제품군

MR시리즈 / 10G광 스위치와 버추얼 스탠딩

	Port configurations	Power supplies & fans	Feature highlights
Layer 2 Access			
	MS220 family	8, 24, 48 port models	<ul style="list-style-type: none"> - Integrated power & fans - Power redundancy w/ RPS 2300
Layer 3 Access			
	MS320 family	24, 48 port models	<ul style="list-style-type: none"> - Dual hot-swappable power supplies - Fans integrated into power supplies
	MS350 family	NEW 24, 28 port models	<ul style="list-style-type: none"> - Dual hot-swappable power supplies - Dual field-replaceable fans
Layer 3 Aggregation			
	MS410 family	NEW 16, 32 port models	<ul style="list-style-type: none"> - Dual hot-swappable power supplies - Dual field-replaceable fans
	MS425 family	NEW 16, 32 port models	<ul style="list-style-type: none"> - Dual hot swappable power supplies - Four field-replaceable fans



머라카 스위치 특징

10G광 스위치와 베추얼 스태킹

The diagram illustrates several key features of the Meraka Switch:

- Topology-aware automatic distribution:** A green callout points to three switches labeled 부산 (Busan), 대전 (Daejeon), and 제주 (Jeju), indicating that traffic is distributed across different locations using only two ports per switch.
- Virtual Stacking:** A green callout points to a stack of three switches, representing the ability to stack multiple switches together.
- Layer 3 Trunking:** A green callout points to a central switch connected to multiple green modules, representing the ability to trunk multiple ports together.
- Live 700GbE port mirroring:** A green callout points to a "Packet capture" window showing configuration for port 1 of switch SWA12, with options for output, duration, and verbosity.
- Power over Ethernet (PoE) monitoring:** A green callout points to a "Ports" configuration window showing power usage details for each port, such as current traffic, total bytes, RSTP state, PoE usage, and CDP/LLDP status.
- Centralized information sharing:** A green callout points to a summary table at the bottom right showing centralized information for various ports across different switches.

Other visual elements include a Cisco logo in the bottom left corner and a large green circle containing a white dot in the bottom right corner.

머라키 궁금한 점

Management

Internet
1

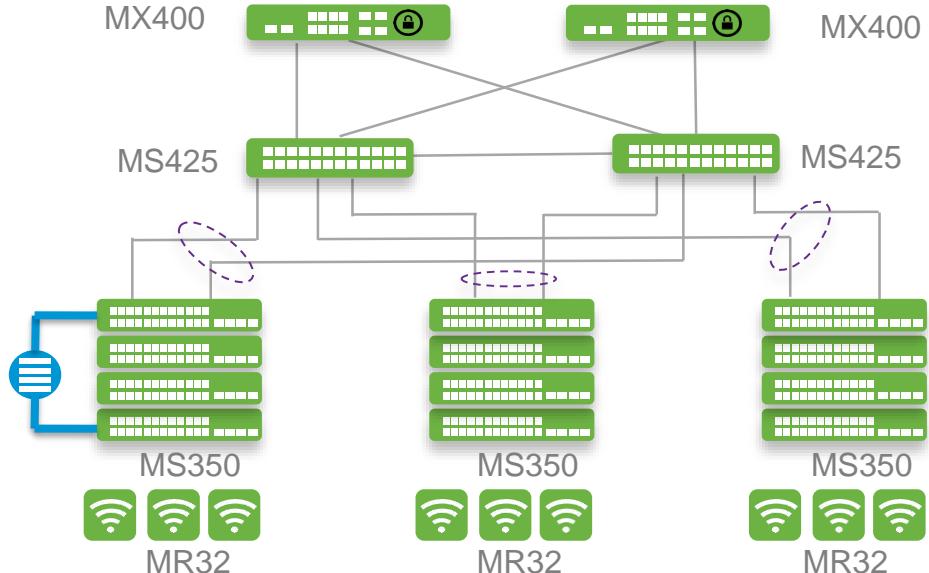


2



머라키 Campus 디자인

머라키로 전체 End-to-End 디자인



Access Devices

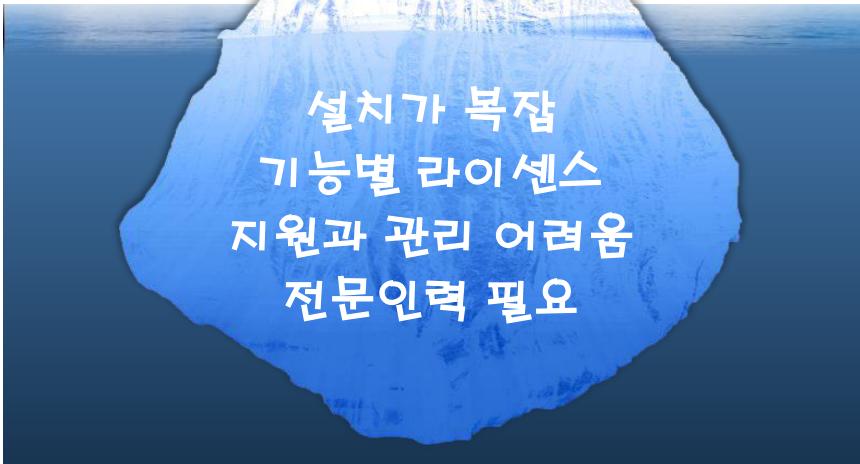


머라키 구성

하드웨어 + 라이센스

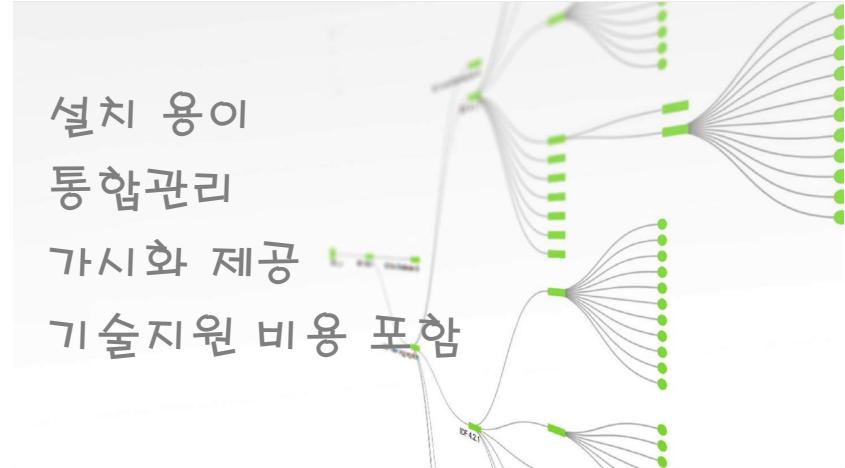
일반 장비 HW + Service

설치가 복잡
기능별 라이센스
지원과 관리 어려움
전문인력 필요



시스코 머라키 HW + License

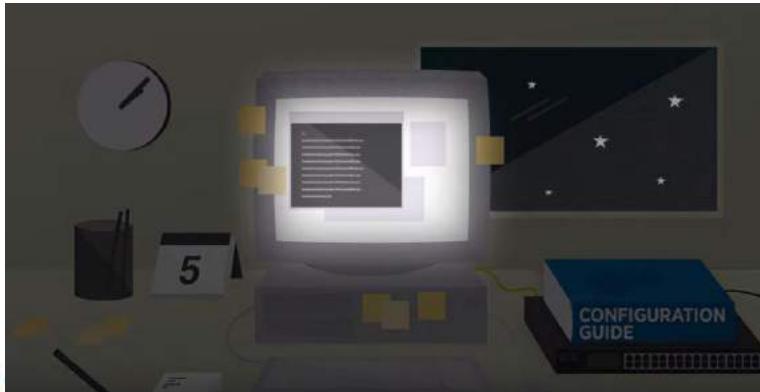
설치 용이
통합관리
가시화 제공
기술지원 비용 포함



License = 컨트롤러 + NMS
+ Service + 리포팅
+ SW & 펌웨어 upgrade

일반 네트워크 장비와 비교

일반장비 vs 시스코 머라키



일반 네트워크 장비와 비교

일반장비 vs 시스코 머라키



Cisco Network Connection IP list interface showing a table of network connections:

Protocol	Port	Device	Sendto	LocalAddress	ForeignAddress	State	WorkerID
tcp	0	0		127.0.0.1:6441	127.0.0.1:10045	TIMEWAIT	python
tcp	0	0		127.0.0.1:6709	127.0.0.1:63209	ESTABLISHED	hostd-worker
tcp	0	0		127.0.0.1:3441	127.0.0.1:70045	ESTABLISHED	hostd-worker
tcp	0	0		127.0.0.1:6704	127.0.0.1:85455	ESTABLISHED	hostd-worker
tcp	0	0		127.0.0.1:1442	127.0.0.1:10048	TIMEWAIT	python
tcp	0	0		127.0.0.1:1442	127.0.0.1:10048	TIMEWAIT	python
tcp	0	0		127.0.0.1:2804	127.0.0.1:85459	ESTABLISHED	hostd-worker
tcp	0	0		127.0.0.1:2702	127.0.0.1:85309	ESTABLISHED	hostd-worker
tcp	0	0		127.0.0.1:1447	127.0.0.1:10062	TIMEWAIT	python
tcp	0	0		127.0.0.1:2704	127.0.0.1:85455	ESTABLISHED	openwrtcmd
tcp	0	0		127.0.0.1:1448	127.0.0.1:85359	ESTABLISHED	hostd-worker
tcp	0	0		127.0.0.1:1449	127.0.0.1:85359	ESTABLISHED	hostd-worker
tcp	0	0		127.0.0.1:3441	127.0.0.1:10048	TIMEWAIT	python
tcp	0	0		127.0.0.1:3443	127.0.0.1:10048	TIMEWAIT	openwrtcmd
tcp	0	0		127.0.0.1:3444	127.0.0.1:10048	TIMEWAIT	python
tcp	0	0		127.0.0.1:1448	127.0.0.1:10048	TIMEWAIT	openwrtcmd
tcp	0	0		127.0.0.1:1449	127.0.0.1:10048	TIMEWAIT	hostd-worker
tcp	0	0		127.0.0.1:1441	127.0.0.1:10045	TIMEWAIT	hostd-worker
tcp	0	0		127.0.0.1:1443	127.0.0.1:10045	TIMEWAIT	python
tcp	0	0		127.0.0.1:1440	127.0.0.1:10048	TIMEWAIT	openwrtcmd
tcp	0	0		127.0.0.1:1441	127.0.0.1:10048	TIMEWAIT	hostd-worker
tcp	0	0		127.0.0.1:1443	127.0.0.1:10048	TIMEWAIT	openwrtcmd
tcp	0	0		127.0.0.1:1440	127.0.0.1:10048	TIMEWAIT	hostd-worker

The Cisco Meraki Dashboard interface. On the left, a sidebar menu includes: NETWORK-WIDE, SECURITY APPLIANCE, SWITCH, WIRELESS, SYSTEM MANAGER, ORGANIZATION, and HELP. The main area shows a network topology with 97 devices. A specific device is highlighted with a red box and a warning icon, indicating a "CABLE ERROR". The status bar at the top right says "NETWORK ALERT: CABLE ERROR".

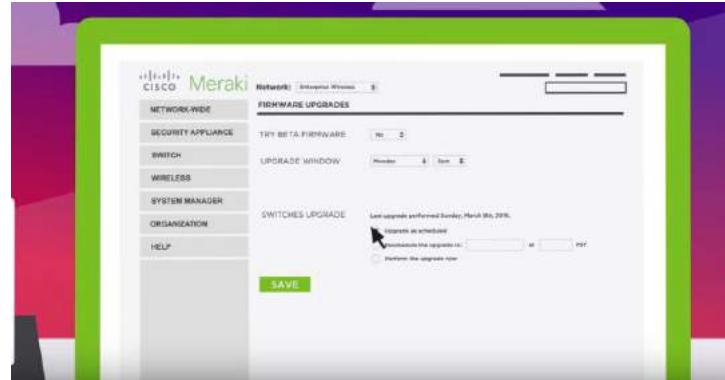
The Cisco Meraki Dashboard interface. The main area displays a green banner for "UPCOMING SCHEDULED MAINTENANCE ON JUNE 28TH, BETWEEN 5PM AND 7PM PST" with a link to "CLICK HERE TO RESCHEDULE". Below the banner are several graphs: a line graph showing network traffic over time, a pie chart, and a bar chart. The sidebar menu on the left is identical to the previous screenshot.

일반 네트워크 장비와 비교

일반장비 vs 시스코 머라키



CISCO



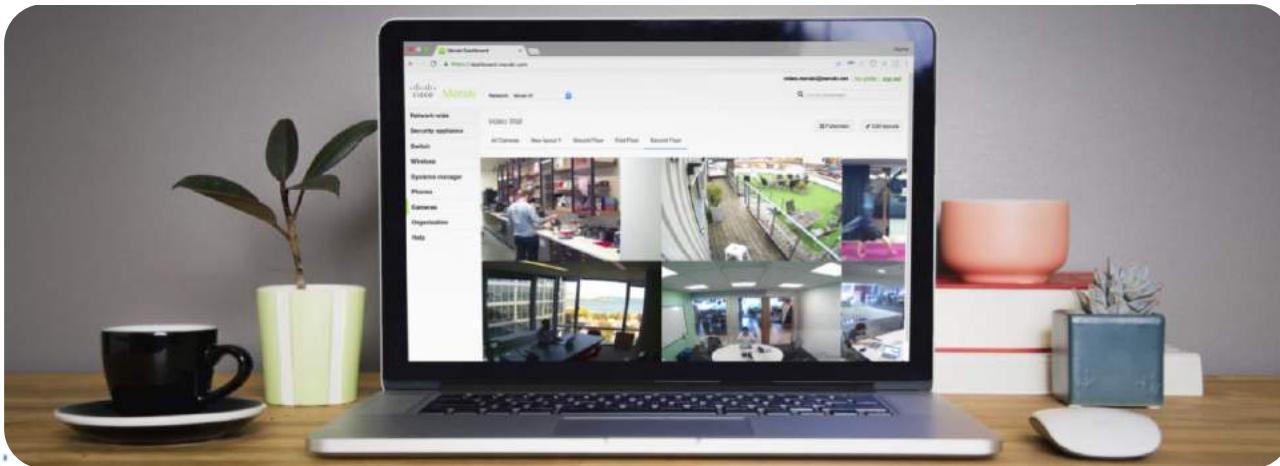
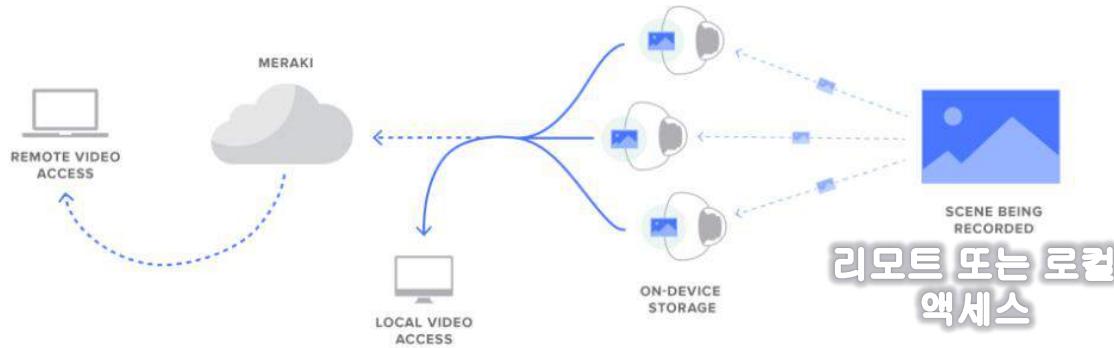
머라키가 적합한 환경

비용절감, 적은 IT 인력, 지점이 많은 환경

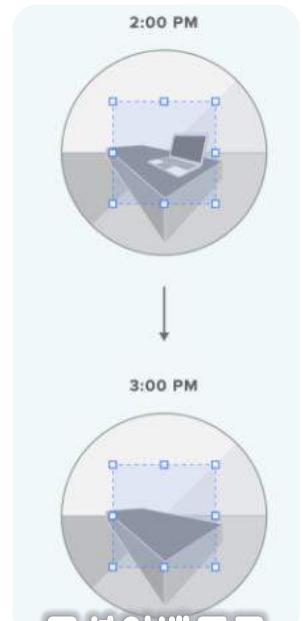


Why Cisco Meraki

고객의 의견수렴 후 신기술 도입 및 New 솔루션 출시



Security Cameras
Meraki MV



모션이벤트로
분실된 컴퓨터 확인

