The SNOC is a Real Thing

Meraki, Security Analytics and XDR

Alex Burger, PTME, Cisco Meraki Matt Robertson, DTME Cisco Security BRKENT-2033



Cisco Webex App

Questions?

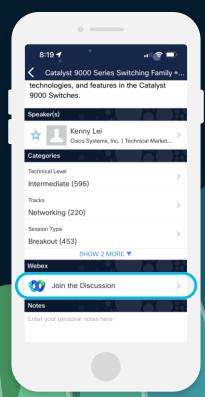
Use Cisco Webex App to chat with the speaker after the session

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

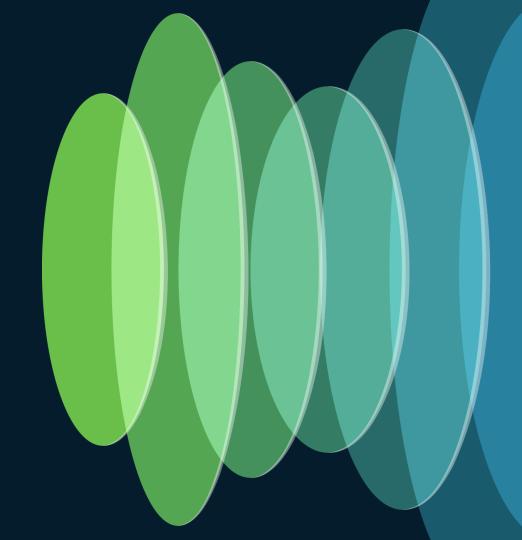
Webex spaces will be moderated by the speaker until June 7, 2024.

https://ciscolive.ciscoevents.com/ciscolivebot/#BRKENT-2033





Exactly what is a SNOC?



Get SNOC'd!

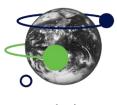




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Agenda

- Introduction
- Secure Network Analytics and XDR
- Telemetry from the Meraki Network
- Threat Detection and Response
- Conclusion



SECURE







Watch out for this guy!



About Us



Matt Robertson
Distinguished Engineer

cisco SECURE







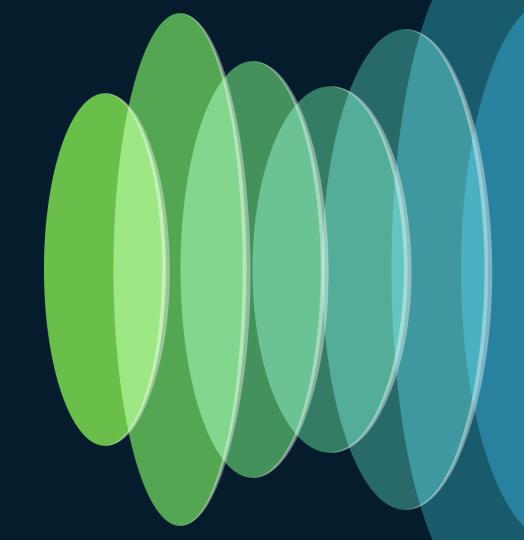


Alex Burger Principal Engineer





Secure Network Analytics and Cisco XDR



NDR & XDR

Network Detection and Response

- Analyze north/south and east/west traffic flows in near-real time
- Model network traffic and highlight suspicious traffic and offer behavioral techniques (nonsignature) to detect anomalies
- Aggregate individual alerts in structured incidents to facilitate investigation
- Provide automatic or manual response capabilities

Extended Detection and Response

- Collection of telemetry from multiple security tools
- Application of analytics to the collected and homogenized data to arrive at a detection of maliciousness
- Response and remediation of that maliciousness

NDR & XDR

Network Detection and Response

Extended Detection and Response

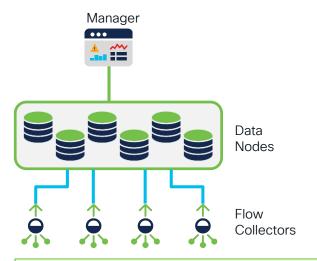
Cisco Secure Network Analytics

Cisco XDR



Cisco Secure Network Analytics

(Stealthwatch Enterprise)



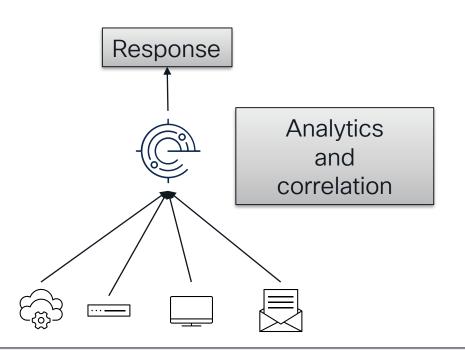
BRKSEC-2248 - Design, Deploy Cisco Network
Detection and Response with Cisco Breach Suite
- Hanna Jabbour, Wednesday Jun 5 @ 2:30 pm

BRKSEC-3019 - Visibility, Detection and Response with Cisco Secure Network Analytics - Matt Robertson, Monday Jun 3 @ 3:00 pm

Secure Network Analytics is a collector and aggregator of network telemetry for the purposes of security analysis and monitoring

Comprehensive East-West network visibility and analytics

Cisco XDR



Cisco XDR collects and analyses telemetry from multiple sources to accelerate security operations.

Collection of telemetry from multiple sources



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Integrations Make XDR Possible

Data Analytics and Correlation

Logs and security events are ingested into the data warehouse and are correlated and analyzed using Al and ML to create actionable *XDR incidents*

Asset Insights and Context

Consolidated inventory of devices and users across an organization. Understanding the asset value contributes to the prioritization and context available for security incidents

Threat Hunting and Investigation

Security information is collected from multiple sources in real time and available for investigation, threat hunting, and enrichment of security incidents

Automation and Response

Provides automated, guided and/or manual actions using a customer's security control points to more rapidly contain and eradicate a security incident.



Meraki and XDR Integrations

Data Analytics and Correlation

Flow logs ingested for network detections

Asset Insights and Context

Systems Manager assets ingested to Asset Insights

Threat Hunting and Investigation

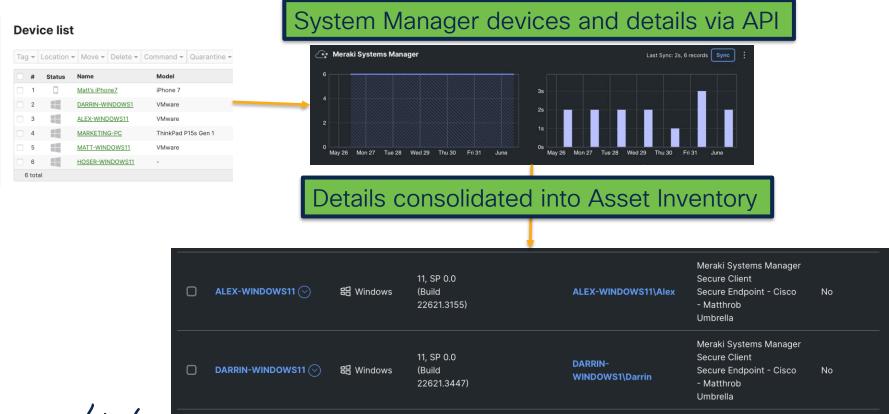
API enrichment for incidents

Automation and Response

Response workflows available

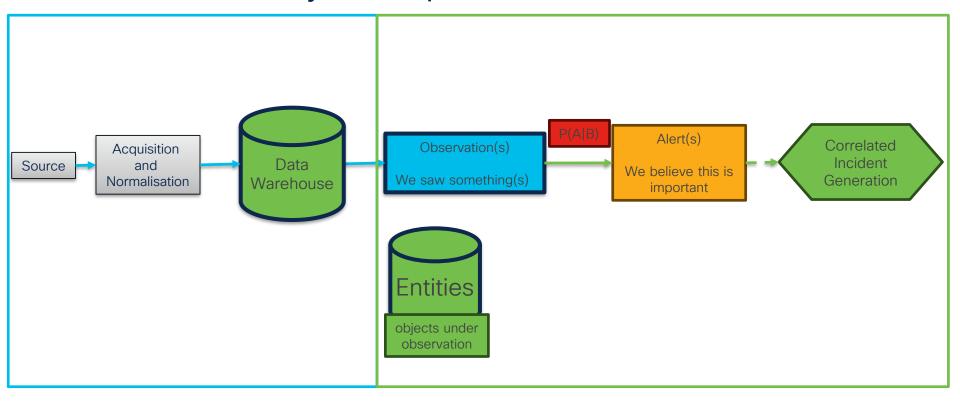


Meraki Systems Manager & XDR Asset Insights



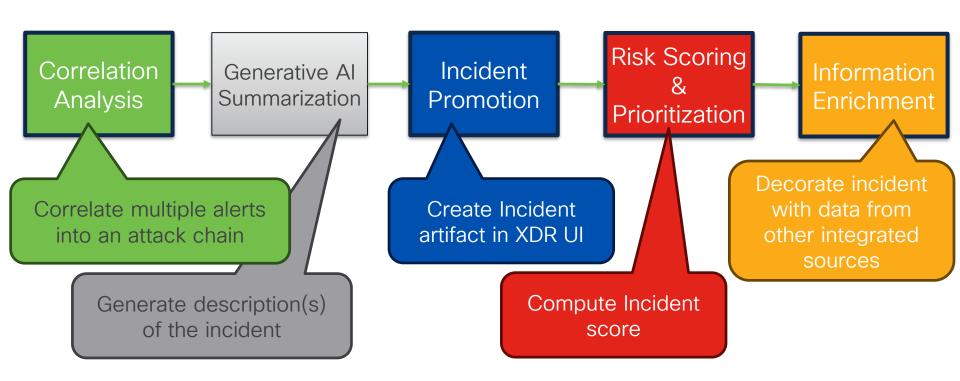
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XDR Data Analytics Pipeline



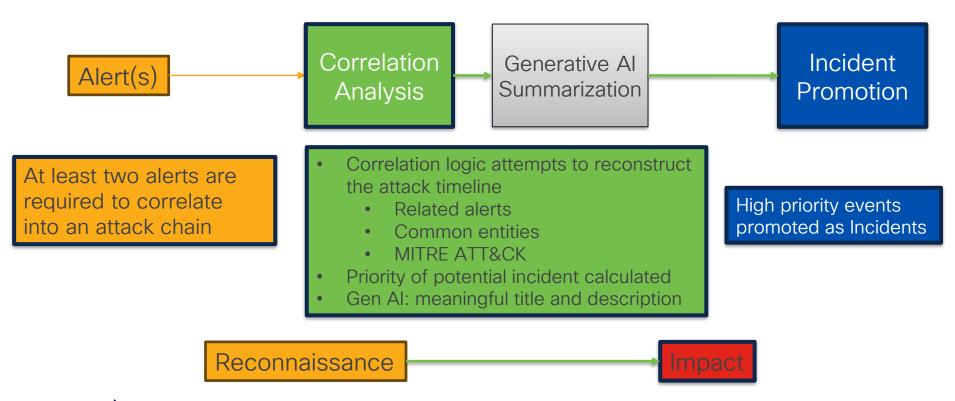


Correlated Incident Generation





Correlation Analysis: Attack Chains





Native Detection vs Extended Detection

Native

Extended

XDR can create alerts from downstream sources that have no native verdicts: NetFlow, NVM, Cloud logs, ISE, FTD XDR collects and extends downstream data sources that have verdicts:

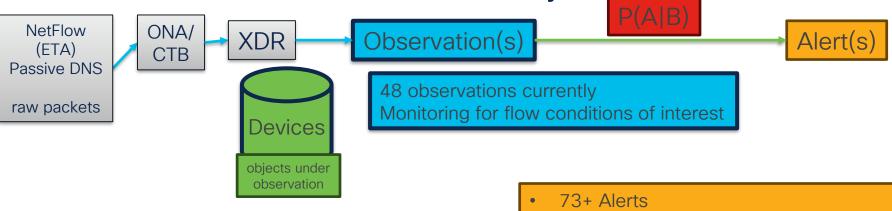
EDRs, ETD, NDRs*, etc

High Fidelity, Low Noise

Alerts have passed a threshold for active notification. Not all potentially malicious events pass this threshold

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XDR Network Flow Data Analytics Pipeline



- NetFlow (incl. ETA), Passive DNS, Raw packets sent to:
 - Observable Network Appliance (ONA)
 - Cisco Telemetry Broker (CTB)
- Metadata extracted and sent to XDR
- Flow logs visible in Event Viewer
- · Identify devices by IP Address, Hostname

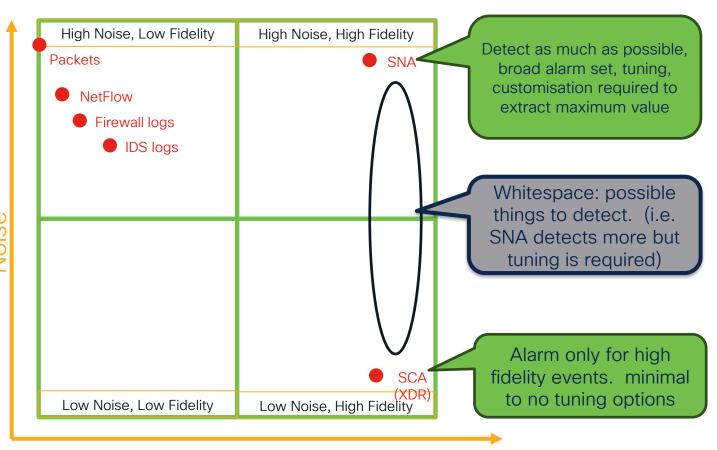
- Some alerts are composed of single observation(s)
- Some alerts are composed of multiple observation(s)
- Contain source observations
- Assigned to device
- Correlated into Attack Chains



NDR: Extracting security value from Network Data

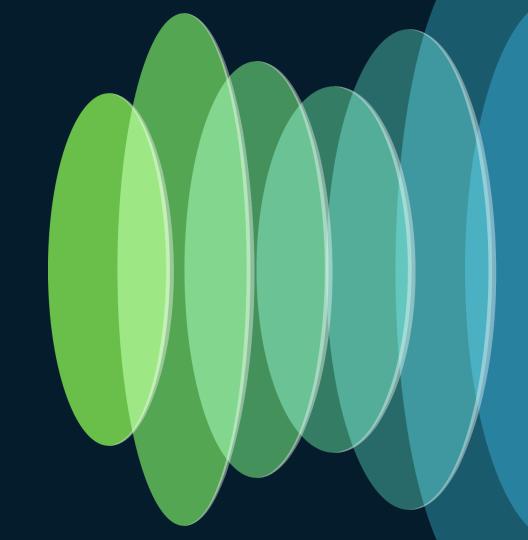
Network telemetry is by nature high volume of data sets with minimal direct security outcomes associated

NDR's apply analytics to network to telemetry to ascertain security outcomes (i.e. create fidelity)





Integrating Meraki with XDR and SNA



Dashboard Managed NetFlow Exporters





Meraki MX

NetFlow v9

Meraki MS390 & C9300-M

IPFIX enriched with Application and ETA



The Value of Network Visibility

Gain insights into the devices, users and applications on your network and what they are up to.

Operational Outcomes

Ask questions of the data to make operational decisions.

Ex. How many users are bypassing my proxy.

Analytical Outcomes

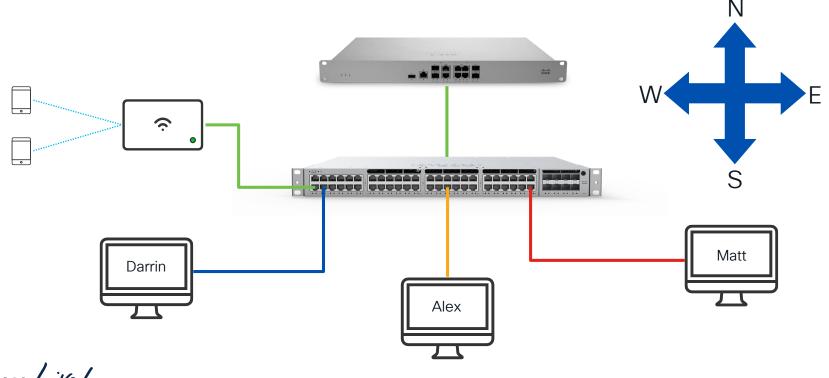
Security Policy:

Analyse network behaviour to design, implement and validate security policy

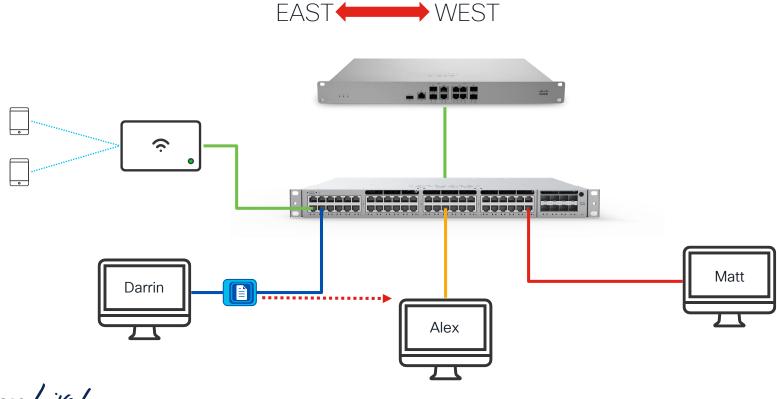
Threat **Detection**:

Analyse network behaviour to infer the presence of a threat actor

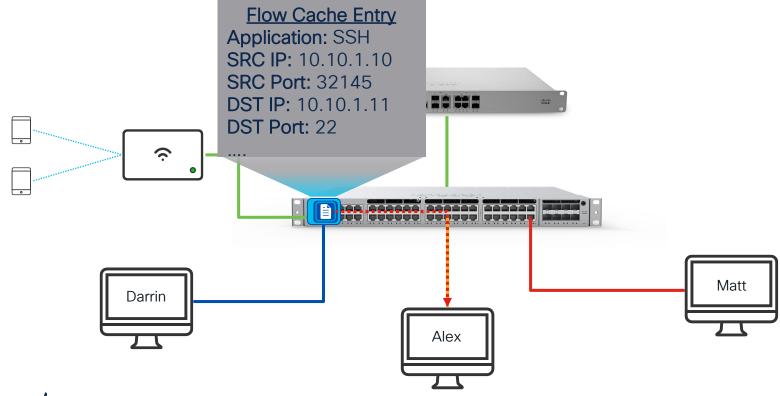




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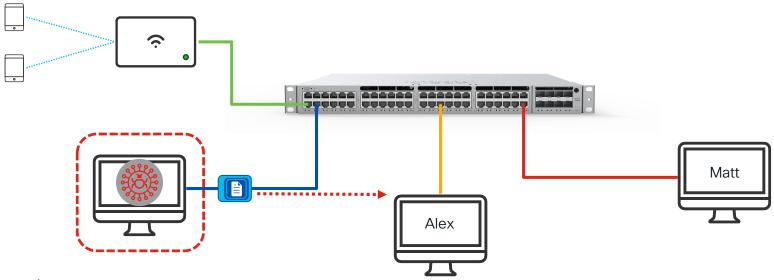
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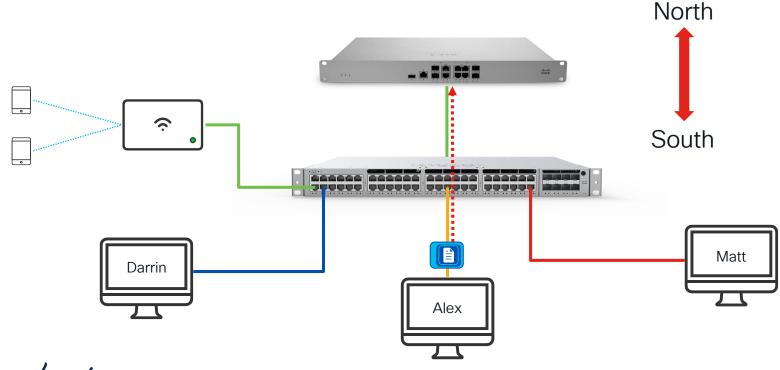


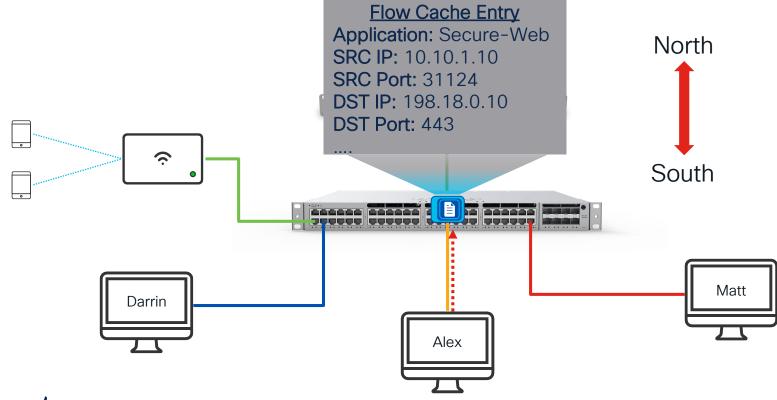
Why capture east-west traffic?

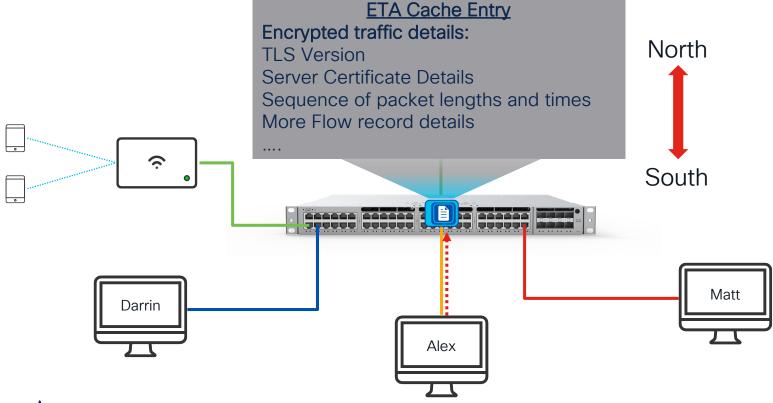
Visibility into

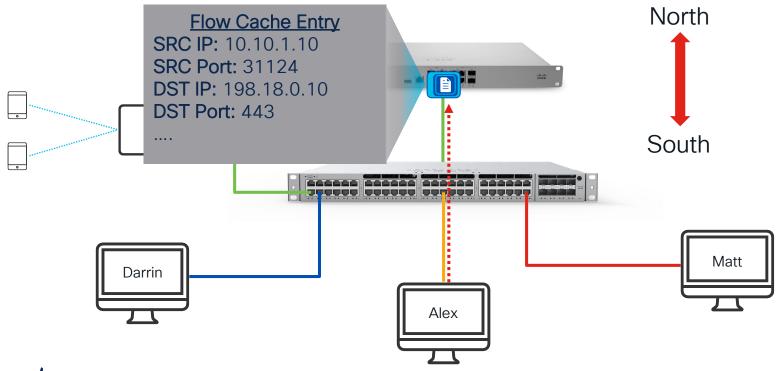
Vulnerability scanning
Lateral movement
Malicious package distribution
Valid communications for policy building





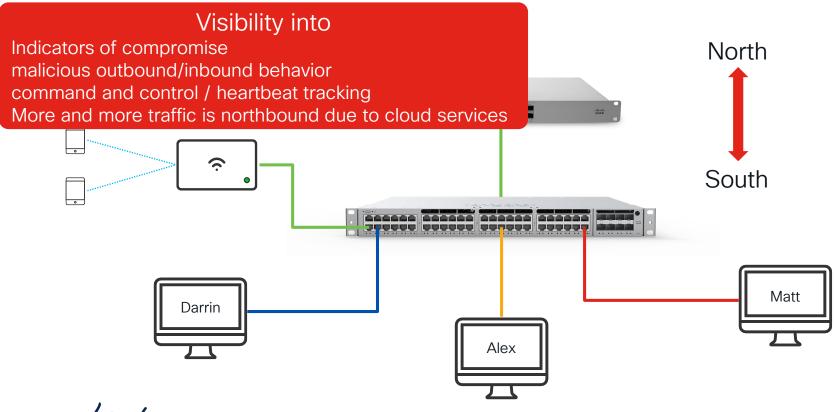






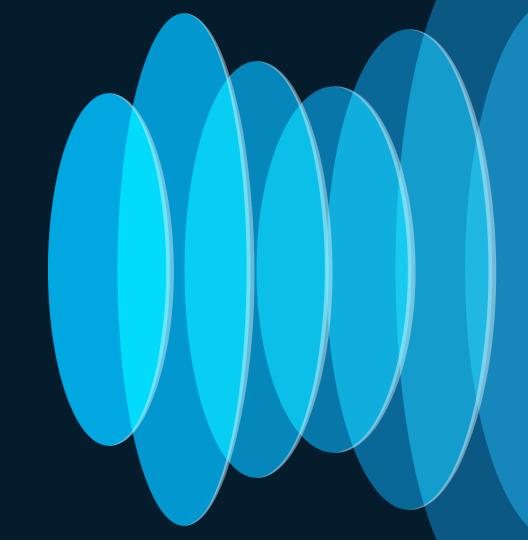
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Why capture north-south traffic?



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NetFlow and ETA details on the MS390/9300-M



CS NetFlow & Encrypted Traffic Analytics

Supported on all MS390/9300/X/L-M

AVC NetFlow

IPv4 and v6 records built for Cisco Secure Analytics

Encrypted Traffic Analytics

for in-depth analysis of traffic without MiTM decryption

All East-West Traffic

capturing flows on every client facing port on all supported switches in the network

Adaptive Policy

Export of Source Security Group Tags (SGTs)



NetFlow traffic reporting	Enabled: send netflow traffic statistics	~
NetFlow collector IP	10.10.0.45	
NetFlow collector port	2055	
Encrypted Traffic Analytics		
ETA collector port	9996	

Requires Advanced Licensing

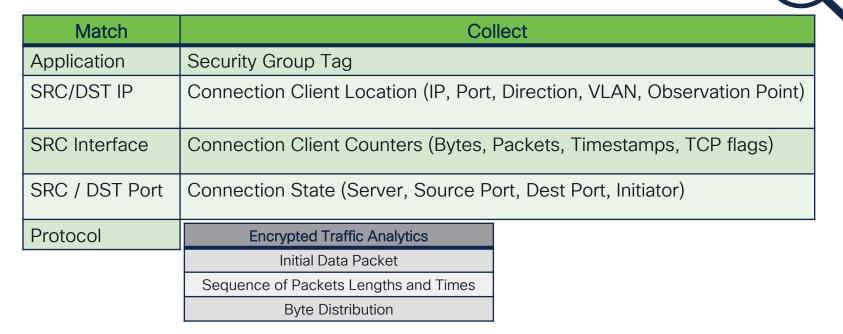
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https://documentation.meraki.com/MS/Monitoring_and_Reporting/MS_NetFlow_and_Encrypted_Traffic_Analytics

C9300-M/MS390 NetFlow v10 (IPFIX) & ETA

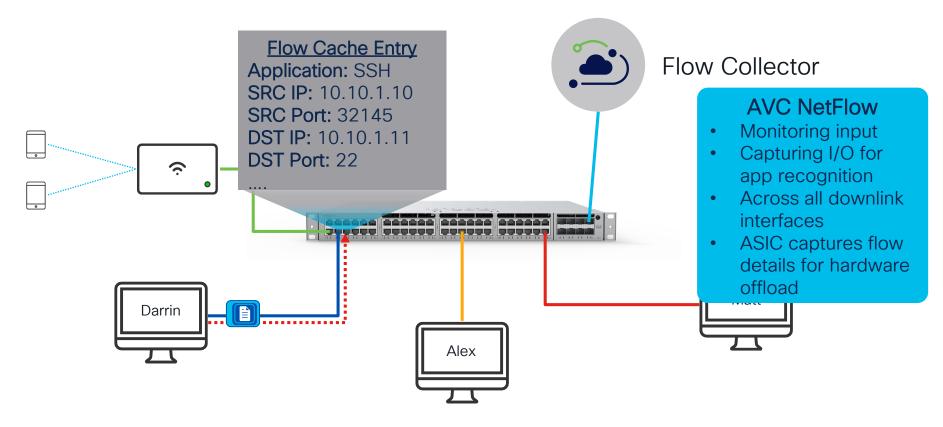
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NetFlow / IPFIX



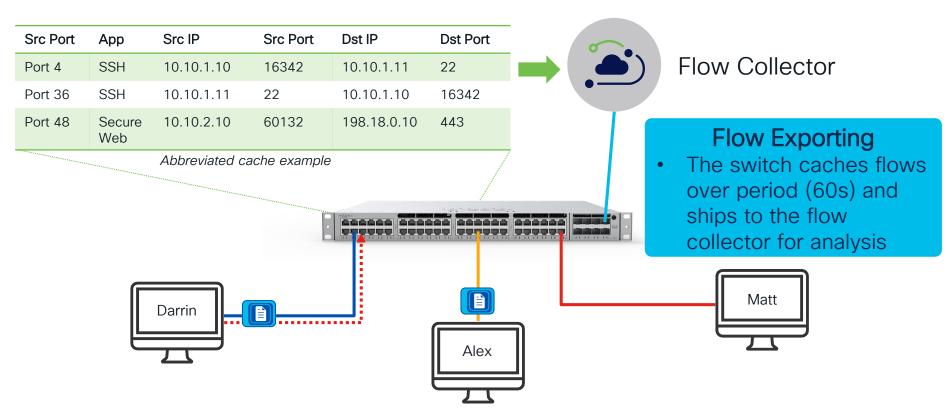


Flow Capture on CS (390/9300)





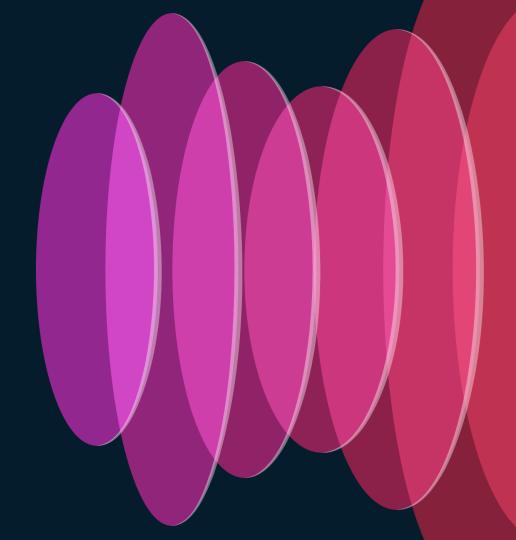
Flow Export on CS (390/9300)



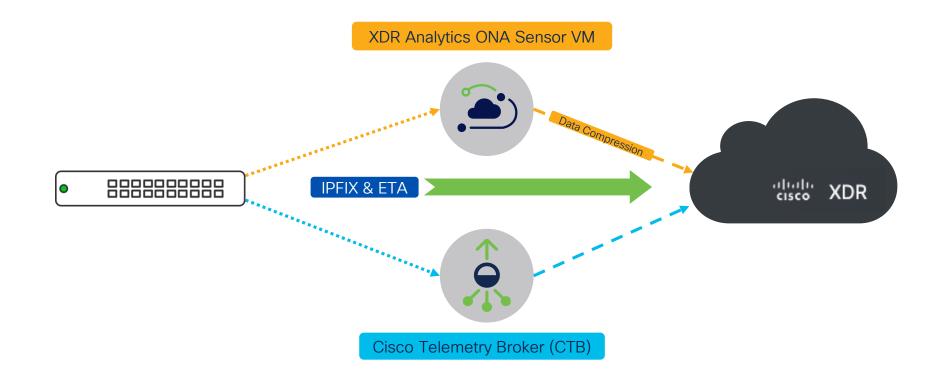


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How do we get this telemetry into XDR?



Getting Flows into XDR from MS390/9300





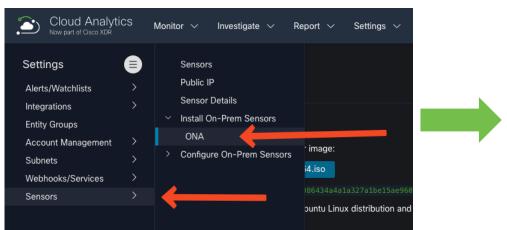
XDR Secure Cloud Analytics ONA Sensor Install

- Log into XDR Analytics (SCA) and navigate to sensors
- 2 Download the ONA Sensor Appliance ISO
- Install in virtual environment and set a static IP address
- 4 Validate connectivity in XDR dashboard
- Program the IPFIX/NetFlow/ETA port configurations in XDR Analytics for the sensor

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Login to XDR Analytics Download the ISO

Secure Cloud Analytics Web Interface







Install in a virtual environment

ONA server appliance = Ubuntu 22.04 + Fancy Packages



CPUs: 2+

Memory: 2GB+

Storage: 32GB+

Network: 1x interface if only

collecting flows
2x if using SPAN for raw traffic analysis

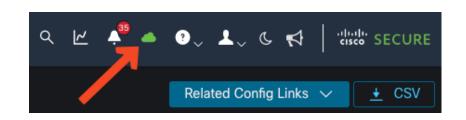


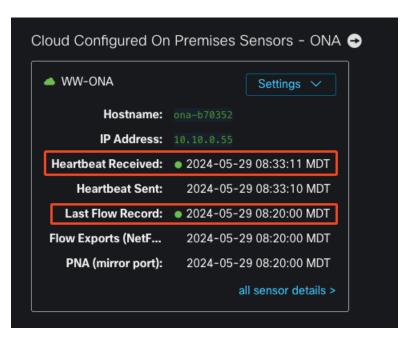
https://www.cisco.com/c/dam/en/us/td/docs/security/stealthwatch/cloud/deployment/Sensor_Installation_Guide_DV_1_3.pdf



Validate Sensor Connectivity to XDR

Secure Cloud Analytics Web Interface

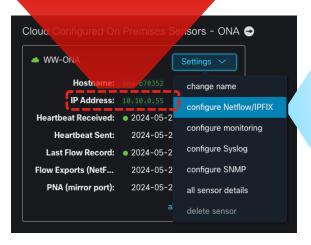


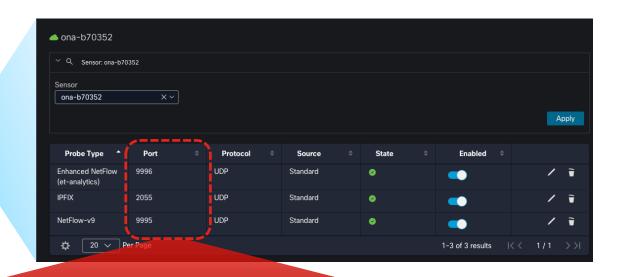




Configure IPFIX/ETA/NetFlow







Port/s to use for flow export configuration in dashboard



Configuring NetFlow / ETA Exporting in Dashboard

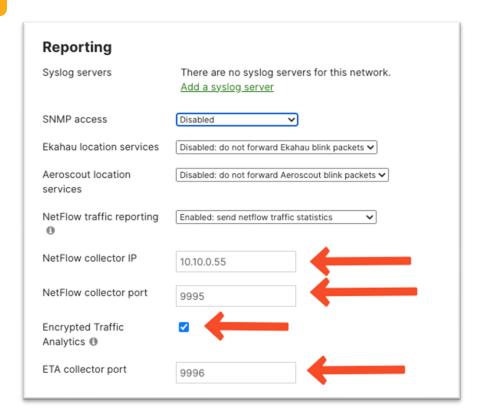
Network-wide > General > Reporting

CS Enablement

Network Wide Enablement on all supported switches with an SVI configured

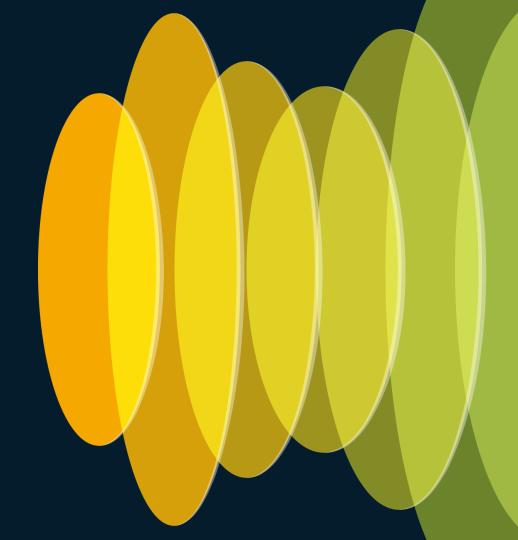
MX Enablement

MX in the network will ship flows from I AN to WAN



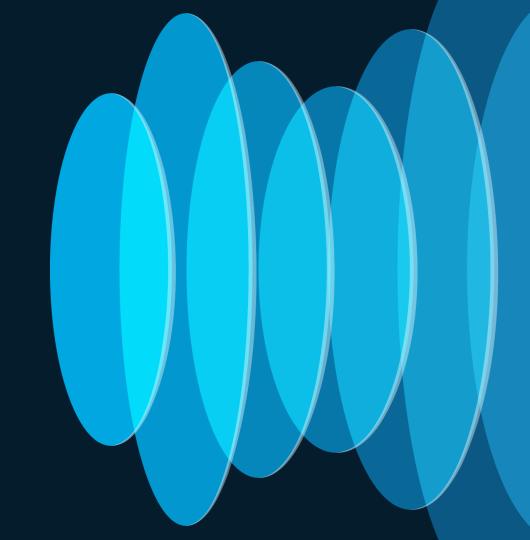


Demo





Introducing something new!



Coming Soon: Meraki MX!

Meraki Cloud

XDR Network Flow Data Analytics Pipeline

- Meraki MX exports flow logs direct to Meraki Cloud
- XDR reads flow logs for configured Orgs/networks
- XDR Analytics does its thing

Correlated Incident Generation

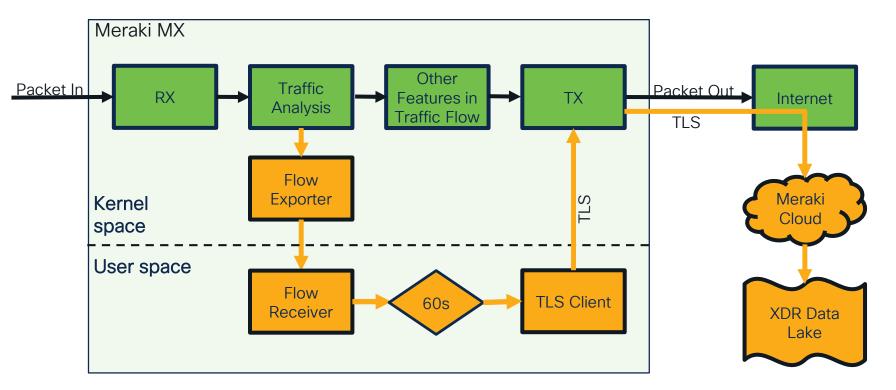


- Incidents appear in XDR Incident Manager
- XDR Incident Manager can be operated on from the Meraki Dashboard



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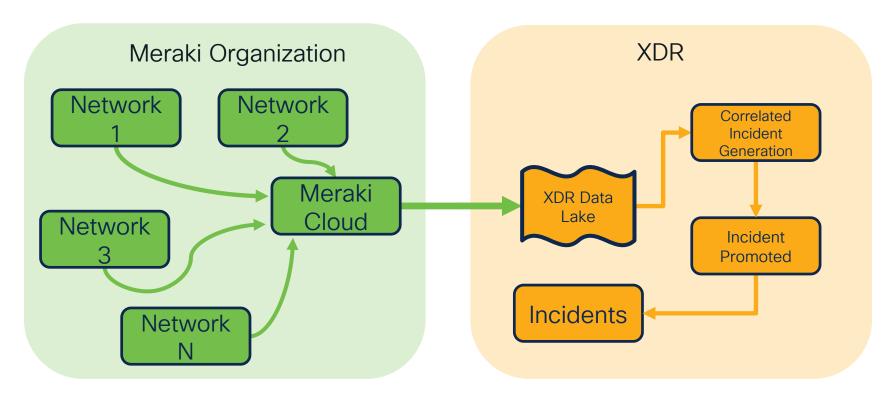
Close Up: MX Telemetry Packet Flow





MX & XDR Integration

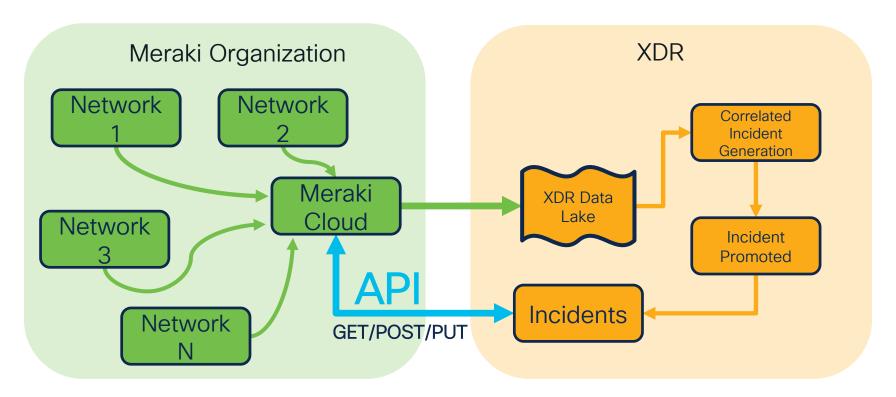
High-level Overview





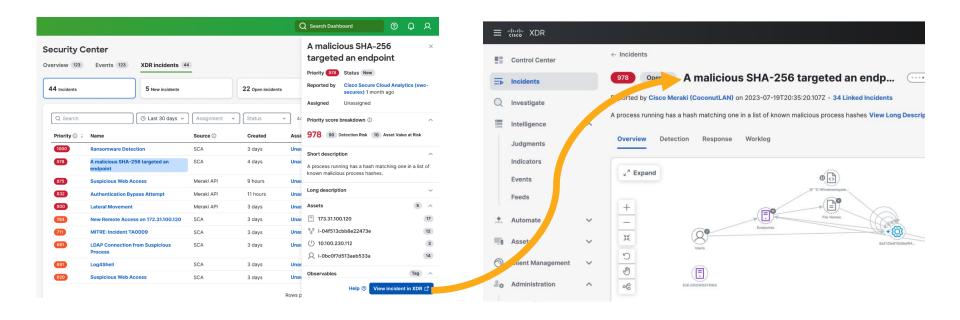
MX & XDR Integration

High-level Overview: API



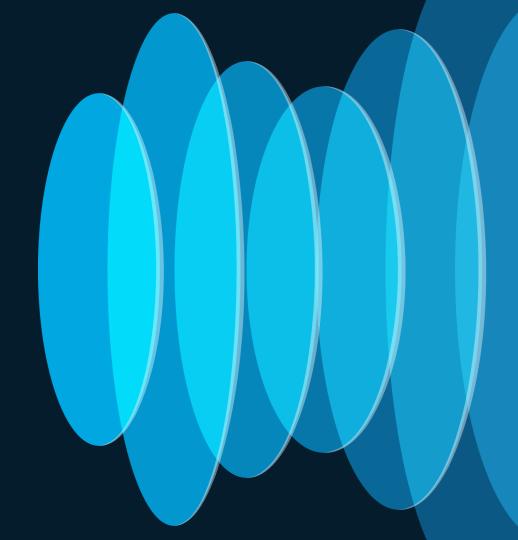


Bringing the SOC to the Meraki Dashboard

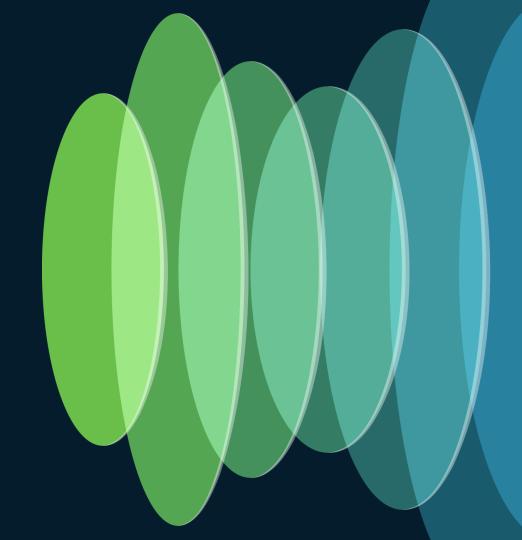




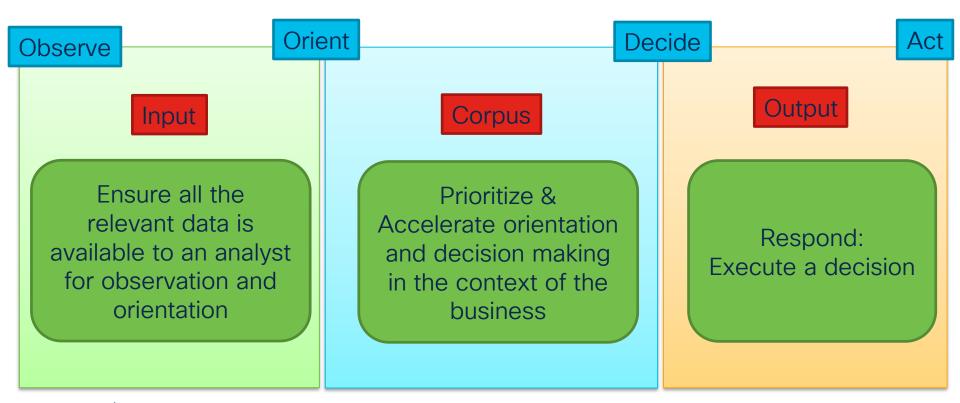
What does this mean for a full stack Meraki and XDR customer?



Threat Detection

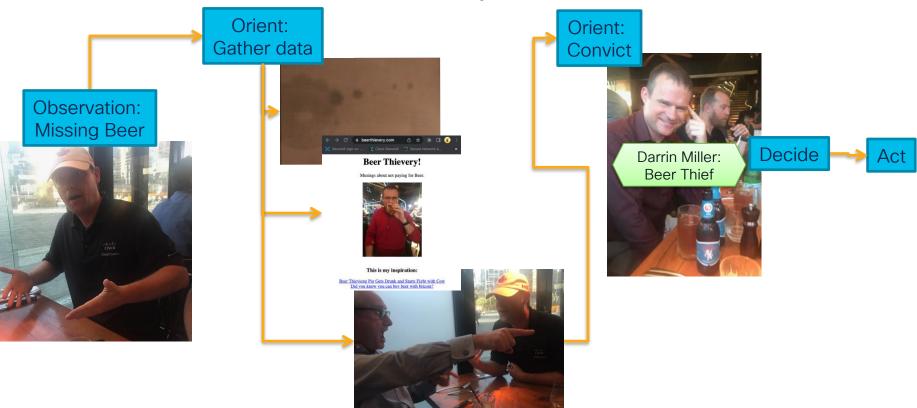


Security Operations: Data to Response



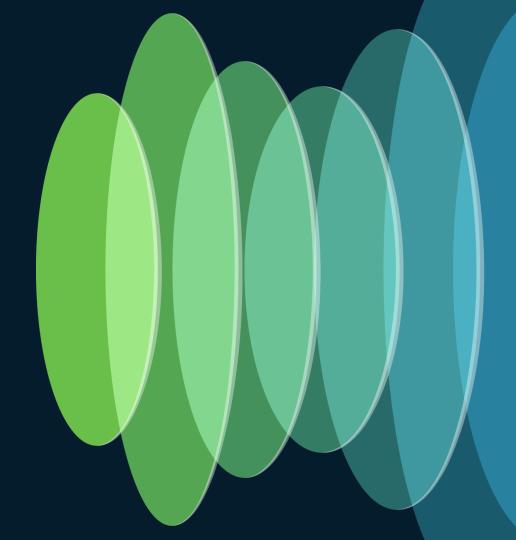


Threat Detection and Response with OODA

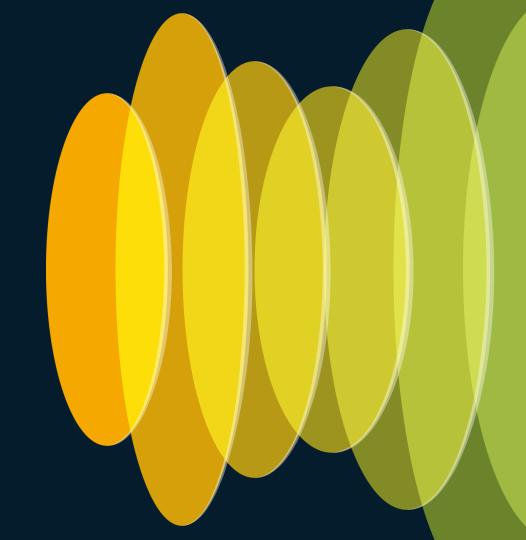




Demo



Response Actions with Adaptive Network Control



MS390/C9300-M with Secure Network Analytics & ISE

Automated threat response and alerting



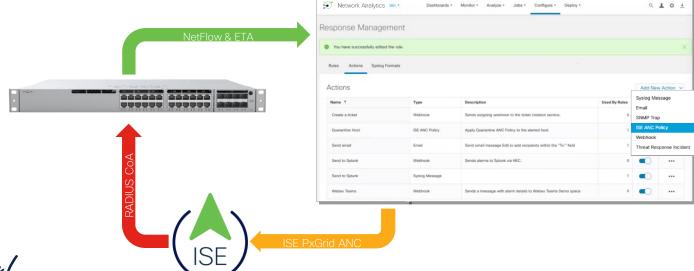
Telemetry provided by MS390 to SNA / XDR



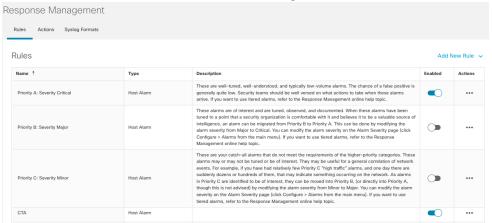
Flexible outcomes: Policy Violation



Trigger CoA via ISE

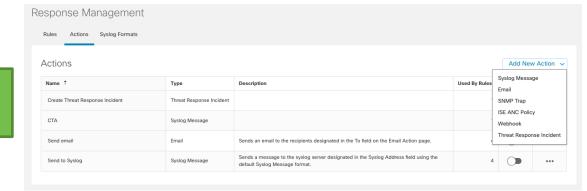


SNA: alarm response rules & actions



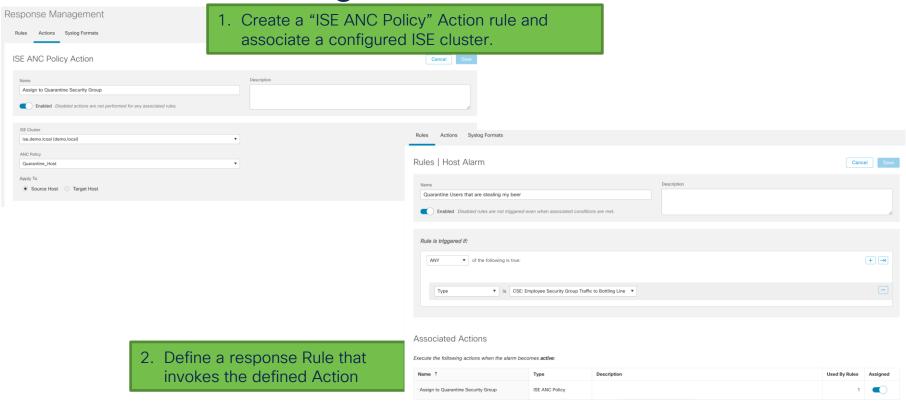
- Create rules to automate response/export on occurrence of an alarm
- Leverage built-in Tiered Alarm Severity rules

- Define automated actions when alarm rule is hit: ISE ANC, syslog, etc.
- Create SecureX Threat Response incident





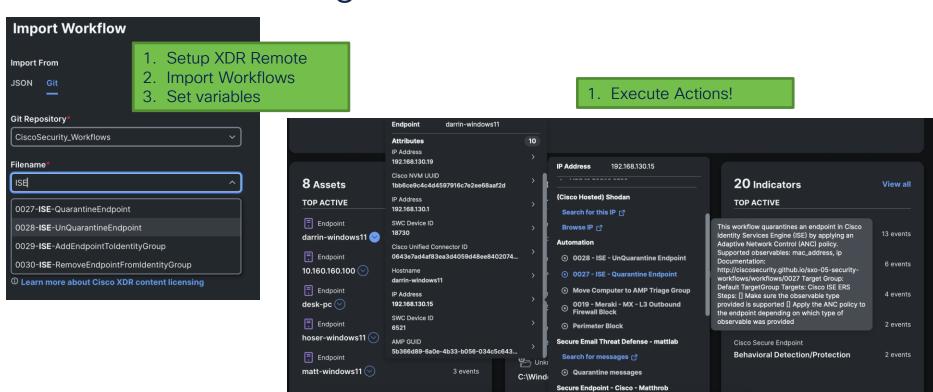
SNA: Remediating Action with ISE





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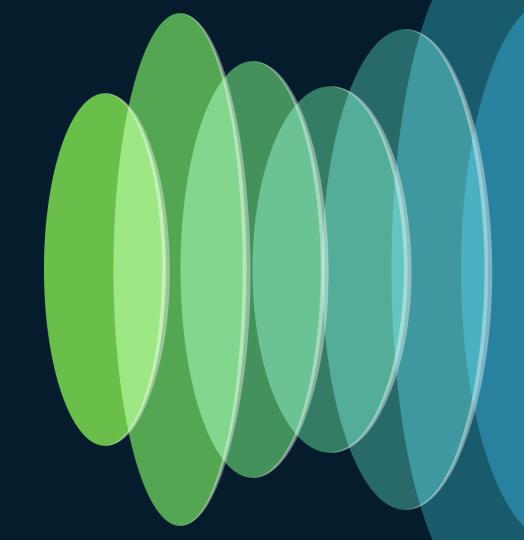
XDR: Remediating Action with ISE





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Summary



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- 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

Related Sessions

Session ID	Title	When
BRKSEC-2178	Extended Detection with Cisco XDR: Security Analytics across the enterprise	Thursday 11:00 AM
BRKSEC-3019	Visibility, Detection and Response with Cisco Secure Network Analytics	Monday 3:00 PM
BRKSEC-2248	Design and Deploy Cisco Network Detection and Response with Cisco Breach Suite	Wednesday 2:30 PM
BRKSEC-2227	Evaluating and Improving Defenses with MITRE ATT&CK	Thursday 1:00 PM



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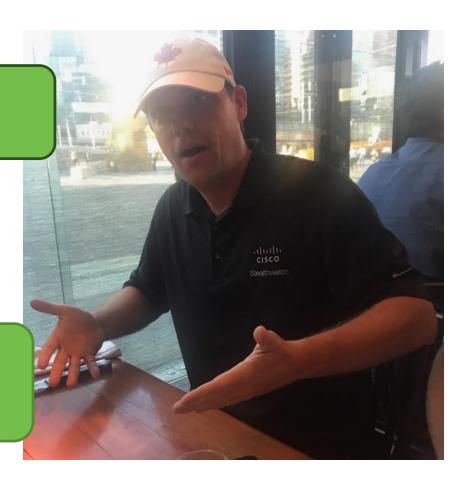
Parting Thoughts

The SNOC is real!

Security Operations can be simplified with Meraki and XDR

Keep your eyes open and don't have your beer stolen.







Thank you

