ciscolive! Let's go



Extended Detection with Cisco XDR

Security analytics across the enterprise

Matt Robertson
Distinguished Engineer
BRKSEC-2178



Agenda

Objective:

Understand Cisco XDR Analytics

Agenda:

- Intro to Cisco XDR
- Data, Analytics and Detection
- Extended Detection
- Summary





Cisco Webex App

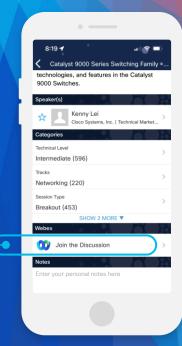
Questions?

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 December 22, 2023.



https://ciscolive.ciscoevents.com/ciscolivebot/#BRKSEC-2178



About Me

Matt Robertson

- Distinguished Technical Marketing Engineer
- Extended Threat Detection and Security Analytics
- Cisco Live Distinguished Speaker
- 15.5 years at Cisco: Development, TME, Lancope
- Canadian eh





Public Service Announcement







Not currently in Melbourne



What is Cisco XDR?



What is Extended Detection and Response?



Collection of telemetry from multiple security tools

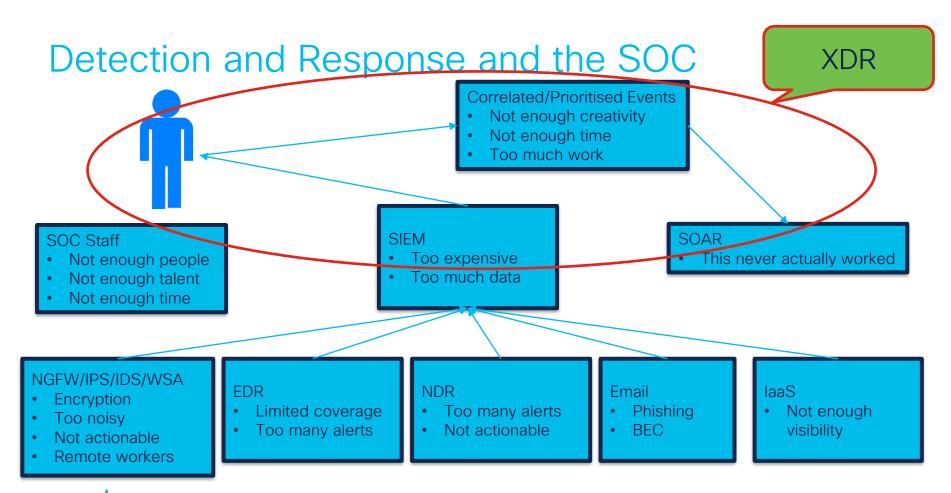


Application of analytics to the collected and homogenized data to arrive at a detection of maliciousness



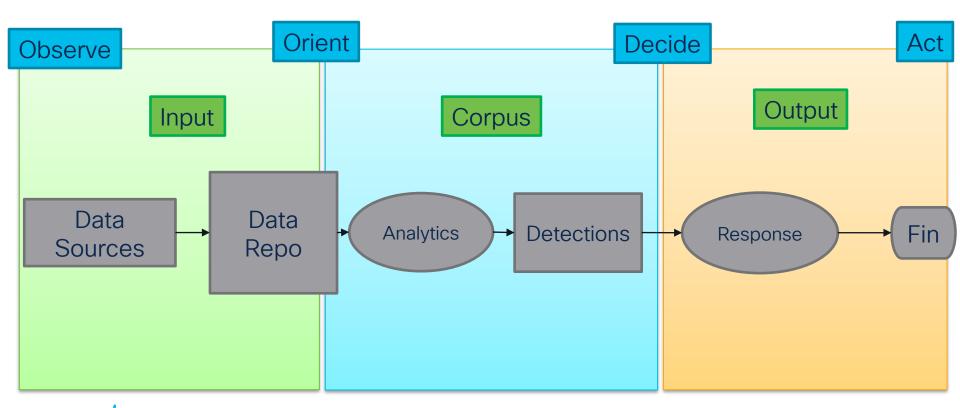
Response and remediation of that maliciousness





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An XDR speeds up the OODA Loop





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Cisco XDR: A new product offer

Data collection
Analytics
Detection





Incident framework Enrichment Response

Along with Significant Enhancements



Evolved Into



BRKSEC-2113 - Cisco SecureX XDR: Making sense of the solution and how it's a Security Productivity Tool - Aaron Woland, Friday Dec 8 @ 1:30 pm

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.



Current Integrations

Threat Hunting and Investigation

Data Analytics and Correlation

Cisco

- Network Telemetry
- NGFW via SAL Logging
- Identity Service Engine
- Public Cloud Infrastructure
- Secure Client NVM
- Secure Endpoint*

3rd Party

Crowdstrike

Cisco

- AMP File Reputation
- Global Threat Intelligence
- Secure Client NVM
- Secure Email and Web Manager
- Secure Email Gateway
- Secure Email Threat Defense
- Secure Endpoint
- Secure Firewall (FPR)
- Secure Malware Analytics
- Secure Network Analytics
- Secure Web Appliance
- Threat Intelligence API *2
- Umbrella
- Talos Intelligence

3rd Party

- Amazon GuardDuty
- CrowdStrike
- Cybereason
- Devo
- Exabeam
- Google Chronicle
- Google Safe Browsing
- Graylog
- Have I Been Pwned
- IBM X-Force Exchange
- IsltPhishing
- LogRhythm
- Microsoft Defender for Endpoint
- Palo Alto Networks AutoFocus
- SentinelOne
- Trend Micro Vision One
- more...



Current Integrations

Asset Insights and Context

Cisco

- DUO (Devices)
- Meraki MX
- Orbital
- Secure Access

Umbrella

Secure Client NVMSecure Endpoint

3rd Party

- CrowdStrike
- Ivanti Neurons
- Jamf Pro
- Microsoft Azure AD (Users)
- Microsoft Defender for Endpoint
- Microsoft Intune
- SentinelOne
- VMWare Workspace ONE UEM
- ServiceNow SecOps

Automation and Response

Cisco

- Adaptive Security Appliance
- Attack Surface Management
- Defense Orchestrator
- Identity Services Engine
- Meraki MX
- Orbital
- Secure Email and Web Manager
- Secure Email Gateway
- Secure Email Threat Defense
- Secure Endpoint
- Secure Firewall (FPR)
- Secure Malware Analytics
- Secure Network Analytics
- Security Management Appliance

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- Umbrella
- Vulnerability Management

3rd Party

- Amazon Web Services
- CrowdStrike
- Cybereason
- ExtraHop
- Fortinet Fortigate
- Google Cloud Platform
- Jamf Pro
- Microsoft Azure
- Microsoft Azure AD
- Microsoft Defender for Endpoint
- Palo Alto Cortex
- Palo Alto Panorama
- SentinelOne
- Trend Micro Vision One

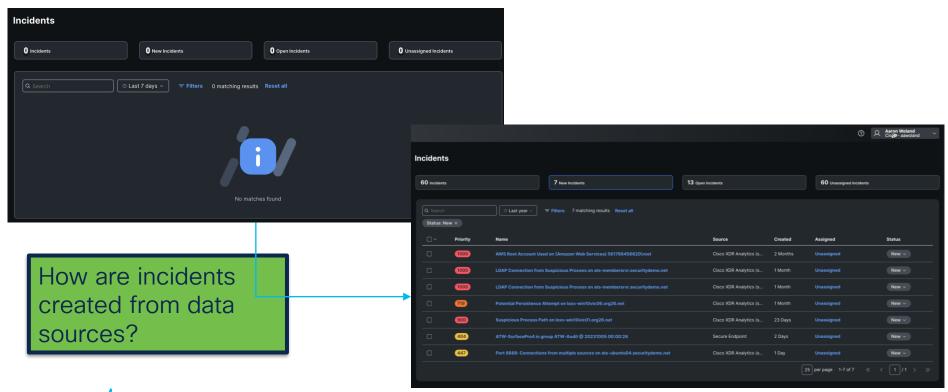


Data, Analytics and Detection



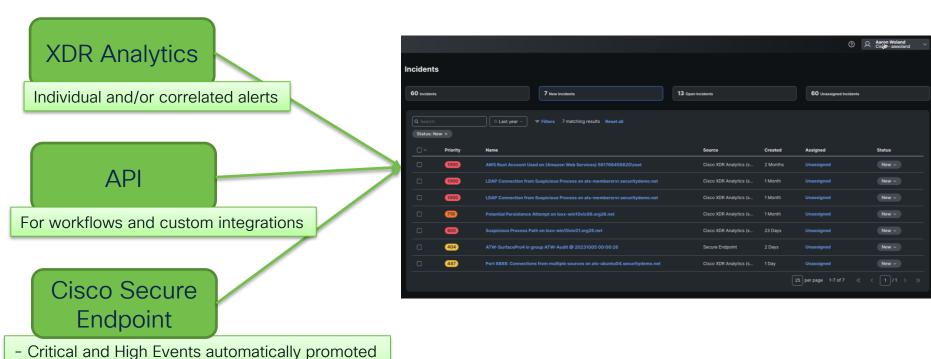
XDR Outcome:

Analytics to the collected & homogenized data to arrive at a detection of maliciousness





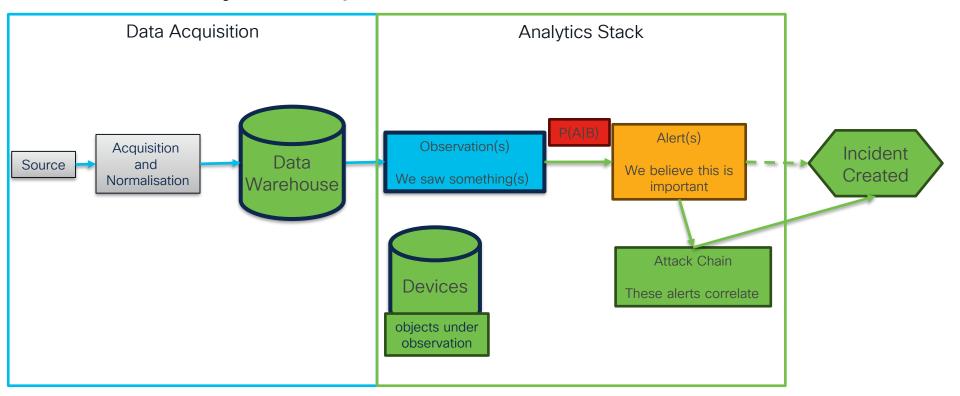
Methods of Incident Creation: Current Status





- this will evolve in the next quarter

Data Analytics Pipeline



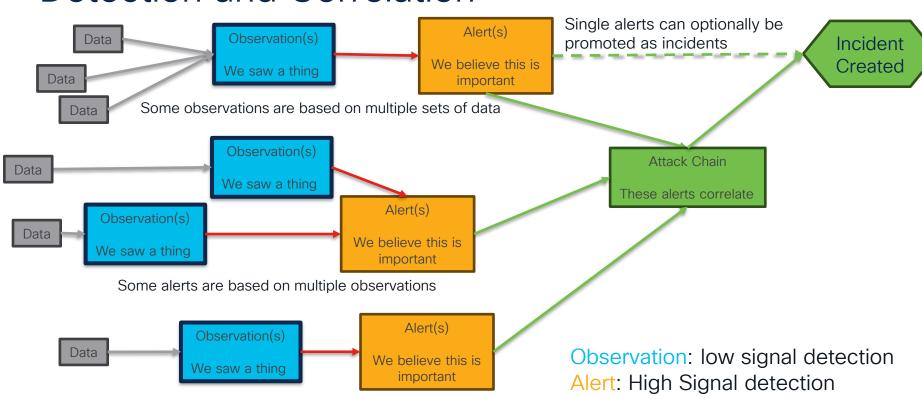




Detection and Correlation

Some data sets can lead directly to an observation and alert

There is an AI/ML model behind observation to alert



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Attack chain: Higher signal detection

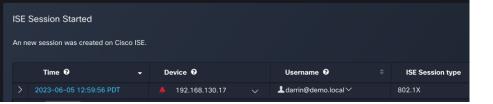
Observations to Alert

Data Model

P(A|B)

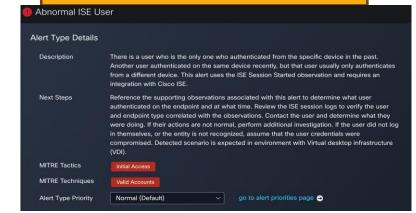
Observation(s)

We saw something(s)





We believe this is important



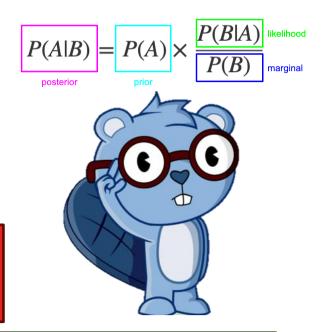


A note about data science

There is a complex AI/ML data model behind the alerting engine

> What moves a set of observations to an alert can be situational dependent for certain alert types

> > For some alerts predicting their future appearance in the UI is not always deterministic



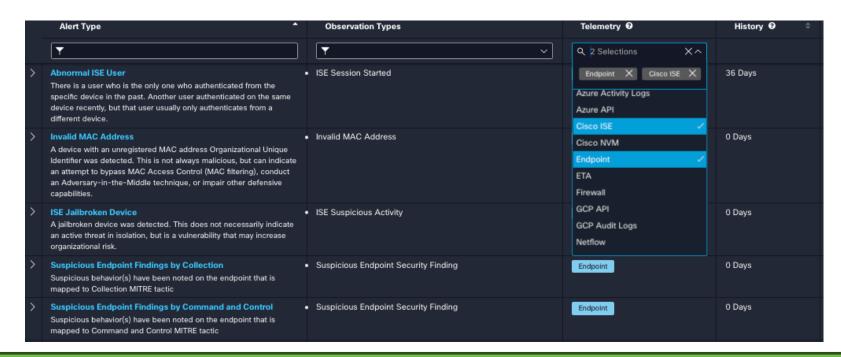
Practical terms:

- Small labs are not ideal proof of concept scenarios
- Single test scenarios may also not present ideal results
- You might not get alerts (incidents) for some data sources

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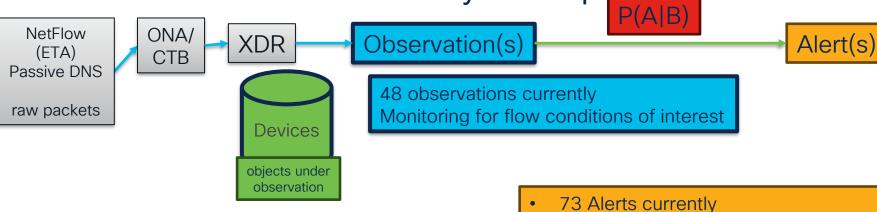
Alerts Require (Specific) Data



Familiarise yourself with the observations, data and history for specific alerts



Network Flow Data Analytics Pipeline

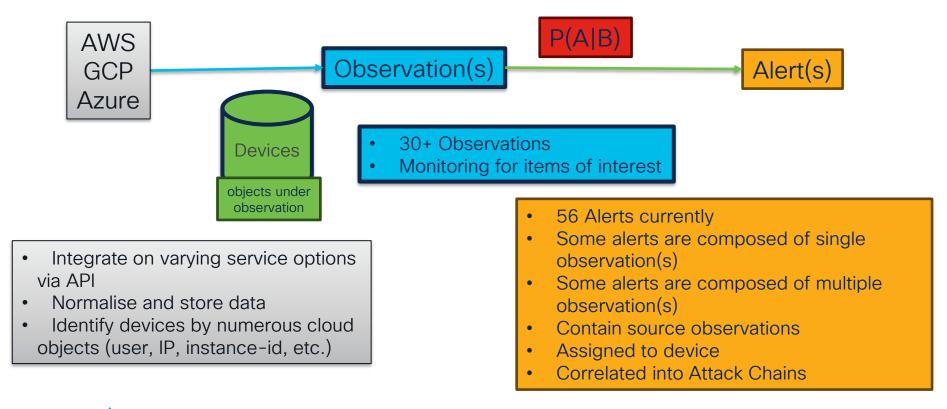


- NetFlow (incl. ETA), Passive DNS, Raw packets sent to:
 - Observable Network Appliance (ONA)
 - Cisco Telemetry Broker (CTB)
- Metadata extracted and sent to XDR
- Flow logs visible in Event Viewer
- Identify devices by IP Address, Hostname

- 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



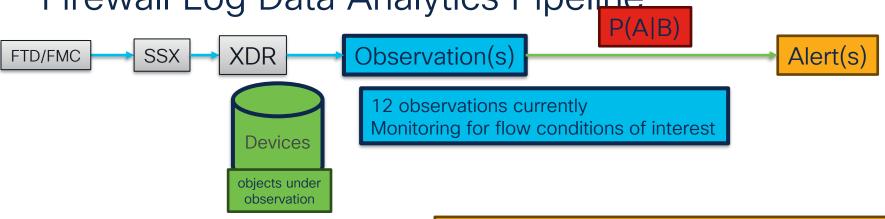
IAAS Data Analytics Pipeline





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Firewall Log Data Analytics Pipeline



- Firewall logs (intrusion, malware, file and connection events) sent to Security Services Exchange (SSX)
- Events read off SSX by XDR Analytics
- Logs visible in Event Viewer
- Identify devices by IP Address, Hostname

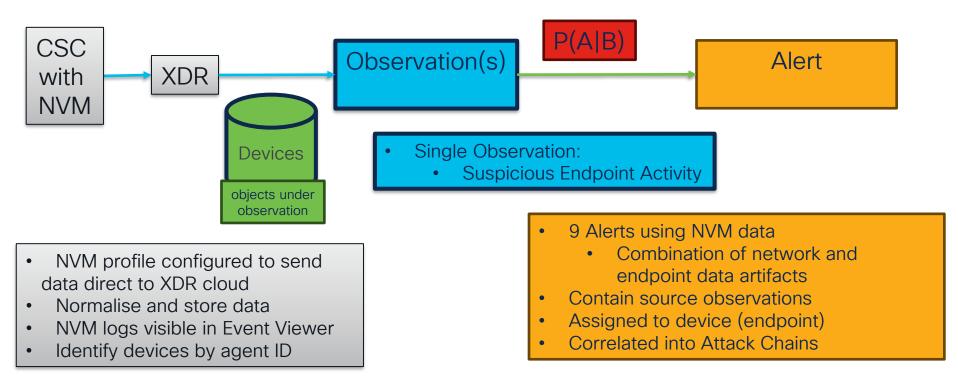
- 16 Alerts currently
- Some alerts are composed of single observation(s)
- Some alerts are composed of multiple observation(s)
- Contain source observations
- Assigned to device

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Correlated into Attack Chains



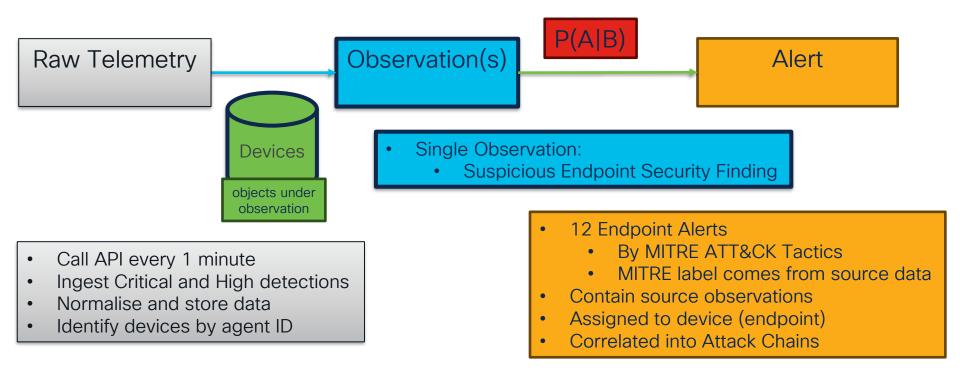
NVM Data Analytics Pipeline





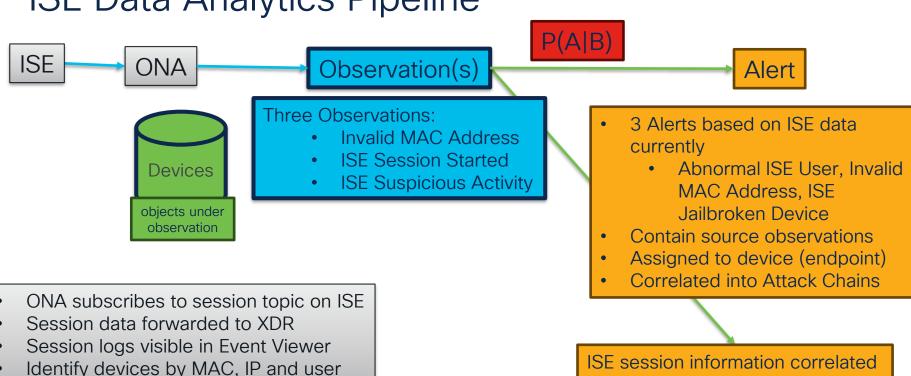
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Endpoint Data Analytics Pipeline (ex.Crowdstrike)





ISE Data Analytics Pipeline



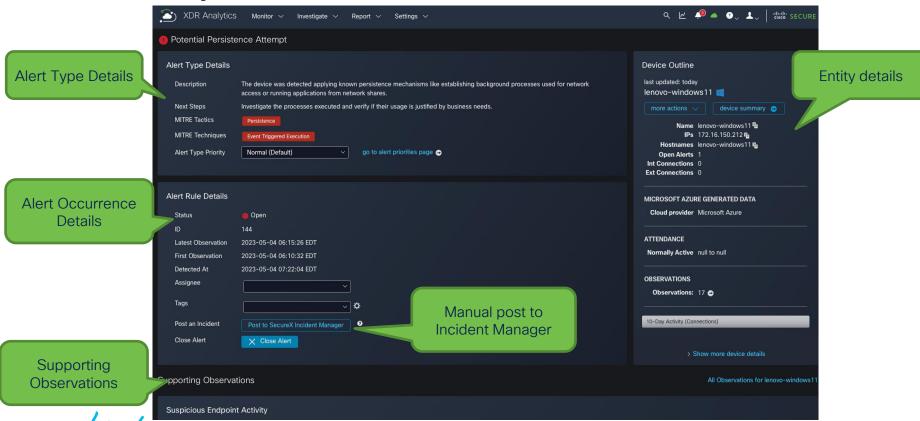


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to Network alerts where possible!

XDR Analytics Alert

New alerts are frequently published into production



Alert Demo





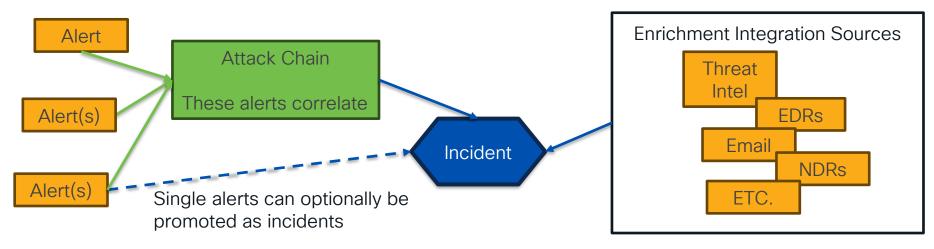
Extended Detection



Important note:

Some XDR Analytics alerts contain data from multiple tools!

Extending a Detection



Correlation (pre-incident creation):

Data from multiple security tools is analysed to arrive at a detection of maliciousness

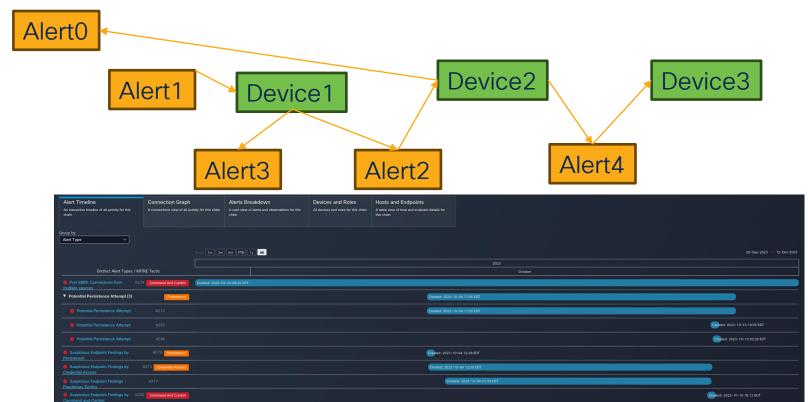
Enrichment (post-incident creation):

A detection of maliciousness is decorated with data from integrated security tools.



Attack Chains

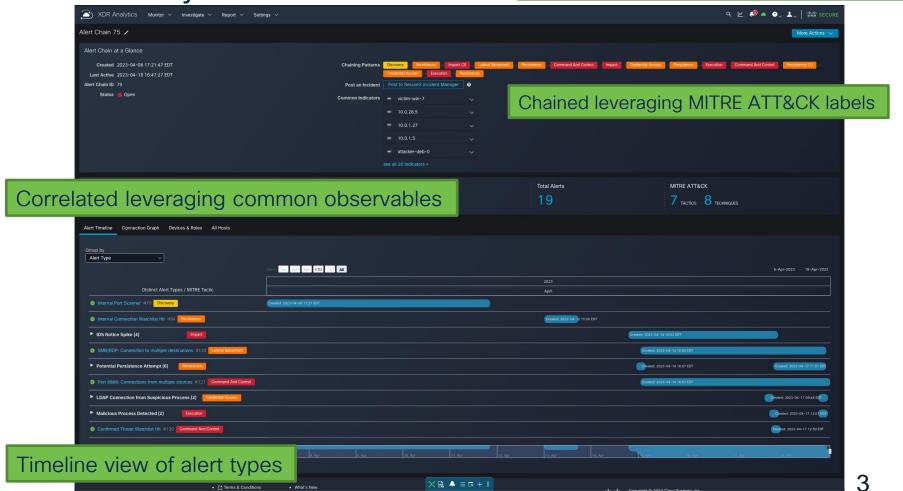
Reconstructing the attack timeline





XDR Analytics: Attack Chain

Automatic correlation of related alerts



XDR Incident Manager Detections promoted into **Incidents** Incident in XDR UI O Last year 0 New Incidents 5 Open Incidents 9 Incidents O Unassigned Incidents Q Search 9 matching results **▼** Filters Original incident source Priority ‡ Assigned Name ‡ Source ‡ Prioritisation BF 1000 Potential Persistence Attempt on victim-win-4 Cisco XDR Analyt... 19 Davs Closed ~ BF 1000 Potential Persistence Attempt on victim-win-0 Cisco XDR Analyt... 6 Hours Open ~ 1000 **Attack Chain 4** Cisco XDR Analyt... BF Open ~ 19 Davs MR 1000 **Executed Malware on victim-win-2** Secure Endpoint 21 Days Open ~ 1000 Attack Chain 70 Cisco XDR Analyt... 1 Monu MR Open ~ 1000 2 Months Open ~ Threat Spotlight: New MortalKombat ransomware and Lapla... Talos Threat Advi... 818 IDS Notice Spike on 10.0.26.5 MR Cisco XDR Analyt... 25 Days Closed V 765 **Azure Permissive Security Group for TD&R RSA** Cisco Secure Clo.. 3 Months Incidents are further extended with data from other integrated data sources 392 victim-win-6.org1.net in group Audit @ 20230414 02:36:02 1 Month Secure Endpoint



Prioritise by Impact

Incidents prioritized by business impact and asset value

742 92 8
Detection Asset
Risk Value at Risk

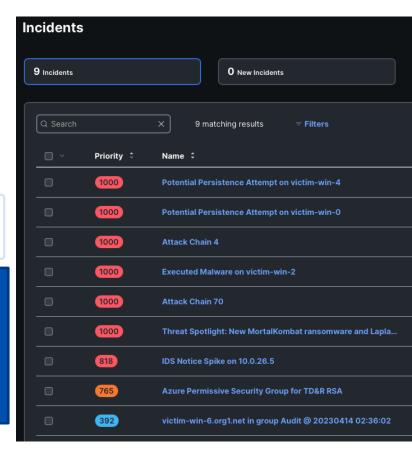
Priority Score = Detection Risk x Asset Value
0-1000 0-100 0-10

Total priority score used to prioritize incidents

Detection Risk computed using data model leveraging multiple value including:

- MITRE TTP Financial Risk
- Number of MITRE TTPs
 - Source Severity

User Defined
Asset Value
represent the
value of the asset
involved in the
incident

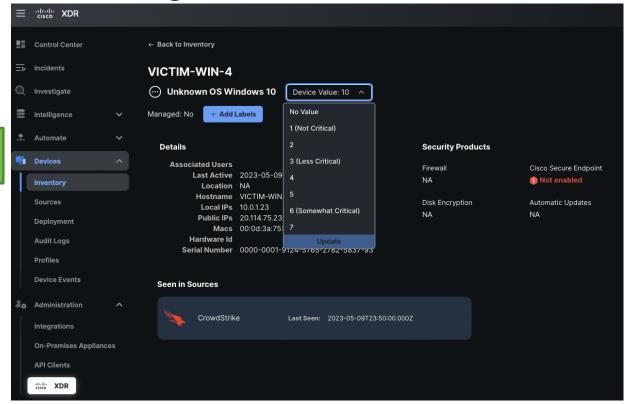




Aside: Asset Value Configuration

- Configured on device page
- Default is 10

Note: Only devices known to Device Insights will appear here





Demo





Summary





Continue your education

- Visit the Cisco Showcase for related demos
- Book your one-on-one Meet the Expert 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

Learning Map

Security

Threat Detection & Response

Learn how SecureX Threat Response is an investigation and remediation application that dramatically simplifies security by cutting the time and manual effort required for threat hunting and incident response.

https://www.ciscolive.com/global/learn/technical -education/learning-maps/security/threat-<u>detection-response.html</u>



Las Vegas, NV | June 4-8, 2023

START .

Monday, June 5 | 1:00 p.m. BRKSFC-1639

An Introduction to Risk-Based Vulnerability Management

Monday, June 5 | 3:00 p.m. BRKMER-2003

Meraki with Secure Network Analytics and XDR: Threat Detection for the Rest of Us

Monday, June 5 | 4:00 p.m. BRKSEC-1023

Accelerate your SOC with Cisco

Tuesday, June 6 | 1:00 p.m. BRKSEC-2084

Seeing is Believing: Unlocking XDR Outcomes with Visibility

Tuesday, June 6 | 2:30 p.m. BRKSFC-2101

Malware Execution As A Service: a Deep Dive into CSMA Advanced File Analysis

Wednesday, June 7 | 10:30 a.m. BRKSEC-2095

Cisco XDR with Email: Protect. Analyze and Evolve the SMTP Conversation

Wednesday, June 7 | 1:00 p.m. BRKSEC-2113

Cisco XDR - Making sense of the Solution and how it's a Security Productivity Tool

Thursday, June 8 | 9:30 a.m.

BRKSEC-2178

Extended Detection with Cisco XDR: Security analytics across the enterprise

Thursday, June 8 | 10:30 a.m.

BRKSEC-2931

Building, Proving, and Extending Detections in Secure Analytics

Thursday, June 8 | 1:00 p.m.

BRKSEC-3116 FINISH |

Automating your Cisco XDR Workflows: from Threat Hunting, to Finding and Confirming Incidents, to Responding!

If you are unable to attend a live session, you can watch it in the On-Demand Library after the event.



Related Sessions

Session ID	Title	When
BRKSEC-2113	Cisco XDR - Making sense of the Solution and how it's a Security Productivity Tool	Friday Dec 8 1:30-3:00 PM
BRKSEC-1023	Accelerate your SOC with Cisco XDR	Wed Dec 6 2:4-3:40 PM
DEVWKS-1732	Getting started with Cisco XDR Automate workflows and atomics	Thursday Dec 7 2:30- 3:15 PM
BRKMER-2234	A Common Policy for Network Agility and Security: The Unified Meraki Approach	Wed Dec 6 1:00-2:30 PM



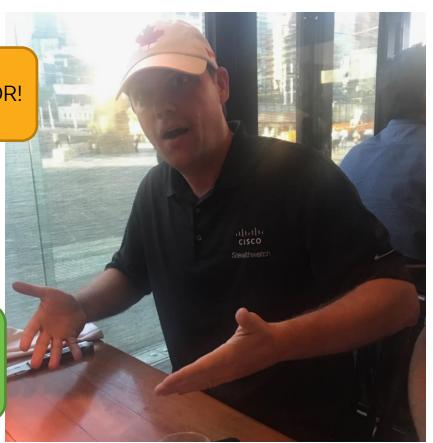
Parting Thoughts

Simplify your security operations with Cisco XDR!

Behaviour-based detections are a critical component of the modern security operations center

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













Thank you





Let's go cisco live! #CiscoLiveAPJC