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Enterprise

Protect 2016



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Session ID: B10047

Speaker: Patrick Cain and Gregory Hedge

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Thank you for providing your feedback, which helps us enhance content for future events.

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Taking Action with ESM

Methods ArcSight ESM Can Take Action

- Action Connectors
- Scripting
- Integration Commands

Why?

Automate

- Instantaneous response
- 24x7
- Not enough humans
- Better than humans

Integrate

- Single pane of glass
- Tools work better when they work together

What Are Action Connectors?

- Provide bi-directional communication between event source and ESM.
- Gives ESM the capability to send commands back to an event source.
- Commands can request more information or have the event source perform an action like block an endpoint.
- These commands can be manual or automated. Some use Integration Commands and Rules, some just Integration Commands.
- Do not confuse Action Connectors with Forwarding Connectors.

Action Connectors

Certified Action Connectors Examples

- ForeScout CounterACT
- Digital Guardian
- Niara Security Intelligence
- Blue Coat Security Analytics
- Ixia Anue Net Tool Optimizer

More Action Connectors

Action Connector Development Guide

- Make your own

Scripting

A Rule can execute a script.

- Bro IDS
- Palo Alto
- Trend Micro TippingPoint
- Aruba ClearPass

Integration Commands

Integration commands are defined within the ESM or Express Console and enable the user to initiate external commands.

- Can be launched from within different content such as Active Channels, Active Lists and Query Viewers.
- Associate parameters with commands to leverage data gathered by ESM in the context in which the commands are called.
- Can be populated with values such as user name and password required for running the external command.
- Prompt for additional information to be used in the command parameters.

Examples of Integration Commands

Typical activities to build and run commands in the ArcSight Console.

- Launch a browser to a web site or solution web interface.
- Launch scripts.
- Run external searches.
- Ticketing system integration.
- Get payload information.
- Get vulnerability scan information.

ArcSight – ForeScout Use Cases

Examples of Automated Response Use Cases directed by ArcSight.

- Quarantine an infected endpoint
- Quarantine or alert on a non-compliant endpoint
- Retrieve endpoint information
- Scanning on demand

ForeScout Example

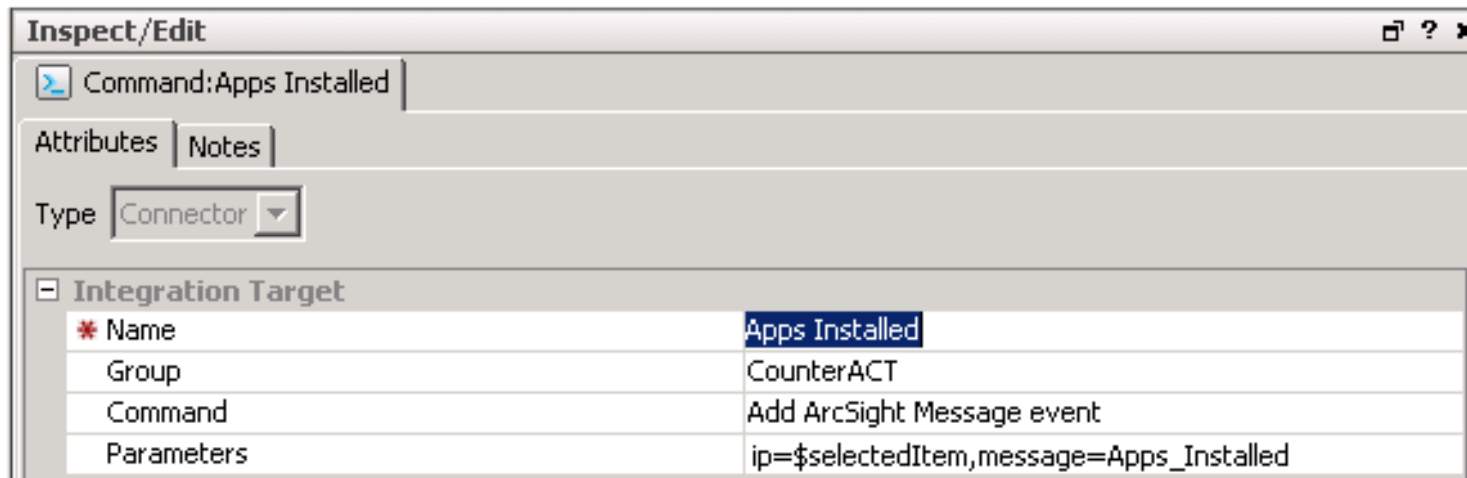
Applications Installed (Integration Command)

The screenshot displays the ForeScout interface for the 'Applications Installed' channel. The active channel is 'Applications Installed' with a total of 125 events. The start time is 23 Jul 2016 23:18:00 EDT and the end time is 24 Jul 2016 01:19:00 EDT. The filter is 'MatchesFilter ("Applications Installed")' and the inline filter is 'No Filter'. The event severity counts are: Very High: 0, High: 0, Medium: 0, Low: 0, and Very Low: 125. Below the summary is a radar chart showing a green bar on the left and a blue bar on the right. At the bottom is a table of installed applications.

| Manager Receipt Time | End Time | Applications Installed | Target Address |
|--------------------------|--------------------------|--|----------------|
| 24 Jul 2016 00:43:07 EDT | 24 Jul 2016 00:44:19 EDT | Microsoft Office Standard 2010;Version: 14.0.6029.1000;User: All Users | 10.24.29.116 |
| 24 Jul 2016 00:43:07 EDT | 24 Jul 2016 00:44:19 EDT | Java 7 Update 55;Version: 7.0.550;User: All Users | 10.24.29.116 |
| 24 Jul 2016 00:43:07 EDT | 24 Jul 2016 00:44:19 EDT | Intel(R) Processor Graphics;Version: 10.18.10.3958;User: All Users | 10.24.29.116 |
| 24 Jul 2016 00:43:07 EDT | 24 Jul 2016 00:44:19 EDT | Java(TM) 6 Update 23;Version: 6.0.230;User: All Users | 10.24.29.116 |

ForeScout Example

Applications Installed (Integration Command)

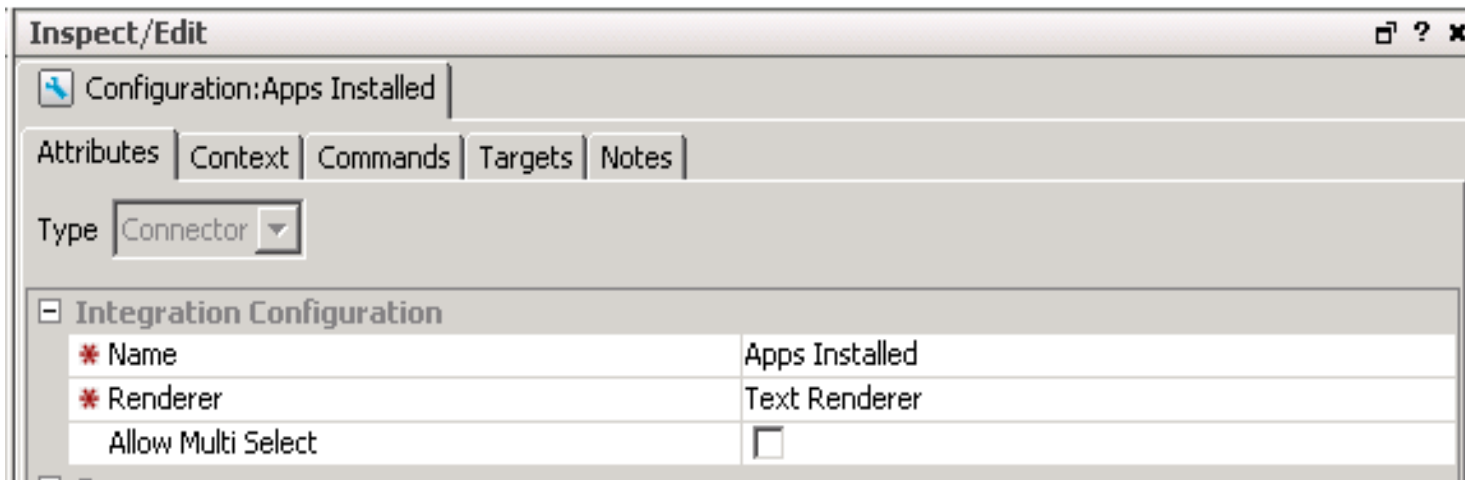


The screenshot shows the 'Inspect/Edit' window for the 'Apps Installed' integration command. The window title is 'Inspect/Edit' and it contains a search bar with the text 'Command:Apps Installed'. Below the search bar are two tabs: 'Attributes' and 'Notes'. The 'Attributes' tab is active, showing a 'Type' dropdown menu set to 'Connector'. Below this is an 'Integration Target' section with a table of properties.

| Integration Target | |
|--------------------|--|
| * Name | Apps Installed |
| Group | CounterACT |
| Command | Add ArcSight Message event |
| Parameters | ip=\$selectedItem,message=Apps_Installed |

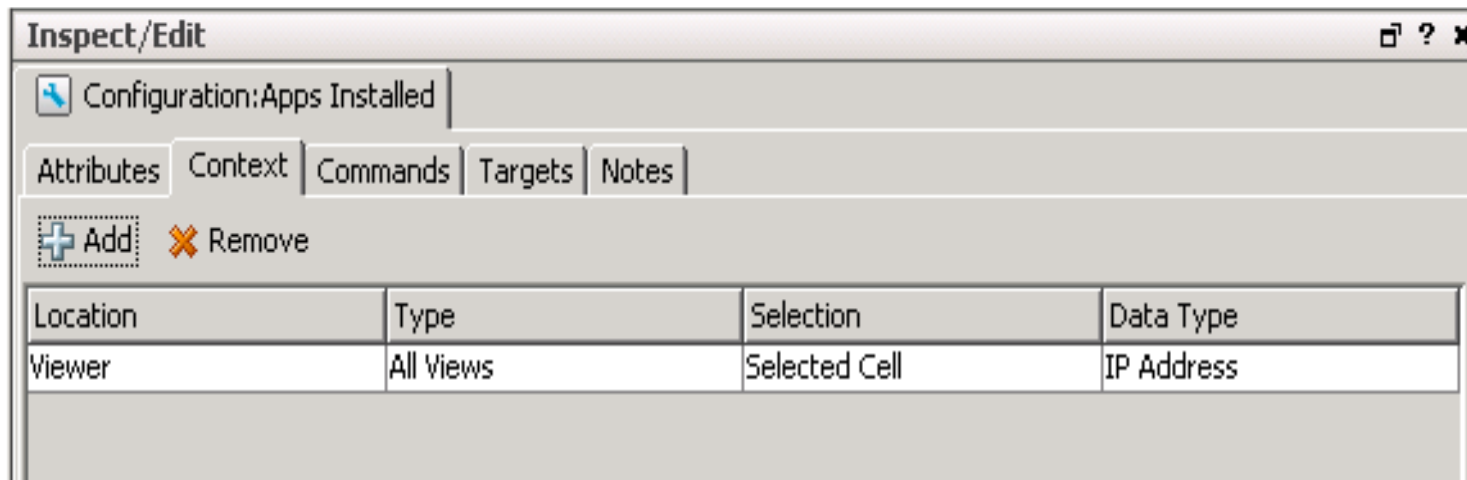
ForeScout Example

Applications Installed (Integration Command)



ForeScout Example

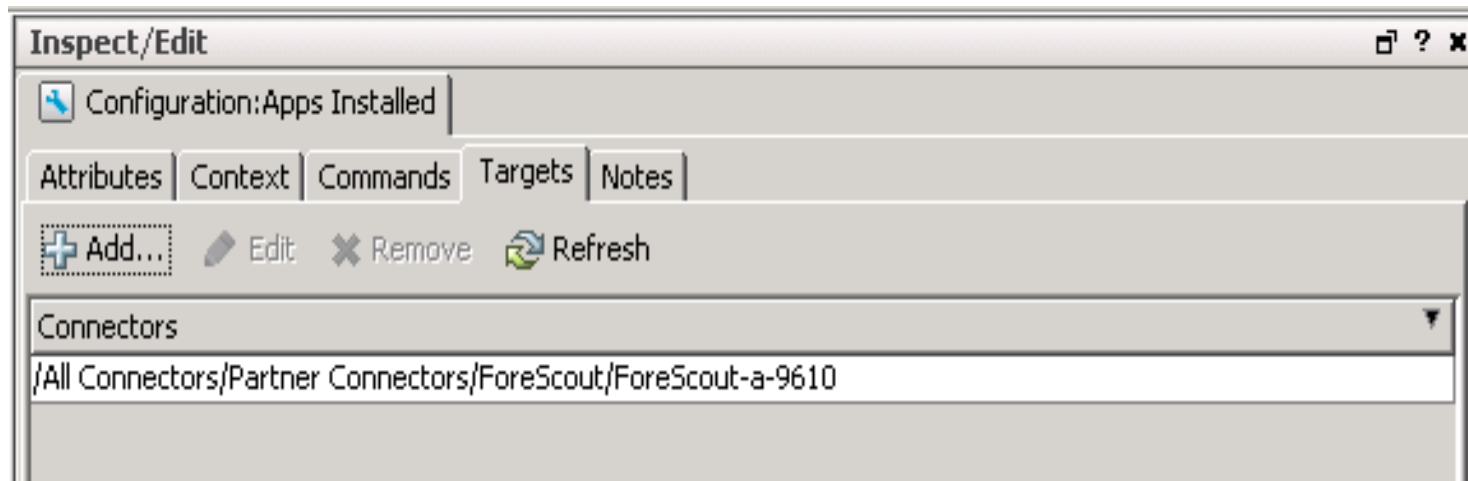
Applications Installed (Integration Command)



| Location | Type | Selection | Data Type |
|----------|-----------|---------------|------------|
| Viewer | All Views | Selected Cell | IP Address |

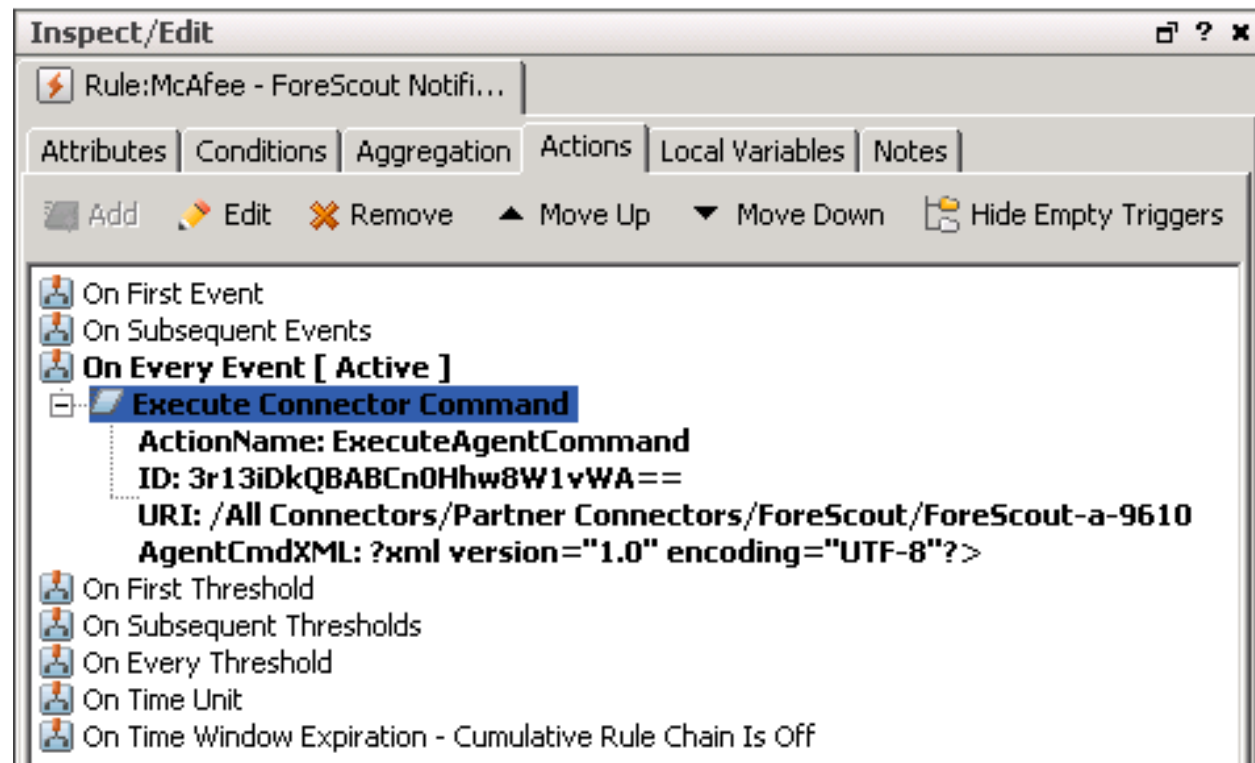
ForeScout Example

Applications Installed (Integration Command)



ForeScout Example

Out of Date DAT File



ForeScout Example

Out of Date DAT File

When: On Every Event

Execute Connector Command

Connector: ForeScout-a-9610

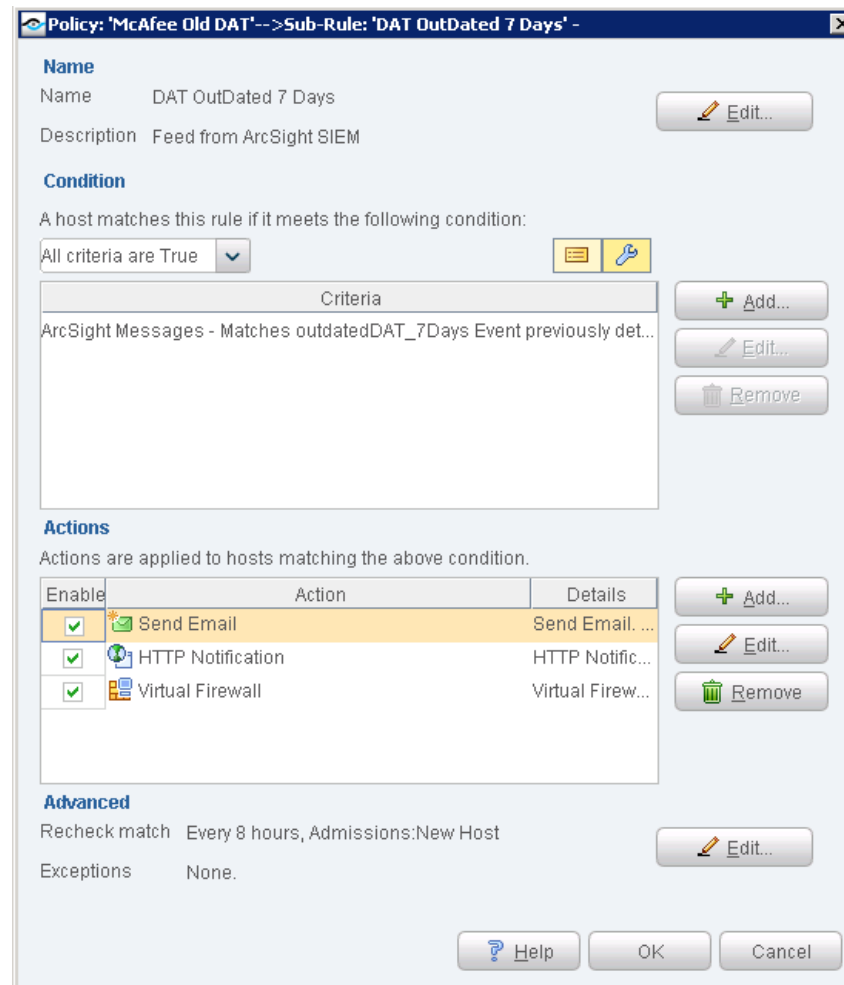
Command: counteract.Add ArcSight Message event

| Name | Value |
|----------|-------------------|
| [-] Misc | |
| ip | \$targetAddress |
| message | outdatedDAT_7Days |

OK Cancel Help

ForeScout Example

Out of Date DAT File



ArcSight – Other Devices Use Cases

- Mostly Defensive Activities
 - Deter people from scanning our networks
 - Persuade directory trolls to go elsewhere
- Some more Offensive
 - Alert Users about compromised devices
 - Remove compromised devices from network

Political Considerations

- What happens when the Actions make an error?
 - The President's computer is removed
 - The primary website gets blocked
- Human override is built into the processes
 - Many IP addresses excluded from the automatics
- The 24/7 NOC has a web page to undo actions
 - They can undo, unquarantine, re-enable, etc
- Reports can be run for metrics to look for oddity

Use Case: Overly Friendly Scanners

- Our networks get port and host scanned a *lot*
- The earlier we can toss that traffic the better
 - There is a border firewall and some TippingPoint IPSes in the way
- There was a perl script that watched firewall logs and responded with a “quarantine” command to the TPs
 - It worked great until the guy who wrote it left and that system was retired
 - Generating reports was a pain (i.e., mysql, more perl, etc)
- Hey! The firewall logs are going to the ESM, too
 - Maybe we should do this as an ArcSight ESM Rule

RULE CONDITIONS

Inspect/Edit

Event Inspector Rule:Firewall - Network Port S...

Attributes Conditions Aggregation Actions Local Variables Notes

Filters Assets Vulnerabilities Active Lists Joins

Edit Summary

Event conditions

- Deny_TCP_UDP
 - AND
 - OR
 - Category Behavior = /Access
 - Category Behavior = /Access/Start
 - NOT
 - InActiveList("/All Active Lists/ Group/Firewall Quarantines fr
 - NOT
 - MatchesFilter("/All Filters/ campus source device")
 - Category Device Group = /Firewall
 - Category Outcome = /Failure

Common Conditions Editor

| Name | Op | Condition | Ad | ⊗ |
|-------|----|-----------|----|---|
| Event | | | | |

RULE ACTIONS

Inspect/Edit

Event Inspector Rule:Firewall - Network Port S...

Attributes Conditions Aggregation Actions Local Variables Notes

Add Edit Remove Move Up Move Down Hide Empty Triggers

- On First Event
- On Subsequent Events
- On Every Event
- On First Threshold [Active]
 - Add To Active List
 - Field: Attacker Address
 - Field: Attacker Zone Name
 - Field: Attacker Zone External ID
 - Resource: /All Active Lists/ Group/Firewall Group/Firewall Quarantines from Rule - 3 hr
 - Set Event Field Actions
 - applicationProtocol = \$put_service
 - categoryBehavior = /Access
 - categoryDeviceGroup = /Security Information Manager
 - categoryObject = /Network
 - categoryOutcome = /Attempt
 - categorySignificance = /Recon
 - categoryTechnique = /Scan/Port
 - deviceCustomString1 = \$subnet24
 - Execute Command
 - Platform: Linux
 - Command: /usr/local/bin/quarantine-fw.sh
 - Argument: \$attackerAddress \$targetPort 180
 - Add To Active List
 - Field: Source Address
 - Field: Source Geo Country Name
 - Field: Destination Port
 - Field: Device Host Name
 - Field: Device Custom String1
 - Field: Device Custom String2
 - Field: Application Protocol
 - Field: Transport Protocol
 - Resource: /All Active Lists/ /Firewall Group/Quarantines - Daily
- On Subsequent Thresholds



Extended Use Case: Other “scanners”

- Other Rules conditions now also do:
 - Directory Trolls, multiple failed SSH logins, WordPress brute forces
- As I talk to you, we are quarantining IP addresses.
 - Varies from 1100 to 8500 per day
- Easily add new conditions periodically
 - E.g., repeated odd WordPress things
 - It’s quite easy to add new conditions
 - MUCH easier than changing the original perl script ;)
- Both reporting and alerting are quite easy
- These could be Action Connectors, too.

Use Case: Alert the Masses

- I get (too many) ESM Reports every morning
- ...and find out too late if an account got compromised
 - 8am report says “root” got owned 17 hours ago.
- Crafted a Rule to look for failed SSH logins followed by a successful one for the same user
 - The 24/7 NOC uses Zabbix as a monitoring tool
 - The Rule action sends a (blinking) Zabbix alert
 - The NOC operator then triages with the user

Attributes Conditions

RULE CONDITIONS

Filters

Edit Summary

Event conditions

- > Matching Event (Matching within 10m)
 - & AND
 - event1.Target User Name = event2.Target User Name
 - event1.End Time <= event2.End Time
 - event1.Device Host Name = event2.Device Host Name
 - event1
 - & AND
 - Name = multiple ssh failures to one host
 - MatchesFilter("/All Filters/ off-campus destination device")
 - event2
 - & AND
 - Name = session opened
 - Category Outcome = /Success
 - Device Process Name = sshd

Event Inspector Rule:ssh login afta failures v...

RULE ACTIONS

Attributes Conditions Aggregation Actions Local Variables Notes

Add Edit Remove Move Up Move Down Hide Empty Triggers

On First Event [Active]


- Send Notification
 - AckRequired: No
 - NotificationMessage: good ssh after failures v2. User: \$targetUserName, source: \$targetAddress, \$targetHostName ; destination: \$deviceHostName - \$deviceAddress
 - Resource: /All Destinations/Pat/
- Execute Command
 - Platform: Linux
 - Command: /usr/local/zabbix/bin/zabbix_sender
 - Argument: -c /usr/local/zabbix/etc/zabbix_agent.conf -k sshlogins -o "User: \$targetUserName, from IP: \$targetAddress, \$targetHostName successfully logged in after failures on: \$deviceHostName - \$deviceAddress" -z hawkeye

On Subsequent Events

On Every Event

On First Threshold

On Subsequent Thresholds



Use Case: Too Many Infections, too Little Time

- Make a system to score IDS, IPS, and AV alerts
 - There is a Query Viewer that runs every 15 minutes to identify the top offenders
 - There is also a Rule that runs looking for them.
- For spyware and C&C alerts, the Rule action can send a ticket to the user
 - There is an email interface to Service Center
 - The Rule has lots of “exception” conditions
- There is a Rule action to send a “blacklist” command to the Aruba controllers, removing the offender from the network
 - This is currently not being used (see Political Considerations)

Other Ideas

Things to try at home

- WMI Commands (see Protect 2014 - “Automation in Incident Response”)
- Ticketing system integration
- SNMP Traps
- ESM and Logger APIs
- Forwarding Connectors

Q&A

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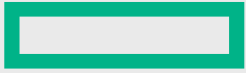
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