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Session ID: B10047 **Speaker:** Patrick Cain and Gregory Hedge

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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.

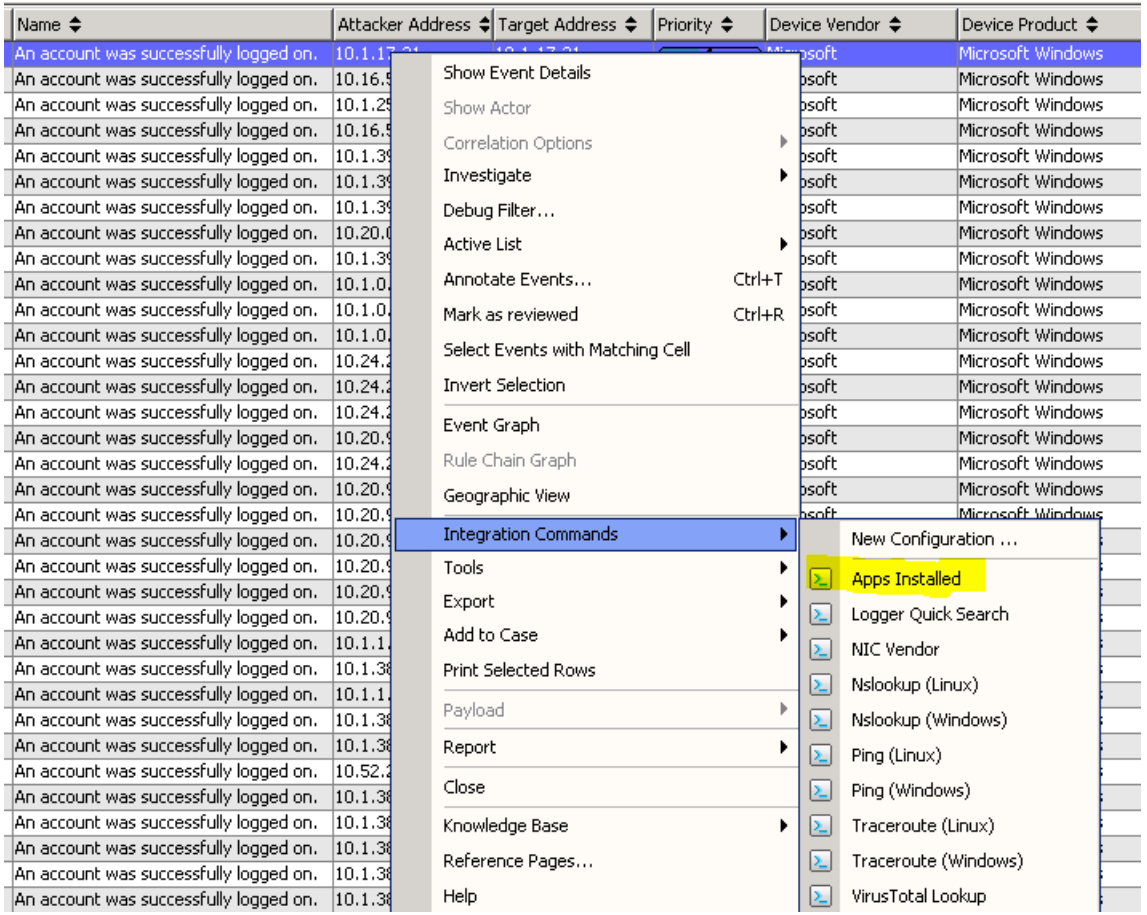
ArcSight – ForeScout Use Cases

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

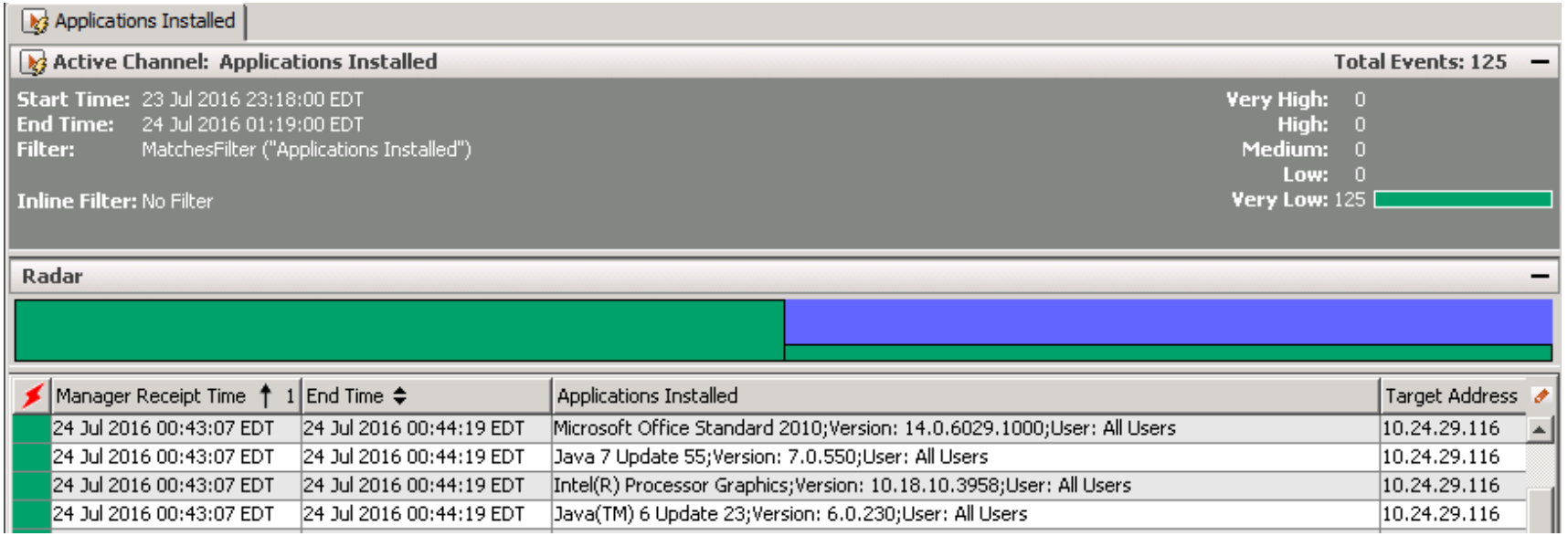
ForeScout Example

Applications Installed (Integration Command)



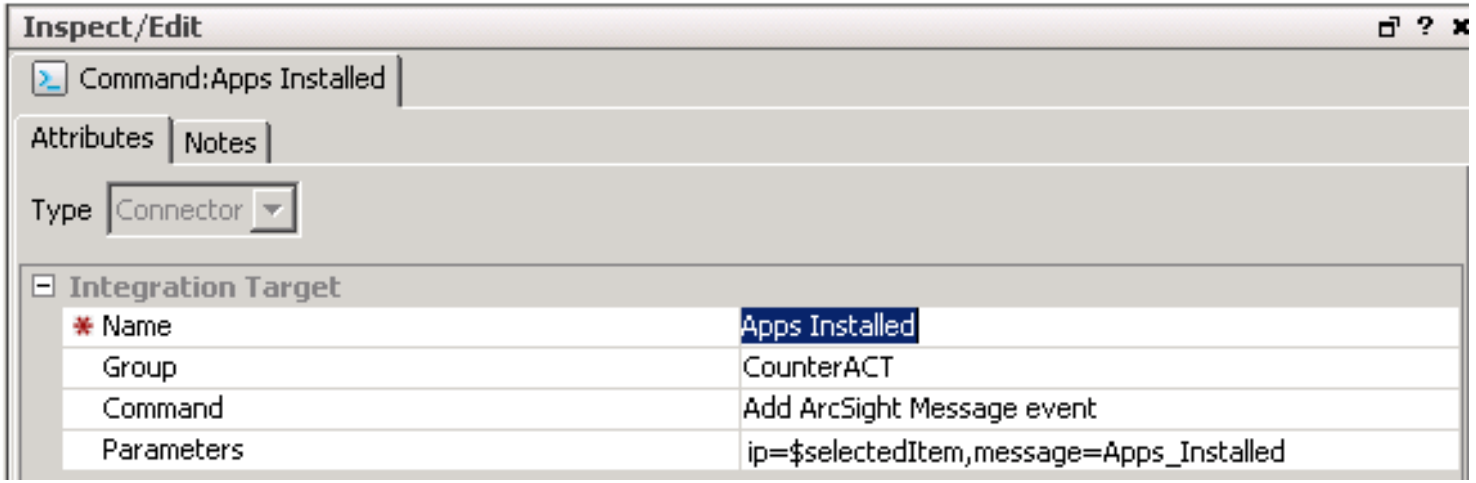
ForeScout Example

Applications Installed (Integration Command)



ForeScout Example

Applications Installed (Integration Command)



ForeScout Example

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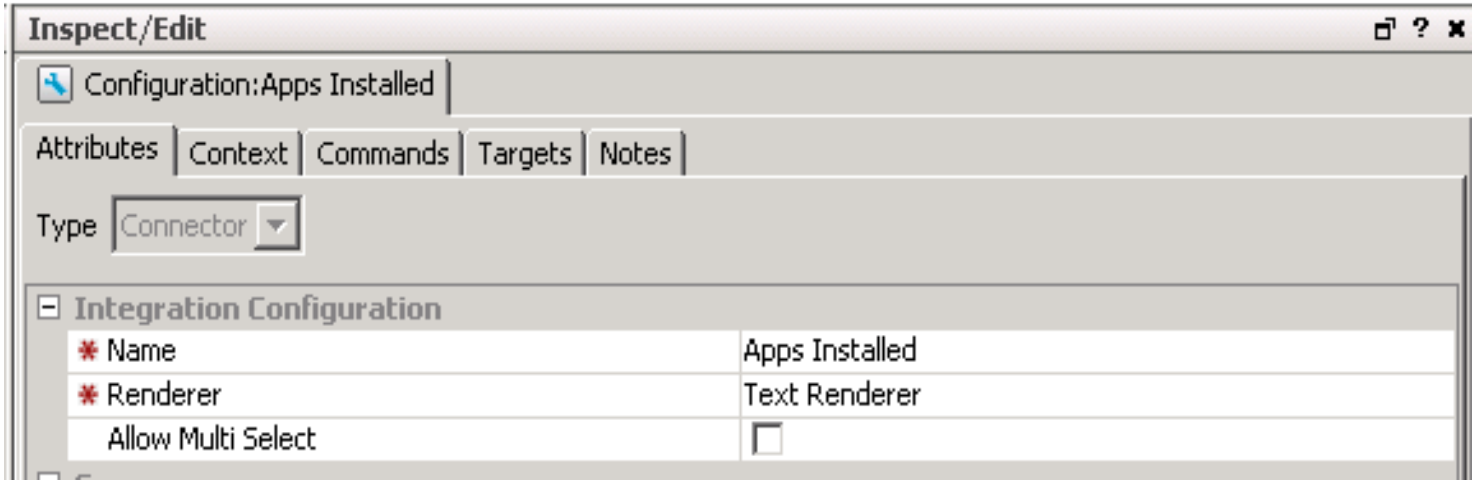

ForeScout Example

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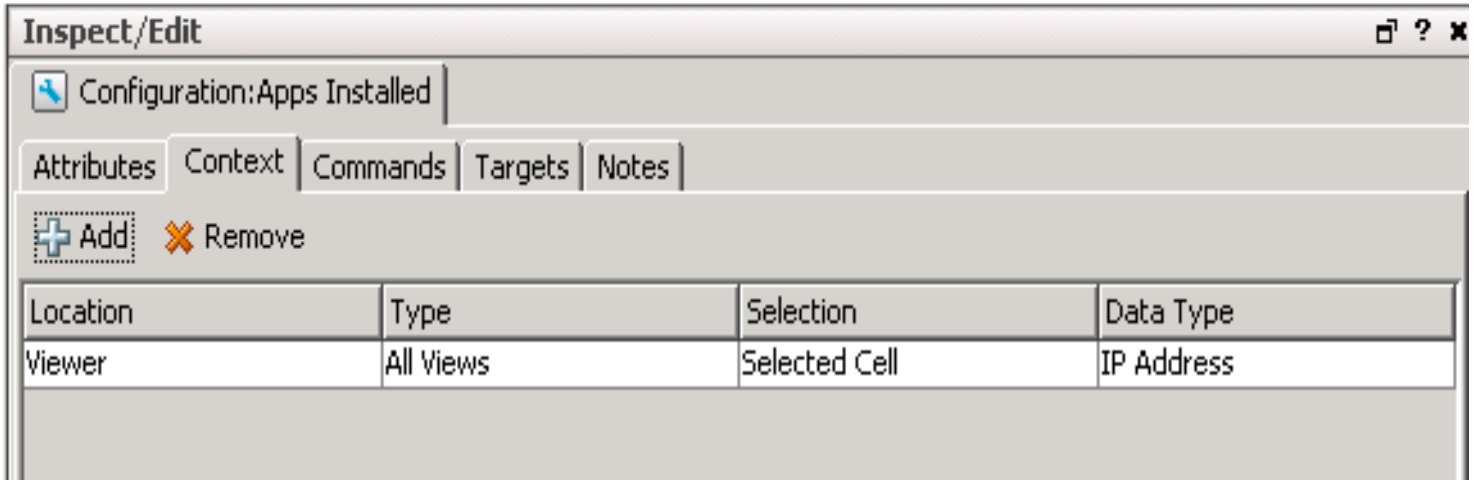

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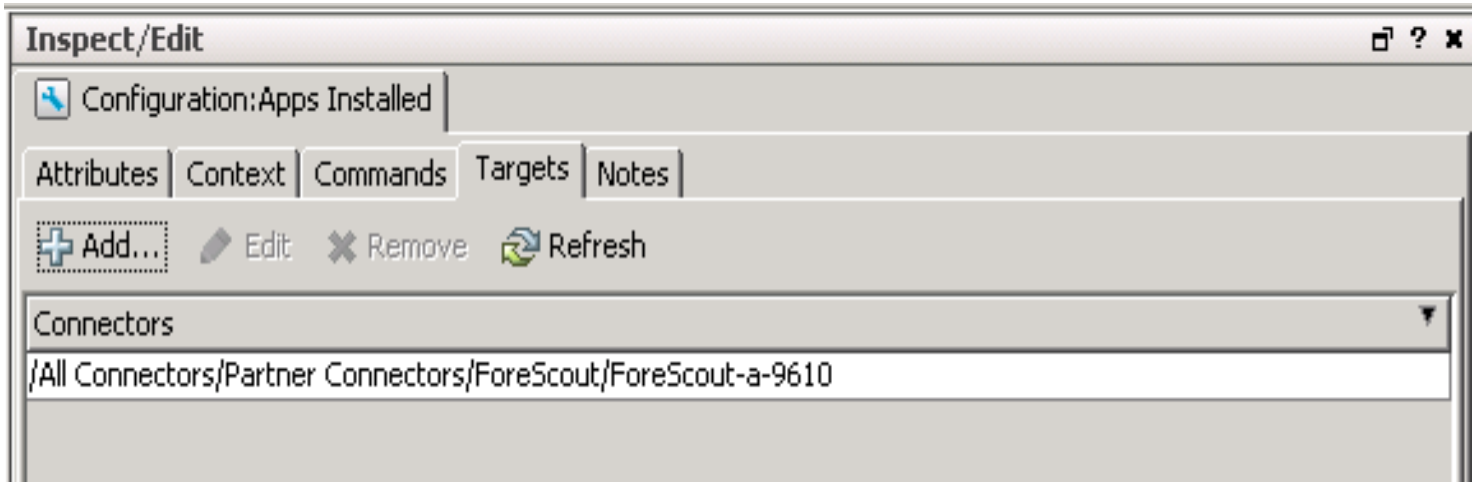
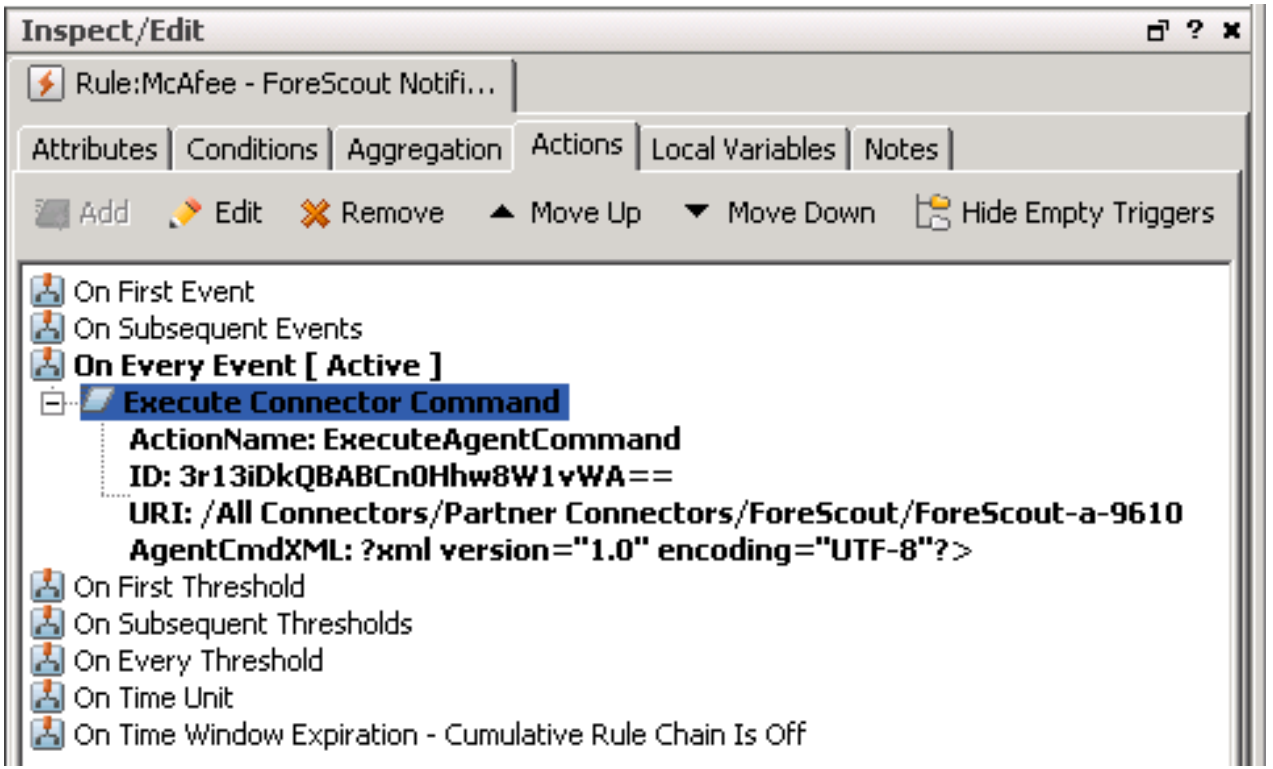
Applications Installed (Integration Command)



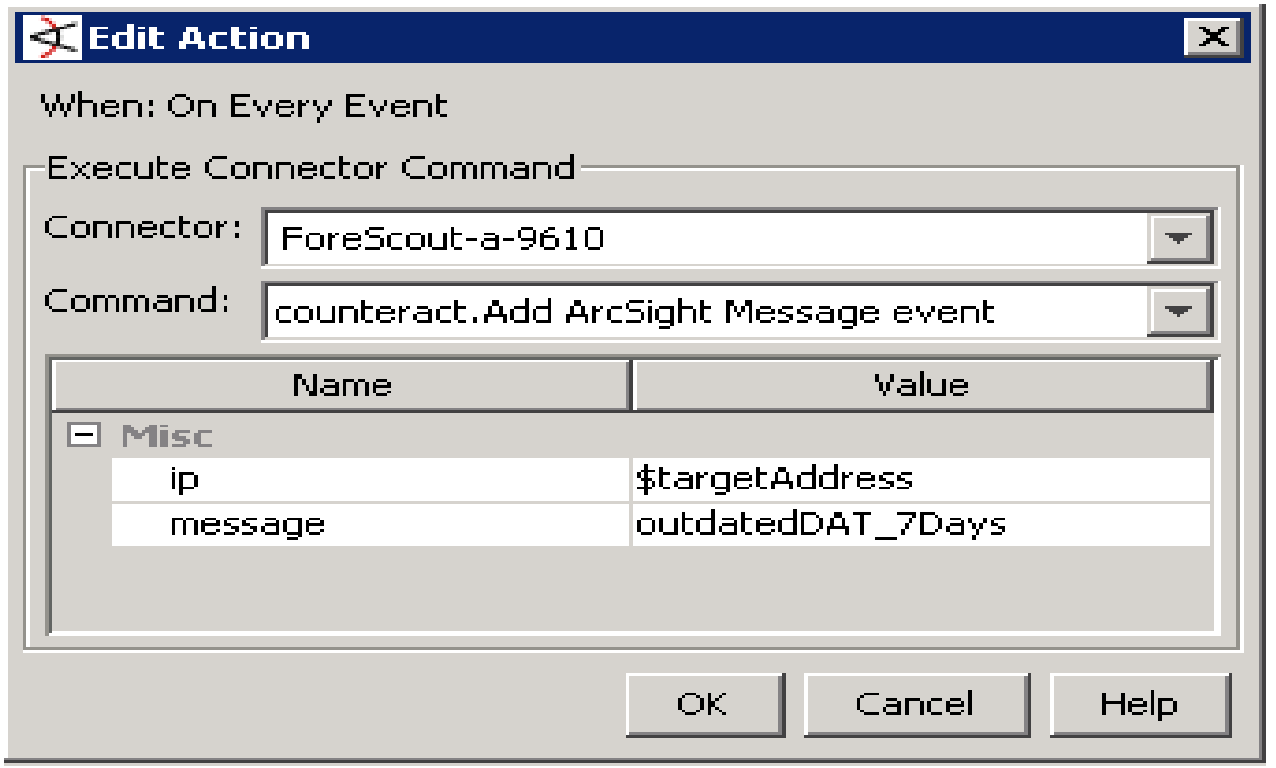
ForeScout Example

Out of Date DAT File



ForeScout Example

Out of Date DAT File



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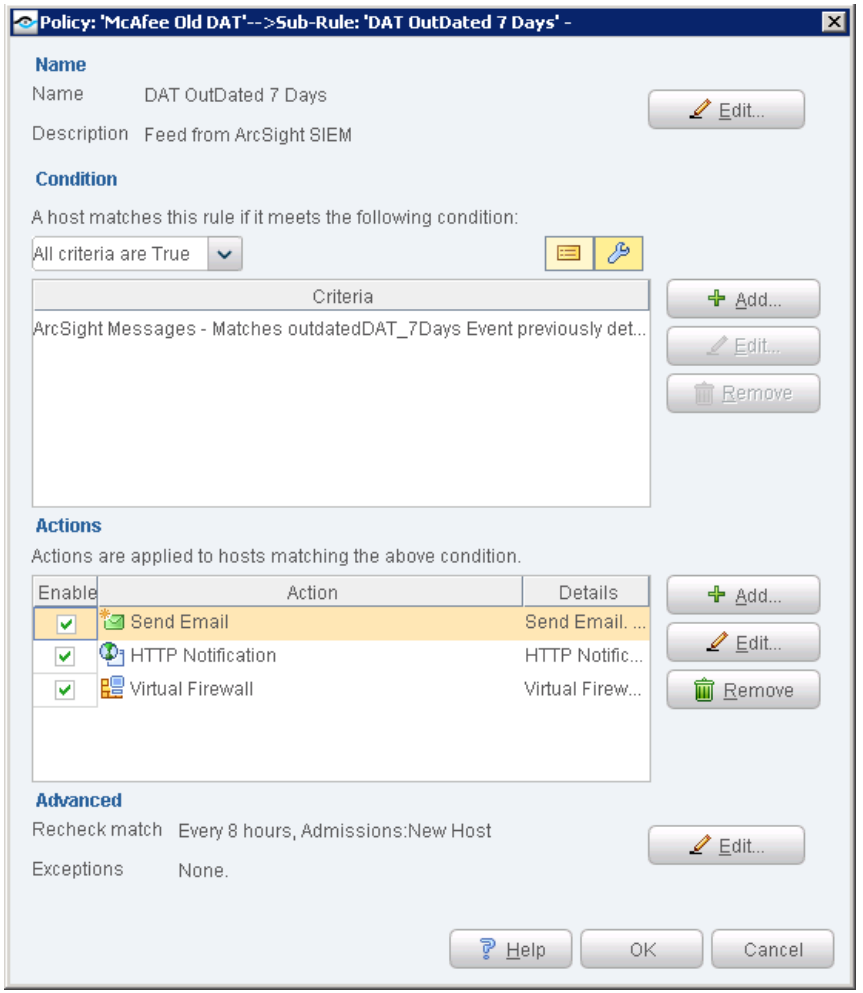


ArcSight – Other Devices Use Cases

- 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

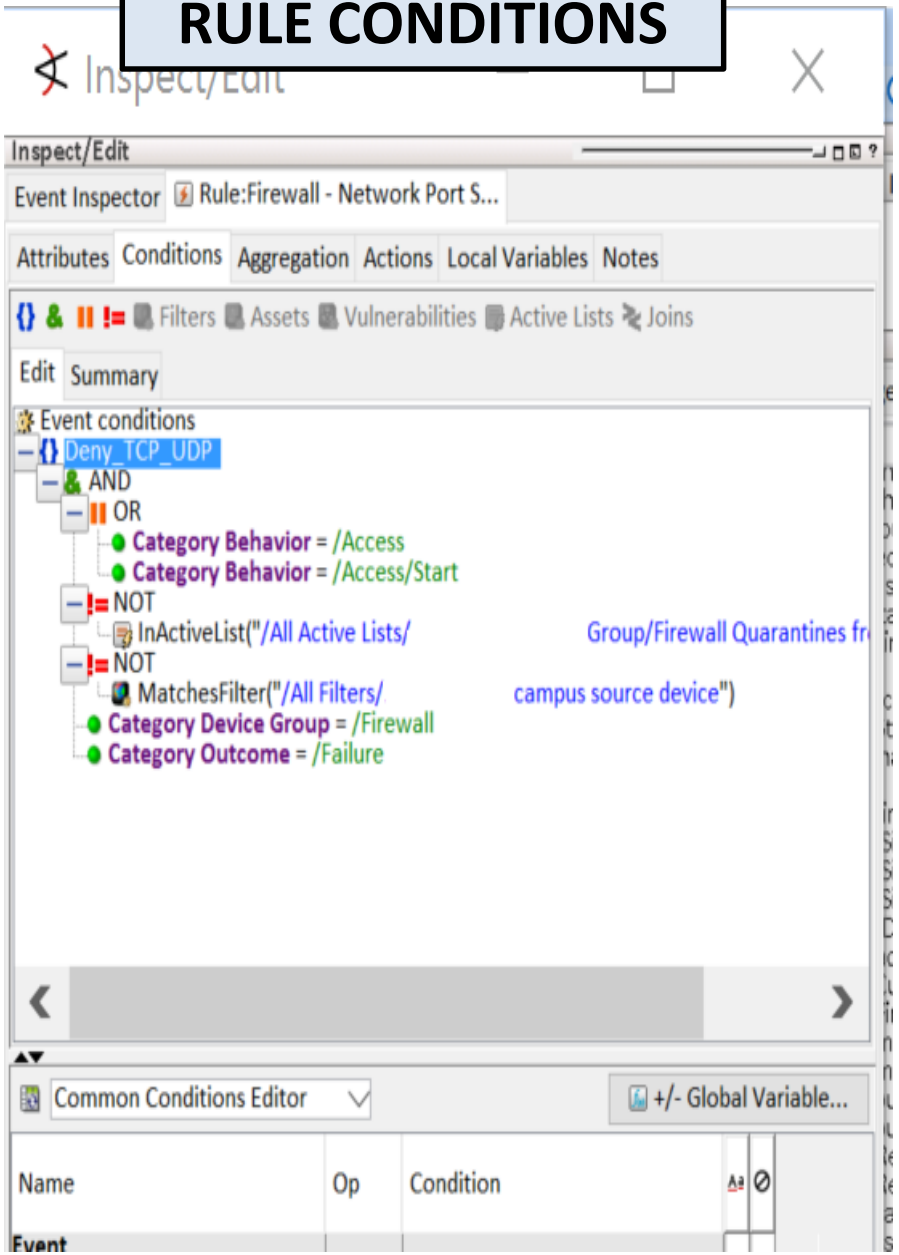
Political Considerations

- 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

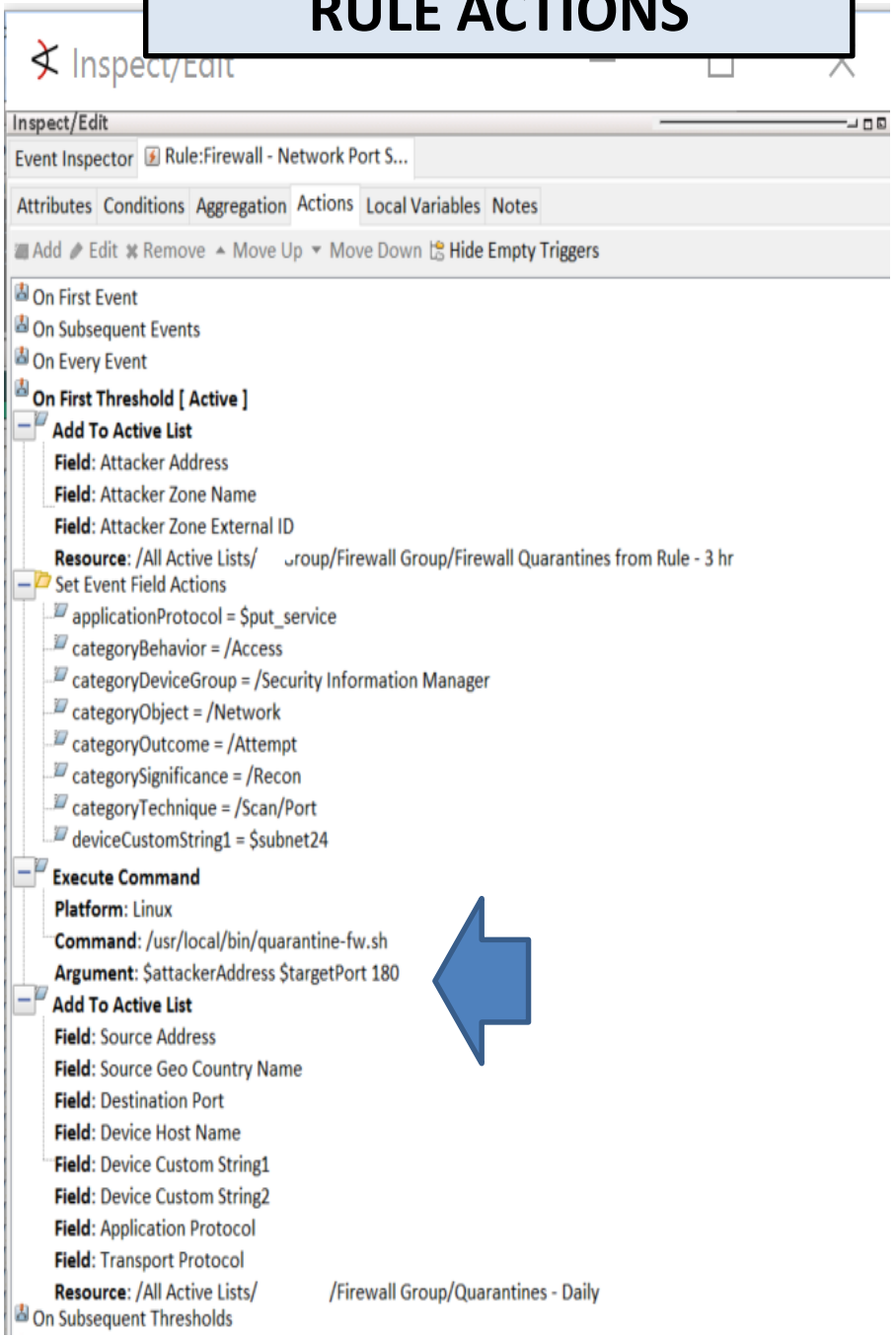
Use Case: Overly Friendly Scanners

- 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



RULE ACTIONS



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

RULE CONDITIONS

Attributes 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

RULE ACTIONS

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

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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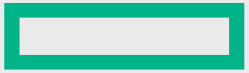

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