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Connect to Protect

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Codifying the Brain: Automation, Alerts and a Human Resource Answer

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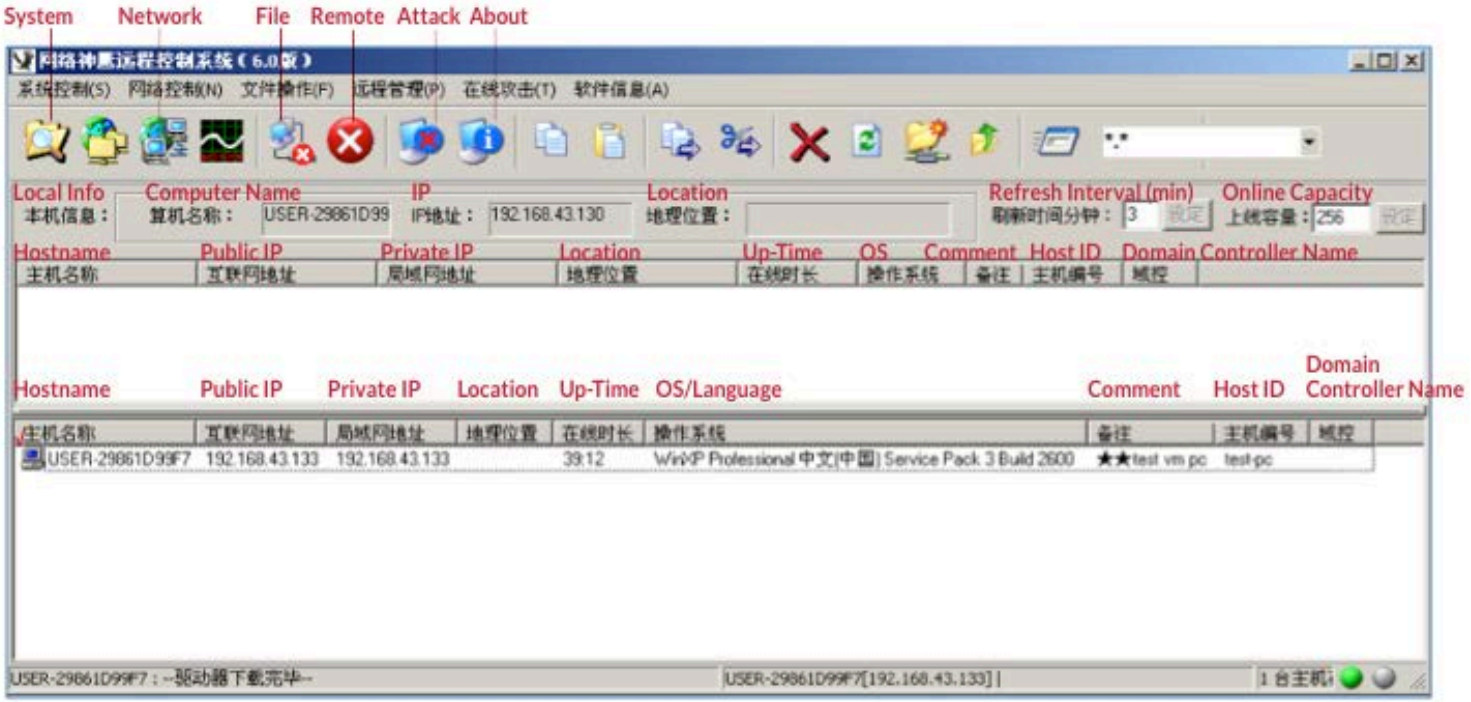
#RSAC

The talent crunch

We have a shortage of good security talent—especially with the more specialized skills of incident response and hunting.

Where do we see automation today?



What if expertise could be codified?

What it means for IR

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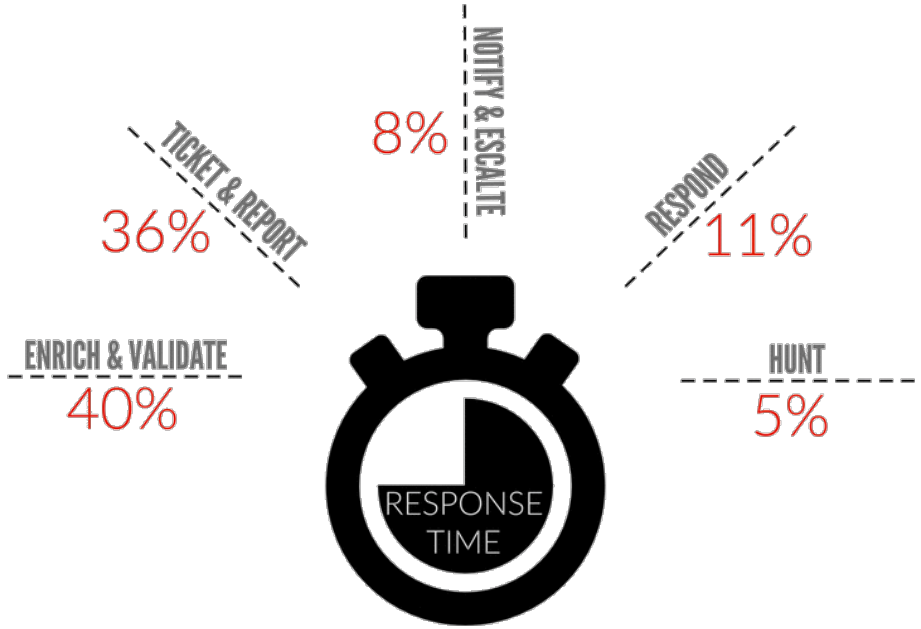
Of all alerts generated in the enterprise, 19 percent (3,218) are considered reliable but only 4 percent (705) are investigated.

Source: The Cost of Malware Containment http://www.ponemon.org/blog/the-cost-of-malware-containment

Where is time wasted?



What is automation/orchestration?

- Orchestration is the arrangement and coordination of a process
  - Orchestration is not necessarily automation
    - A well-orchestrated process could require human approval at each step
- Automation is the operation of a process with minimal human intervention
  - Automation is not necessarily orchestration
    - Simple steps of a process could be automated (e.g., reverse DNS lookup) with minimal orchestration

What can be automated in an IR process?

Context

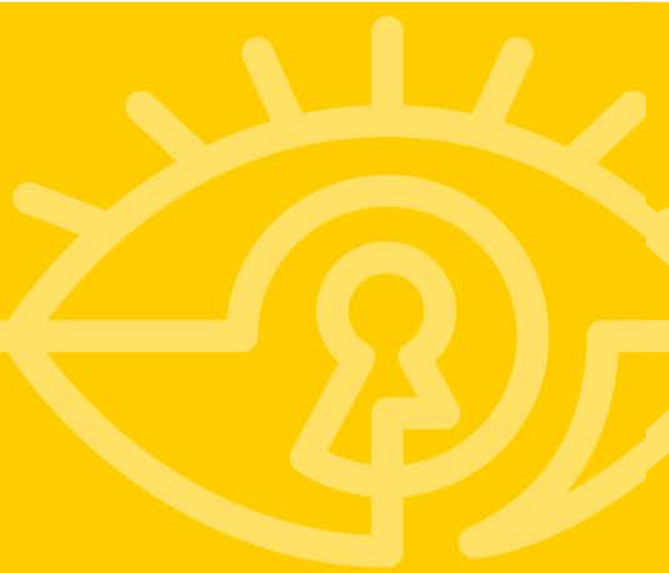
- Lookups against VirusTotal
- Lookups against AV
- Obtain domain registration history
- Look up the department of a user
- Look up the owner of an asset
- Query intelligence service for prior evidence
- Search SIEM for prior evidence
- Search endpoints for evidence of compromise

Containment

- Quarantine a host with endpoint detection/remediation software
- Block C2 at the proxy
- Update whitelisting software

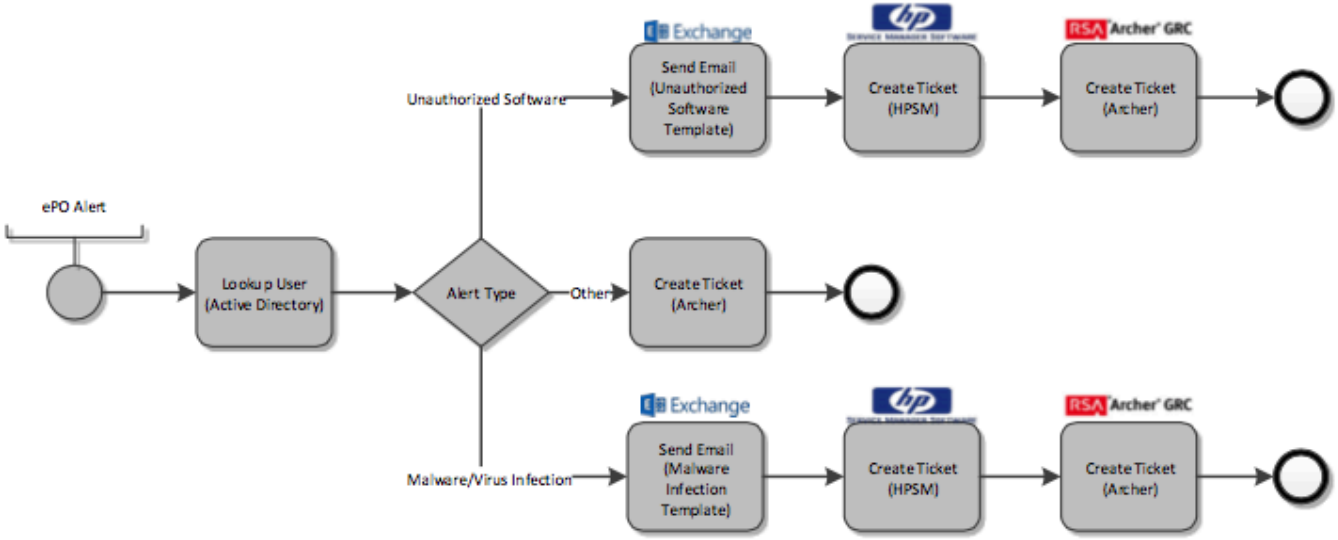
Workflow

- Open a ticket in your case management system
- Send emails to impacted users
- Automatically forward/escalate based on automated decisions
- Etc…



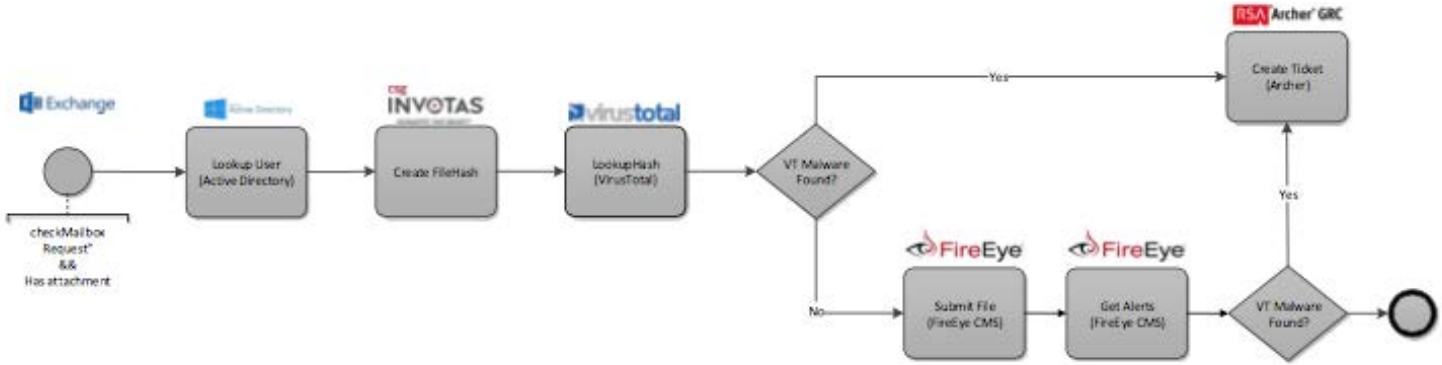
Real-World Use Cases

Antivirus Alert



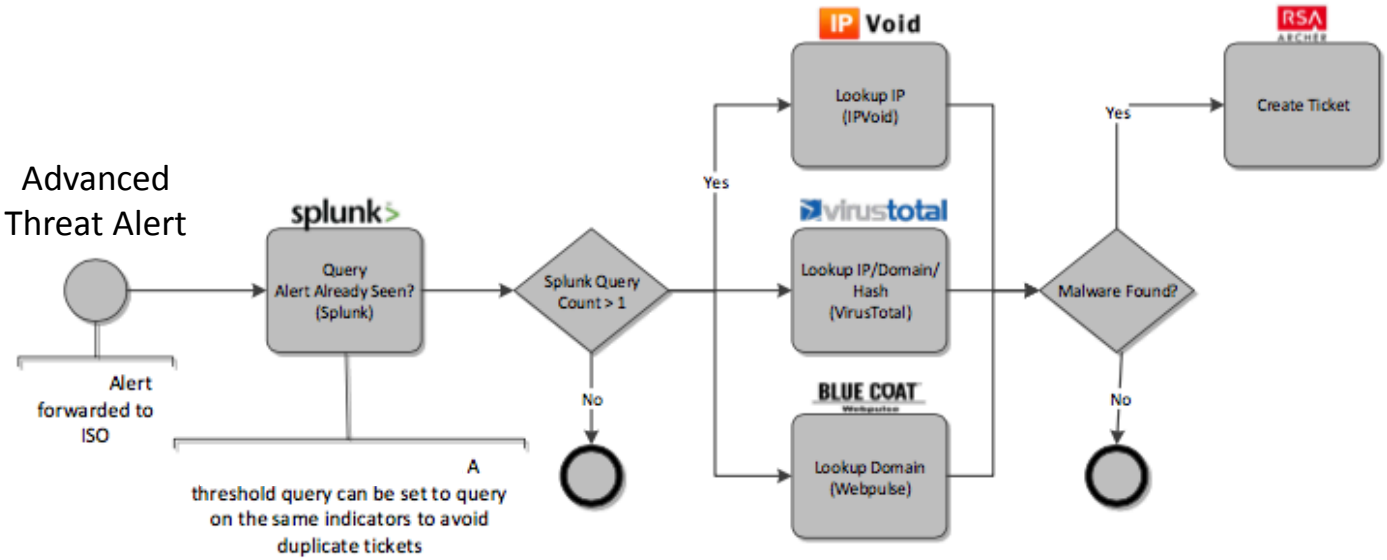
1,440 hours per year → 40% time savings = 576 hours/year saved

Suspect email analysis

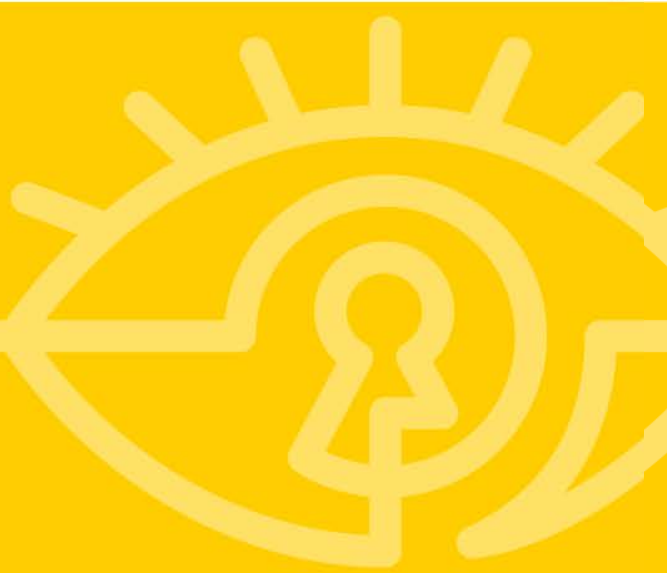


8,800 hours per year → 65% time savings = 5,720hours/year saved

Advanced Threat Alert



4,224 hours per year → 65% time savings = 2,745 hours/year saved



Challenges and Best Practices for Automation

Challenges

- What about the dark arts of incident response?
- What about ambiguity?
- Should code really be making decisions?
- What if automation reaches the wrong conclusion?
- This is my job!

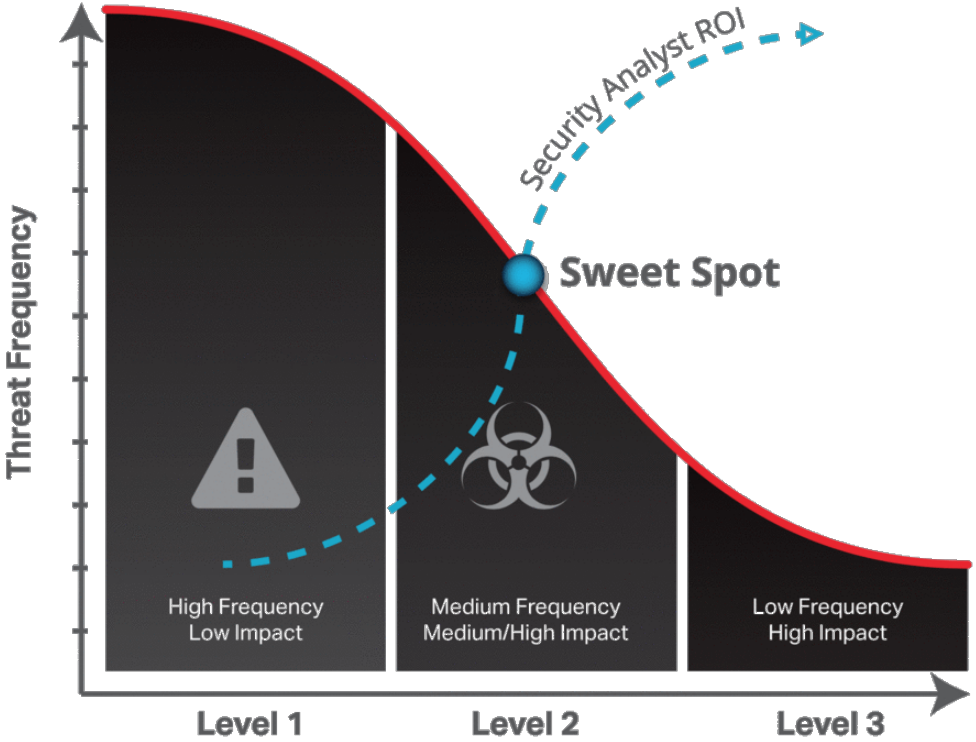
“Lean Before Digitize”

- Automating ineffective processes just results in faster ineffectiveness
- Consider adding new sources that were previously omitted due to time constraints

Understand your metrics and targets

- Time to identify (TTI)
  - Fast incident identification is a hard requirement for the decision making and response process
- Time to respond (TTR)
  - TTR is crucial to early interruption of threats
- Frequency
  - The average number of incidents over a given time window
- Risk-Regret
  - High risk-regret actions directly affect ROI as these are likely to remain as human initiated – whereas low risk-regret are excellent candidates for full automation
- Integration readiness
  - Readiness for integration can be impacted by several factors including technology or process limitations. Integration readiness will evolve over time with improvements in both.

Automate the right types of incidents



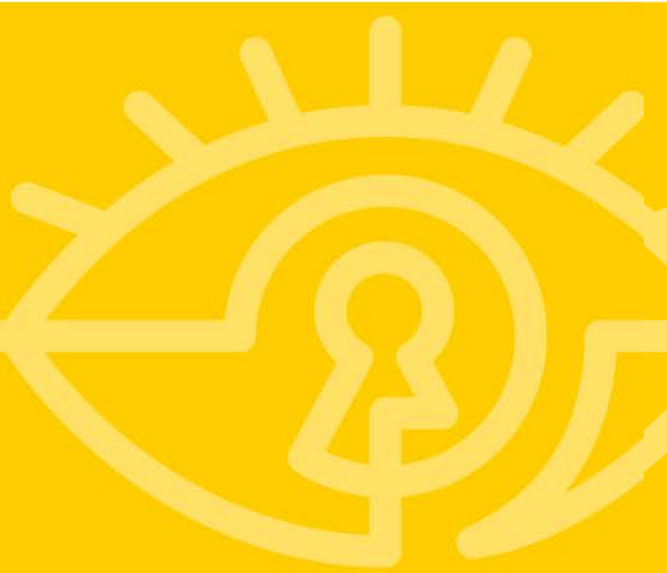
Deploy carefully

- Selectively identify the processes and activities with the most return from an analyst time and effort point of view.
- Automate your actions as close to the threat window as possible. Reduce your threat exposure by blending human and machine actions for the best (and fastest) results.
- Measure your successes – refine and improve them.
- Create new courses of action as you master existing playbooks.
- Reuse everything.
- Control the excitement.
  - Teams often want to jump in and create playbooks, which is great. But this can lead to confusion.
  - Instead, create a priority-based list with an initial team, then identify the growth process.

Define and communicate the win

Why are you automating?

- To reach a cost-out target?
- For the elimination of annoying tasks?
- So that your team can devote more time to hunting?



Applying Automation

Getting started with automation

- Next week you should:
  - Identify low-value / high-frequency tasks within your IR process
- In the first three months following this presentation you should:
  - Automate these processes
  - Start scripting; graduate to commercial tools when connectors and playbook libraries become your bottleneck
- Within six months you should:
  - Have your analysts start hunting with all of their free time!