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## **Deploying Detection** as Code at Scale

**SEC1847A** 

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Apply the tools and best practices from software development to detection content development.



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#### **Four Principles:**

Detection Language



Apply the tools and best practices from software development to detection content development.

- Detection Language
- Version Control System



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- Automated Workflows



Apply the tools and best practices from software development to detection content development.

- Detection Language
- Version Control System
- Automated Workflows
- Test-driven Development



## Why implement DaC?

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Detections are already code

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- Detections are already code
- Ensure thorough detection validation
- Built-in change control
- Increase visibility of changes

- Improve documentation
- Increase development velocity
  - Easier discoverability
- More confidence with unit tests and required approvals
- Less time fixing broken alerts
- Enable broad find/replace-type changes





- 700+ correlation searches
- 600+ properties of a correlation search configurable via API
- 20+ content creators across different teams



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- Mid-project Splunk® Cloud migration



### **Tool Selection**

#### **Tool Selection**



#### YAML - Detection Language

- Human and machine readable
- Syntax is relatively easy to learn
- Supports comments
- Ubiquitous



#### Git - Version Control / Automation

- Lots of CI/CD features baked into enterprise versions
- Ubiquitous



#### **Docker - Automation**

- Already integrated into our git environment
- Very easy to build and iterate on as we mature our use case
- Ubiquitous



#### Python - Automation

- Splunk maintains a Python SDK so we don't need to write our own middleware
- Ubiquitous





- First iteration was a simple "pull" sync from Splunk® into git:
  - API call to get current state of all correlation searches
  - Convert results from JSON to YAML
  - Compare with YAML files already in repo
  - Write any changes out
  - Submit merge request for that day's changes



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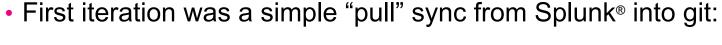


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#### This allowed us to:

- Build and test the scaffolding we needed for the "push" end state
- Narrow down which of the hundreds of properties we actually care about
- Provide basic change tracking through daily merge requests
- Prove the concept to leadership





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- Mandatory review required for all changes to prod
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100+ merges per month / 1,000+ total





"I love peer review."
- Anonymous Engineer



## <u>Demo</u>

## Where We're Going From Here

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- Fully integrate CI/CD with our existing detection validation process
- Automate more of the MR checklist (SPL linting, improved dynamic analysis)
- Bring in content creators outside of the security team
- Expand the scope to other Splunk® content (macros, lookups, dashboards)
- Bring other tools under the detection as code umbrella (endpoint sensor logic, suricata rules, etc.)

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Thorns Roses

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- Schema updates can be a chore
- Running "push" and "pull" syncs simultaneously can get interesting

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#### **Thorns**

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#### Roses

- Enforced and automated documentation
- Enforced alert output standards
- Custom tagging
- Automated testing
- Catching all sorts of issues before they hit prod
- Team-wide visibility of changes
- Large scale updates

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- Get your content creators on board up front

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  - Red Team
  - Threat Intel
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- Incident Response
- Red Team
- Threat Intel
- Upper Management

- Put a lot of thought into your definition language schema
- Make it (as) easy (as possible)

#### **Additional Resources**

- <u>SEC1197C Build Detection as Code Like the Splunk Threat Research Team</u> (slides)
- Detection-as-code: Why it works and where to start
- <u>Detectionengineering.io</u>
- Sigma
- Splunk Security Content Repo
- Me! (email | LinkedIn | splunk-usergroups: @Nate Zastrow)

## Questions?

## Thank You

