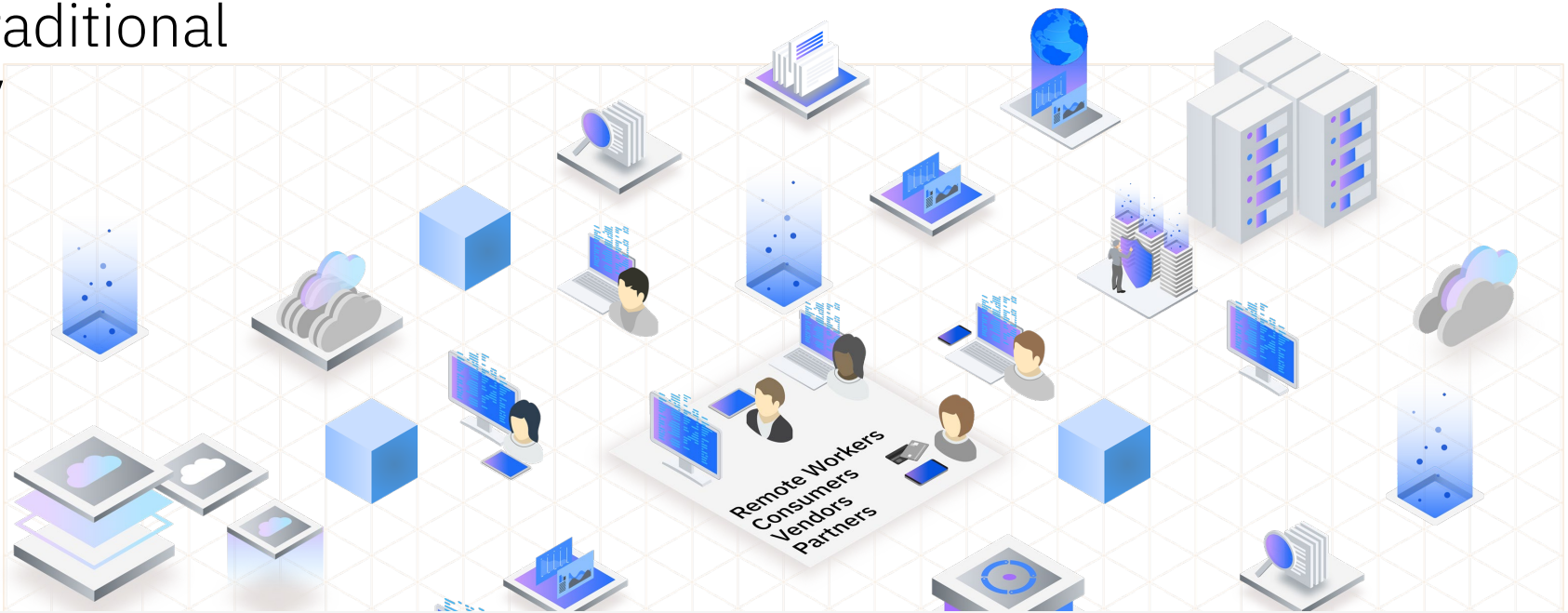
Collective Defense Intelligence

A Model for Empowering the Open Cybersecurity Ecosystem

Jason Keirstead
CTO & Distinguished Engineer, IBM Security
Co-Chair, Open Cybersecurity Alliance
Steering Committee, OCSF
Board Member, OASIS Open

Traditional
cy
is



- 66% of security teams do NOT share their data, **far worse** for their analytics
- 45% of security teams require security engineers to hand wire integrations
- Still, 21% of security decision-makers cite understaffing as a top challenge

Source: SANS 2021 Security operations survey - https://sansorg.egnyte.com/dl/b5945iNBTy

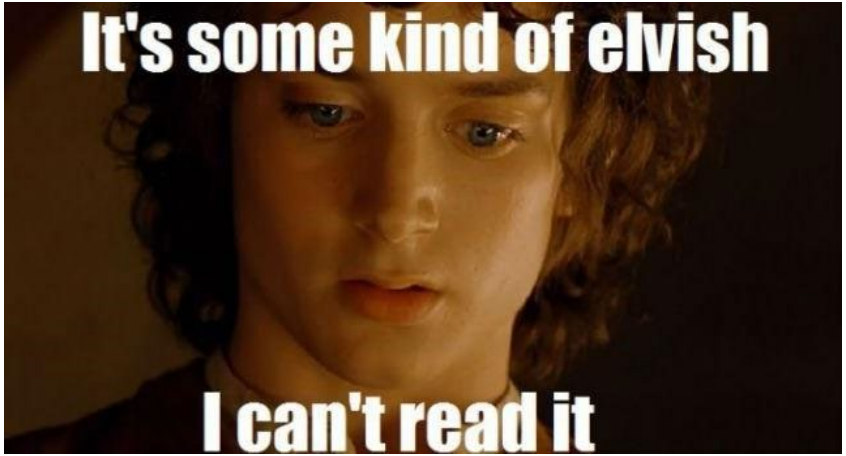
Industry and technology co

- 84% believe that a product's integration capabilities are important
- 83% believe future interoperability depends upon established standards
- 77% want more support for open standards

Source: ESG Research Report, July 2022 "Technology Perspectives from Cybersecurity Professionals"

”Detection As Code” – What!?

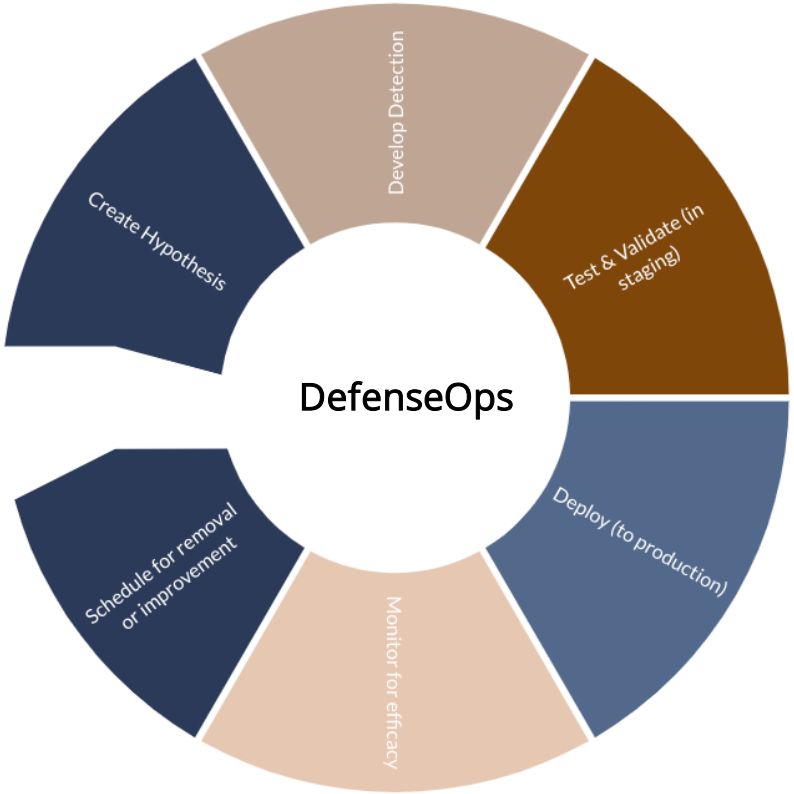
- Do SOC Engineers have to write code now?



- What about intelligence?
- What about response plans?
- What about automations?

“Detection as Code” -> “DefenseOps”

- Test-Driven Detection Development (TDD)
- Composability & Reuse
- Version-controlled, automated deployment workflow



John Lambert, "The githubification of infosec" - https://medium.com/@johnlatwc/the-githubification-of-infosec-afbdbfaad1d1
Florian Roth, "Creating leverage" - https://cyb3rops.medium.com/leverage-is-key-b2abd3c323e2
Anton Chuvakin, “Can we have ‘Detection as Code’ - https://medium.com/anton-on-security/can-we-have-detection-as-code-96f869cfdc79

Shifting Left and Right

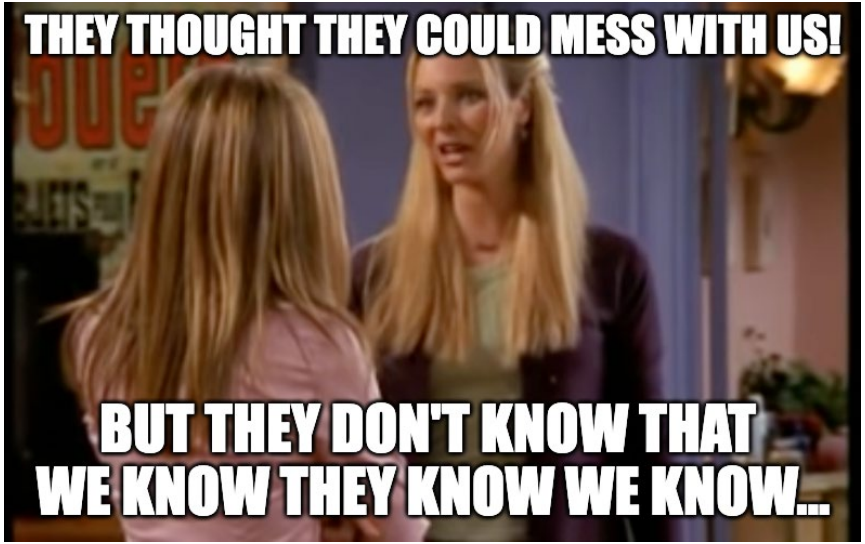
- We need to encourage detections that are *less specific* and *more modular*, to be able to scale and support collaboration
- The more specific a detection is, the less useful it is in practice and shorter its shelf-life
- Environments have realistic upper-limit to detections that can be deployed, we can't write atomic detections for everything

From “Detection as Code” to “Collective Defense Intelligence”

- **Threat intelligence** is **evidence-based knowledge** (e.g., context, mechanisms, indicators, implications and action-oriented advice) about **existing or emerging** menaces or hazards to assets. – *Gartner*
- **Defense intelligence** is **curated tactical knowledge** (e.g. hunt scenarios, alerting rules, detection analytics, manual and automated remediations, and playbooks) that will detect, mitigate, or prevent **validated and quantified** menaces or hazards to assets. – Me
- **Collective Defense intelligence** is enabled via an open security ecosystem that aids collaborating together on common Defense intelligence.

How can we enable collective defense?

- There is a serious tradeoff between secrecy and action in intelligence and counterintelligence activities
- For various reasons, in cybersecurity organizations we skew much too far into the secrecy side of this trade
- A number of fallacies contribute to this issue – we need to fight these.



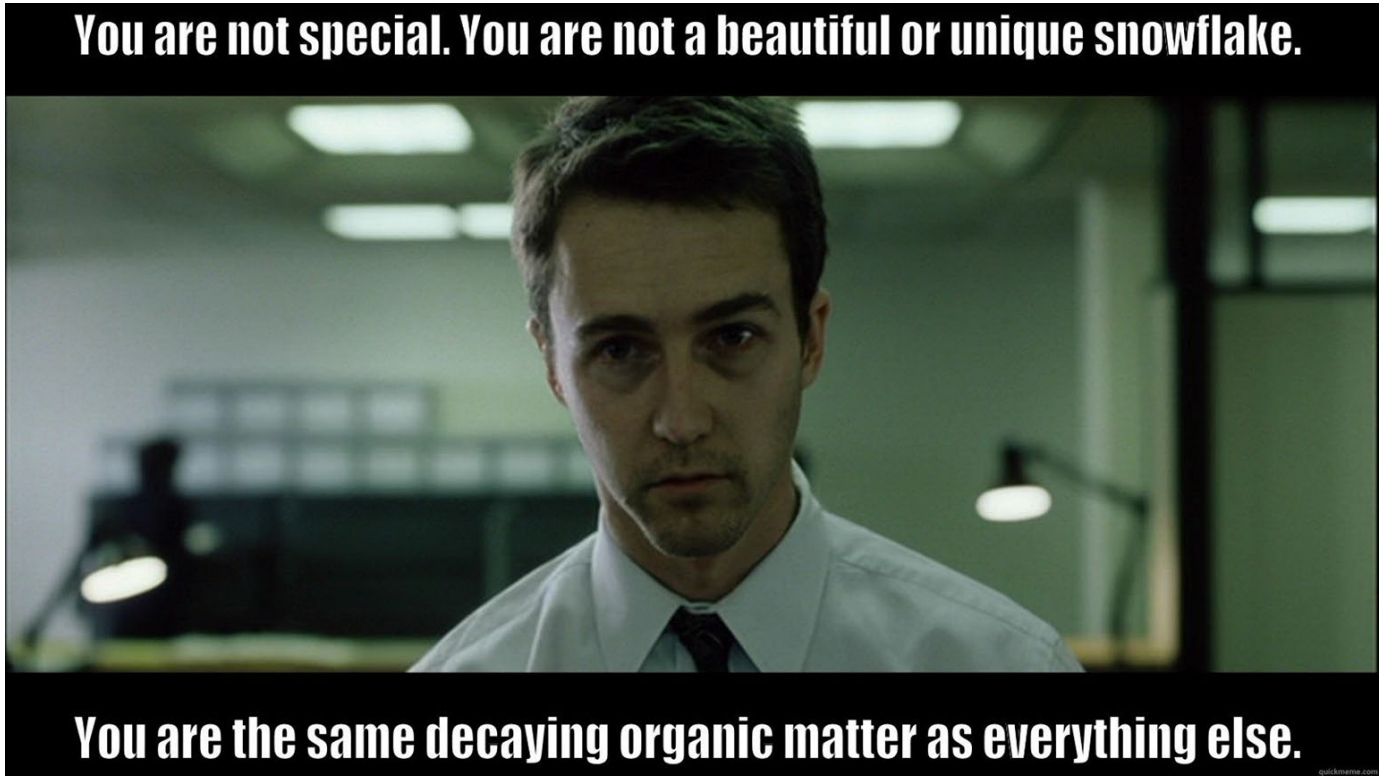
https://www.youtube.com/watch?v=a4CS2tCjAgk

Resolving Perceived Challenges

- Can’t be “jack of all trades, master of none”
- We want to collaborate, but don’t know how to do it
- We want to collaborate, but have no tools to enable it
- **How can I trust someone else’s defense?**

Photo/KEN GARDUNO

Resolving Perceived Challenges



Open Security leads to Collective Defense

Improved Risk Reduction

Foundational Standards

- Foundational security elements
- Encryption, identity, data interchange
- Enable development of secure applications and services

sigstore KMIP

fido ALLIANCE

Operational Standards and Compliance

- Best practice consumption from regulators and industry bodies
- Continuous policy monitoring and enforcement
- Vulnerability normalization and prioritization

NIST OSCAL OSV

CIS Center for Internet Security

Open Policy Agent

Threat Intelligence Sharing

- Commercial and OSINT feeds
- ISAC / ISAO sharing
- Intelligence operationalization
- Creation of organization-specific intelligence

STIX TAXII

Global Resilience Federation

FIRST

Collaborative Detection

- Common frameworks to understand attackers
- Common data models to enable analytics
- Shared cross-platform detections

Open Cybersecurity Schema Framework

SIGMA

MITRE ATT&CK

Collective Defense

- Shared cross-platform hunting
- Shared cross-platform response runbooks
- Linkage from intelligence to detection to response to policy enforcement
- End-to-end collaboration

Kestrel

cacao PLAYBOOKS

MITRE ENGENUITY | Center for Threat Informed Defense

Collective Defense

Security Standards


Developer


Developer

Enabling Collective Defense Intelligence

Standards

DefenseOps

Collaboration in the open

Nonprofit Cyber

Nonprofit Cyber

[Nonprofit Cyber](#) is a **coalition** of implementation-focused cybersecurity nonprofits to collaborate, work together on projects, voluntarily align activities to minimize duplication and increase mutual support, and link the community to key stakeholders with a shared communication channel.

APWG

Canadian Cyber Threat Exchange
Informing Canadian Business

Échange canadien de menaces cybernétiques
Informer les entreprises canadiennes

CIS Center for Internet Security®
Creating Confidence in the Connected World.

CSA cloud security alliance®

CR Consumer Reports

CREST

CDA CYBER DEFENCE ALLIANCE

CYBER READINESS INSTITUTE

CYBER RISK INSTITUTE

CYBER THREAT ALLIANCE

Cybercrime SUPPORT NETWORK

CyberGreen

CyberPeace Institute

fido alliance
simpler stronger authentication

FIRST
Improving Security Together

FORGE

GLOBAL CYBER ALLIANCE

GLOBAL RESILIENCE FEDERATION

IST Institute for SECURITY + TECHNOLOGY

MITRE ENGENUITY | Center for Threat Informed Defense

NCFTA

NATIONAL CYBERSECURITY ALLIANCE

NOMAD FUTURIST

OCA OPEN CYBERSECURITY ALLIANCE

OPEN SECURITY TRAINING 2
OST2.FYI

OWASP®

01010 01000000 010001 01000 0100001 SAFECode

SECURE THE VILLAGE

SHADOWSERVER

SIGHTLINE SECURITY

How To Help

OPEN CYBERSECURITY ALLIANCE

Learn more about open security initiatives to understand how to aid collective defense

Become part of the security ecosystem that embraces open source and collective defense

Contribute to the open security community with code, tooling, detections

Contribute and collaborate on detections as well as response plans

Open Cybersecurity Schema Framework

opencybersecurityalliance.org

ocsf.io

BORDERLESS CYBER

"Cybersecurity Meets Privacy"

11-12 September 2023

Royal Holloway*, University of London

CFP Closes June 9!

https://borderlesscyber2023.oasis-open.org

** Royal Holloway is located 15 minutes from Heathrow Airport & 35 minutes from downtown London.*

Cybersecurity Meets Privacy

11-12 September 2023
Royal Holloway, University of London
https://borderlesscyber2023.oasis-open.org

Ways to consider participating…

- Attend: Registration is open. Fee to attend is £120-180+, includes daily breakfast, lunch and day one dinner.
- Sponsor: A variety of options available. Packages include podium time, tabletop exhibits and more.
- Submit a Proposal: There's still time to submit a proposal. Submission details can be found on the conference website.

* Royal Holloway is located 15 minutes from Heathrow Airport & 35 minutes from downtown London.

- ** A limited amount of reasonability priced university accommodations are available. Reserve now.

Questions ???

Jason Keirstead

CTO & Distinguished Engineer, IBM Security
Co-Chair, Open Cybersecurity Alliance
Steering Committee, OCSF
Board Member, OASIS Open

jason AT Keirstead DOT org
https://twitter.com/BlueTeamJK/
https://www.linkedin.com/in/jasonkeirstead/