Threat Detection and Remediation Workshop

Module 2

Agenda

- Module 2: Run the CloudFormation template (~5 min)
- Threat detection and remediation intro presentation (~25 min)
- Workshop walkthrough (~10 min)

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Start module 2

use
us-west-2

https://tinyurl.com/y84cc3pj
(https://github.com/aws-samples/aws-security-workshops/tree/master/threat-detection-wksp)

Directions:

- Browse to **https://tinyurl.com/y84cc3pj**
- Click on **Attack Simulation** at the end
- Complete this module (~5 min) then stop
- We will then do a presentation

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GDPR and threat detection & remediation

Under GDPR **Controllers** and **Processors** are required to implement appropriate Technical and Organizational Measures (“TOMs”)

(1) Pseudonymisation and encryption of personal data	(2) **Ensure ongoing confidentiality, integrity, availability, and resilience of processing systems and services**
(3) **Ability to restore availability and access to personal data in a timely manner in the event of a physical or technical incident**	(4) **Process for regularly testing, assessing, and evaluating the effectiveness of TOMs**

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Threat Detection and Remediation Intro

Why is threat detection so hard?

Large datasets

Signal to noise

Skills shortage

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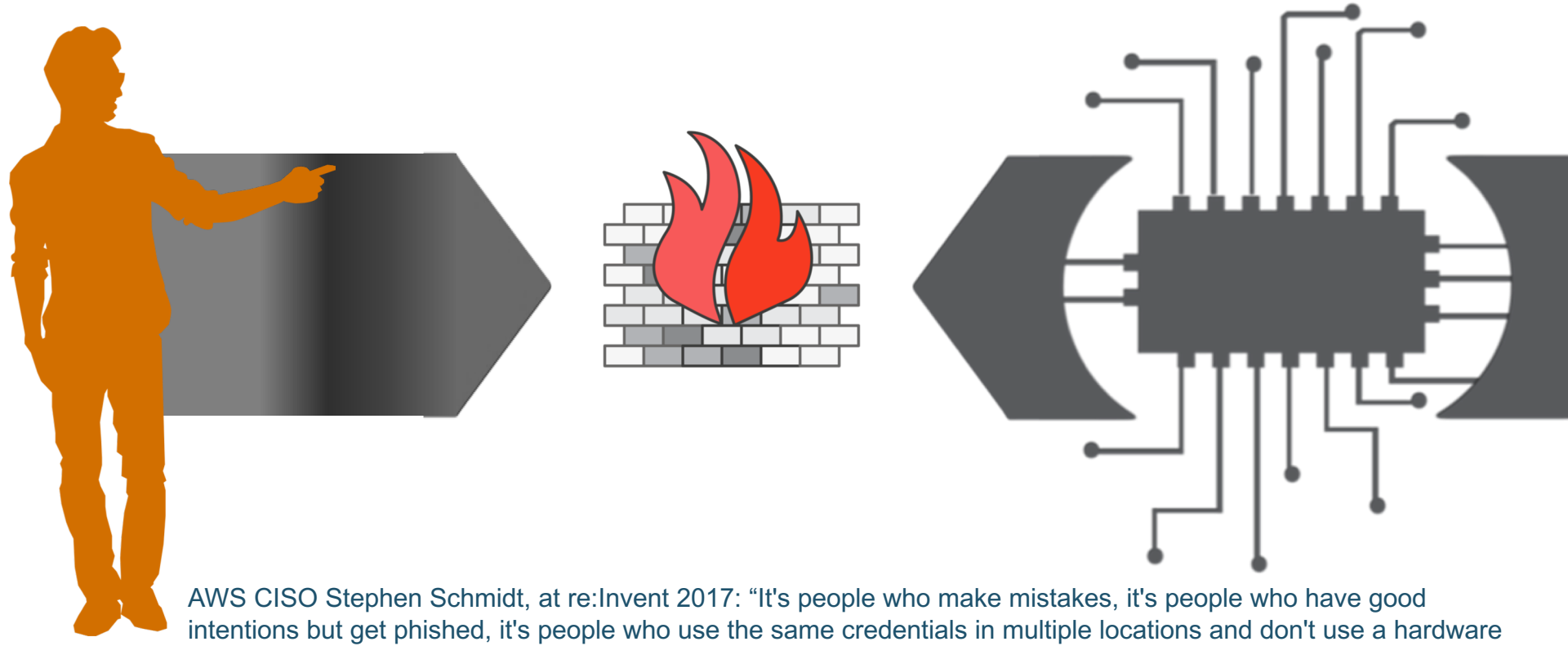
Get humans away from the data and analysis



AWS CISO Stephen Schmidt, at re:Invent 2017: “It's people who make mistakes, it's people who have good intentions but get phished, it's people who use the same credentials in multiple locations and don't use a hardware token for a multi-factor authentication… Get the humans away from the data.”

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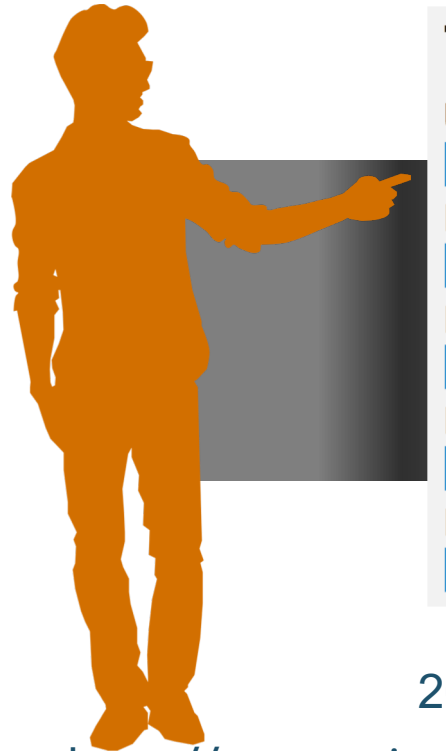
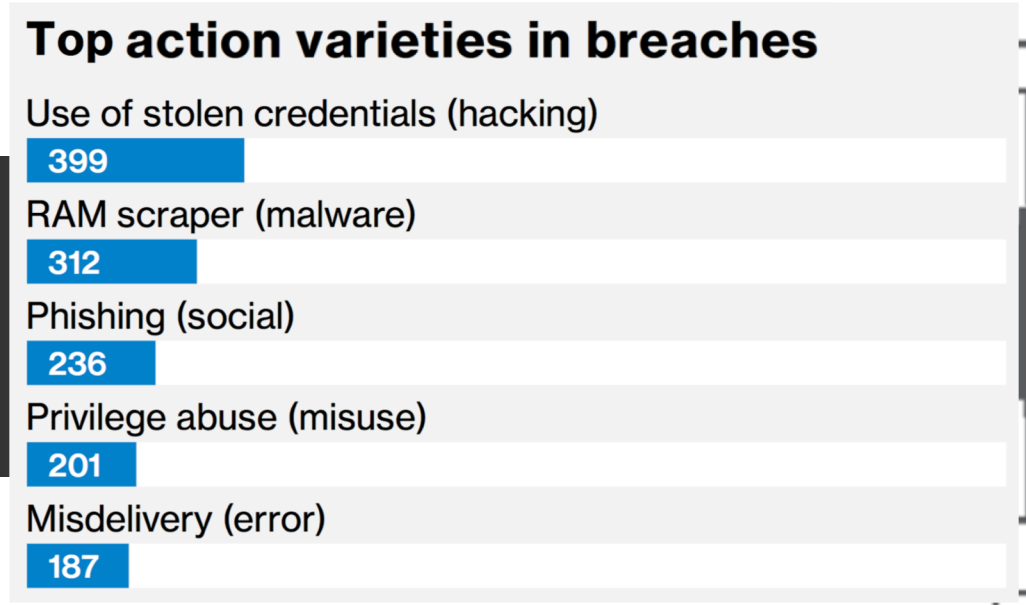
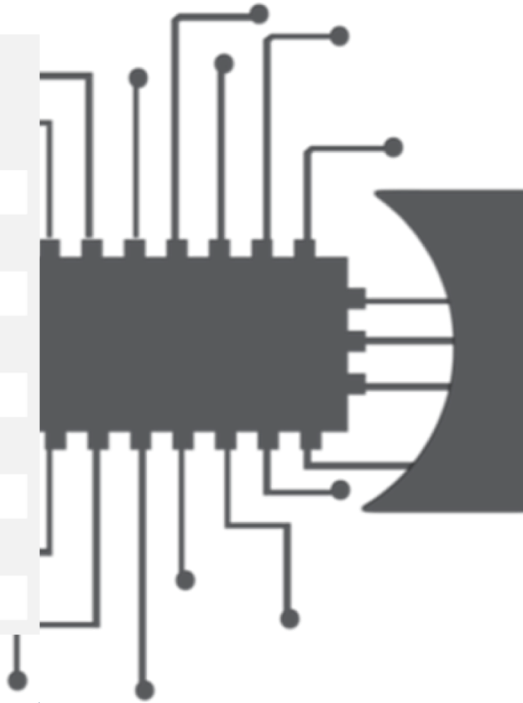
Get humans away from the data and analysis







2018 Verizon Data Breach Investigations Report

https://www.verizonenterprise.com/resources/reports/rp_DBIR_2018_Report_en_xg.pdf

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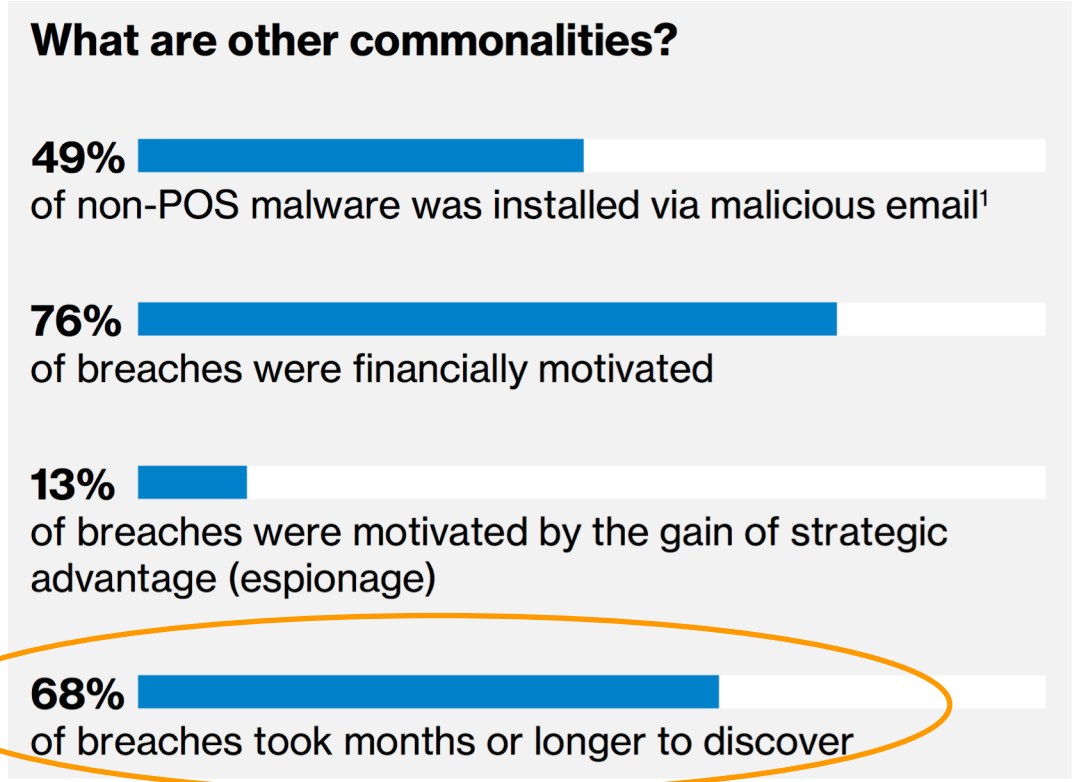
Detecting breaches



https://www.verizonenterprise.com/resources/reports/rp_DBIR_2018_Report_en_xg.pdf

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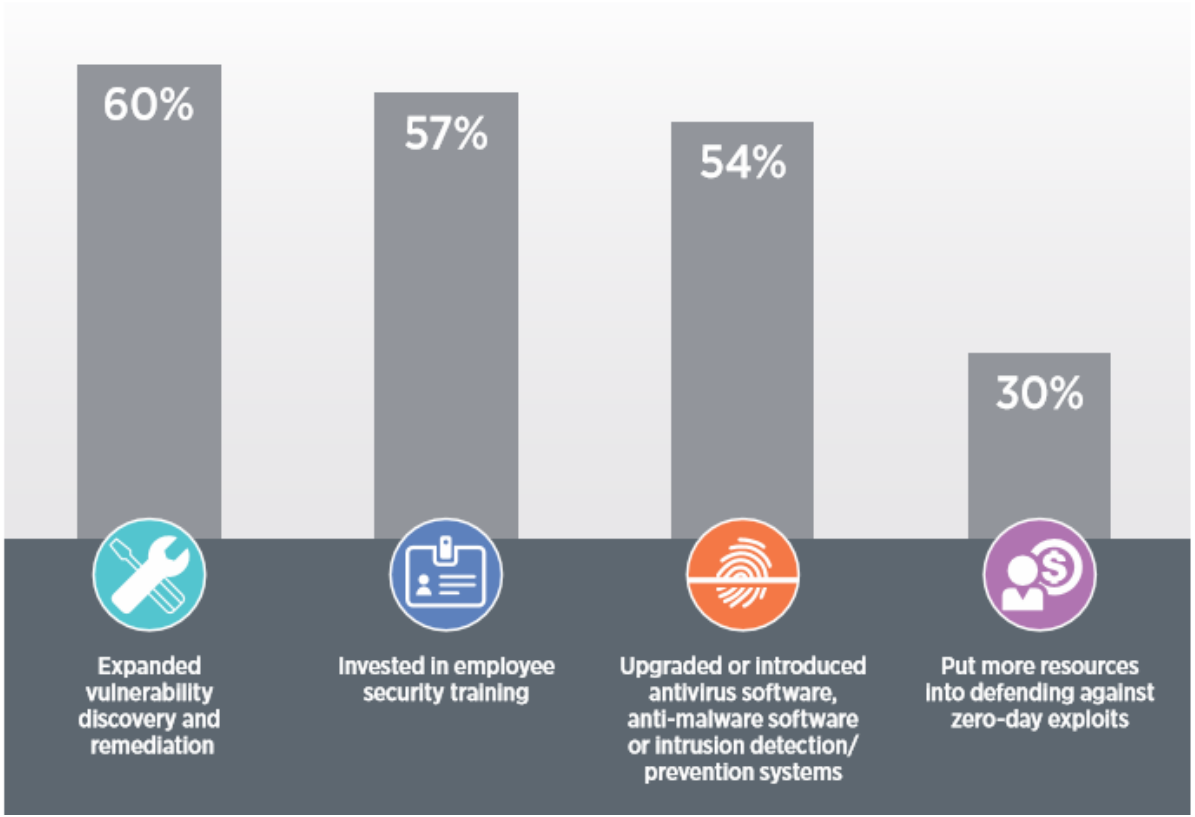
Top Actions Taken to Address Security Issues



2017 Forbes Insights – "Enterprises Reengineer Security in the Age of Digital Transformation"

Source: 2017 Forbes Insights – "Enterprises Reengineer Security in the Age of Digital Transformation"

AWS Security Solutions

https://www.nist.gov/cyberframework

Identify

AWS
Systems Manager

AWS Config

Protect

AWS
Systems Manager

Amazon Inspector

VPC

KMS

AWS CloudHSM

IAM

AWS Organizations

AWS Cognito

AWS Directory Service

AWS Single Sign-On

Certificate Manager

Amazon Inspector

Amazon Macie

Detect

AWS CloudTrail

AWS Config Rules

**Amazon
CloudWatch Logs**

Amazon GuardDuty

VPC Flow Logs

Amazon Macie

AWS Shield

AWS WAF

Respond

AWS Config Rules

AWS Lambda

**AWS
Systems Manager**

**Amazon
CloudWatch Events**

Recover

AWS Config Rules

AWS Lambda

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Threat Detection Services

Threat Detection: Log Data Inputs

AWS CloudTrail

Track user activity and API usage

VPC Flow Logs

IP traffic to/from network interfaces in your VPC

CloudWatch Logs

Monitor apps using log data, store & access log files

DNS Logs

Log of DNS queries in a VPC when using the VPC DNS resolver

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Threat Detection: Machine Learning

Amazon GuardDuty

Intelligent threat detection and continuous monitoring to protect your AWS accounts and workloads

Amazon Macie

Machine learning-powered security service to discover, classify & protect sensitive data

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Live Role Playing Exercise

Threat Detection: Evocations/Triggers

AWS Config rules

Continuously tracks your resource configuration changes and if they violate any of the conditions in your rules

Amazon CloudWatch Events

Delivers a near real-time stream of system events that describe changes in AWS resources

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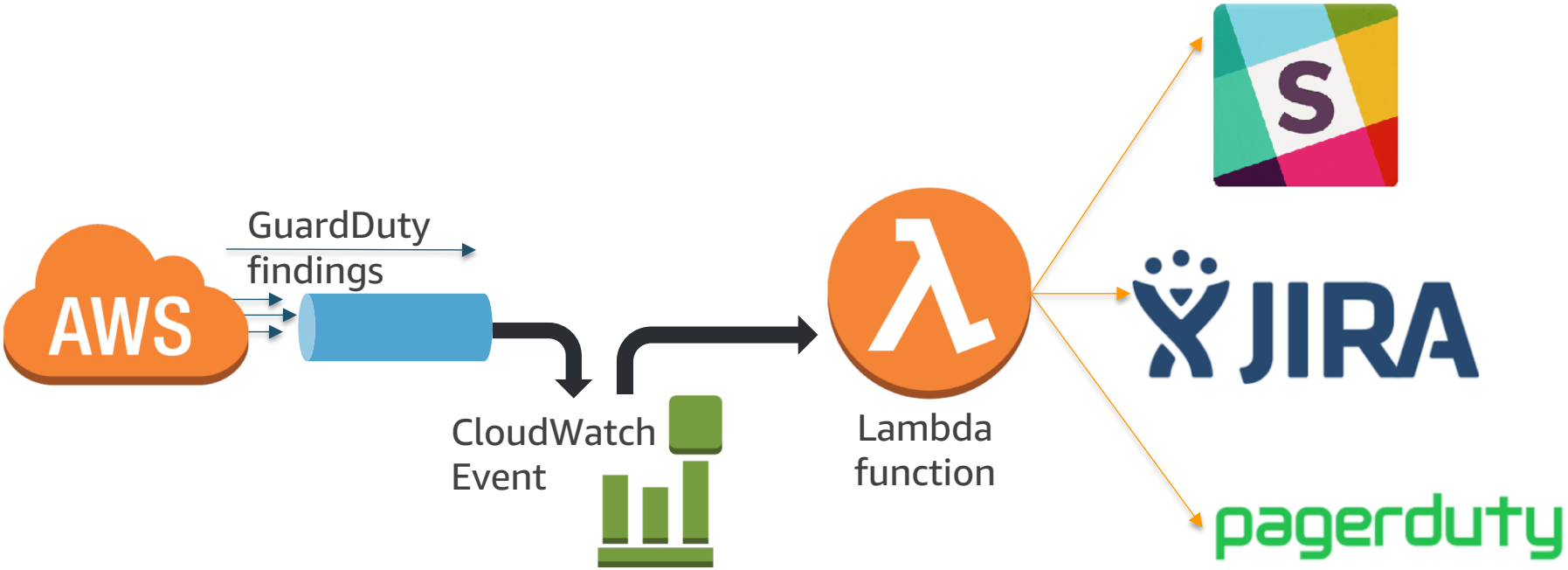
Amazon CloudWatch Events

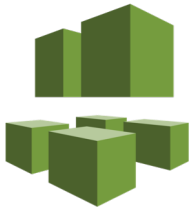


Threat Remediation Services

Threat Remediation Services

AWS Lambda

Run code for virtually any kind of application or backend service – zero administration



AWS Systems Manager

Gain operational insights and take action on AWS resources

Amazon Inspector

Automate security assessments of EC2 instances

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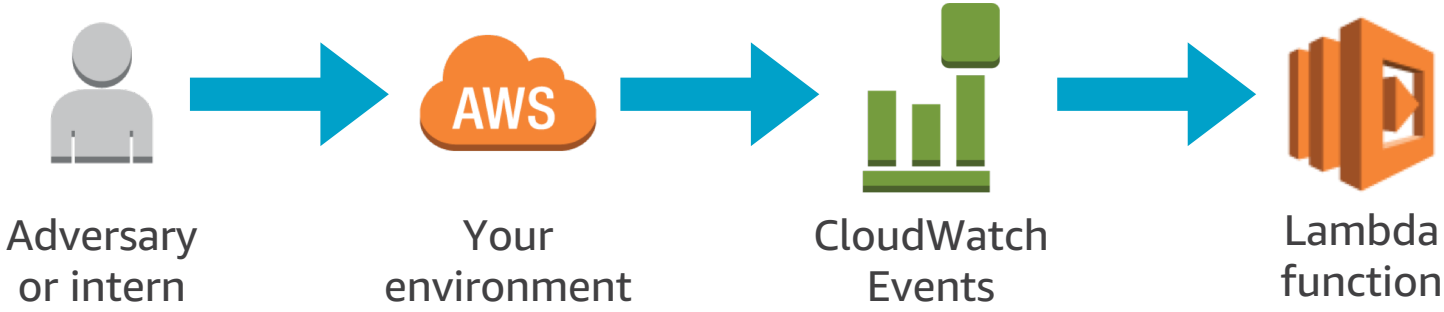
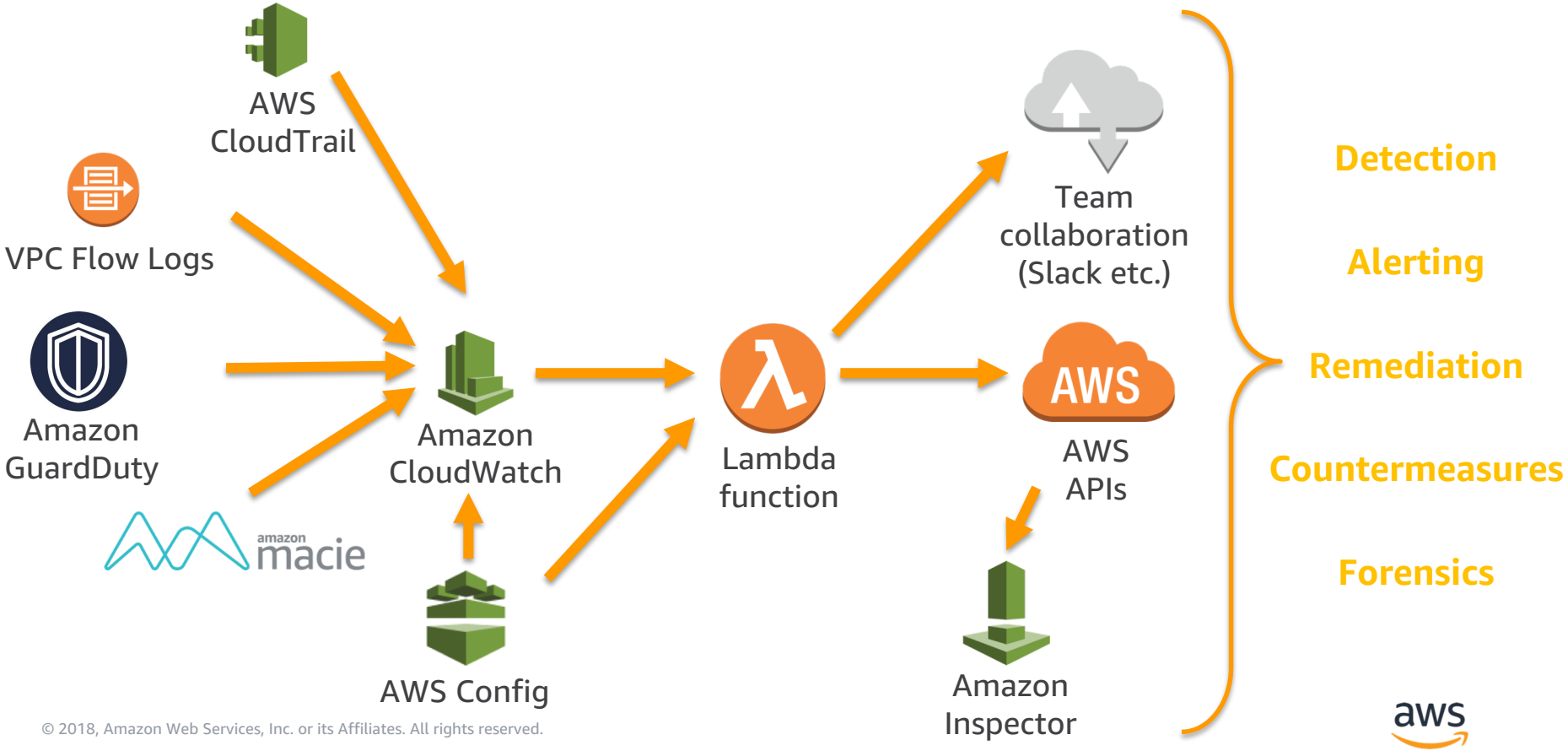
High-Level Playbook



High-Level Playbook



Review Questions

- How can you create custom rules for Config?
- How do GuardDuty and Macie differ?
- What services are important for automation of remediations?
- What performance impact does GuardDuty have on your account if you have more then 100 VPCs?
- Which of the services discussed have direct access to your EC2 Instances?

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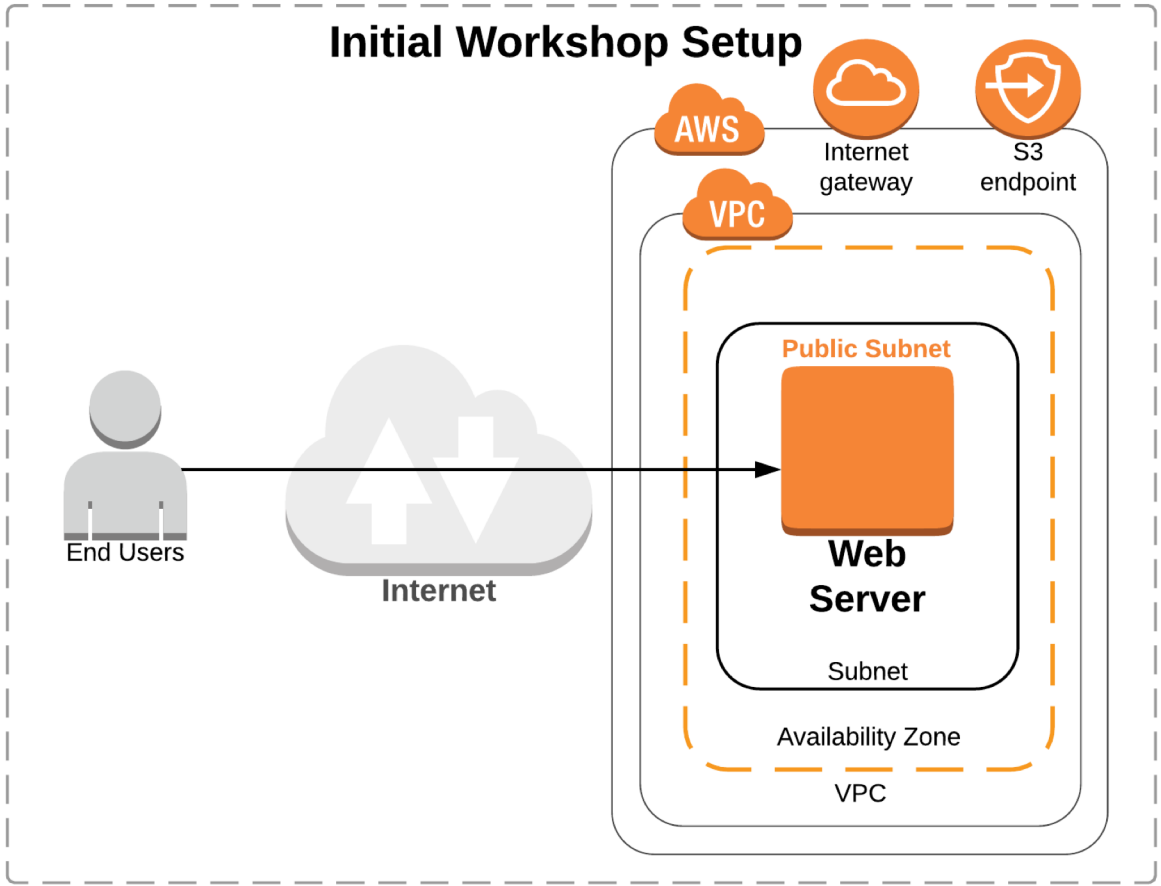
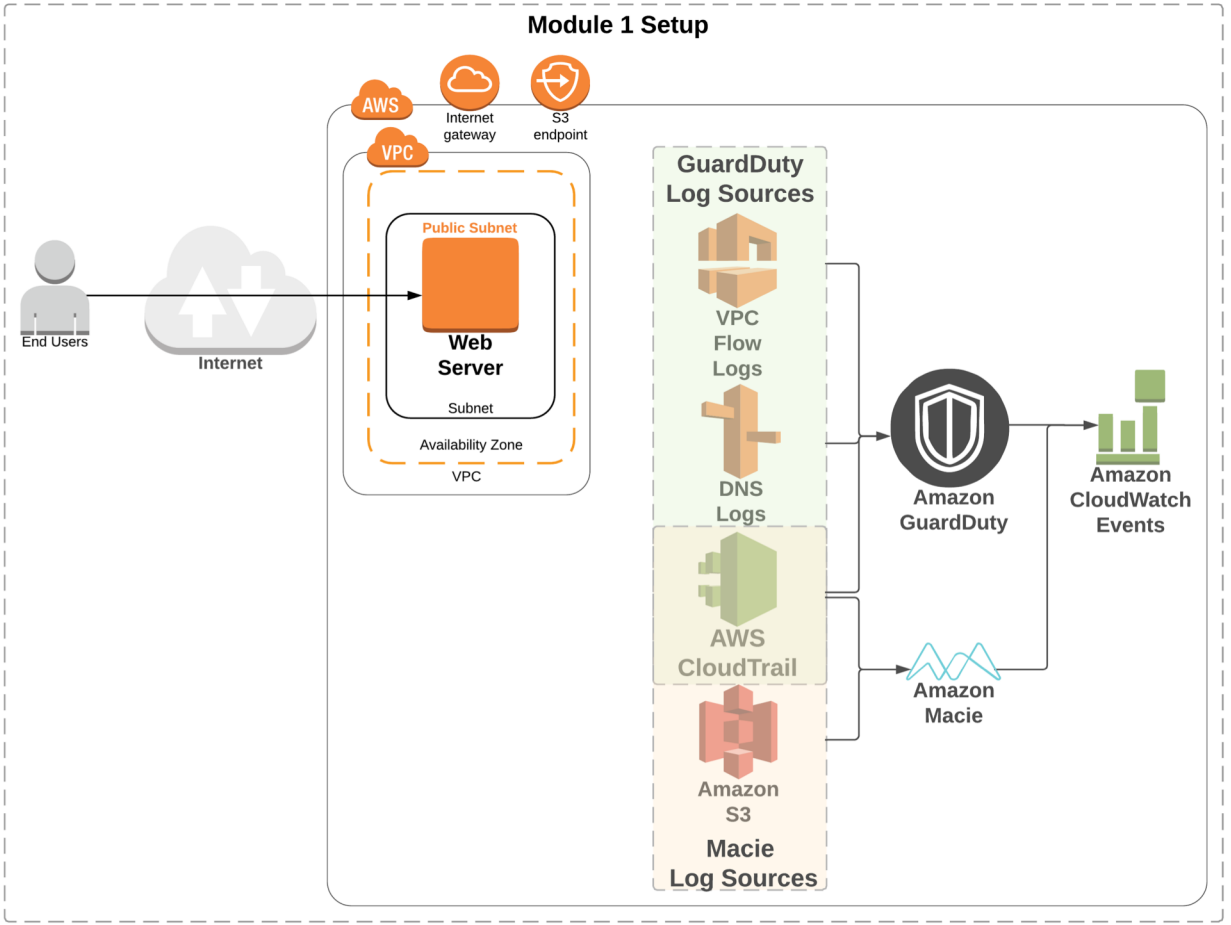
Workshop walkthrough

The initial setup



Module 1 setup



Start module 3

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(https://github.com/aws-samples/aws-security-workshops/tree/master/threat-detection-wksp)

Directions:

- Browse to **https://tinyurl.com/y84cc3pj**
- Click on **Detection & Remediation** at the end
- Run through this module (~45 min)
- We will then finish up with module 4 and cleanup

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