





AGENDA					
Welcome			_		
 Status of Archive, eDiscovery and Records Management in Microsoft 	Amy Judd Compliance Specialist	VITA			
 Layering AWS Security Services to automated secure Landing Zones, DR and Incident Response 	Milty Brizan Sr. Solutions Architect	AWS		 	
 Proactive Defense Technology to Detect and Protect Environments from Cyber Threats and Ransomware Attacks 	Jeff Spencer & Raazi Zain	ZScaler			
2022 Cybersecurity Awareness Month	Tina Gaines	VITA			
Upcoming Events / Announcements	Ed Miller	VITA			
Adjourn					

STATUS OF ARCHIVE, EDISCOVERY AND RECORDS MANAGEMENT IN

MICROSOFT

• Presented by

• Amy Judd / VITA



PURVIEW

•	Interim solution	=
•	Microsoft equivalent of Google Vault	ው (ም (
		日 日 日 日
	 Includes Purview eDiscovery (Standard) for G3 licenses 	<u>A</u> 4
	 Email: captures and maintains all sent/received 	F t
	 SharePoint, OneDrive, Teams 	<u>⊸</u> F
•	VITA has active procurement for statewide eDiscovery contracts (expected 2022)	Soluti
	 Five-member evaluation team 	
	$\circ~$ Reps from VITA, OAG, and three customer agencies	
•	Investigating potential longer-term Archives and Records Management services	,⇔ (É e
	$_{\odot}$ Working with NTT and the Library of Virginia (LVA)	s
	$_{\odot}~$ Vault and Purview do not meet RM best practices for government or LVA rules &	
	guidelines	P _A I ⊡a F



Microsoft Purview

Compliance Manager

Data connectors

lome

Alerts

Reports olicies

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Catalog

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Content search

Discovery Standard

remium

Jser data search

nsider risk management

Records management

Communication compliance

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Layering AWS security services to automate secure Landing Zones, DR and incident response

Milty Brizan, Sr. Solutions Architect August 2022, CoVA ISOAG



- Former Navy Submariner
 - USS Norfolk (SSN 714)
 - USS Memphis (SSN 691)
- Ex JPMC
- AWS for 7 years, all in SLG
- Application Modernization



Agenda

- The AWS Story
- The security needs of customers
- AWS layered security services portfolio
- Cloud Security best practices
 - Well-architected applications
- Automating Security and Governance
 - AWS Control Tower
 - AWS Security Hub
- Adding automated response & remediation
- Disaster Recovery

The AWS Story



What is AWS?

AWS provides a highly reliable, scalable, low-cost infrastructure platform in the cloud that powers millions of businesses in over 240 countries and territories around the world.

secure cloud computing environment with the highest quality globa

Benefits

- Low Cost
- Elasticity & Agility
- Open & Flexible
- Secure
- Global Reach





What sets AWS apart?



Security



Service Breadth & Depth; Pace of Innovation



Experience: 1M+ customers



Global Footprint



Machine Learning



Ecosystem



Interprise leader

Fine-grained identity and access control; Build with the Highest Standards for Privacy and Data Security

200+ fully featured services to support any cloud workload; AWS released 3,084 significant features and services in 2021

Building and managing cloud since 2006

84 Availability Zones within 26 geographic Regions, 17 Local Zones, 410+ Points of Presence (400+ Edge Locations and 13 Regional Edge Caches) in 90+ cities across 47 countries.

More machine learning happens on AWS than anywhere else. Machine learning in the hands of every developer and data scientist.

100,000+ APN partners from over 150 countries. The AWS Marketplace offers 50 categories, and 10,000+ Products

AWS positioned as a Leader in the Gartner Magic Quadrant for **Cloud Infrastructure and Platform Services**



26 Regions



Availability Zones

- Each AWS Region consists of multiple, isolated, and physically separate AZs within a geographic area
- An Availability Zone (AZ) is one or more discrete data centers with redundant power, networking, and connectivity in an AWS Region
- High throughput, low latency (<10mS) network between Availability Zones
- All traffic between AZ's is encrypted
- Physical separation with 100 km (60 miles)

Region	us-east-1 (N.Virginia)				
O Availability Z	one 💿 Availability Zone 💿 Availability	Zone			
us-east-1a	u us-east-1b us-east-7	lc			

Customer obsessed



90% of roadmap originates with customer requests and are designed to meet specific needs



"Performance, reliability, and responsiveness are fundamental to our customer experience, and T3 instances help us to deliver on that customer promise while also controlling our costs."

-Heroku



The security needs of customers

Before...

Move fast **OR** Stay secure



Now... Move fast AND Stay secure



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Balancing the needs of builders and central cloud IT



Innovate with the speed and agility of AWS

Cloud IT: Establish governance



Govern at scale with central controls



More innovation, greater agility, with control

Agility

Experiment

Be productive Empower distributed teams Self-service access Respond quickly to change Don't choose between Agility or Control You need and want both



Governance

Enable Provision Operate Secure & Compliant Operations & Spend

Management



The most-sensitive workloads run on AWS



"We prioritize data privacy and security in our platforms as well as ensuring we observe customer preferences. AWS was chosen because it's great in rich web application services."

-Christopher Bird, global platform CTO of messaging, HSBC's Wealth & Personal Banking



"The maturity of AWS infrastructure and the level of security audits that AWS performs on its data centers and services gave us peace of mind. We knew that the privacy and security of patient and customer data would be the top priority."

-Mark Maalouf, Vice President, Global Digital Health, Teva



"Migrating to AWS was an important step in creating better delivery velocity for our security applications."

-Jon Barcellona, Cybersecurity Engineering Director, Southwest Airlines



Customers need.... Infrastructure & services to elevate security



Inherit global security and compliance controls



Scale with superior visibility and control



Highest standards for privacy and data security



Automate & reduce risk with deeply integrated services



Largest ecosystem of security partners and solutions



Customers need.... Scale with superior visibility and control



Control where your data is stored and who can access it

Fine-grain identity and access controls so users and groups have the right access to resources

Reduce risk via security automation and continuous monitoring

Integrate AWS services with your solutions to support existing workflows, streamline ops, and simplify compliance reporting



Customers need.... Highest standards for privacy and data security



Meet data residency requirements Choose an AWS Region, and AWS will not replicate it elsewhere unless you choose to do so



Encryption at scale

with keys managed by AWS Key Management Service or managing your own encryption keys with AWS CloudHSM using FIPS 140-2 Level 3 validated HSMs



Comply with local data privacy laws by controlling who can access content, its lifecycle, and its disposal



Access services and tools that enable you to build compliant infrastructure on top of AWS



Customers need.... To automate and reduce risk with integrated services Comprehensive set of APIs and security tools



Continuous monitoring and protection



Threat remediation and response

Operational efficiencies to focus on critical issues

Securely deploy business critical applications



Gain access to a world-class security team

Where would some of the world's top security people like to work? At scale on huge challenges with huge rewards

So AWS has world-class security and compliance teams watching your back!

Every customer benefits from the tough scrutiny of other AWS customers





Inherit global security and compliance controls





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Traditional on-premises security model





Security & Compliance is a Shared Responsibility



https://aws.amazon.com/compliance/shared-responsibility-model/



The Line Varies ...



Services



CUSTOMER IAM

AWS IAM

Services



The layered security approach



AWS foundational and layered security services



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How do I enable threat detection at scale?



Threat detection, monitoring, and response





Scalable and centralized management

Built-in integration with AWS Organizations

Administrator / member setup



• Designate a centralized delegated administrator



• Add all member accounts



• Auto-enable services on all member accounts



Amazon GuardDuty

Foundational threat detection & monitoring layer

Protect your AWS accounts, workloads, and data with intelligent threat detection and continuous monitoring





Amazon GuardDuty: How it works



Amazon GuardDuty built-in data sources

Amazon VPC flow logs



DNS logs



CloudTrail events



CloudTrail S3 data events

VPC flow logs capture information about the IP traffic going to and from network interfaces in your VPC

VPC flow logs **do not** need to be turned on to generate findings; data is consumed through an independent stream DNS logs are based on queries made from Amazon EC2 instances to known and unknown questionable domains

DNS logs are in addition to Amazon Route 53 query logs; Route 53 is not required for GuardDuty to generate DNS-based findings AWS CloudTrail provides a history of API calls used to access AWS Management Console, SDKs, AWS CLI

Identification of user and account activity, including source IP address used to make the calls; CloudTrail event logs **do not** need to be turned on to generate findings Data events, also known as data plane operations, provide insight into the resource operations performed on or within a resource

GetObject, ListObjects, DeleteObject, and PutObject API operations


What can GuardDuty detect?

Detecting known threats using threat intelligence

GuardDuty leverages threat intelligence from various sources

- AWS security intel
- AWS partners CrowdStrike and Proofpoint
- Customer-provided threat intel



Threat intelligence enables GuardDuty to identify the following

- Known malware-infected hosts
- Anonymizing proxies
- Sites hosting malware and hacker tools
- Cryptocurrency mining pools and wallets



What can GuardDuty detect?

Unknown threats using machine learning

Algorithms to detect unusual behavior

- Inspecting signal patterns for heuristics
- Profiling the normal and looking at deviations
- Machine learning classifiers





Amazon Inspector

Automated and Continuous Vulnerability Management at Scale







- Environment coverage
- High impact findings
- Resources by finding severity



One-click continuous monitoring

- Automatic discovery of resources
- Monitors throughout the resource lifecycle



Prioritize with contextualized scoring

- Inspector Risk
 score
- Security metrics
- Customized views



Centrally manage at scale

- AWS Organizations
- Package vulnerability, Network reachability
- Environment
 coverage



Automate and take actions

- Management APIs
- Detailed findings in
 - Eventbridge
- Security Hub integration



Amazon Inspector - How it works





Continuous discovery and scanning

Automatically discover workloads and continually scan them for vulnerabilities across your organization



- Automatic Discovery Amazon Inspector automatically discovers all eligible resources and begins continuous scans of those resources for software vulnerabilities and unintended network exposure.
- Continuous scanning Amazon Inspector employs its own, purposebuilt scanning engine to monitor your resources for software vulnerabilities or open network paths that can result in compromised workloads, malicious use or resources, or unauthorized access to your data.

Amazon Inspector monitors your environment throughout the life-cycle of your resources by running scans in response to events such as after the installation of a new application or patch.

Amazon Inspector utilizes the SSM (SSM) service to collect software application inventory needed to scan Amazon EC2 instances for software vulnerabilities. Amazon Inspector can only scan for software vulnerabilities in operating systems supported by SSM.



Prioritized and contextualized scoring

Drive efficiency and accuracy with the Amazon Inspector risk score for prioritized, contextualized, and actionable results.



- Amazon Inspector score The Inspector risk score is a highly contextualized score that is generated for each finding by correlating common vulnerabilities and exposures (CVE) information with network reachability results, and exploitability data.
- Vendor score
 - Software package vulnerability scoring Amazon Inspector uses the NVD/CVSS score as the basis of severity scoring for software package vulnerabilities.
 - Network Reachability scoring Amazon Inspector uses the NVD/CVSS score as the basis of severity scoring for software package vulnerabilities. The NVD/CVSS score is the vulnerability severity score published by the NVD and is defined by the CVSS.

Amazon Inspector examines the security metrics that compose the National Vulnerability Database (NVD) base score for the vulnerability and adjusts them according your compute environment.

Amazon Detective

Investigative layer

Quickly analyze, investigate, and identify root cause of security issues



Built-in data collection



Automated analysis



Visual insights



Amazon Detective usage flow





Amazon Detective





Amazon Detective



Multi-account telemetry collection



Member Account 1

User 1

 \triangle

AWS

How do I monitor & respond to threats at scale?



AWS Security Hub

Continuous security assessment & automated response layer

Centrally view & manage security alerts & automate security checks





How AWS Security Hub works



Better visibility into security issues.

Easier to stay in **compliance**.

Automated security & compliance checks

Security Hub > Security standards

Security standards

AWS Foundational Security Best Practices v1.0.0 by AWS Description The AWS Foundational Security Best Practices standard is a set of automated security checks that detect when AWS accounts and deployed resources do not align with security best practices. The standard is defined by AWS security experts. This curated set of controls helps improve your security posture in AWS, and covers AWS's most popular and foundational services. Security score	CIS AWS Foundations Benchmark v1.2.0 by AWS Description The Center for Internet Security (CIS) AWS Foundations Benchmark v1.2.0 is a set of security configuration best practices for AWS. This Security Hub standard automatically checks for your compliance readiness against a subset of CIS requirements. Security score	PCI DSS v3.2.1 by AWS Description The Payment Card Industry Data Security Standard (PCI DSS) v3.2.1 is an information security standard for entities that store, process, and/or transmit cardholder data. This Security Hub standard automatically checks for your compliance readiness against a subset of PCI DSS requirements. Security score
Disable View results	Disable View results	Disable View results

- 150+ fully automated, nearly continuous checks evaluated against pre-configured rules
- Findings are displayed on main dashboard for quick access.
- Best practices information is provided to help mitigate gaps to be in compliance.



Security Hub as a central dashboard



Centralize across accounts and prioritize findings without needing to normalize View security and compliance posture against key standards

Take automated action on findings through CloudWatch Events



How do I automate response & remediation?

aws

Acting on findings



Automated detection & response



- Blocking traffic to and from suspicious remote hosts, for example to IP addresses associated with known command and control servers for botnets.
- GuardDuty detection of unintended communication with remote hosts triggers a series of steps, including blocking of network traffic to those hosts by using Network Firewall, and notification of security operators.

Use Security Hub Custom Actions to trigger automation





Customizable response and remediation actions



Lambda function, Step

Automation document

Function, or

console and take a custom action on them. These findings are sent to CloudWatch decorated with a custom action ID 3. User creates Amazon CloudWatch Events rules to look for certain findings associated with a custom action ID or findings with specific characteristics.

platform, or custom

remediation playbook

Customizable response and remediation actions





AWS Security Hub Automated Response and Remediation solution architecture



https://aws.amazon.com/solutions/implementations/aws-security-hub-automated-response-and-remediation/



Layer Threat Detection and Response Services

Advanced threat detection and response on AWS







Security tools natively available in AWS and from third parties

Reduce the burden for the security team

Centralized & scalable deployment with a click of a button



Sources of Best Practices

AWS Cloud Adoption Framework (CAF)



How to move to the cloud securely including the "Core Five Epics":

- Identity and Access Management
- Logging and Monitoring
- Infrastructure Security
- Data Protection
- Incident Response

AWS Architecture Center

CIS Benchmarks

Center for

Internet Security[®]



Architecture Center contains workshops, whitepapers, trainings and technical guides focusing on Security, including the Well Architect Framework (specially the Security pillar), and the AWS Security Reference Architecture. 148 detailed recommendations for configuration and auditing covering:

- "AWS Foundations" with 52 checks aligned to AWS Best Practices
- "AWS Three-Tier Web Architecture" with 96 checks for web applications



CIS Benchmarks:

What, Why, Check, Fix

2.1 Ensure CloudTrail is enabled in all regions (Scored)

Drofilo Applicability	Audit:	
Level 1	Perform the following to determ	Remediation:
Description:	Via the management Console	Perform the following to enable global Cloud Trail logging: Via the management Console
log files to you. The reco the API call, the source I response elements retur calls for an account, inclu line tools, and higher-lev Rationale: The AWS API call history change tracking, and cor exists will ensure that un detected.	 Sign in to the AWS Manag at <u>https://console.aws.an</u> Click on Trails on the lef You will be presen Ensure at least one Trail I Click on a trail via the link Ensure Logging is set to c Ensure Apply trail to Via CLI aws cloudtrail describe-trails 	 Sign in to the AWS Management Console and open the IAM console at https://console.aws.amazon.com/cloudtrail Click on Trails on the left navigation pane Click Get started Now, if presented Click Add new trail Enter a trail name in the Trail name box Set the Apply trail to all regions option to Yes Specify an S3 bucket name in the S3 bucket box Click Create If 1 or more trails already exist, select the target trail to enable for global logging Click the edit icon (pencil) next to Apply trail to all regions Click Save
		Via CLI

aws cloudtrail create-trail --name <*trail_name*> --bucket-name <*s3_bucket_for_cloudtrail*> -is-multi-region-trail

aws cloudtrail update-trail --name <*trail_name*> --is-multi-region-trail

Best-of-the-Best Practices: Identity and Access Management

1) Use multiple AWS accounts to reduce scope of impact



AWS accounts provide administrative isolation between workloads across different lines of business, regions, stages of production and classes of data.



Benchmark



CIS Web-Tier Benchmark

2) Use limited roles and grant temporary security credentials

IAM	IAM Roles	Secrets Manager	

IAM roles and temporary security credentials mean you don't always have to manage long-term credentials and IAM users for each entity that requires access to a resource.





3) Federate to an existing identity service



Control access to AWS resources, and manage the authentication and authorization process without needing to recreate all your corporate users as IAM users.





Benchmark

CIS Web-Tier Benchmark



Best-of-the-Best Practices: Logging and Monitoring

4) Turn on logging in all accounts, for all services, in all regions



CloudTrail

Amazon GuardDutv

The AWS API history in CloudTrail enables security analysis, resource change tracking, and compliance auditing. GuardDuty provides managed threat intelligence and findings.



Benchmark



CIS Web-Tier Benchmark

5) Use the AWS platform's built-in monitoring and alerting features



AWS Security Hub

AWS Config

Monitoring a broad range of sources will ensure that unexpected occurrences are detected. Establish alarms and notifications for anomalous or sensitive account activity.





CIS Web-Tier Benchmark

6) Use a separate AWS account to fetch and store copies of all logs



Security



Configuring a security account to copy logs to a separate bucket ensures access to information which can be useful in security incident response workflows.





CIS Web-Tier Benchmark



Best-of-the-Best Practices: Infrastructure Security

7) Create a **threat** prevention layer using AWS edge services





Amazon CloudFront **AWS Shield** AWS WAF

Use the hundreds of worldwide points of presence in the AWS edge network to provide scalability, protect from denialof-service attacks, and protect from web application attacks.



8) Create network zones with Virtual Private Clouds (VPCs) and security groups

🙆 VPC		Security group
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Implement security controls at the boundaries of hosts and virtual networks within the cloud environment to enforce access policy.



CIS Web-Tier **Benchmark**

9) Manage vulnerabilities through patching and scanning



Test virtual machine images and snapshots for operating system and application vulnerabilities throughout the build pipeline, and into the operational environment.





Benchmark



Benchmark

Best-of-the-Best Practices: Data Protection

10) Encrypt data at rest (with occasional exceptions)



AWS KMS

Amazon S3

Enabling encryption at rest helps ensure the confidentiality and integrity of data. Consider encrypting everything that is not public.





CIS Web-Tier Benchmark

11) Use **server-side** encryption with provider managed keys

<u>}</u>
VM2 KW2



AWS Key Management Service (KMS) is seamlessly integrated with multiple AWS services. You can use a default master key or select a custom master key, both managed by AWS.



12) Encrypt data in transit (with no exceptions)





Amazon CloudFront

Certificate Manager

SSL / TLS / **HTTPS**

Encryption of data in transit provides protection from accidental disclosure, verifies the integrity of the data, and can be used to validate the remote connection.





Benchmark

CIS Web-Tier Benchmark



Tools and Automation

AWS Security Hub



Amazon CloudWatch Events



AWS Config Rules



An automated security assessment service that helps improve the security and compliance of applications deployed on AWS. Amazon Inspector automatically assesses applications for vulnerabilities or deviations from best practices. A monitoring service for AWS cloud resources and the applications you run on AWS. You can easily build workflows that automatically take actions you define, such as invoking an AWS Lambda function, when an event of interest occurs. A fully managed service that provides you with an AWS resource inventory, configuration history, and configuration change notifications. Config Rules enables you to create rules that automatically check the configuration of AWS resources recorded by AWS Config.



Resources

AWS Security Pillar Well Architected Framework http://bit.ly/WellArchSec

CIS AWS Security Foundations Benchmark http://bit.ly/AWSCIS

AWS Architecture Center - Security, Identity, & Compliance http://bit.ly/BstSec

CIS AWS Three - Tier Web Architecture Benchmark http://bit.ly/AWSCIS3T

AWS Security Reference Architecture <u>https://docs.aws.amazon.com/prescriptive-guidance/latest/security-reference-architecture/welcome.html</u>



Wouldn't it be great if there was a service to orchestrate everything?

AWS Control Tower: Easiest way to set up and govern AWS at scale



Why use AWS Control Tower?

Set up a best-practices AWS environment in a few clicks

Standardize account provisioning



Centralize policy management

Enforce governance and compliance proactively

Enable end user self-service

Get continuous visibility into your AWS environment

Gain peace of mind



Multi-account approach // security log flow



Orgs: Account management Log Archive: Security logs **Security:** Security tools, AWS Config rules Shared services: Directory, limit monitoring **Network:** AWS Direct Connect **Dev Sandbox:** Experiments, Learning **Dev:** Development **Pre-Prod:** Staging **Prod:** Production Team SS: Team Shared Services, Data Lake

Multi-account approach // network connectivity



Orgs: Account management Log Archive: Security logs **Security:** Security tools, AWS Config rules Shared services: Directory, limit monitoring **Network:** AWS Direct Connect **Dev Sandbox:** Experiments, Learning **Dev:** Development **Pre-Prod:** Staging **Prod:** Production Team SS: Team Shared Services, Data Lake



Enable governance






Multi-account architecture



- Master account: designation of your existing account to create a new organization. Also your master payer account
- Organization consists of 2 OUs with pre-configured accounts -
 - Core OU: AWS Control Tower-created accounts, i.e., Audit account and Log archive account

○ Custom OU: Your provisioned accounts



Automate compliant account provisioning



- Built-in account factory provides a template to standardize account provisioning
- Configurable network settings (e.g., subnets, IP addresses)
- Automatic enforcement of account baselines and guardrails
- Published to AWS Service Catalog



Enable self-service with AWS Service Catalog



Organize, entitle, publish account factory

1







Developers, data scientists



Automate governance at scale



Operate with agility + control







Dashboard for oversight

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dWS Services ~ Reso	urce Groups 👻 🍾		🗘 Admin/0490	0293 @ 423 • Oregon • Support				
AWS Control Tower $~~ imes~$	AWS Control Tower > Dashboard							
Dashboard Accounts	Recommended actions							
Guardrails Users and access	Environment summary		Guardrail summary					
Account factory	3	34	28	12				
Shared accounts	Organizational units	Accounts	Preventive guardrails	Detective guardrails				
	Noncompliant resources Info							
	Resource ID Resource type	Service Region	Account name OU	Guardrail				
	vol-842jhdksj83821234 Volume	EC2 us-west-2	db-uswest-1-gamma Custom	Enable encryption for EBS volumes at				
	vol-05flia830kd209897 Volume	EC2 us-east-1	testing-beta-1 Project 1	Enable encryption for EBS volumes at				
	sg-031234b83bac98765 Security Group	EC2 eu-west-1	ops-test-4 Project 1	Disallow internet connection through				
	Organizational units Info							
	Name	Parent OU	Compl	iance				
	Core	Root	⊘ Con	npliant				
	Project 1	Root	🛞 No	ncompliant				
	Custom	Root	⊗ No	ncompliant				
	Accounts			< 1 >				
	Account name Account email	Organizatio	onal unit Owner	Compliance status				



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Disaster Recovery

aws

Disaster recovery benefits of the cloud



Traditional disaster recovery

- Massive upfront & ongoing hardware cost
- Management and infrastructure overhead
- Data growth increases costs
- Separation of test and production environment
- Vulnerable to cyber threats/hacking



DR in the cloud

- Pay as you go for the rightsized compute/storage
- Lower IT overhead
- More automation
- Easy and repeatable testing
- Systems up in minutes (not hours/days!)



Common disaster recovery challenges

- High cost of idle duplicate resources
- Diverse infrastructure and OS types
- Server compatibility issues
- Inability to achieve recovery objectives (RPOs/RTOs)
- Tests and drills are expensive and don't allow us to verify our security posture
- Different DR tools or processes for different applications
- Scaling and securing DR site



AWS Elastic Disaster Recovery use cases



On-premises to AWS



Cloud to AWS

 $aws \otimes \rightarrow eaws$

AWS Region to AWS Region



AWS Elastic Disaster Recovery benefits



aws

How AWS Elastic Disaster Recovery works

Continuous replication of on-premises and cloud servers with AWS as your elastic recovery site





Thank you!

brizanm@amazon.com







VITA ISOAG AND ZSCALER DECEPTION

Experience your network, Secured

Jeff Spencer Sales Engineer, Zscaler Deception

July 2022

Zero Trust Security: Cyber Threat Protection





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The Problem

Sophisticated attackers are stealthy



generate a security alert.

SOURCE: MANDIANT

Advanced attacks are human-operated



- Use active reconn / discovery
- Clone normal behavior

68% of attacks are not

malware-based.

• Make real-time judgements

SOURCE: CROWDSTRIKE

Security analysts chase ghosts and burn out



Monitoring team faces

- Event fatigue
- Data paralysis
- Missed alerts

45% of alerts are false positives.

SOURCE: ESG

Current approach puts the burden on the defenders who are stretched thin



Use Cases

Where is Deception being used



What are experts saying

Gartner On Deception

"Prioritize alerts from the deception platforms as high-priority, high-fidelity alerts that need immediate attention."

"Security leaders looking to build or expand their threat detection function should include deception tools in their stack."



Launched Framework for planning adversary engagement, deception and denial activities in order to help execute strategies and technologies

Szscaler

Changing the game

Deception disrupts advanced attacks



Attackers know your strategy. Predictable defenses are easily bypassed

Decoys and traps make your environment unpredictable, disrupt attacker playbooks

The anatomy of an advanced attack

How and why ransomware succeeds



The anatomy of an adversary engagement

Multiple opportunities to disrupt ransomware with deception technology



The solution

Zscaler Deception



Case Study : Stopping a targeted attack at a bank

INDUSTRYNO. OF ASSETSBanking40,000+			DECEPTION COVERAGE Perimeter, DC, DMZ, Active directory						
	01	01 Initial intrusion 03 Attacker gets in through an exposed Cisco router		03	 Intelligence gathering Attacker spends 9.5 hours jumping from one decoy to the other. Zscaler captures attacker activity revealing their toolset and strategy 			Active Defense The location with the compromised endpoint is <u>ring-fenced with decoys</u> to shore up defenses	
		02	First Detection The Cisco router is a Zscaler decoy and detects the attacker	3	04	Investigation SOC correlates Zscaler intelligence with event logs and find that the attacker had compromised an endpoint in another part of the network.	06	Threat neutralized Compromised endpoint is isolated and <u>attacker is ejected</u> from the network by cutting off CnC	



Why Zscaler Deception

Benefits of integrated Deception and Adversary Engagement

+167%

Average increase in 'Opportunity to Detect' advanced attacks like ransomware

+50%

Average increase visibility for targeted threats not found in threat intel feeds

+90%

Average improvement in ability to detect an advanced threat in the early stages of an attack

98%

Average lesser alert volume than traditional detection controls



The future of targeted threat detection

Zero Trust + Zscaler Deception



Use cases - Native containment



Gartner Peer Insights

All Categories > Operation Zs by Z 4.7	al Technology Security > Zsc Scaler Decep scaler in Operational Technology ***** 23 Reviews	aler > Zscaler Deception tion Review ology Security	S Gartner peerinsights™ COMPARE I WRITE A REVIEW LOWINLOAD PDF			
Overview	Reviews	Alternatives	Likes and Dislikes			
Zscaler Deception Ratings Overview Review weighting 🕥 🗌 Reviewed in Last 12 Months 🗳 EMAIL PAGE						
4.7 ★★★★★	23 Reviews (All Time)		96% Would Recommend			
Rating Distribution			Customer Experience			
5 Star		78%	Evaluation & Contracting 4.9			
4 Star		17%	Integration & Deployment 4.5			
3 Star		4%	Service & Support 4.7			
2 Star		0%				
1 Star		0%	Product Capabilities 4.8			
Distribution based on 23	aratings (j)					

"My team showed our findings, very impressive. Lets talk numbers" - CIO LoanDepot

"One of the best products that I have evaluated in recent memory" - CISO Waste Connections

"the last 7 days for my Incident responders have been transformative" - *Mgr ITSec*

"We caught the Red-Team in our audit, seems like this does work" - CISO of Bank



Operationalize your MITRE ENGAGE Framework

Zscaler Deception provides coverage for 99% capabilities for strategic deception and denial activities

PREPARE	EXPOSE		AFFECT			ELICIT		UNDERSTAND
Planning	Collection	Detection	Prevention	Direction	Disruption	Reassurance	Motivation	Analysis
Define Exit Criteria	API Monitoring	Decoy Artifacts and systems	Baseline	Decoy Artifacts and systems	Decoy Artifacts and systems	Application Diversity	Application Diversity	Distill Intelligence
Develop Threat Model	Network Monitoring	Detonate Malware	Hardware Manipulation	Detonate Malware	isolation	Artifact Diversity	Artifact Diversity	Hotwash
Persona Creation	Software Manipulation	Network Analysis	Isolation	Email Manipulation	Network Manipulation	Burn-In	Detonate Malware	Inform Threat Model
Strategic Goal	System Activity Monitoring		Network Manipulation	Migrate Attack Vector	Software Manipulation	Email Manipulation	Information Manipulation	Redefine Operation
Storyboarding			Security Controls	Network Manipulation		Information Manipulation	Personas	Activities
				Peripheral Management		Network Diversity	Network Diversity	
Coverage VIA On-boarding Training and services			Security Controls		Peripheral Management			
Capabilities Use case not covered				Software Manipulation		Pocket Litter		



Extensive built-in Decoys

APPLICATION DECOYS

Detect lateral movement with decoys for SSH sessions, database client connections, and saved shares / mapped network drives.

ACTIVE DIRECTORY DECOYS

PRIVILEGE ESCALATION

Create deception in the Active Directory (AD). Smokescreen does this by using the real AD instead of a dummy AD / trust relationship.

PERIMETER THREAT INTELLIGENCE DECOYS

RECONNAISSANCE

Detects pre-attack reconnaissance activity against internet facing architecture to give provide intelligence about external attacks.

EMAIL DECOYS EXPLOITATION

Email decoys that engage with attackers attempting to mount social-engineering / spear-phishing attacks on high-value personnel.

CLOUD DECOYS

Decoy IAM credentials and S3 buckets that detect lateral movement in your Cloud environment.

FILE DECOYS

Auto generated file decoys with custom content, file names, and format that trigger when a file is opened, accessed, copied, or deleted.

CREDENTIAL DECOYS PRIVILEGE ESCALATION

Inject fake credentials in credential managers, RDPs, and browsers that act as breadcrumbs to lure attackers.

MAN IN THE MIDDLE DETECTION EXPLOITATION

Detect Man-in-the-Middle attacks for protocols like LLMNR, mDNS, and NBT-NS by identifying the spoofer.

PROCESS DECOYS

PRIVILEGE ESCALATION

Fake anti-malware / DLP processes that detect attackers when they try to disable them.

✓ FULL KILL-CHAIN COVERAGE

- ✓ CUSTOMIZE DECOYS W/ VM IMAGES, DOCKER CONTAINERS
- ✓ ATTAIN REALISM USING KEYWORDS, NAMING CONVENTIONS ETC



Thank you!





How to Get Involved in Cybersecurity Awareness Month 2022

22 June 2022



What is Cybersecurity Awareness Month?

- Month of October
- Launched in 2004
- Co-lead by the Cybersecurity and Infrastructure Security Agency (CISA) and the National Cyber Security Alliance
- Raises awareness about digital security and empower everyone to protect their personal data from digital forms of crime.

Overall Campaign



1

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2022 Themes:

It's Easy to Stay Safe Online

NATIONAL CYBERSECURITY ALLIANCE

Messaging

- Five Broad Campaign Topics
 - 1. Cybersecurity Starts with You
 - Top priorities for collective responsibility
 - 2. Update Your Software
 - Prevent Malware Attacks
 - 3. Enable Multi-Factor Authentication
 - Create extra barriers against Threat Actors
 - 4. Use Trusted Password Management and Strong Passwords
 - Protect your Personally Identifiable Information
 - 5. Recognize and Report Phishing Attacks
 - Don't become a victim to cyber crimes





This year's focus are on four key behaviors instead of weekly themes

Topics covered:

- Enabling multi-factor authentication
- Using strong passwords and a password manager
- Updating software
- Recognizing and reporting phishing



Enabling Multi-Factor Authentication

Topics covered:

- What is MFA
- Why is it important
- How does it work
- What does it looks like
- What type of accounts offer MFA




Using Strong Passwords and Password Managers

Topics covered:

- What makes a strong password
- What is a password manager
- Why use a password manager
 Dispelling the myths that password managersare unsafe
- How to choose a password manager





Updating your Software

Topics covered:

- Why it's important
- When to update
- Setting automatic updates
- Avoiding fakes



Overall Campaign

Recognizing and Reporting Phishing

Topics covered:

- •How to spot a phish on emails, texts or over the phone
- What to do if you spot a phish
- How to report a phish



Resources



NATIONAL CYBERSECURITY ALLIANCE

Resources



Become a Champion

- Show your support for Cybersecurity Awareness Month
- Champions represent those dedicated to promoting a safer, more secure and more trusted internet
- Becoming a Champion is <u>easy</u> and <u>free</u>

https://staysafeonline.org/programs/cybersecurity-champion/



Become a Champion

- Receive a toolkit of materials exclusively for registered Champions
- Organizations: Get your company name listed on staysafeonline.org
- Be among the **first to receive updates** on Cybersecurity Awareness Month news, events and materials



Resources

Oh Behave: The Annual Cybersecurity Attitudes and Behaviors Report

Download 2021's Report



Resources

Snapshot of 2021's Findings:

- **Nearly half** of people surveyed say they have never heard of MFA.
- **47% of people** never or rarely use different passwords for their accounts
- 31% of people keep track of their passwords by writing them down in a notebook
- **31%** say they either "sometimes," "rarely," or "never" install software updates.





Ways to GetInvolved



NATIONAL CYBERSECURITY ALLIANCE

Online

- Join the conversation on social media using #BeCyberSmart and #CybersecurityAwarenessMonth
- Share the sample social media posts and graphics
- Add the logo to your website for the duration of October
- Blogabout cybersecurity





Ways to Get Involved



At Work

- Send emails to employees/customers with educational materials or highlight your organization's activities
- Issue a company promotion related to the month such as a product discount or giveaway
- Mention Cybersecurity Awareness Month in your resources and materials
- Hold a contest for employees/students
 NATIONAL CYBERSECURITY ALLIANCE



Step 1: Train Your Staff

- Create a presentation for all staff; involve your IT staff if available, and include:
 - What's In It For Me (WIIFM)? Why cybersecurity is important for everyone
 - Teach cybersecurity basics; be proactive with materials and messaging
 - Share consistent information to promote action
- Follow up with employees regularly to confirm behavior integration and measure comprehension of training materials
- Explore training opportunities workforce development opportunities via National Initiative for Cybersecurity Careers and Studies
 - Interactive <u>Training and Education Catalog</u>
 - <u>Cybersecurity Career Pathways Tool</u>



Events



NATIONAL CYBERSECURITY ALLIANCE

Events



Hosting an Event or Training

- Identify your audience and the behavior you want to change/influence
- Keep the learning experience lighthearted, fun, relatable and interactive
- Include games/ giveaways
- Show buy-in from the C-suite
- Invite an outside speaker



Request a CISA Cybersecurity Speaker

Interested in inviting an outside speaker for your Cybersecurity Awareness Month events? Request a CISA speaker to discuss cybersecurity at your cybersecurity awareness month campaign event, by sending an email to <u>CISA.speakers@cisa.dhs.gov</u> or downloading the CISA Speaker Request Form at

www.cisa.gov/request-cisa-speaker

Deadline: August 26, 2022.



Events



Request an NCA Speaker

https://staysafeonline.org/contact-us/

ONTACT US

Our goal is to make sure you have everything you need to feel safer and more secure online.

So let us know how we can help you. Or let us know if you're interested in helping us in our mission

Fill out the form and someone will reach out to you.

We know how important cybersecurity is, so we will do our best to contact you as soon as we can.

Email*			
First Name*			
Last Name*			
Anything else	you'd like to add?*		
Submit			
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Save the dates

- October 6: Cybersecurity America: A United Mission
- October 12: #BeCyberSmart Twitter Chat
- November 2: Afterglow Party

Share your event!

info@staysafeonline.org



Cybersecurity Awareness Month



Additional Resources

Cybersecurity Awareness Month

https://staysafeonline.org/programs/cybersecurity-awareness-month/

StaySafeOnline.org

https://staysafeonline.org/

Education Videos and Webinars:

https://www.youtube.com/user/StaySafeOnline1



For more information: cisa.gov Cisa.gov/cybersecurity-awarenessmonth <u>cyberawareness@cisa.dhs.gov</u>

Stay safe online.



NATIONAL CYBERSECURITY ALLIANCE Website StaySafeOnline.org

Twitter @staysafeonline

Facebook /staysafeonline

LinkedIn /national-cyber-security-alliance

Email info@staysafeonline.org

- Governor's Proclamation
- 2023 Kids Safe Online Poster Contest
- If you are scheduling any events, please let VITA know so we can post them to our website as well as our social media platform



SECURITY AWARENESS TRAINING

- 2022 agency training should have started. 2022 training must be completed by Dec. 31, 2022. 2022 compliance forms are due to VITA Jan. 31, 2023.
- Minor definition changes have been made so SEC527. More information will be forthcoming. If you have any suggestions/comments to SEC527, let us know.
- Agency Compliance Form has been updated and will be updated in Archer and in SEC527.
- Please submit your 2022 training solution form to VITA by 9/30/2022. This can be entered in Archer or a paper copy may be submitted.





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ICY REVIEW AND ACCEPTANCE					
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Remote Access Policy: Indicate which solution your agend	y will be using in order to provide remote acc	ess policy training.			
All Other Applicable Policies: Indicate which solution your agent	y will be using in order to provide any other a	pplicable policy training.			
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QUESTIONS





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UPCOMING EVENTS



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• Audit was completed June 23, 2022

- It's published on the OSIG website:
- <u>https://www.osig.virginia.gov/reports/#PerformanceAuditServicesReports</u>

 SCOPE: The scope of this review included an examination of information technology assets used by executive branch agencies to ensure that agencies and contractors sanitize Commonwealth of Virginia (COV) data as required by Virginia Information Technologies Agency (VITA) Information Technology Resource Management standards and best practices.



STATE INSPECTOR GENERAL AUDIT

FINDING 1:

Agency Internal Policies Did Not Fully Document Removal or Destruction in Accordance with COV Standards



STATE INSPECTOR GENERAL AUDIT

OSIG RECOMMENDATION:

Communicate to agencies to include in their annual risk assessment that their internal policies and procedures clearly address SEC501, SEC514-05 data removal requirements and ITRM Standard 514.



Communicate to agencies to include in their annual risk assessment that their internal policies and procedures clearly address SEC501, SEC514-05 data removal requirements and ITRM Standard 514.

All agencies must assure that your agency's internal policies and procedures directly reference and align with the data removal requirements in SEC 501 Information Security Standard and SEC 514 Removal of Commonwealth Data from Electronic Media Standard.

This is already required in SEC501 MP-1 (media protection family)



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Communicate to agencies to include in their annual risk assessment that their internal policies and procedures clearly address SEC501, SEC514-05 data removal requirements and ITRM Standard 514.

Additionally, when conducting IT risk assessments for your agency, a review of your agency's internal policies should be included and any deficiencies should be documented for remediation.

Thank you!



REGISTRATION IS OPEN



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2022 COMMONWEALTH VIRTUAL INFORMATION SECURITY CONFERENCE - AUG. 18, 2022

HTTPS://WWW.VITA.VIRGINIA.GOV/INFORMATION-SECURITY/SECURITY-CONFERENCE/



COMMONWEALTH OF VIRGINIA INFORMATION SECURITY CONFERENCE 2022

VIRTUALLY, NOTHING IS IMPOSSIBLE: SECURING THE HYBRID WORK ENVIRONMENT





COVITS - SAVE THE DATE



Commonwealth of Virginia Innovative Technology Symposium (COVITS)! Sept. 7, 2022

Location:

Greater Richmond Convention Center

403 N 3rd Street

Richmond, VA 23219

Register is now open:

COVITS 2022 - LIVE! (govtech.com)



ISOAG SEPTEMBER MEETING

150

The next ISOAG meeting will be held on:

Sept. 14, 2022 @ 1 p.m.

Presenters:

Brandon Lapetina – Varonis

Erin Mosely/Steve Orrin – Intel

David Ihrie – Virginia Innovation Partnership Corporation


IS ORIENTATION



IS Orientation

Remote - WebEx

Sept. 29, 2022

Start time: 1:00 p.m.

End time: 3:00 p.m.

Instructor: Marlon Cole

https://covaconf.webex.com/covaconf/onstage/g.php?MTID=ec be083f9321db08a0c81eca667f50575



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IS COUNCIL COMMITTEE

The next scheduled meeting for the IS Council:

Sept. 21, 2022

12 p.m. – 1 p.m. via Webex

If you would like an invite to the meeting, contact:

tina.gaines@vita.virginia.gov



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MEETING ADJOURNED

