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DevSecOps on the AWS Cloud

Matthew Sharp

Chief Information Security Officer

www.logicworks.com

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The pace of innovation has dramatically accelerated, and security teams struggle to keep up.

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The pace of innovation has dramatically accelerated, and security teams struggle to keep up.

Trust needs to move at the speed of business.

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Automate.

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Matt Sharp
CISO

- Served for 10+ years as a strategic advisor to CISOs of *Fortune* 500 and global institutions
- Former Head of Global Security at Crocs
- Certified Cloud Security Professional (CSSP)
- AWS Certified Solutions Architect - Associate

We design, build, automate, and manage enterprise AWS clouds.

Cloud Migration

Cloud Automation

24/7 Management

Cloud Security

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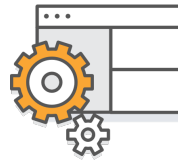How many in the room are business / developers / operations / security?

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How many of you relate to the observation that **security may be a bottleneck** in the DevOps process?

Financial Services Company

Business Drivers: Agility and Cost

1. Security is late to the table

2. Tools invalidate business hypothesis
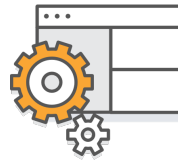
3. Team is unable to automate

Financial Services Company

Business Drivers: Agility and Cost

**1. Security is
late to the table**

Cultural
Adjustments

**2. Tools invalidate
business hypothesis**

Evaluate Tooling
Assumptions

**3. Team is
unable to
automate**

Skills / Team
Composition and Tools

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Solution: Adjust cultural mindset of both Security and DevOps teams.

- Apply a business-oriented filter

- Re-evaluate the staffing model – how does this fit with 2 pizza teams?

- Read *Phoenix Project*, *DevOps Handbook* and/or *Visible Ops Security*

Security

- Engage the security team early (so they can think & plan)

- Encourage skills development / engage security in hackathon

- Offer to help build automation

- Appreciate staffing challenges

DevOps

2. Tools Invalidate Business Goals

Solution: Re-evaluate existing tooling assumptions.

All Security Tools Must:
- Scale up / down <u>economically</u>
- Integrate with automation (i.e., Puppet, AWS CloudFormation)
- Congruent with existing security
- Support the business assumptions
- Independently evaluated for the cloud (AWS Security Competency)
- API support

Security

- Automation can provide assurances – educate your auditors

- Seek first to understand – you will always have the advantage resulting from information asymmetry

- DevOps look at the API

DevOps

https://aws.amazon.com/security/partner-solutions/

Solution: Change staffing structure and prioritize development to automate.

Embed Security in DevOps

- Centralized Security vs. Special Ops Security
  - Centralized must have dev skills
  - Special Ops can influence development to create automation

Security

Embed DevOps in Security

- Automation / Scripting
  - Use native AWS tools
  - Use automation whenever possible
  - Security needs skills to write AWS Lambda functions (Python / Java / C#)

DevOps

https://aws.amazon.com/waf/

Security Automation: Components

Feature	Tool
Security Groups	CloudFormation
Network ACL (Firewall)	CloudFormation
Subnet Sizing	CloudFormation
Naming	CloudFormation, Configuration Management
Authentication	Configuration Management
Encryption	CloudFormation (S3), Configuration Management
Anti-Virus	Configuration Management
Hosts/Users	Configuration Management
Software Versions	Configuration Management
Log Shipping / Aggregator	Configuration Management

Summary

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Trust needs to move at the speed of business

Automation is the key

Security & DevOps must collaborate to get there

Shortcut the evolution – engage Logicworks!

Questions?

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155 Avenue of the Americas, Fifth Floor | New York, NY 10013
P: 212.625.5300 | www.logicworks.com

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