Security Hardening for AWS Cloud Hosting

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WHO WE ARE …

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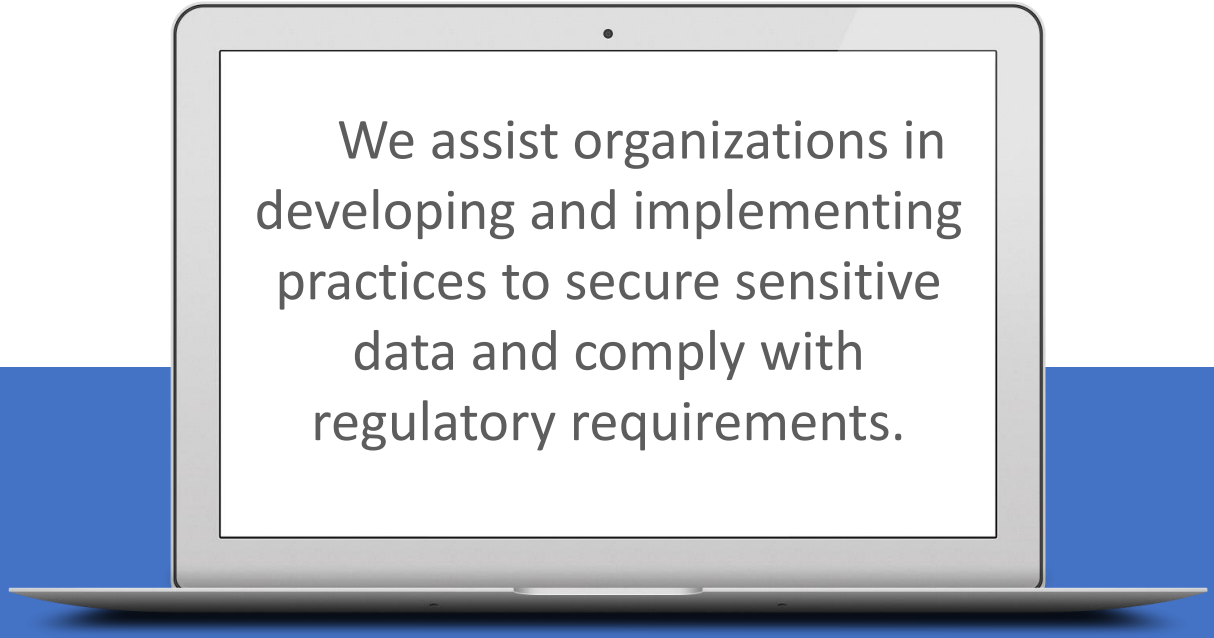

DIY TOOLKIT
DIY assessment, training, customized policies & procedures and much more …

CONSULTING
Professional services to help you with your Compliance needs

MANAGED SERVICES
Managed compliance and security services to focus on your key business outcome.

DISCLAIMER

Consult your attorney

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This webinar has been provided for educational and informational purposes only and is not intended and should not be construed to constitute legal advice.

Please consult your attorneys in connection with any fact-specific situation under federal law and the applicable state or local laws that may impose additional obligations on you and your company.

ALL WEBINARS ARE RECORDED AND AVAILABLE AS AN "ON DEMAND" SUBSCRIPTION

Nehal Trivedi

AWS Solution Architect

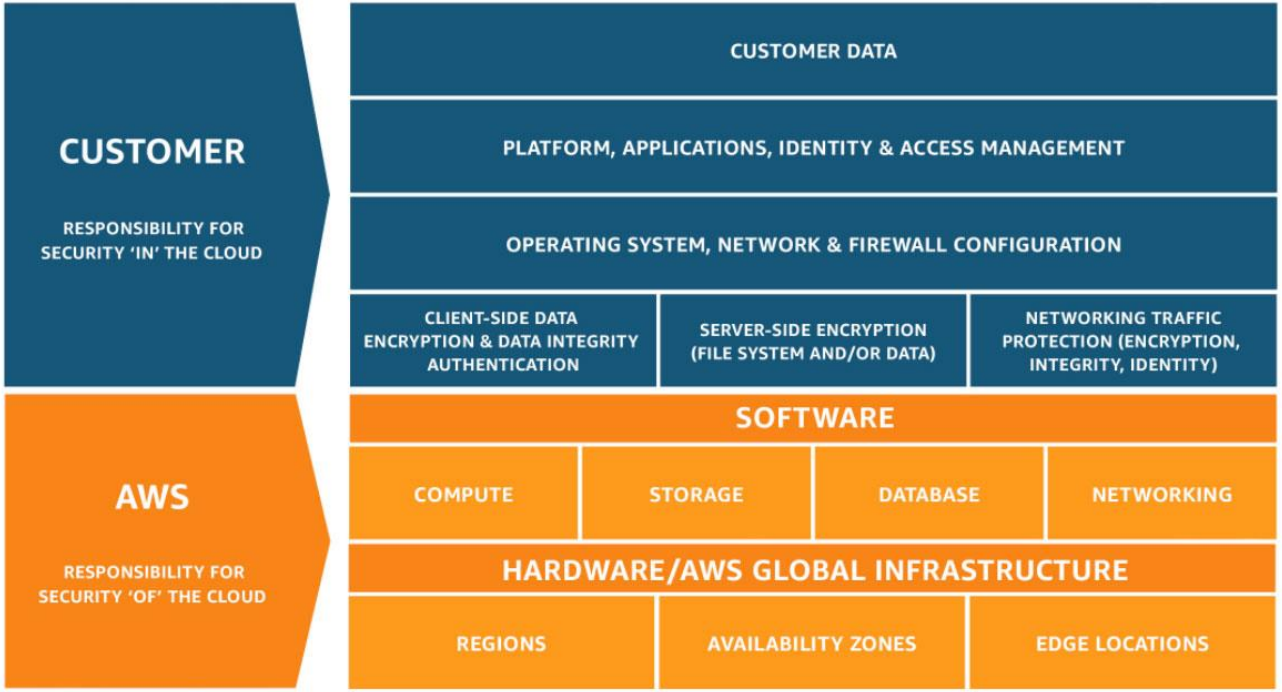
President, Innogile

Nehal's Background

Nehal has been solving complex business problems using software for nearly two decades and loves what he does. He has experience with Healthcare, Financials, Pharma, Manufacturing, Publishing and Non-Profit to name a few. Nehal helps us with cloud and software best practices, picking things apart and putting them together again.

AWS Shared Responsibility Model

infrastructure services



- Inherited Controls
  - Physical & Env.
- Shared Controls
  - Patch
  - Configuration
  - Training
- Customer Specific
  - Zone Security
  - Service protection

Customer responsibility will be determined by the AWS Cloud services that a customer selects.

AWS Shared Responsibility Model

application stack

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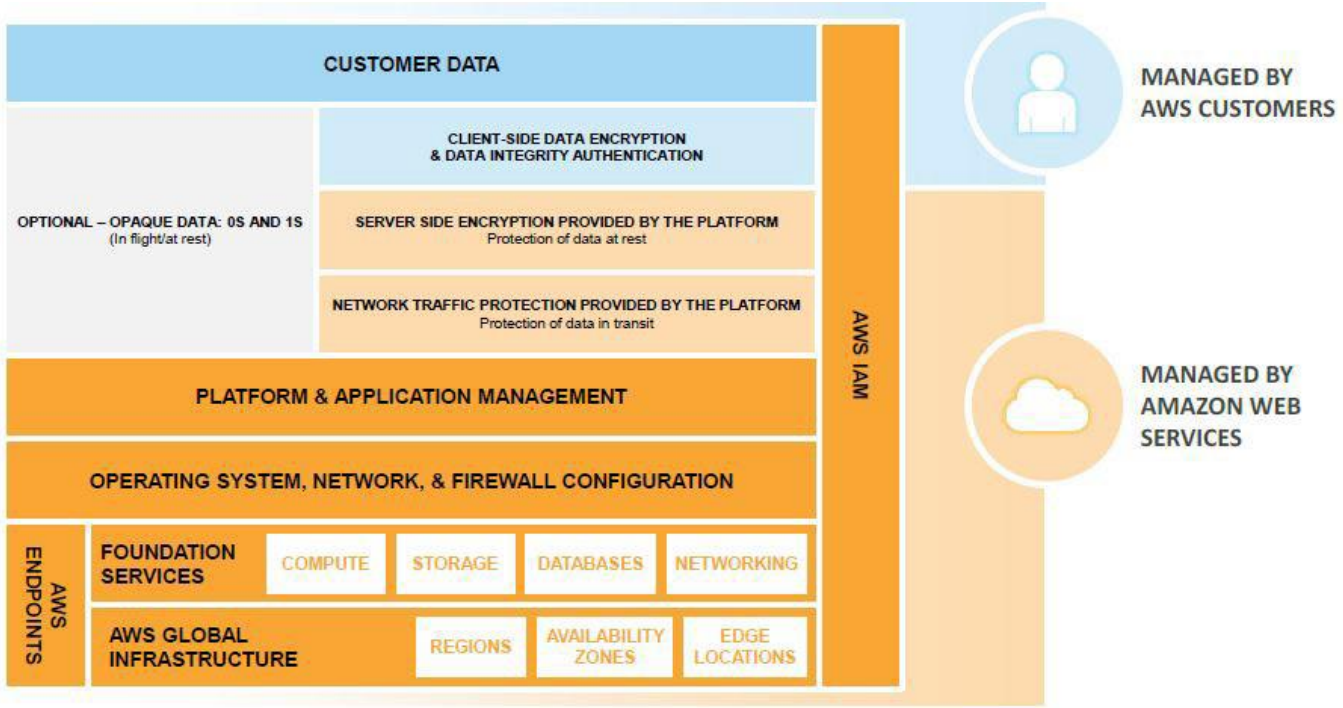
	Customer Data			
Customer	Identity & Access Management / Firewall Configuration (Security Groups)			
	Client-side Data Encryption & Data Integrity Authentication	Server-side Encryption (File System and/or Data)	Network Traffic Protection (Encryption, Integrity, Identity)	
	Platform & Application Management / Operating System & Network Configuration			
AWS	AWS Foundation Services			
	Compute	Storage	Database	Networking
	AWS Global Infrastructure			
	Regions	Availability Zones	Edge Locations	

Resource Access Policy

Customer responsibility will be determined by the AWS Cloud services that a customer selects.

AWS Shared Responsibility Model

abstracted services



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AWS Infrastructure Design

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IAM Services
- Console Access
- Programmatic Access
  - Least privileges
  - Security Credentials
  - 2FA
    - Hard token
    - Soft token
  - Permissions or Policies

AWS Organizations

Regions/Availability Zones
- High Availability/DR
- *AWS Cloudfront*

Define and Categorize Assets

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Required for Compliance Management

- HIPAA, GDPR, CCPA and NIST Framework
- Inventory and Data Management

- ARN - Amazon Resource Names

arn:aws:clouddirectory:us-west2:accountId:schema/development/SchemaName

- Resource Tags - Name, Purpose, etc.

arn:aws:clouddirectory:us-west-2:12345678910:directory/ARIqk1HD-UjdtmcIrJHEvPI

Name, Owner, Project, BillingDept

- AWS Config

Secure Data

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Encryption

- Protecting data-at-rest on various AWS services
  - KMS for storing and retrieving data
    - Block storage, S3, Databases, Filesystems

- Protecting data-in-transit on various AWS services
  - TLS/SSL encryption SHA-256
    - Using ACM to manage TLS Certs, attach them to ELBs, Cloudfront

Encryption needs to be enabled for all sensitive data

Secure Operating System & Applications

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Network

- VPC, VPN, Security Groups

Operating System

- Harden AMIs
- Manage Patches
- Use Storage Encryption By default
  - EBS Encryption and S3 Encryption

Avoid mitigating Compromise & Abuse

Secure your Infrastructure

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VPC
- VPN
- Inspector
- Security Zoning and Segmentation

Public-facing Application
- Protect using AWS Shield and WAF
- Certificate Manager

Enable Cloudwatch logs for resource access

Continuous Threat Detection - GuardDuty

Summary

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- Shared responsibility model drives cloud effectiveness
- Whenever possible use AWS managed services
- Pay attention to Service Level Agreement (SLA)
  - Ephemeral vs. persistence data
- Use least privilege access
- Logs are critical, so enable and monitor them

Resources

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- ❑ AWS Security Best Practices
- ❑ AWS Security Blog
- ❑ Multi-Factor Authentication
- ❑ Security, Identity and Compliance on AWS

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Next Steps

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- Security Hardening of Azure Cloud Hosting – April 16, 2020

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Questions

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for your attention!

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Thank you for joining us today

05 March 2020