

# AWS SUMMIT



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

APP204

# AWS security at scale: From development to production

**Mousa Nassar**

Senior Solutions Architect  
AWS

**Achraf Souk**

Principal Solutions Architect  
AWS



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Cloud security challenges



## Innovation roadblocks

The traditional security approach can earn the security team the reputation of the "Department of No"



## Expertise & resource shortages

Existing security teams work at capacity and spend their limited time on repetitive and low-value tasks



## Scale and complexity

Managing security at scale across cloud environments



## Evolving threat landscapes

Shifting tactics and new technologies create an ever-changing risk dynamic



## Data protection & privacy demands

To maintain customer trust, organizations must meet industry regulations

# Proven security to accelerate innovation



**The most secure  
infrastructure**



**Security automation that  
drives speed and agility**

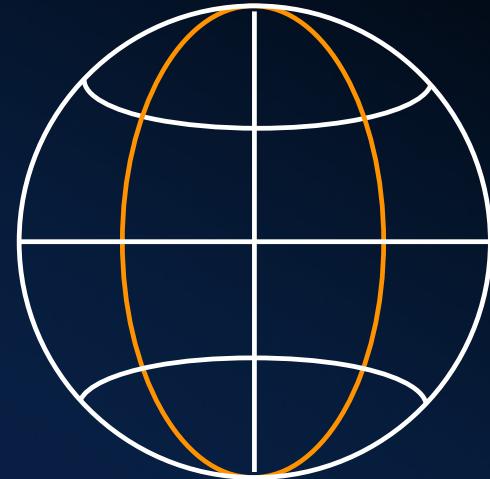


**End-to-end security  
and guidance**

# Security of the cloud

## AWS approach

- Secure by design
- 143 security and compliance certifications
- Most operational experience
- Security at scale across all global regions
- Continuous monitoring and protection 24/7
- Automated security assessments and controls



**Secure by design  
at the silicon level**



GRAVITON4



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.



GRAVITON4

## Security enhancements

Full encryption of all high-speed physical interfaces

---

Pointer authentication

---

Branch target identification

---

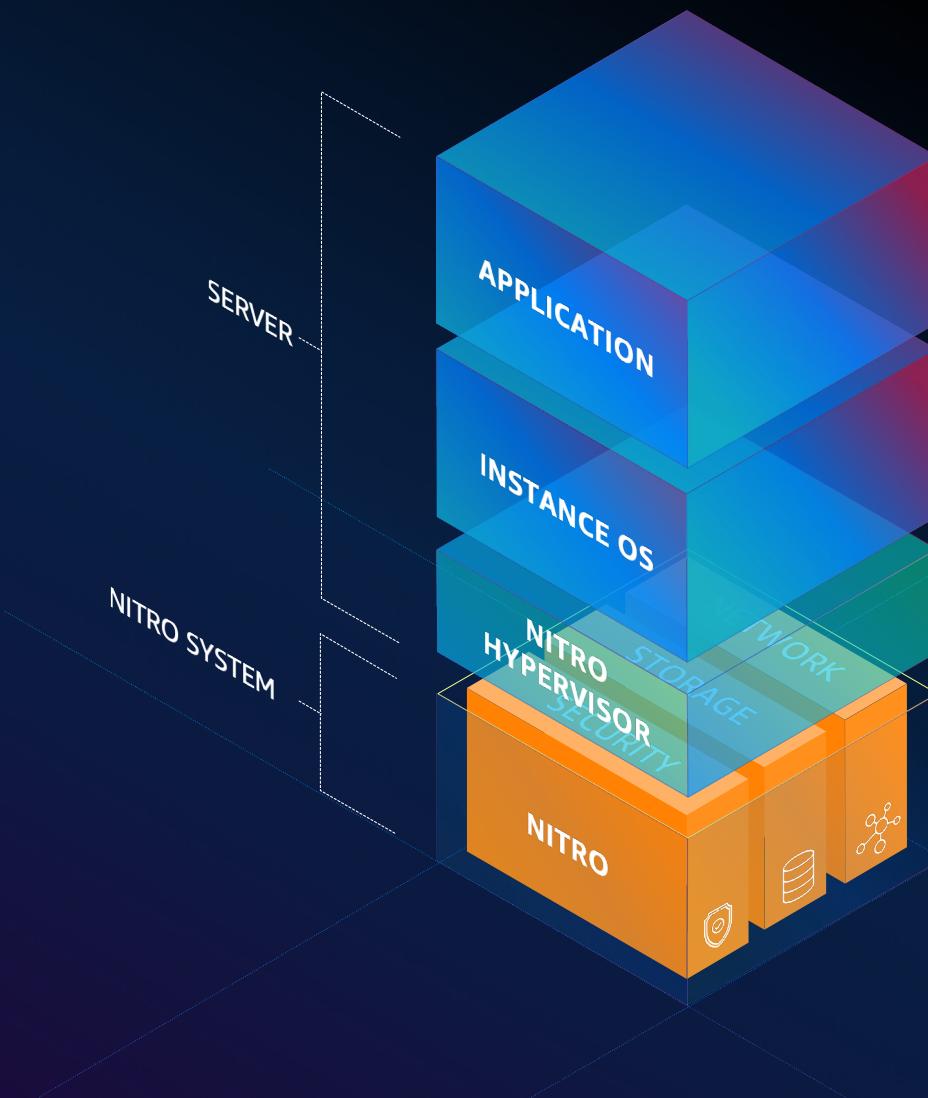
No simultaneous multi-threading (SMT)



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# The AWS Nitro System architecture

OFFERING THE BEST  
SECURITY, PERFORMANCE,  
AND INNOVATION IN THE  
CLOUD



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Threat intelligence

Algorithms that help predict malicious domains before they appear in threat intel feeds

Processes **over a trillion** DNS requests a day

Discovers **an average of 124,000** malicious domains a day

Intelligence **integrated** into Amazon GuardDuty



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Threat disruption

Network telemetry analyzer that detects and restrict suspicious behavior within minutes

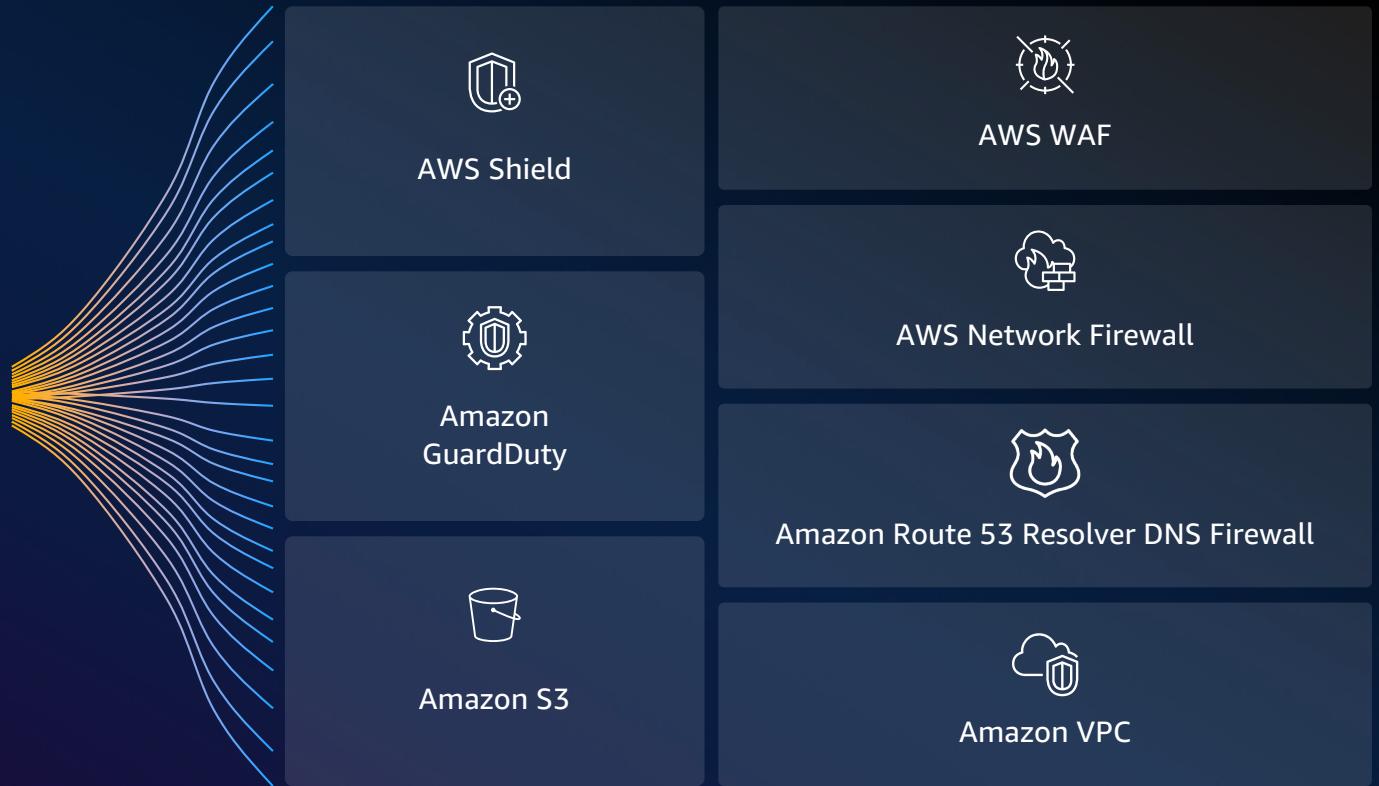
More than **27 billion** attempts to find unintentionally public S3 buckets

Nearly **2.7 trillion** attempts to probe Amazon EC2 instances

**Automated protections** in Amazon S3, Amazon VPC, AWS Shield, and AWS WAF



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.



# Security in the cloud

## AWS approach

- 300+ purpose-built native security services
- Thousands of security solutions on the AWS Marketplace
- Committed to open-source security



# AWS security solutions



## Identity and access management

AWS Identity and Access Management (IAM)  
AWS IAM Identity Center  
AWS Organizations  
AWS Directory Service  
Amazon Cognito  
AWS Resource Access Manager (AWS RAM)  
Amazon Verified Permissions



## Data protection

Amazon Macie  
AWS Key Management Service (AWS KMS)  
AWS CloudHSM  
AWS Certificate Manager (ACM)  
AWS Private CA  
AWS Secrets Manager  
AWS Payment Cryptography  
Server-side encryption



## Network and infrastructure protection

AWS Firewall Manager  
AWS Network Firewall  
AWS Shield  
AWS WAF  
Amazon VPC  
AWS PrivateLink  
AWS Systems Manager  
AWS Verified Access



## Detection and response

AWS Security Hub  
Amazon GuardDuty  
Amazon Security Lake  
Amazon Inspector  
Amazon Detective  
AWS Security Incident Response  
Amazon CloudWatch  
AWS Config  
AWS CloudTrail



# Security at the edge



# The most-sensitive workloads run on AWS



"When you look at the Wealth & Personal Banking strategy around scale, resiliency, security, and innovation on the cloud — to enable our business objectives, we had to find the right organization that could partner with us, with the scale and global footprint."

**Gavin Munroe**  
Global CIO, Wealth & Personal Banking,  
HSBC



"Using AWS gives Delivery Hero a range of tools and technologies to help it manage data securely and deliver the customer-centric service the company is famous for."

**Shery Brauner**  
Director, Site Reliability Engineering,  
Delivery Hero



"AWS is a customer-focused company, and the AWS team listens to our concerns. AWS Organizations for Amazon GuardDuty has saved us a lot of time"

**Sachin Patil**  
Product Owner of AWS Cloud Services,  
Volkswagen Group



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Generative AI



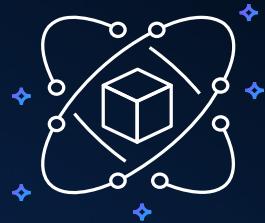
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Generative AI security use cases



## Security of generative AI

How do I secure my business applications that leverage generative AI?



## Generative AI for security

How can I use generative AI to minimize vulnerabilities, threats, and risks?

# Use case 1: Security of generative AI

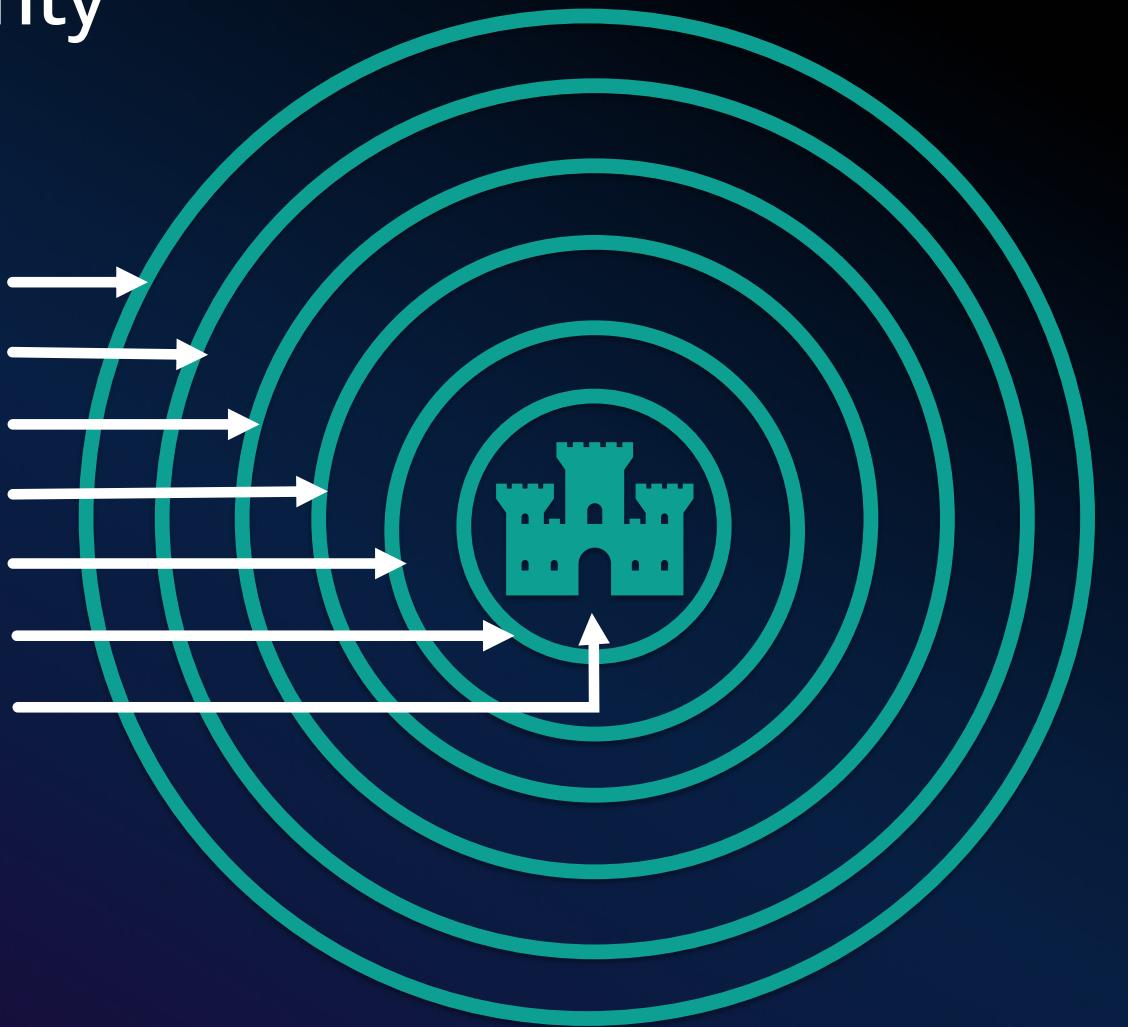


© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Defense-in-depth security

Layered security controls for generative AI

- Policies, procedures, and awareness
- Network and edge protection
- Identity and access management
- Threat detection and incident response
- Infrastructure protection
- Application protection
- Data protection



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Four foundational AWS security services

Where to begin with a defense-in-depth foundation for generative AI

Incident response



AWS Security Hub



Amazon GuardDuty

Threat detection

Data protection



AWS Key Management Service (AWS KMS)



AWS WAF

Network & infrastructure protection



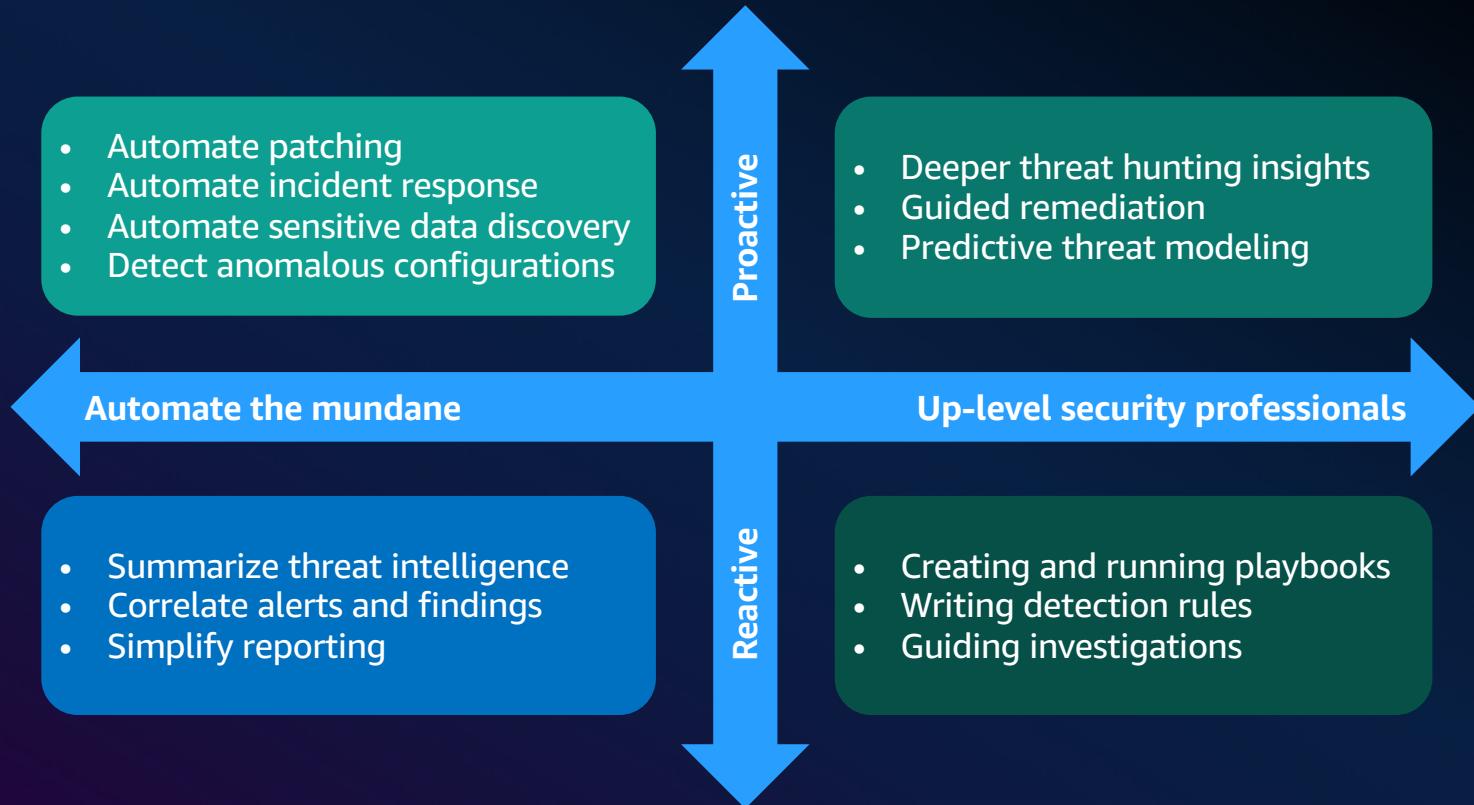
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

## Use case 2: Generative AI for security



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# How generative AI can empower security teams



Source: [IDC - New Use Cases for Generative AI in Security Analytics](#)



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Leverage AI/ML-powered services to improve security

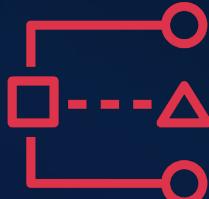
AWS services that employ AI and ML to improve security



Amazon GuardDuty



Amazon Detective



AWS IAM  
Access Analyzer



Amazon Inspector



Amazon Macie



Amazon Q  
Developer



Amazon CodeGuru  
Security

# Get started



## AWS Immersion Day

Hands-on experience  
implementing AWS security  
services and best practices



## Security Activation Day

A guided day of security and  
data protection with AWS  
solutions architects



## 30-day free trial

Sign up for a risk-free  
trial of select AWS Cloud  
security services



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

skillbuilder.aws

## Build beyond

Create a free account  
on AWS Skill Builder to  
gain in-demand skills



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Thank you!



Please complete the session  
survey in the mobile app

**Mousa Nasar**

[in/in/mousan](https://www.linkedin.com/in/mousan)

**Achraf Souk**

[in/in/achrafsouk](https://www.linkedin.com/in/achrafsouk)



© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved.