Cloud: the New Normal in Financial Services

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The world doesn’t work the way it used to…

15yrs

The **average lifespan of an S&P company** dropped from 67 years in the 1920s to 15 years today

2/3

More than two-thirds of **IT budgets** go toward **keeping the lights on**

77%

of **CEOs believe security risk has increased** in the last few years and 65% believe their **risk management** capability is **falling behind**

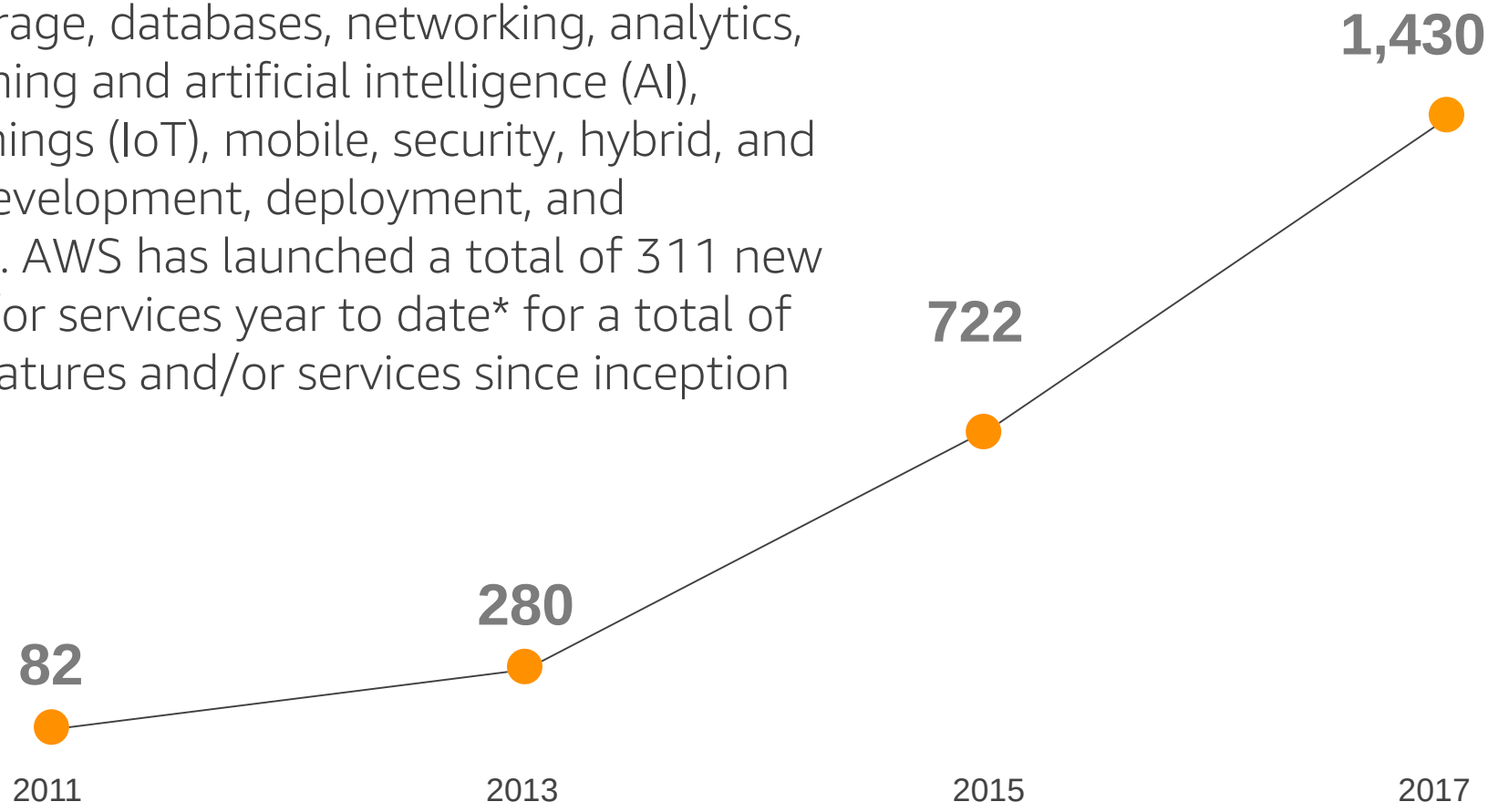
CLOUD IS THE NEW NORMAL

What is AWS?

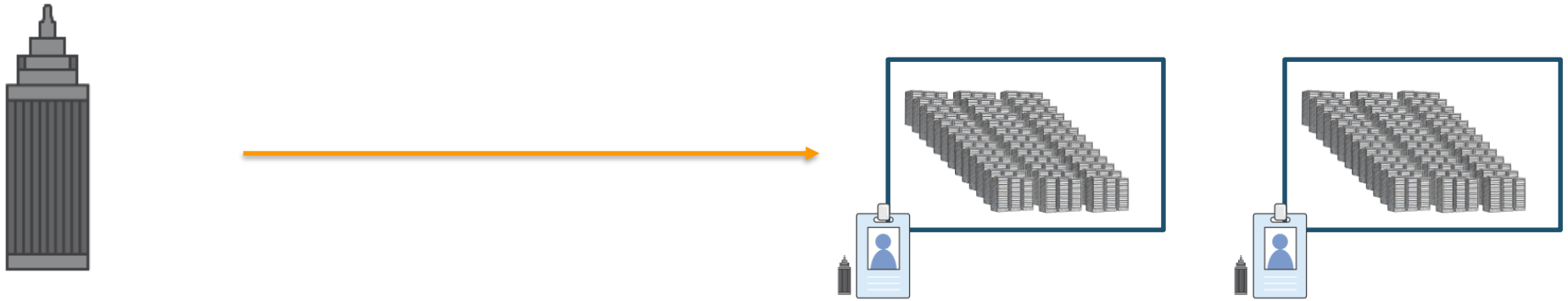
Cloud computing is the on-demand delivery of compute power, database storage, applications, and other IT resources through a cloud services platform via the internet with pay-as-you-go pricing.

AWS Pace of Innovation

AWS offers over 129 fully featured services for compute, storage, databases, networking, analytics, machine learning and artificial intelligence (AI), Internet of Things (IoT), mobile, security, hybrid, and application development, deployment, and management. AWS has launched a total of 311 new features and/or services year to date* for a total of 4,653 new features and/or services since inception in 2006.



Simplified model of “traditional outsourcing”



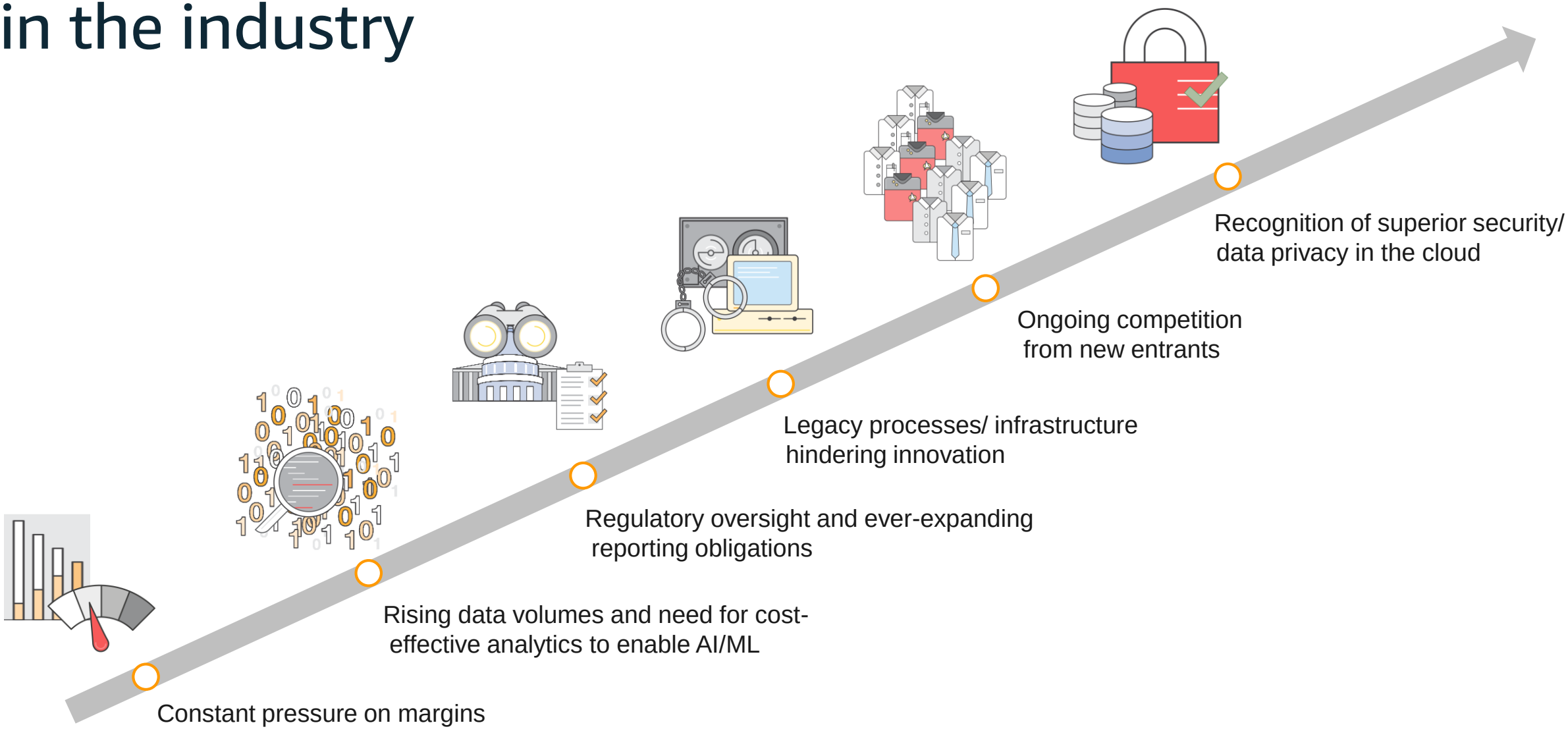
Financial Institution

Data center

DR data center

This is not AWS.

Multiple forces are converging to drive cloud adoption in the industry



AWS Enables Financial Institutions

AWS is the cloud provider of choice for major financial institutions

80% of Global Systemically Important Banks (G-SIBs) are AWS customers

A top 10 bank in the US is **migrating core systems** to AWS and planning to own or lease **no data centers by 2018**

A US-based G-SIB is running **11 mission critical grid/HPC workloads** on AWS

A European G-SIB is moving its **cash management platform** and a mission critical **pricing engine** to AWS

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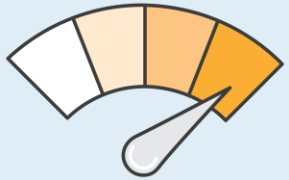
AWS is helping financial institutions realize enterprise benefits



Innovate faster and solidify your competitive advantage by merging startup agility with enterprise experience and resources.

Eliminate costly technical debt and reallocate resources so you can deliver high-value, revenue-generating projects faster.

Reduce risk by focusing resources dedicated to security, compliance, and availability to the most important areas of your business.

AWS in Banking

"It's not a question of 'if' we move to AWS; rather, it's a question of how…and the question of when, is now."

- Chairman/CEO of G-SIFI Bank

Capital One

Creating innovative customer services

BBVA

Scaling out transaction compute requirements

DBS

Realizing FinTech innovations

Japan Net Bank

Increasing reliability and optimizing costs

bankinter

Decreasing time-to-solution

N26

Enabling mobile-first banking for customers

monzo

Competing, at scale, with established enterprises

SIMPLE

Complying with regulatory requirements

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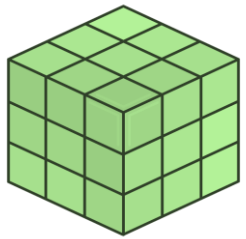
Cloud is enabling transformation and innovation in the industry

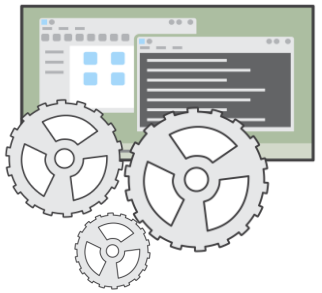
Digital channels

Grid/high-performance computing



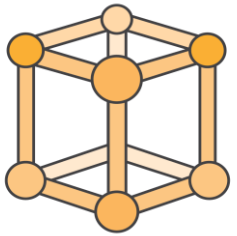
Agile data analytics

Core systems transformation



AI/Machine Learning

Blockchain and DLT



Widespread adoption today ..... ▶ **Gaining traction**

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Security Is Job Zero

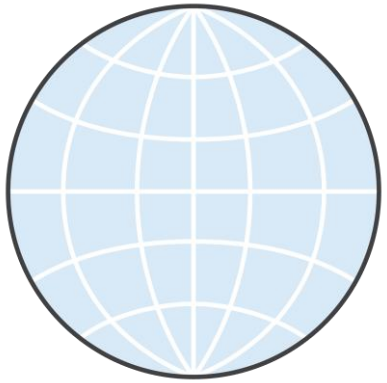
Security is Job Zero

PEOPLE & PROCESS

SYSTEM

NETWORK

PHYSICAL



Familiar Security Model

Validated and driven by customers' security experts

Benefits all customers

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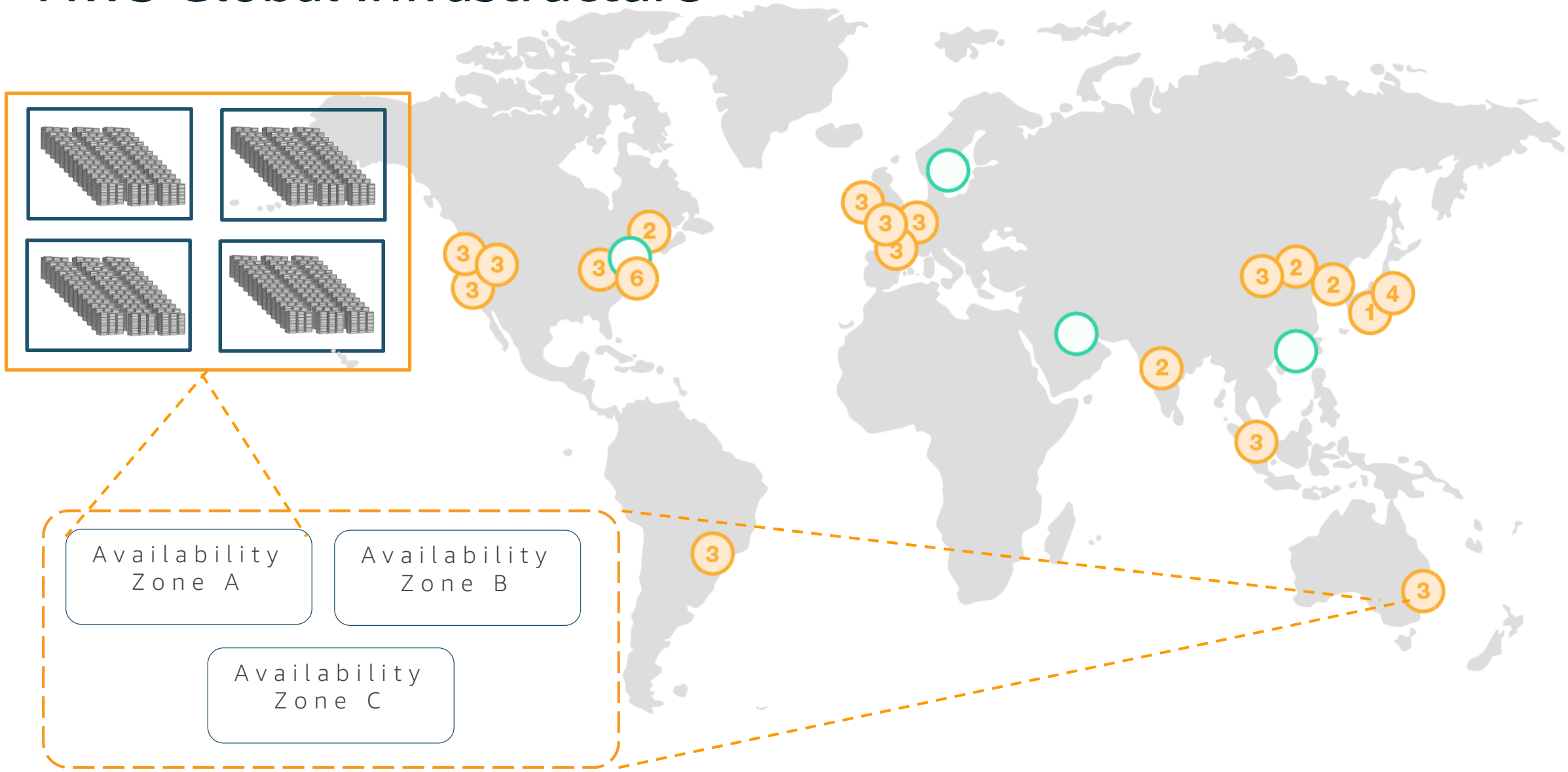
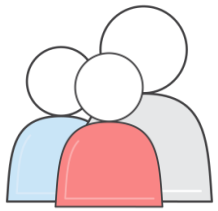
AWS Global Infrastructure



Shared Responsibility Model for Security



Customer

Responsibility for security *in* the cloud

- **Customer data**
- **Platform, applications, identity & access management**
- **Operating system, network & firewall configuration**
- **Client-side data encryption & data integrity authentication**
- **Server-side encryption (file system and / or data)**
- **Networking traffic protection (encryption / integrity / identity)**

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Responsibility for security *of* the cloud

- **Compute**
- **Storage**
- **Database**
- **Networking**
- **AWS global Infrastructure**
  - **Regions**
  - **Availability Zones**
  - **Edge Locations**

Introducing Amazon GuardDuty

Amazon GuardDuty is a managed threat detection service that continuously monitors for **malicious** or **unauthorized** behavior to help you protect your AWS accounts and workloads.

GuardDuty Monitors:

- Unusual API calls.
- Potentially unauthorized deployments that indicate a possible account compromise.
- Potentially compromised instances or reconnaissance by attackers.

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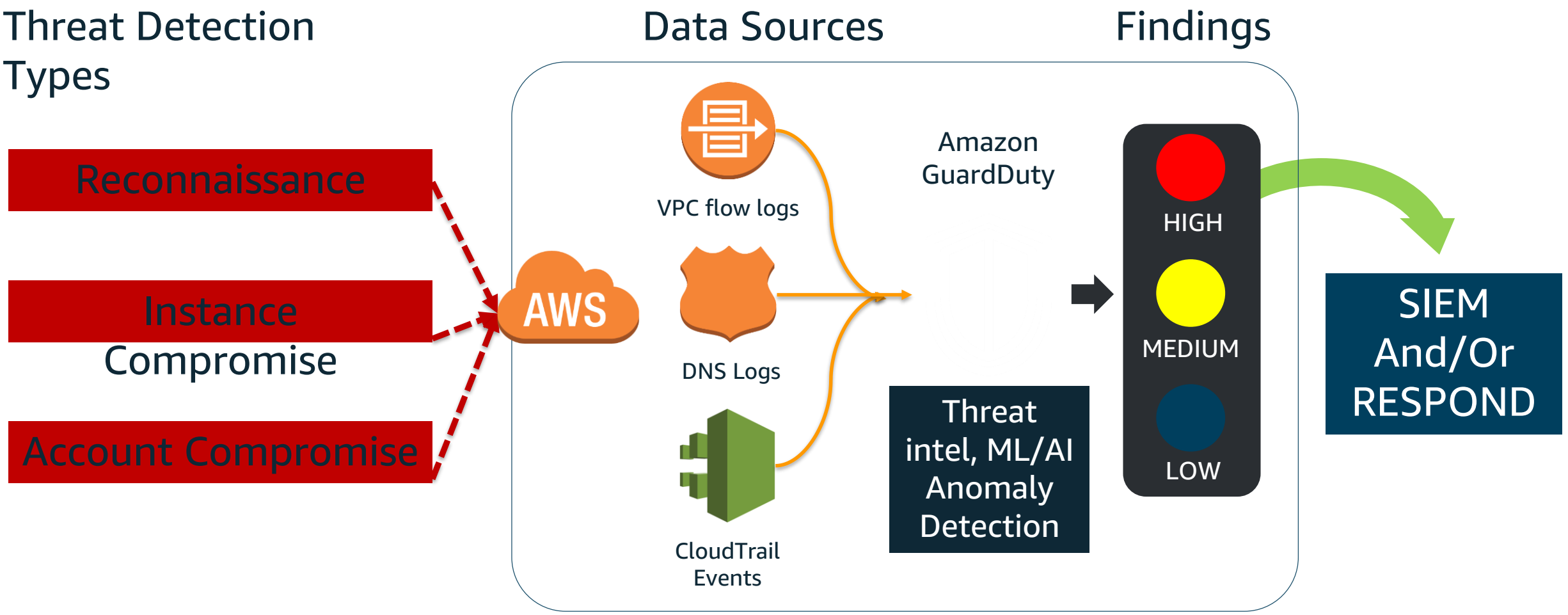
How GuardDuty Works



3 Important Takeaways: **1)** You don't need to have any logging turned on in account in order for GuardDuty to process any of the log types. **2)** Currently customers do not have direct access to the DNS logs and so GuardDuty is in effect their only means of monitoring these logs. **3)** All the logging is all done on the backend as GuardDuty gets them directly from the relevant services. So, there is no need for architecture changes, no agents and no account performance impact.

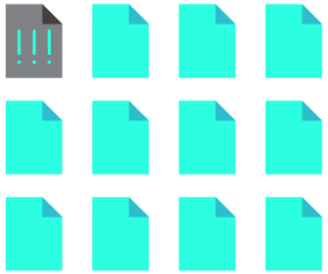
Amazon Macie

Automatically Discover, Classify, and Secure Content at Scale

Classifying and protecting sensitive data is a manual and expensive process. Companies today lack the automated controls and policies to accurately identify, classify, and secure business critical data. To bridge this gap, companies typically invest in data loss prevention (DLP) solutions to help discover data, define alerting parameters, and set security policies.

Amazon Macie Benefits

Data Visibility

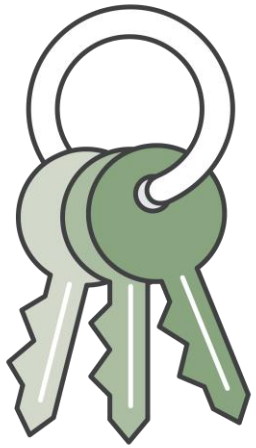


User Behavior Analytics

Automate Workflows

Automatic Alert Categories

Customers always have full ownership and control



- AWS makes no secondary use of customer content
- Keep data in your chosen format and move it, or delete it any time
- There is no automatic replication of data outside of your chosen AWS Region
- Customers can encrypt their content any way they choose

The most sensitive workloads run on AWS

"We determined that security in AWS is superior to our on-premises data center across several dimensions, including patching, encryption, auditing and logging, entitlements, and compliance."

—John Brady, CISO, FINRA (Financial Industry Regulatory Authority)

"The fact that we can rely on the AWS security posture to boost our own security is really important for our business. AWS does a much better job at security than we could ever do running a cage in a data center."

— Richard Crowley, Director of Operations, Slack

"With AWS, DNAnexus enables enterprises worldwide to perform genomic analysis and clinical studies in a secure and compliant environment at a scale not previously possible."

— Richard Daly, CEO DNAnexus

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Inherit global security and compliance controls

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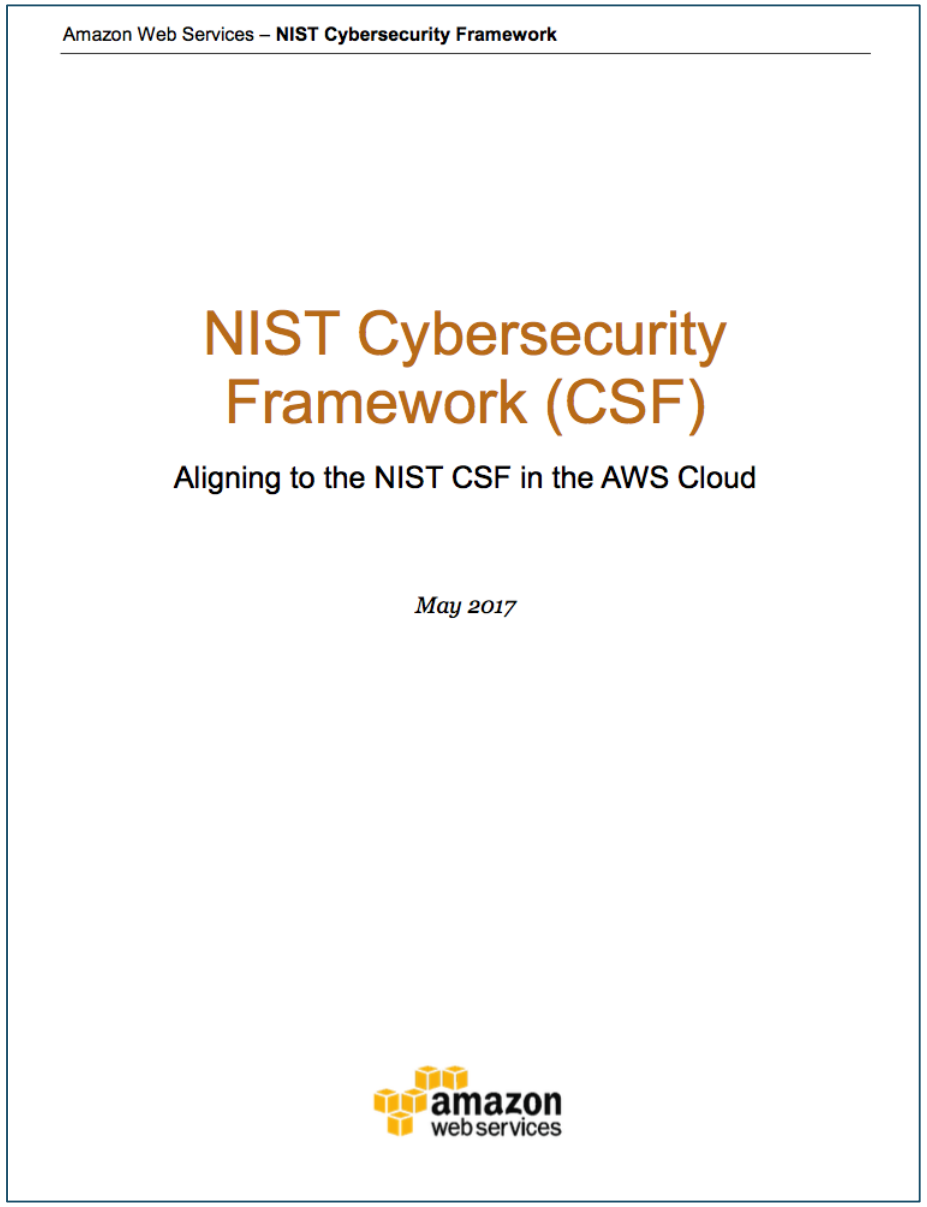
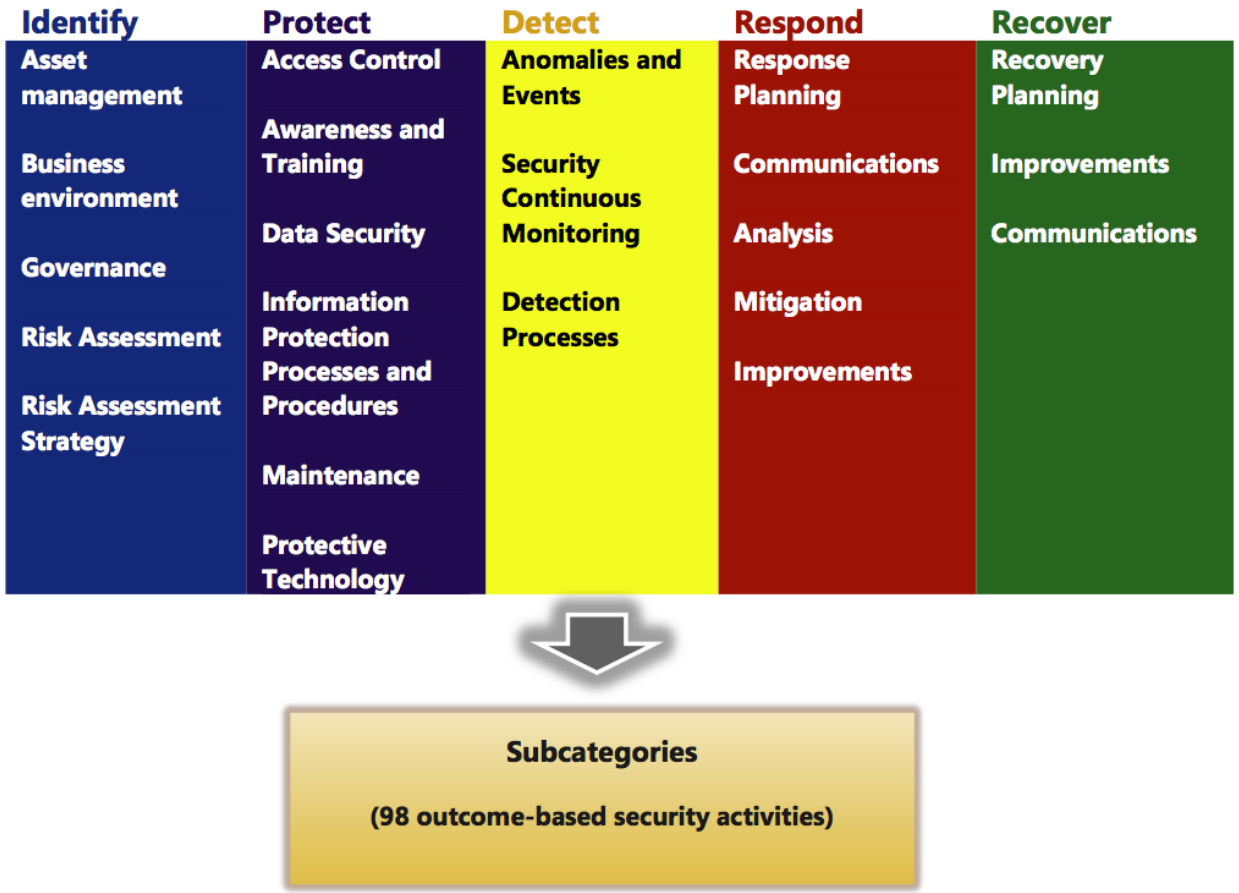
AWS NIST Cybersecurity Framework (CSF)





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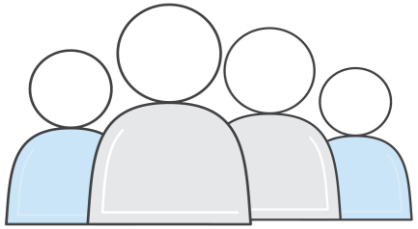
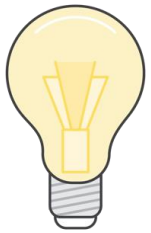
Why is the Right Approach to Regulation Critical?

AWS Public Policy and Financial Services in LATAM



Associations and Partnerships

Relationships with Government Agencies



Cloud Awareness

Monitoring

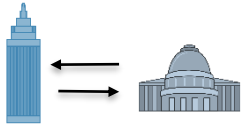
We engage with global regulatory bodies on an ongoing basis

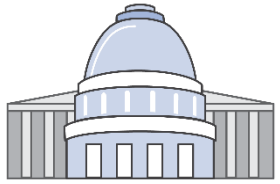
1 To share our approach and tools

Educate regulators to help examiners audit AWS environments

Help shape the regulatory landscape to reflect changes in technology

Facilitate dialogue between the industry and its regulators





Ongoing engagement with regulators in the US and around the world serves two purposes

The result: the environment and feedback channels our customers need to innovate with confidence

2 To assess and explain policy

Regulatory policy evaluations to assess the potential impact of regulations

Country-by-country impact assessments to map how financial institutions need to operate

Region- and country-specific compliance guides to document key policy changes and responses

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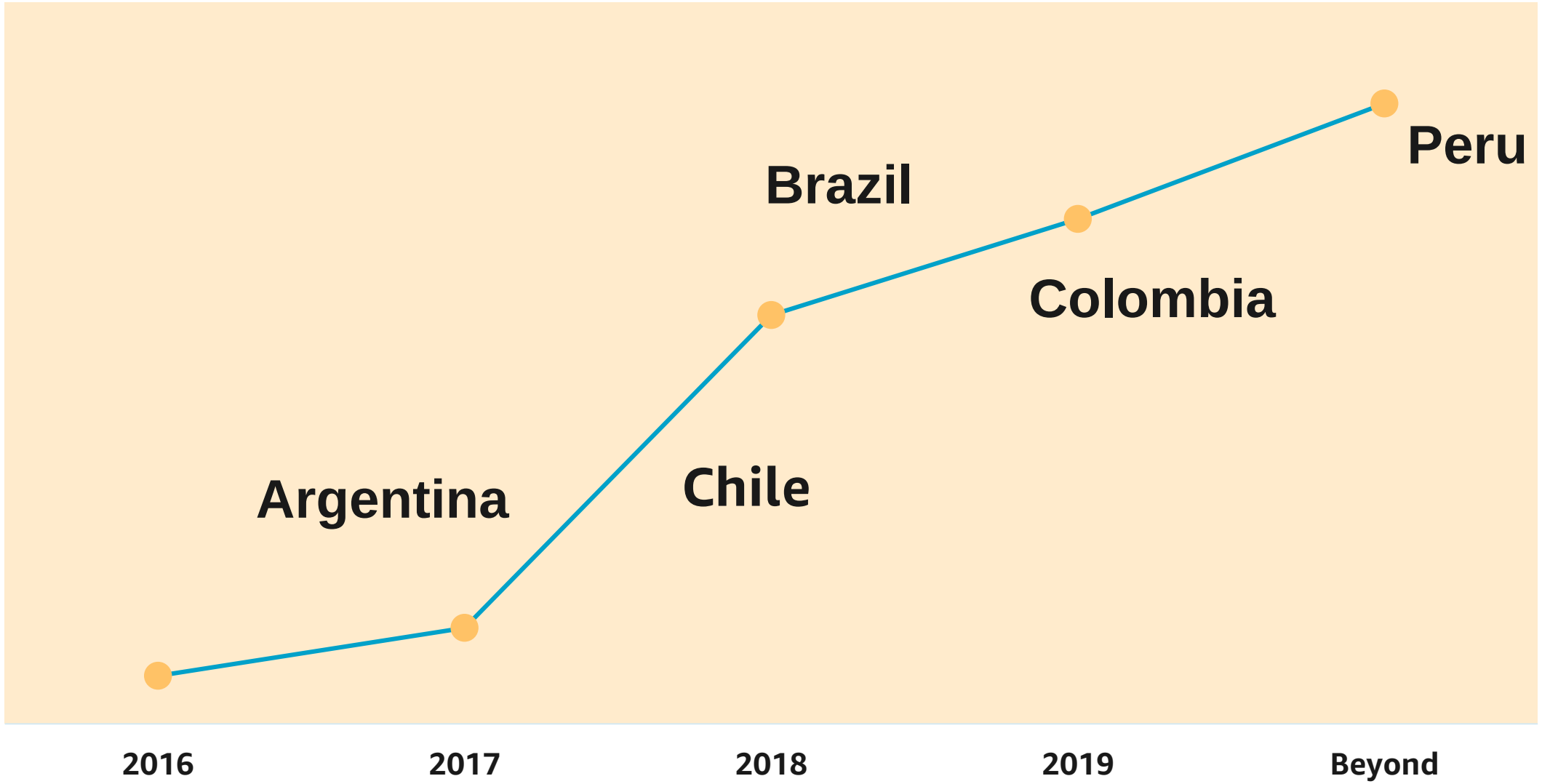
Positive Regulatory Momentum



AWS Public Policy is here for you!

- ✓ Education on cloud and trends
- ✓ Workshops
- ✓ Whitepapers and other resources