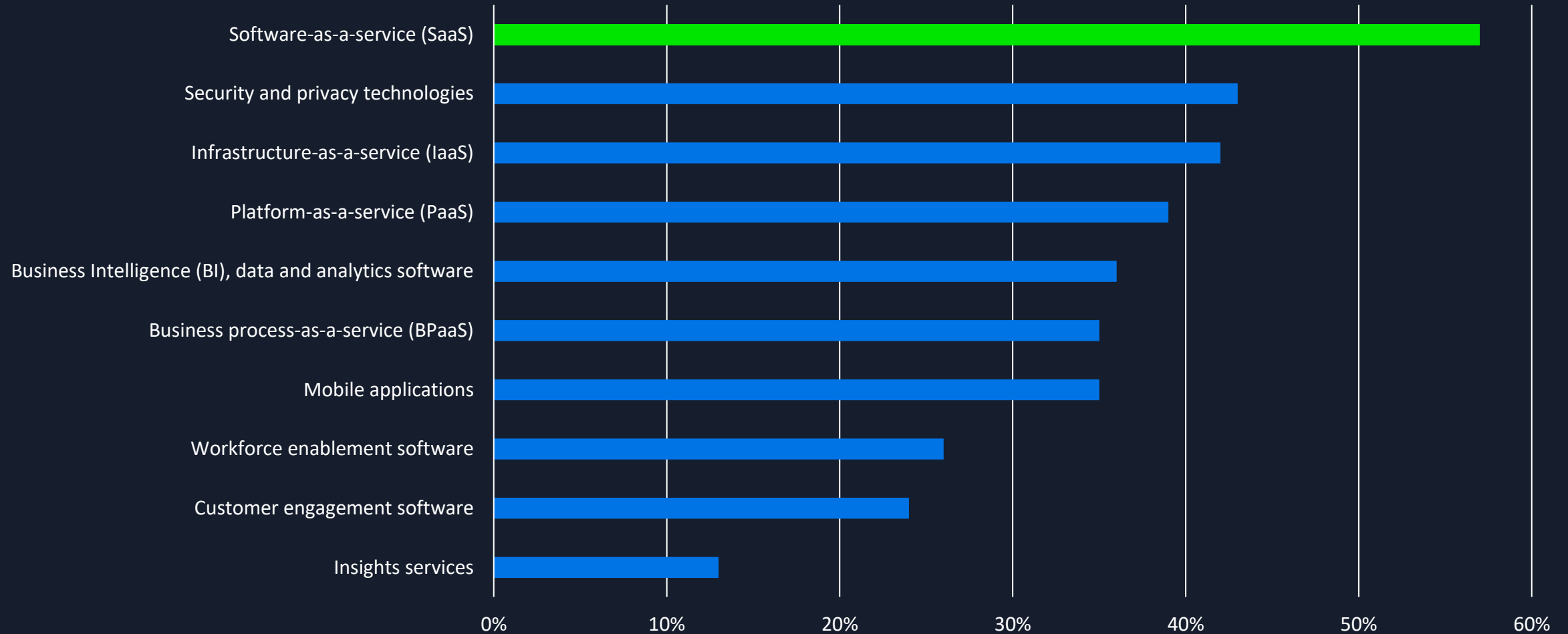


SaaS leads as a strategy for digital transformation



Base: 2,457 service decision makers who are involved in their company's digital transformation
Source: Forrester Analytics Business Technographics® Global Business and Technology Services Survey



Customer Expectations for SaaS



Simplify IT
Management



Frictionless
onboarding



Innovative
Pricing



Rapid and
Painless
innovation

Customer Expectations for SaaS



Simplify IT
Management



Frictionless
onboarding



Innovative
Pricing



Rapid and
Painless
innovation

+



**Specific customer
needs**

Customer Expectations for SaaS



Simplify IT
Management



Frictionless
onboarding

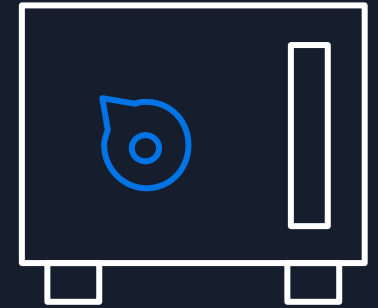


Innovative
Pricing



Rapid and
Painless
innovation

+



**Highest
Levels of
Security**

Customer Expectations for SaaS



Simplify IT
Management



Frictionless
onboarding



Innovative
Pricing



Rapid and
Painless
innovation



Compliance

Customer Expectations for SaaS



Simplify IT
Management



Frictionless
onboarding



Innovative
Pricing

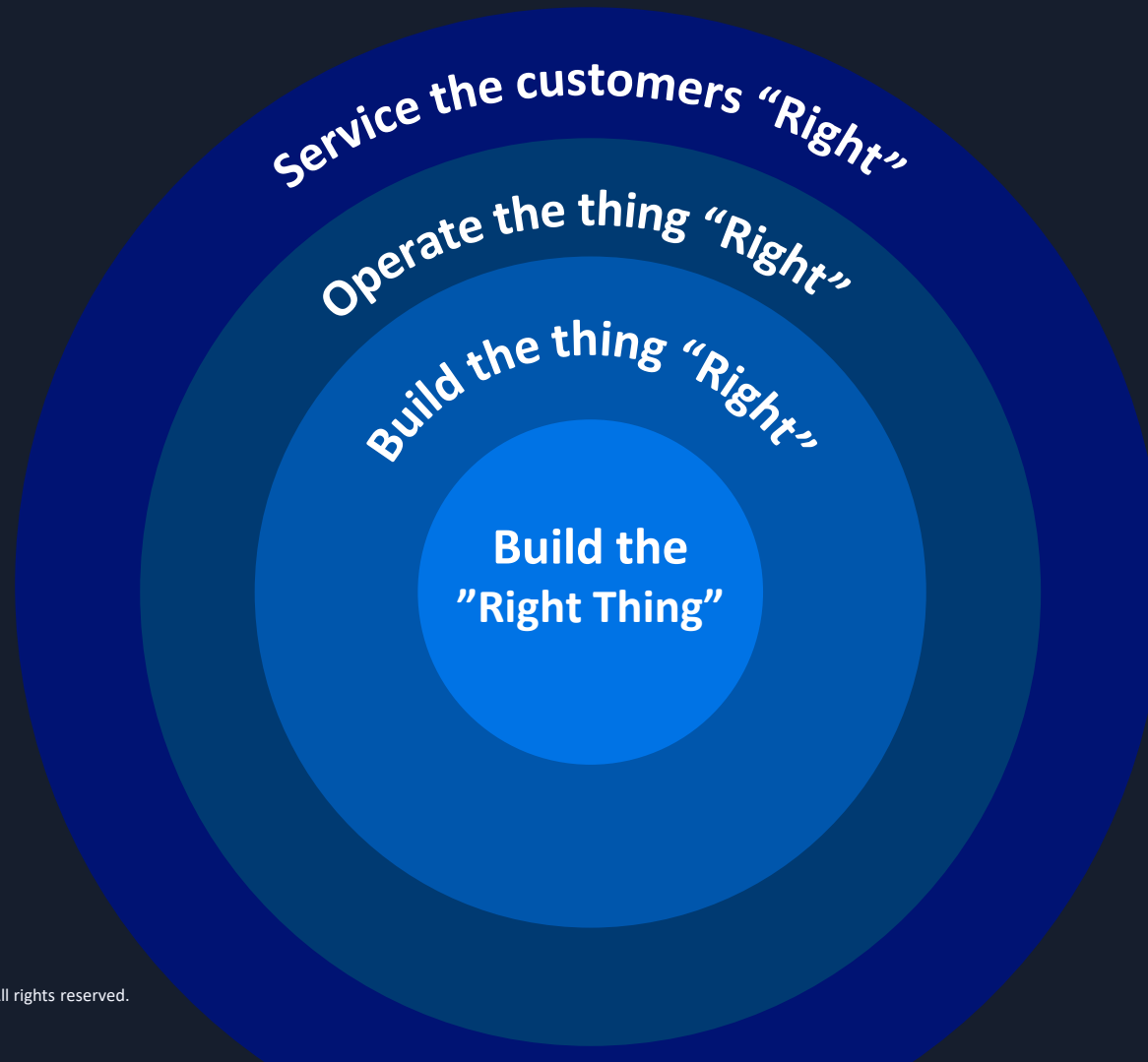


Rapid and
Painless
innovation



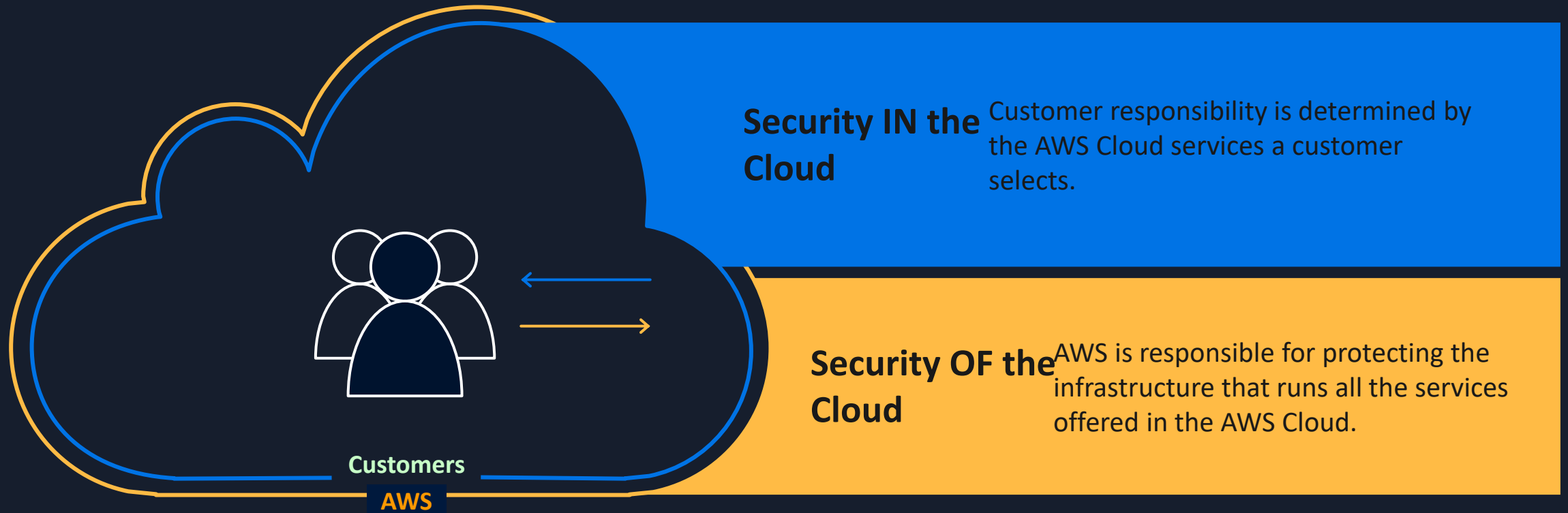
**High Availability
& Reliability**

The Service Mindset for SaaS Providers



} **Shared Responsibility**
of SaaS and Paas / IaaS
provider

Shared Responsibility Model (for Security)



Why customers choose AWS

EXPERIENCE

18 years

helping millions
of customers

GLOBAL REACH

34 Regions

spanning 108
Availability Zones and over 140
Direct Connect locations

SECURITY

300+

security features

INNOVATION

200+

service offerings

AWS INFRASTRUCTURE

3.6x+

energy efficient than the
median of surveyed U.S.
enterprise data centers

TCO

134

price reductions
since 2006

ECOSYSTEM

12,000

software listings from
2,000 ISVs

Why customers choose AWS

EXPERIENCE

18 years

helping millions of customers

GLOBAL REACH

34 Regions

spanning 108 Availability Zones and over 140 Direct Connect locations

SECURITY

300+

security features

INNOVATION

200+

service offerings

AWS INFRASTRUCTURE

3.6x+

energy efficient than the median of surveyed U.S. enterprise data centers

TCO

134

price reductions since 2006

ECOSYSTEM

12,000

software listings from 2,000 ISVs

SaaS on AWS adapts to your needs

Elastically adapting to demand

Applying on-demand scaling and fine grained compute options enables SaaS solutions to scale seamlessly to changes in consumption, e.g. additional users or growing data processing needs.

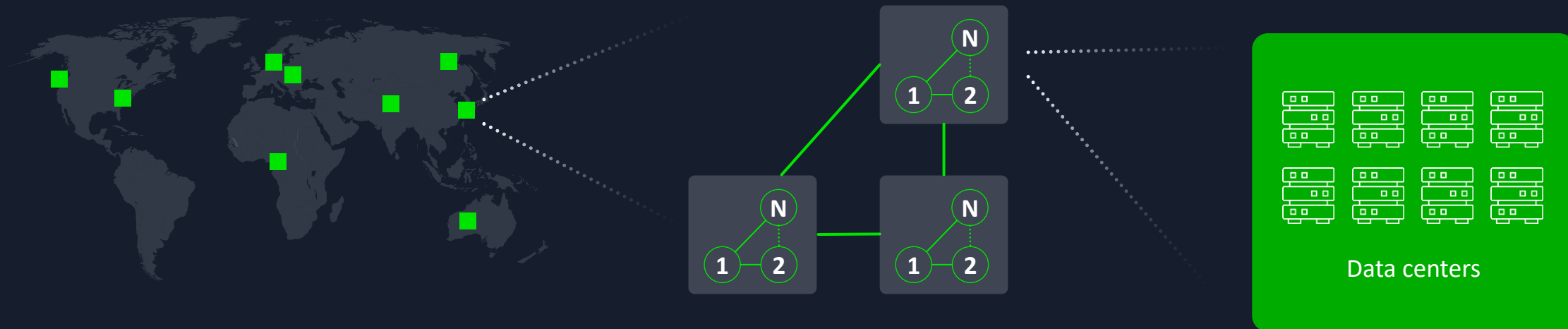


Low latency and distributed where needed

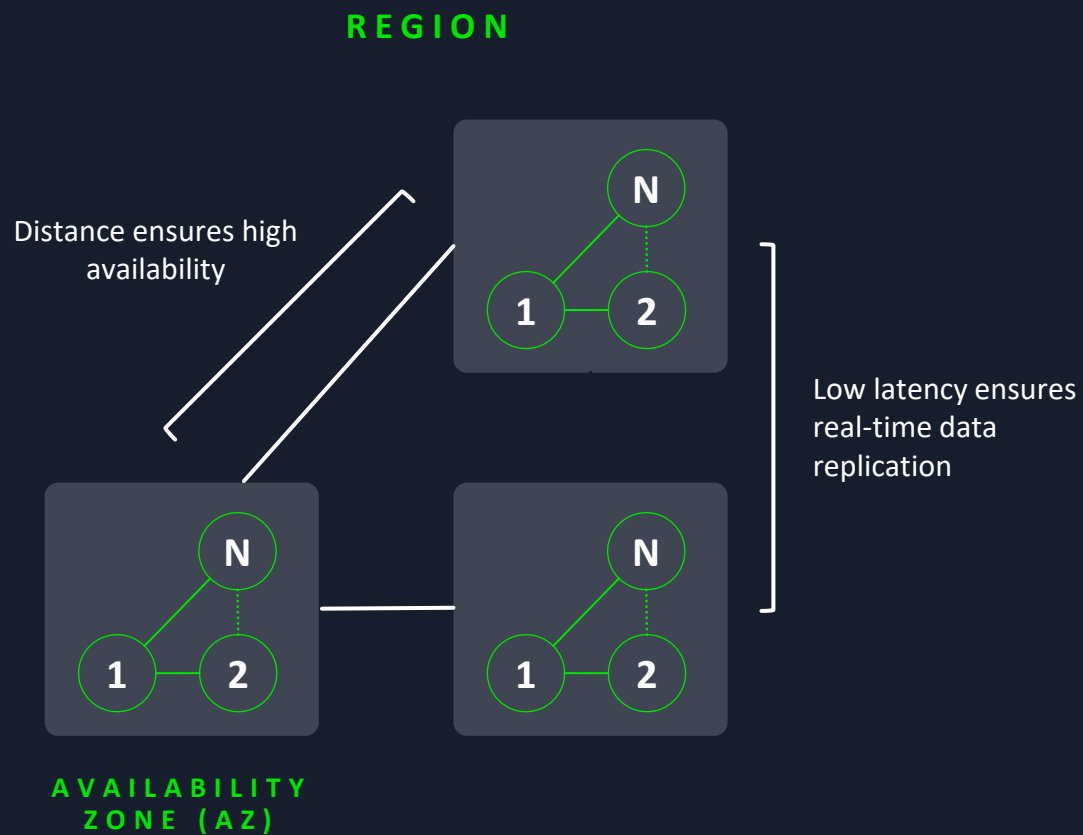
Globally available content delivery reduces latency for users worldwide. Dynamic content can be synchronized between regions. Data residency requirements can be fulfilled with regional, yet highly durable multi-az deployments.

AWS Region Design

AWS Regions are comprised of multiple Availability Zones (AZs) for **high availability, high scalability, and high fault tolerance**. Applications and data are replicated in real time and consistent in the different AZs.



Availability Zones design for resiliency



100K+ servers at scale

ISOLATED PARTITION

Fully isolated with one or more datacenters

POWER

Highly available, fault tolerant, and scalable

DISTANCE

Physically separated by a meaningful distance – all within 60 miles (100km) of each other

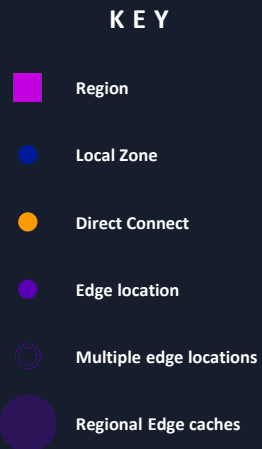
INTERCONNECTION

Datacenters connected via fully redundant and isolated metro fiber

AWS Global Infrastructure Regions & AZs



AWS Global Infrastructure Regions & Network



Why customers choose AWS

EXPERIENCE

18 years

helping millions of customers

GLOBAL REACH

34 Regions

spanning 108 Availability Zones and over 140 Direct Connect locations

SECURITY

300+

security features

INNOVATION

200+

service offerings

AWS INFRASTRUCTURE

3.6x+

energy efficient than the median of surveyed U.S. enterprise data centers

TCO

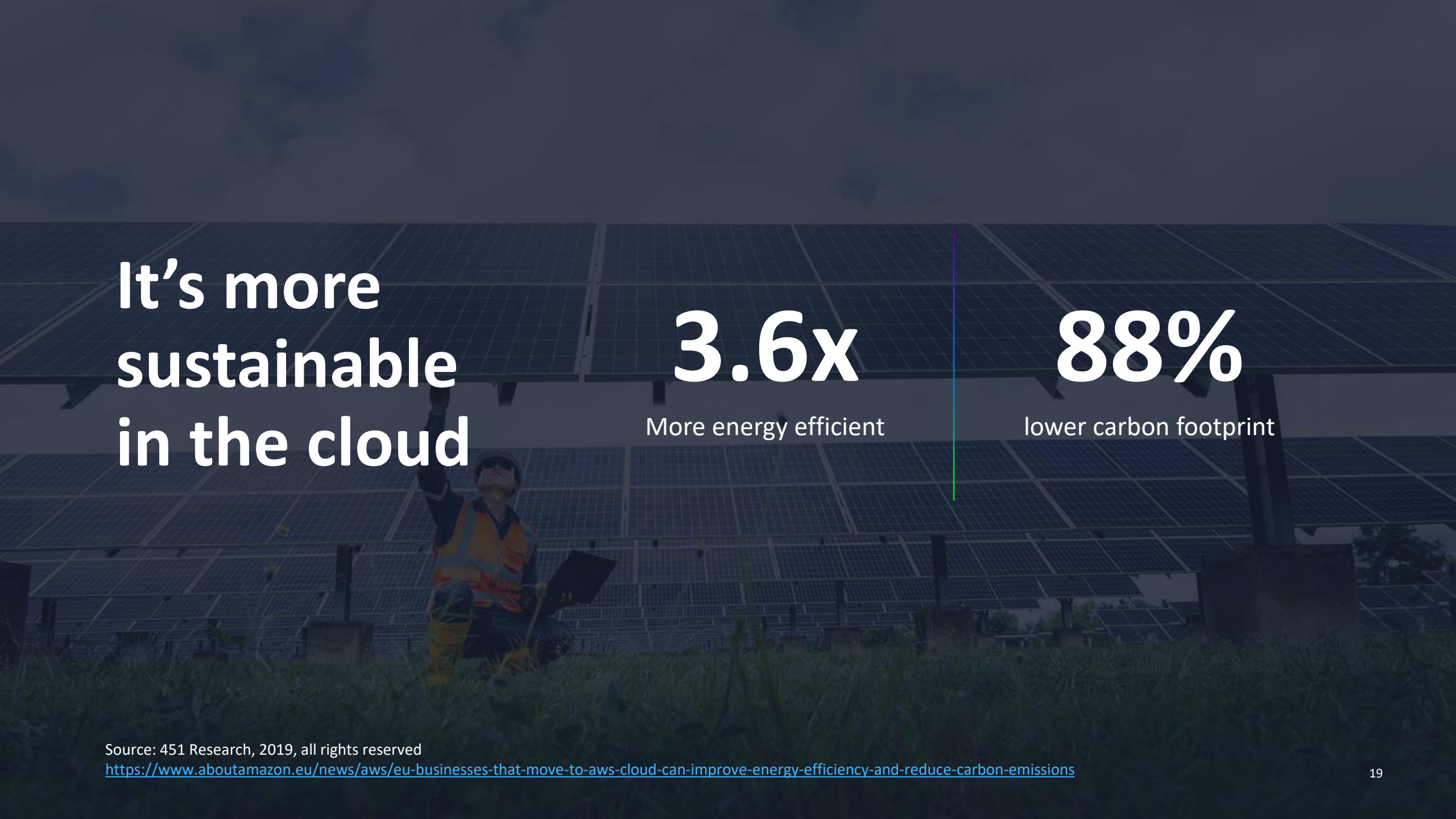
134

price reductions since 2006

ECOSYSTEM

12,000

software listings from 2,000 ISVs



**It's more
sustainable
in the cloud**

3.6x

More energy efficient

88%

lower carbon footprint

Source: 451 Research, 2019, all rights reserved

<https://www.aboutamazon.eu/news/aws/eu-businesses-that-move-to-aws-cloud-can-improve-energy-efficiency-and-reduce-carbon-emissions>

Why customers choose AWS

EXPERIENCE

18 years

helping millions of customers

GLOBAL REACH

34 Regions

spanning 108 Availability Zones and over 140 Direct Connect locations

SECURITY

300+

security features

INNOVATION

200+

service offerings

AWS INFRASTRUCTURE

3.6x+

energy efficient than the median of surveyed U.S. enterprise data centers

TCO

134

price reductions since 2006

ECOSYSTEM

12,000

software listings from 2,000 ISVs

Security = Peace of mind

Fully managed on all layers

SaaS consumers expect a maintenance free solution with minimal service interruptions. Fault tolerant and resilient architectures built on AWS automation capabilities and availability concepts support SaaS Providers in meeting high service expectations.

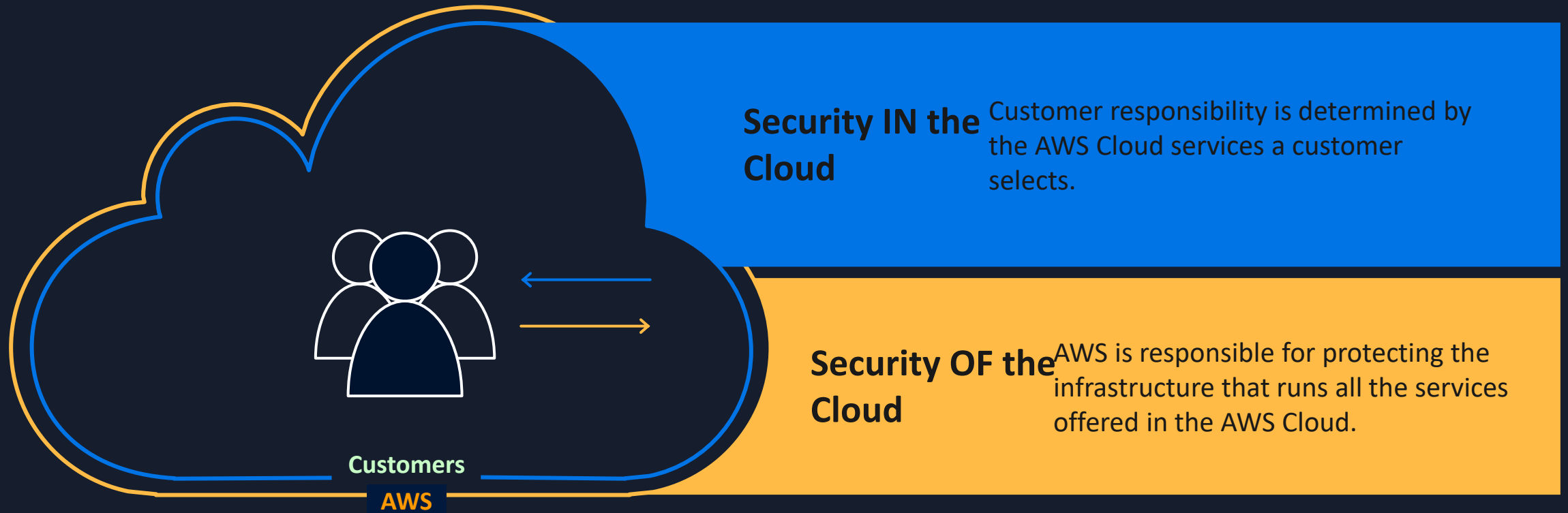


Secure and compliant

Fine grained access control and built-in encryption options keep people away from data. Compliance criteria can be met building on an extensive compliance framework.



Shared Responsibility Model (for Security)



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 manage your own encryption keys with AWS CloudHSM using FIPS 140-2 Level 3 validated HSMs



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



Comply with local data privacy laws

by controlling who can access content, its lifecycle, and its disposal

AWS security protections and control processes are independently validated by multiple third-party independent assessments.

AWS supports more than 143 security & compliance standards



Why customers choose AWS

EXPERIENCE

18 years

helping millions of customers

GLOBAL REACH

34 Regions

spanning 108 Availability Zones and over 140 Direct Connect locations

SECURITY

300+

security features

INNOVATION

200+

service offerings

AWS INFRASTRUCTURE

3.6x+

energy efficient than the median of surveyed U.S. enterprise data centers

TCO

134

price reductions since 2006

ECOSYSTEM

12,000

software listings from 2,000 ISVs

Why customers choose AWS

EXPERIENCE

18 years

helping millions of customers

GLOBAL REACH

34 Regions

spanning 108 Availability Zones and over 140 Direct Connect locations

SECURITY

300+

security features

INNOVATION

200+

service offerings

AWS INFRASTRUCTURE

3.6x+

energy efficient than the median of surveyed U.S. enterprise data centers

TCO

134

price reductions since 2006

ECOSYSTEM

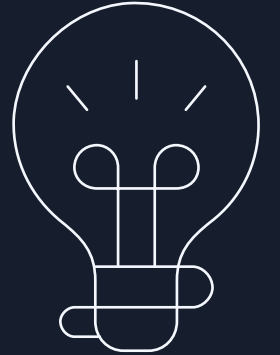
12,000

software listings from 2,000 ISVs

Innovation

Through **breadth of services**

More than 200 fully featured AWS services enable new use cases in SaaS solutions and foster innovation.



Through **closer and more frequent** innovation cycles

Automatic deployment options allow to deploy new features often and to shorten innovation cycles. Availability of metrics and usage statistics allow service providers to operate closer to customer needs and to shape the product to benefit users.

Why customers choose AWS

EXPERIENCE

18 years

helping millions of customers

GLOBAL REACH

34 Regions

spanning 108 Availability Zones and over 140 Direct Connect locations

SECURITY

300+

security features

INNOVATION

200+

service offerings

AWS INFRASTRUCTURE

3.6x+

energy efficient than the median of surveyed U.S. enterprise data centers

TCO

134

price reductions since 2006

ECOSYSTEM

12,000

software listings from 2,000 ISVs



**Software as a Service (SaaS)
+ operational excellence in the AWS Cloud
= Advantages for your business**

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 manage 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

Automate and reduce risk with integrated services

Comprehensive set of APIs and security tools



Continuous monitoring and protection



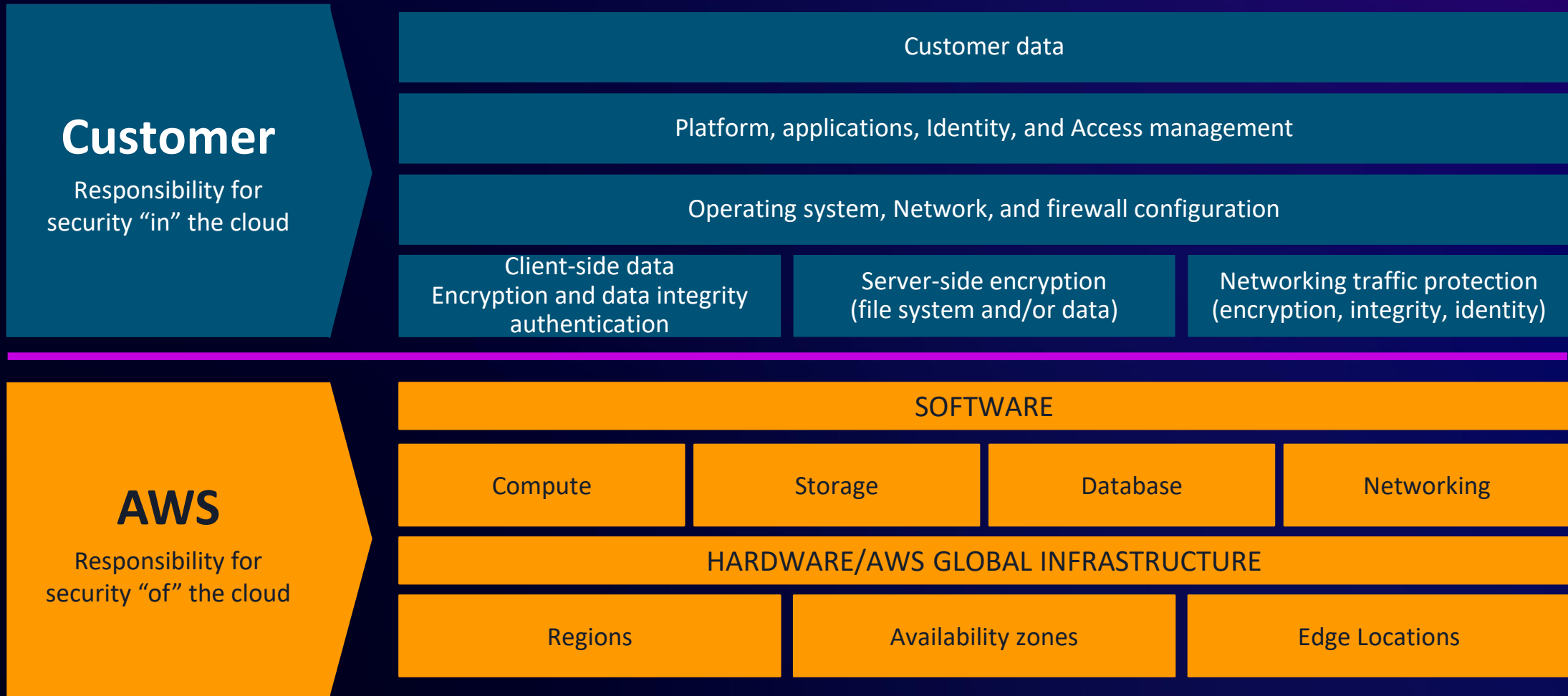
Threat remediation and response

Operational efficiencies to focus on critical issues



Securely deploy business critical applications

Compliance starts with the AWS Shared Responsibility Model



Law Enforcement Information Requests & Transparency Reports

Data privacy and confidentiality are our top priorities at AWS



Storage

You choose the AWS Region(s) in which your content is stored and the type of storage you use.



Security

You choose how your content is secured.



Access

AWS does not access or use customer content except as necessary to provide the service offerings, or to comply with the law or a binding order of a government body.



Disclosure of Customer Content

We will not disclose customer content unless we're required to do so to comply with the law or a binding order of a government body.



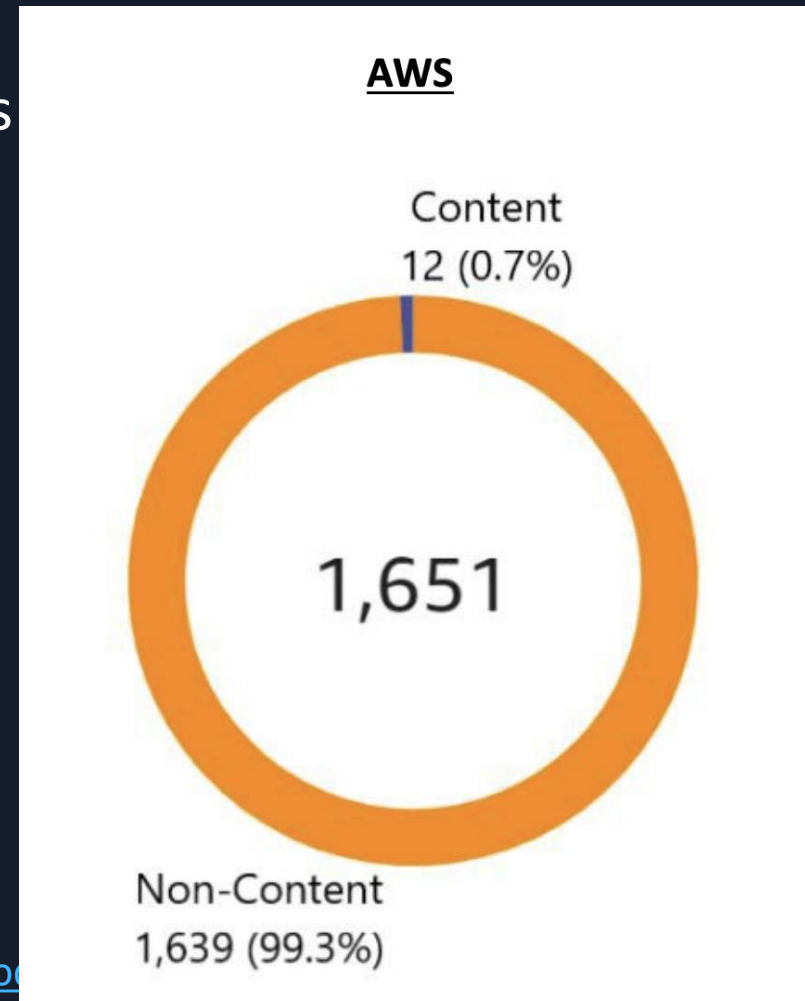
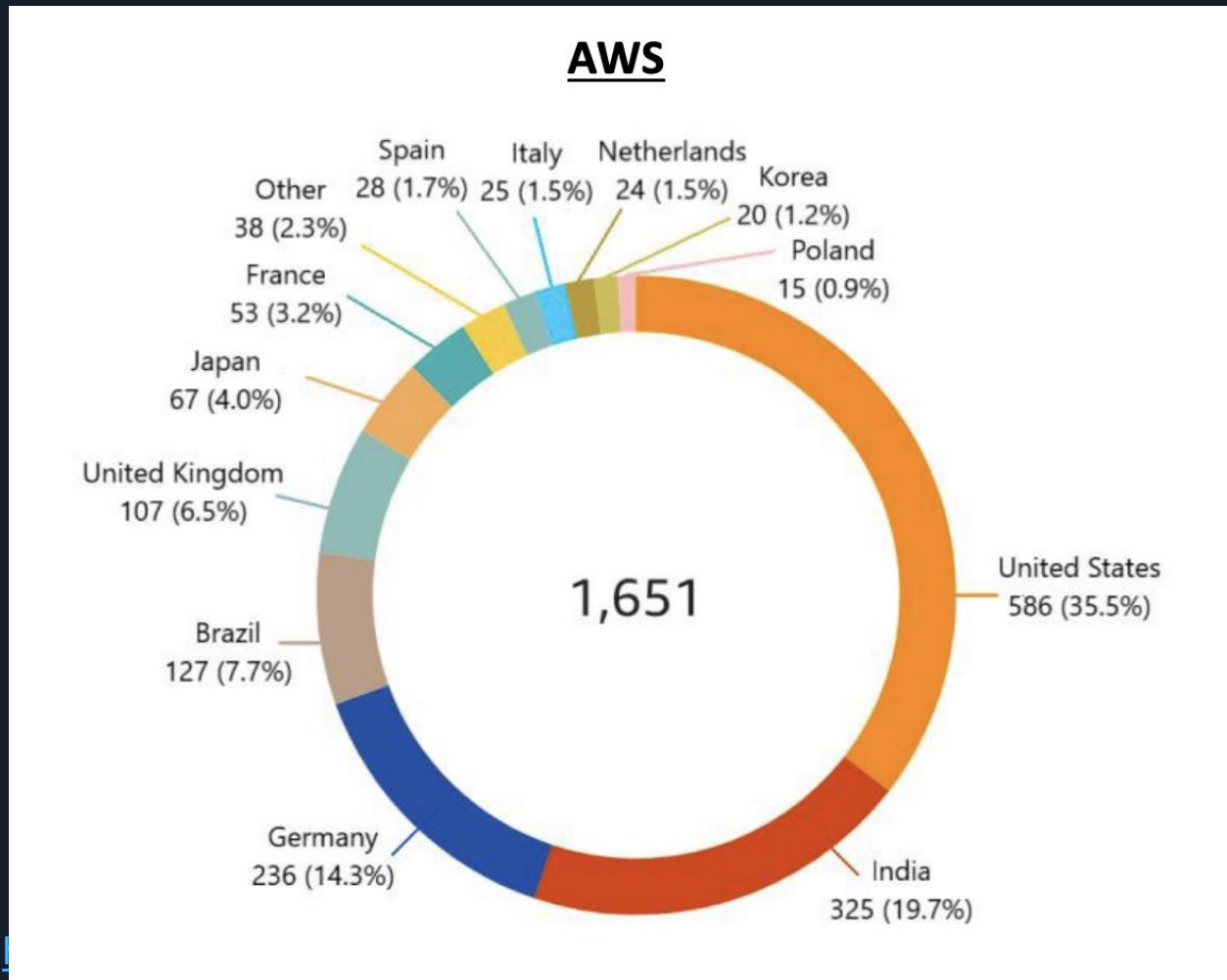
Security Assurance

AWS security protections and control processes are independently validated by multiple third-party independent assessments.

For more information, visit our Data Privacy Center on our website: <https://aws.amazon.com/compliance/data-privacy/>

Law Enforcement Information Requests

Numbers



Law Enforcement Information Requests

Amazon, incl. AWS, have been reporting these numbers since 2015.

How many requests resulted in the disclosure to the U.S. government of enterprise or government content data located outside the United States?

None.

Published July 31, 2024

https://www.amazon.com/gp/help/customer/display.html?ref=hp_left_v4_sib&nodeId=GYSDRGWQ2C2CRYEF



Digital Sovereignty

Why is Digital Sovereignty important to you?

I want to be compliant with regulations.

I want to be in control of where my data is persisted at, where it's transferred to and where it's being processed.

I want to determine who does what with my data.

I want to be safe and in control.

Digital Sovereignty Themes



Data residency



**Operator access
restriction**



**Resiliency,
survivability, and
independence**

Data sovereignty

Operational sovereignty

Digital sovereignty

Security vs. Digital Sovereignty

Same, same, but different?

Or is it?

Threat Modeling 101

What are you protecting your data and workloads from?

Who are you protecting your data and workloads from?

Cyber Vandalism
Cyber Crime
Organized Crime

Potential Insider Threats
in my organization

Service
Disruption

Bugs
Zero Day
Vulnerabilities

My CSP

Geopolitical
Risks /
nation-state
adversaries

The most secure, extensive, and reliable global cloud infrastructure

143 security standards and compliance certifications

Most operational experience

Highest network availability

There is no sovereignty without foundational security

AWS Digital Sovereignty Pledge: Control without Compromise



**Control over the
location of data**



**Verifiable control
over data access**



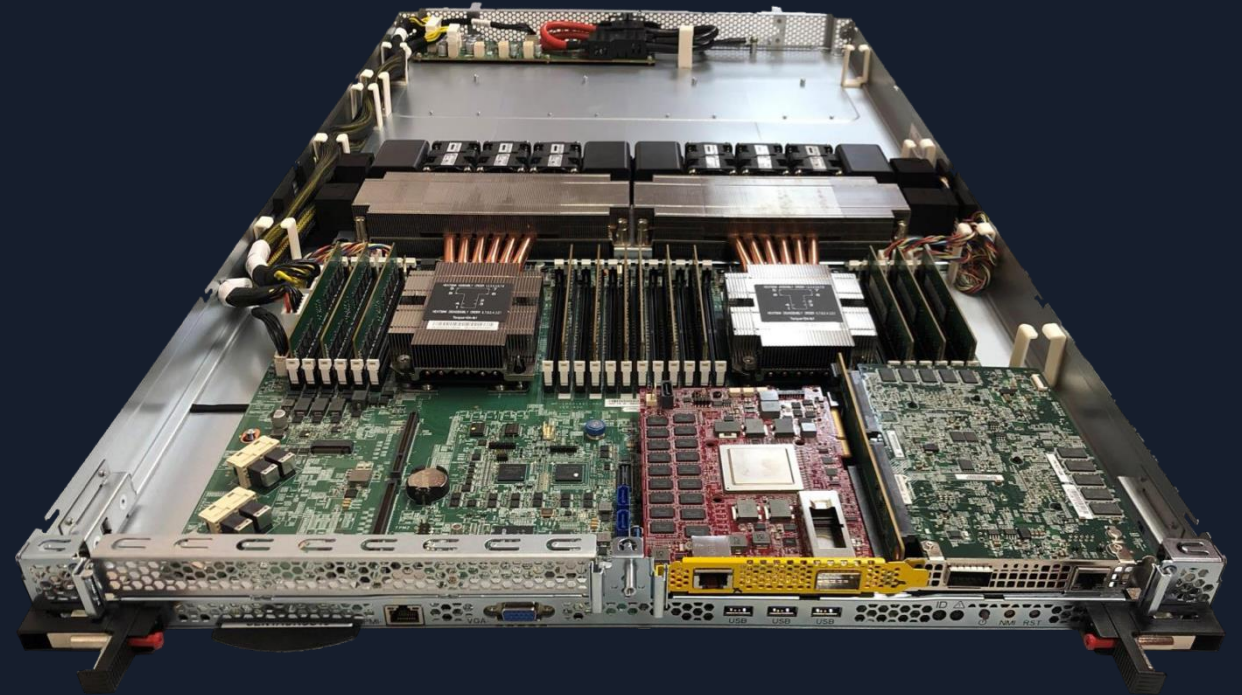
**The ability to encrypt
everything
everywhere**



**Resilience
of the cloud**

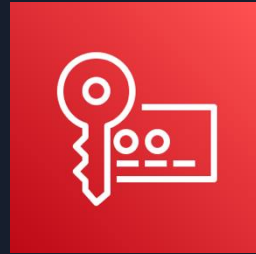
AWS Nitro System

- **AWS Regions are powered by AWS Nitro System for confidential computing**
- The Nitro System is the foundation for AWS
- All EC2 instance types released since 2018 are powered by the Nitro System
- There is **no operator access mechanism** in the Nitro System design
- All Nitro operations are done with secure, authenticated, authorized, logged (and audited) administrative APIs
- Third-party attestation and validation by NCC Group

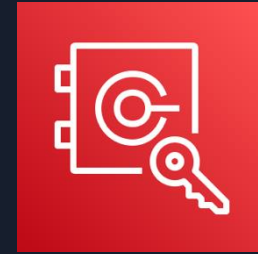


Nitro-based EC2 server

Encryption management with AWS KMS and CloudHSM



AWS Key Management Service
(AWS KMS)



AWS CloudHSM



Ability to encrypt all your data, whether in transit, at rest, or in memory.



All services support encryption with customer managed keys that are inaccessible to AWS.

SOC 1 - Control 4.5: *Customer master keys used for cryptographic operations in AWS KMS are logically secure so that no single AWS employee can gain access to the key material.*

More options for key management: AWS CloudHSM



- Standalone, dedicated HSM cluster that you own and operate in your VPC
- Extensive support for “lift and shift” on-premises HSM workloads
- Offers more specialized cryptographic algorithms and legacy ciphers than KMS
- Certified at FIPS 140-2 Security Level 3
- Can become the backend HSM for KMS using the KMS custom key store feature / custom key store interface

Host your keys outside AWS with: AWS KMS External Key Store (XKS)



- Full removal of root of trust from AWS KMS
- Transparent to AWS services and client apps
- Flexibility on which keys you choose to store in external key manager
- Customer owns the key in meaningful ways
Serves as “kill switch”: Turn off XKS & AWS data becomes unreadable

Provided by selected partners

THALES

EVIDEN

salesforce

ATOS

Fortanix

HashiCorp



ENTRUST

T Systems

Vendor support for AWS KMS XKS

The AWS European Sovereign Cloud



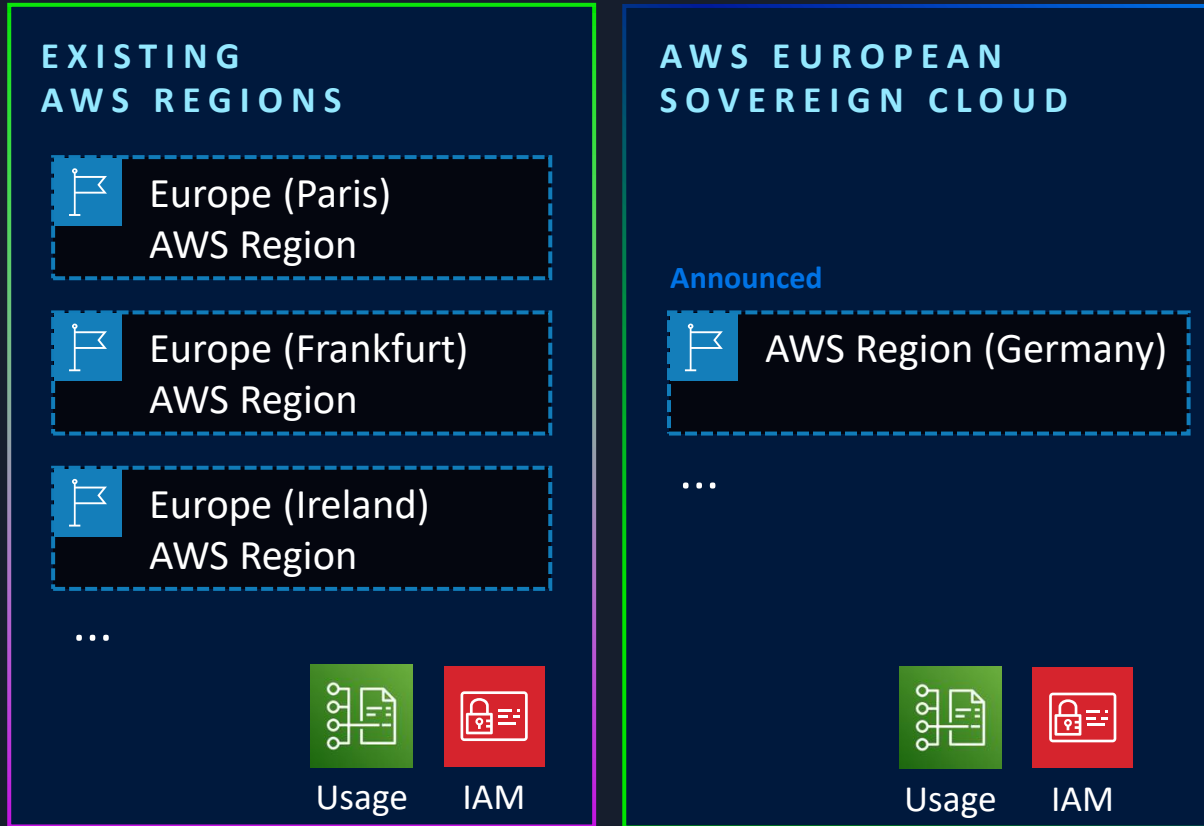
**AWS European Sovereign Cloud
set to launch **by the end of 2025,**
backed by a €7.8 billion investment**

AWS European Sovereign Cloud

- A new **independent cloud for Europe**, designed to help public sector organizations and customers in highly regulated industries meet their **evolving sovereignty needs**
- The new AWS European Sovereign Cloud will launch its first AWS Region in Germany
- Multiple Availability Zones
- Connected to the internet (& Direct Connect), i.e. not air-gapped



AWS European Sovereign Cloud characteristics



- Operational autonomy
- Separate **IAM** system
- Separate **in-Region** billing and usage metering systems
- Powered by the AWS Nitro System

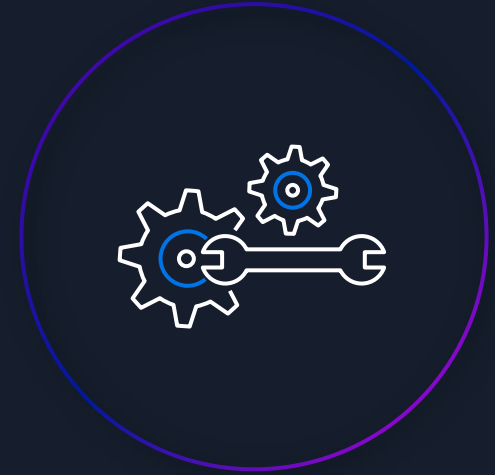
Delivering Operational Autonomy



**EU resident
AWS employees**



**Located in the
EU**



**Full control of operations
& support**

Customer service

Day-to-day operations

Technical support

Data centre operations

The AWS European Sovereign Cloud will provide data residency and assurance that customers can keep metadata they create in the EU

Already available in all existing AWS Regions



Customer content stays within the AWS Region the customer selects

Example: Data that customer uploads to an S3 bucket, RDS databases, and so on

Further data residency choice with AWS European Sovereign Cloud



Customer-created metadata stays in EU

Example: Roles and permissions, resource labels, configurations used to run AWS resources

More choice for customers

- The AWS European Sovereign Cloud is another option for customers.
- AWS European Sovereign Cloud helps customers who want to adopt the cloud, but are facing increasing regulatory scrutiny over **data location**, European **operational autonomy**, and **resilience**.

“The development of a European AWS Cloud will make it much easier for many public sector organizations and companies with high data security and data protection requirements to use AWS services. We are aware of the innovative power of modern cloud services and we want to help make them securely available for Germany and Europe. [...]”

Claudia Plattner, President of the BSI, Germany

Transparency and collaboration: Regulators welcome the AWS European Sovereign Cloud

“The development of a European AWS Cloud will make it much easier for many public sector organizations and companies with high data security and data protection requirements to use AWS services. We are aware of the innovative power of modern cloud services and we want to help make them securely available for Germany and Europe. [...]”

Claudia Plattner, President of the BSI, Germany

“AWS’s announcement of an independent European cloud will provide organizations facing the most stringent regulations with more choice in their digital sovereignty strategy. In order to successfully provide human-centric and secure services to citizens and businesses, public sector agencies need to have cloud solutions that are compatible with data protection and other legislation.”

Jarkko Levasma, Government CIO at the Ministry of Finance, Finland

“We welcome the announcement by AWS to further enhance its current European infrastructure footprint with a new independent cloud. This will help public and private organizations navigating stringent regulatory requirements to accelerate their transition to the cloud while improving innovation and data security for the benefit of European citizens. [...]”

Dan Cimpean, Director of the National Cyber Security Directorate, Romania

“[...] AWS’s announcement of an independent European cloud is indeed the right decision at the right time that will ultimately also bolster transatlantic collaboration. [...] it will provide more heavily regulated organizations, such as those in the public sector with an eye on evolving regulation, more choice in their digital sovereignty strategy.”

Tomas Krejci, Deputy director of the National Cyber and Information Security Agency (NÚKIB), Czech Republic.

NIS2 Compliance

- Shared responsibility between Customer and AWS
- Whitepaper “NIS2 Considerations for AWS Customers”
https://d1.awsstatic.com/whitepapers/compliance/NIS_2_Considerations_for_AWS_Customers.pdf
- AWS working closely with cybersecurity regulators in various EU Member States to define standards and best practices

DORA Compliance

- Shared responsibility between Customer and AWS
- Whitepaper “AWS User Guide to the Digital Operational Resilience Act”
<https://aws.amazon.com/blogs/industries/introducing-the-aws-user-guide-to-the-digital-operational-resilience-act-dora/>