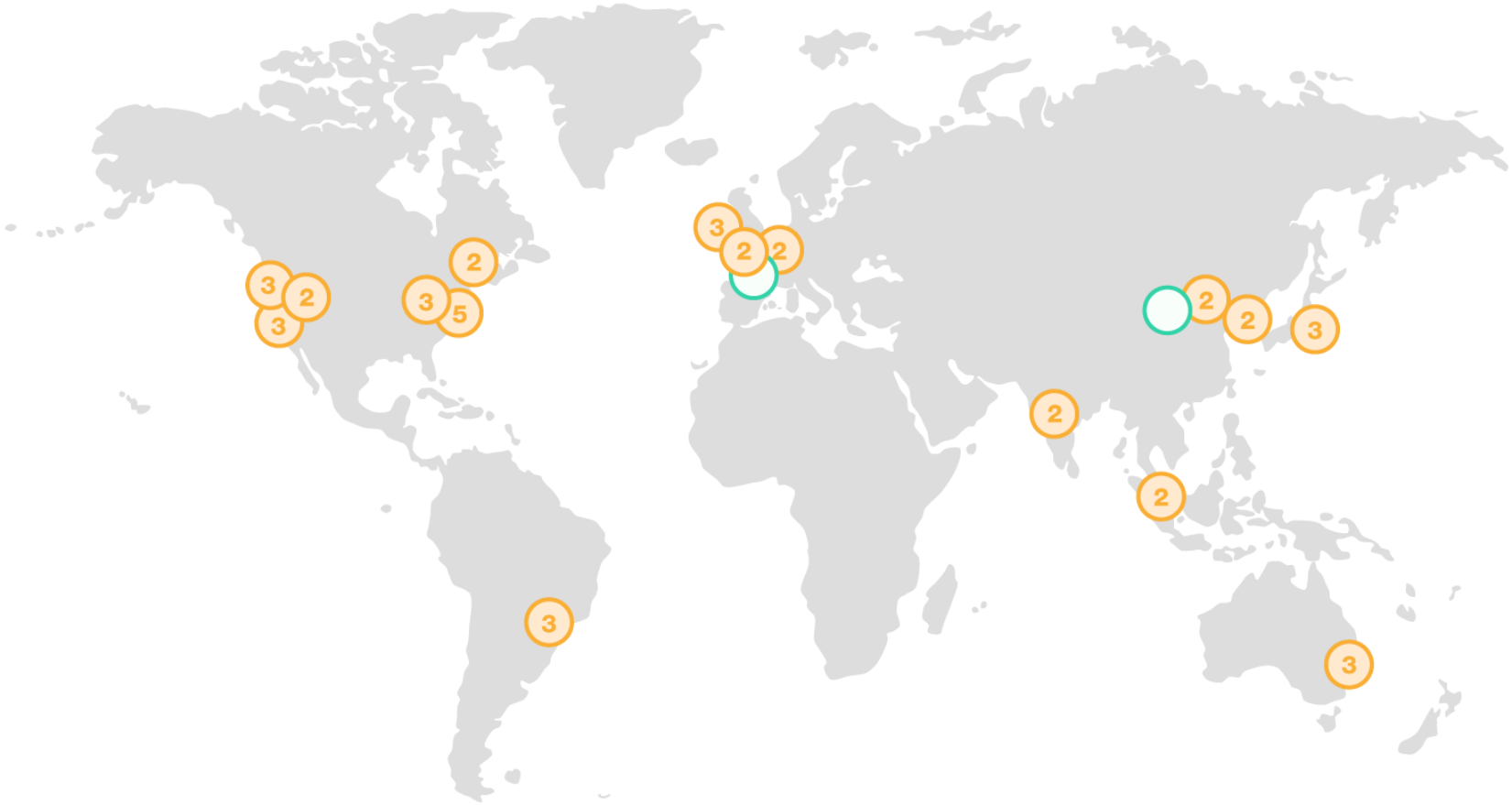
Amazon Web Services
Democratizing IT

Joakim Stolpe
AWS Nordics

Deploy faster wherever you like

16 Regions – **42** Availability Zones – **68** Edge Locations



Region & Number of Availability Zones

AWS GovCloud (2)

US West

Oregon (3)

Northern California (3)

US East

N. Virginia (5), Ohio (3)

Canada

Central (2)

South America

São Paulo (3)

EU

Ireland (3)

Frankfurt (2)

London (2)

Asia Pacific

Singapore (2)

Sydney (2), Tokyo (3),

Seoul (2), Mumbai (2)

China

Beijing (2)

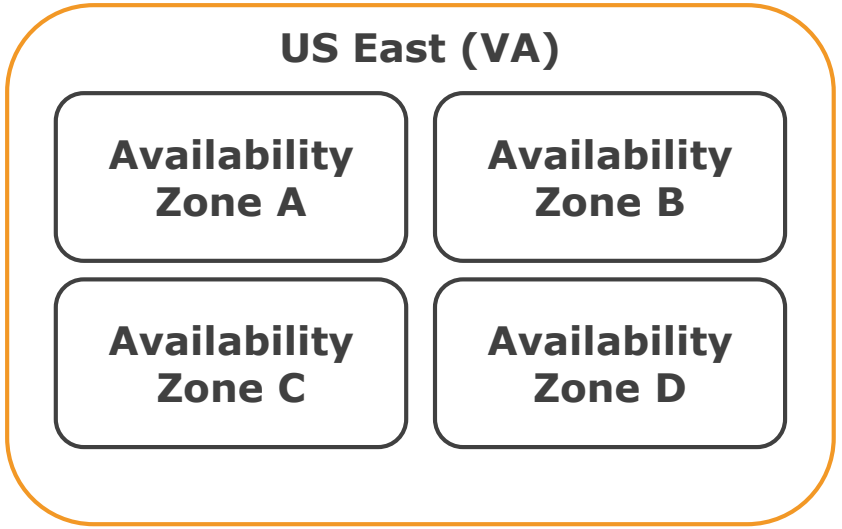
Announced Regions

Paris, Ningxia, Stockholm

AWS Global Infrastructure

42 Availability Zones (AZs)

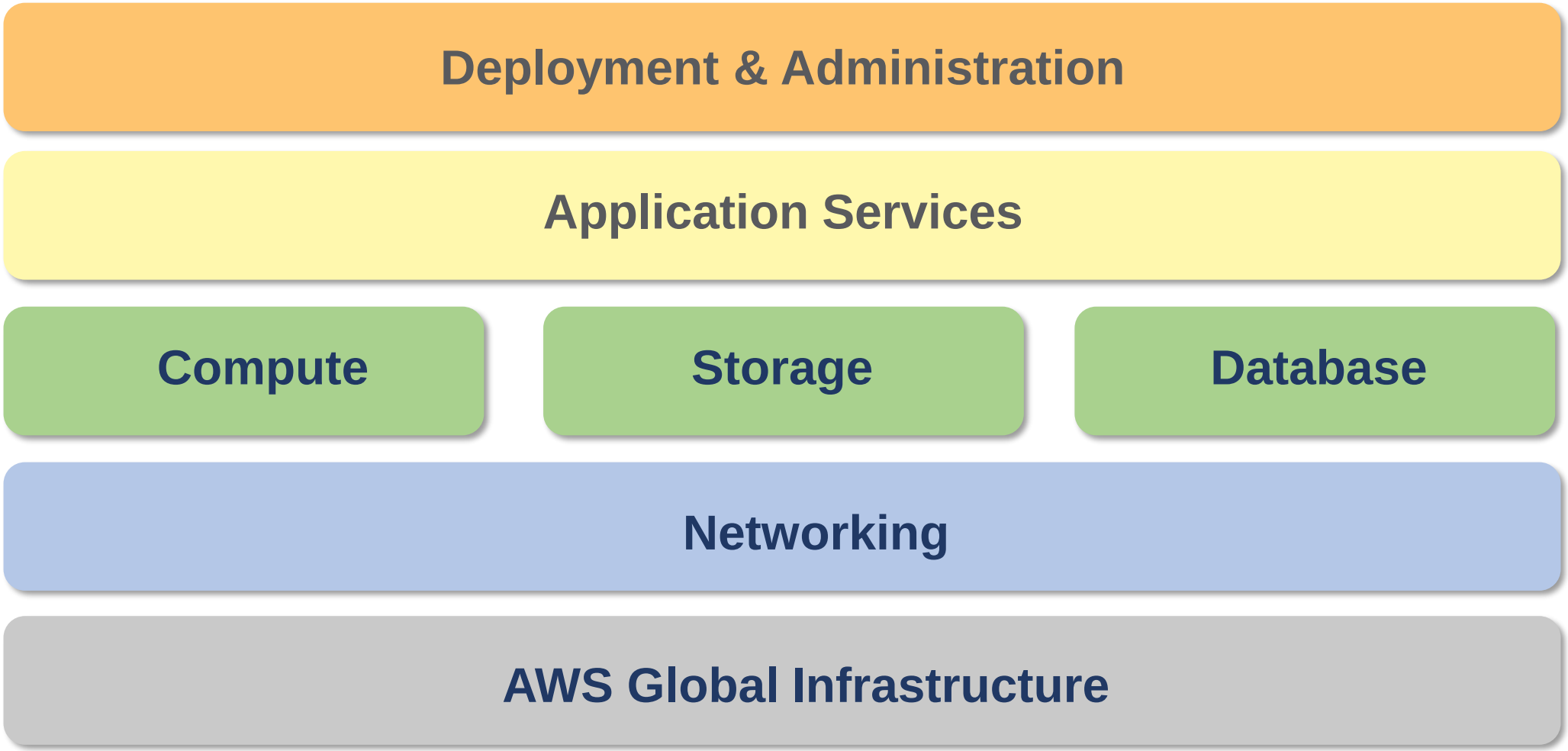
- Example
  - US East (N. Virginia)
    - us-east-1a
    - us-east-1b
    - us-east-1c
    - us-east-1d

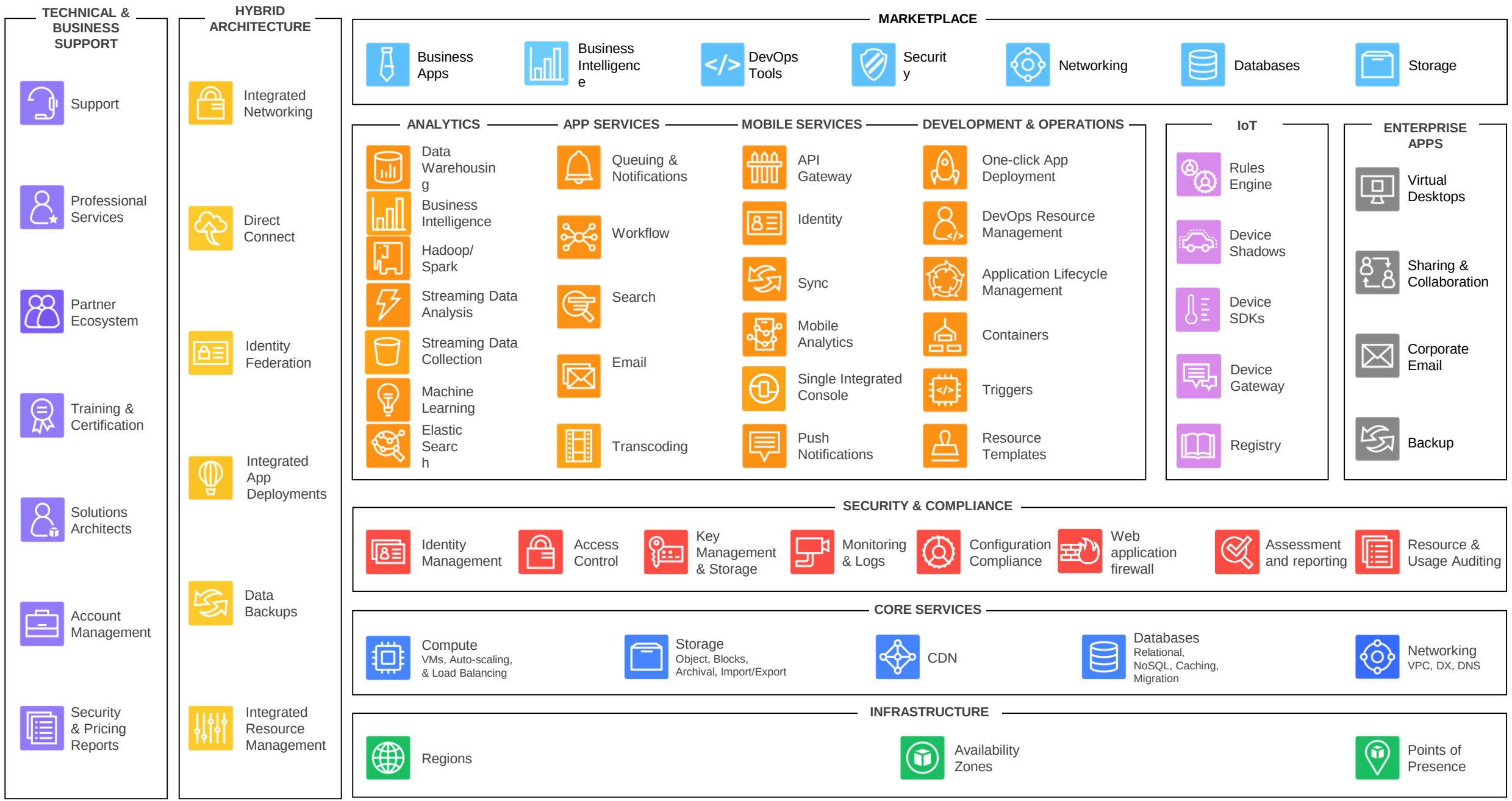


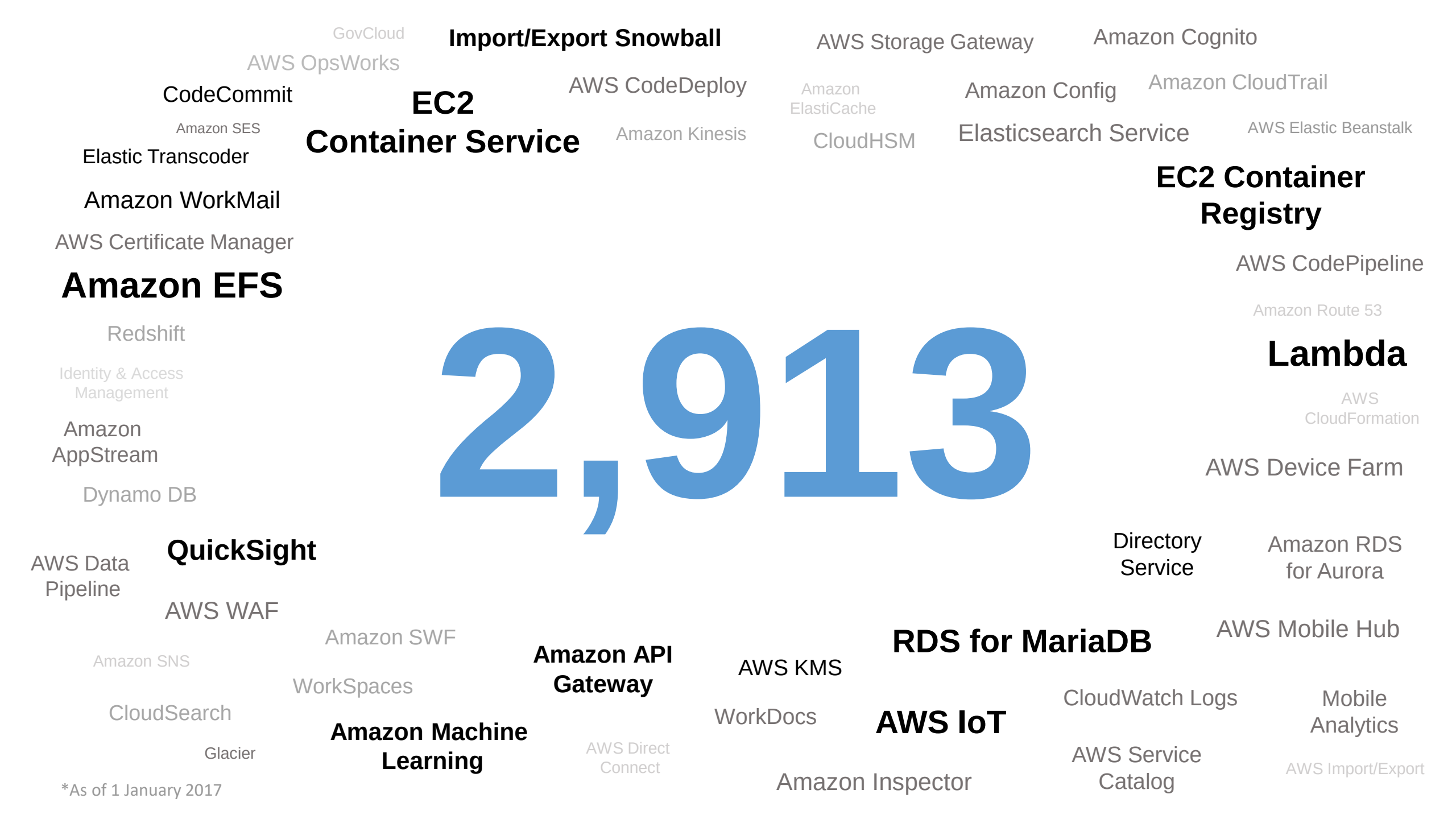
AWS Edge Locations

Local points-of-presence commonly supporting AWS services like Amazon Route 53 and Amazon CloudFront

AWS provides broad and deep services to support any cloud workload

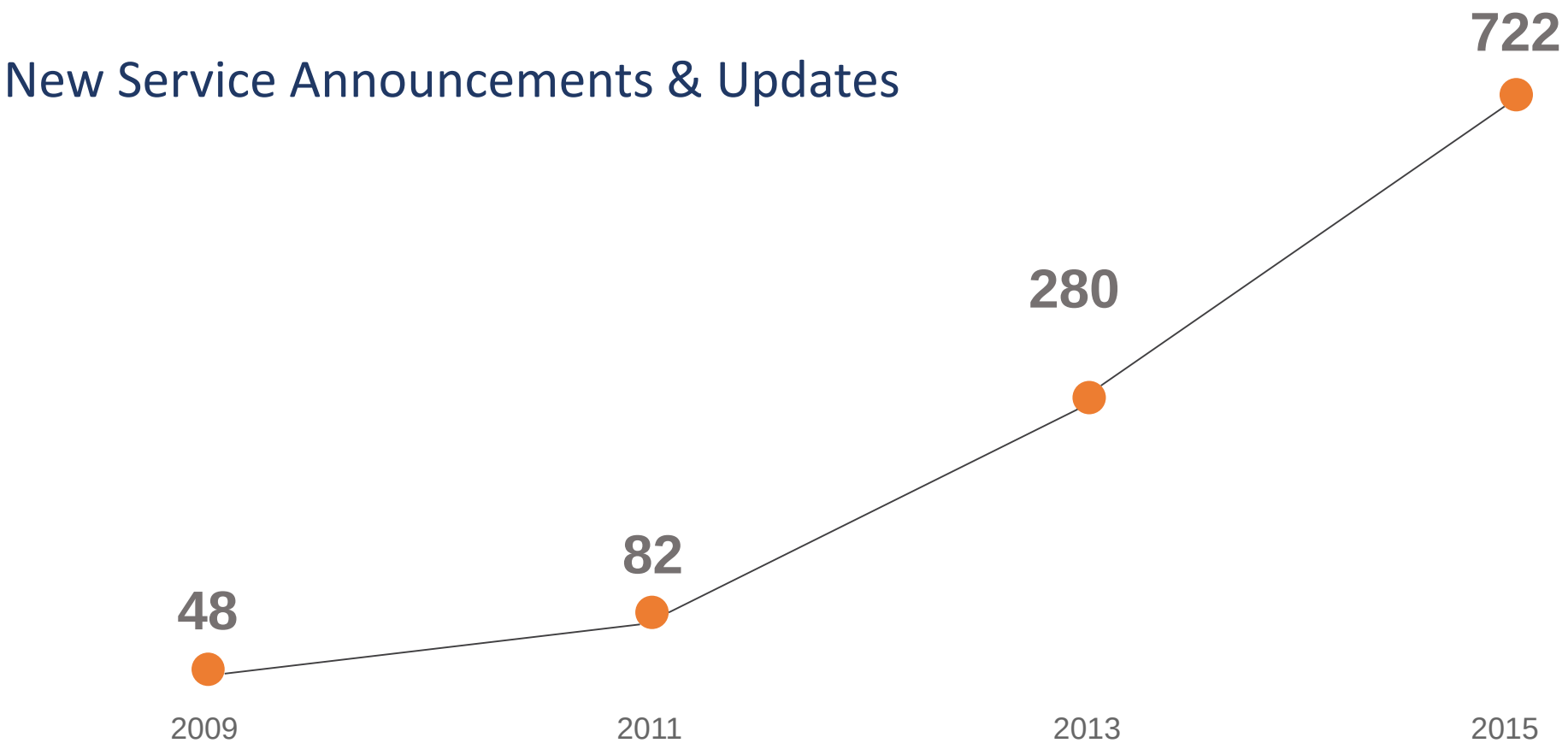



TECHNICAL & BUSINESS SUPPORT
Support
Professional Services
Partner Ecosystem
Training & Certification
Solutions Architects
Account Management
Security & Pricing Reports
HYBRID ARCHITECTURE
Integrated Networking
Direct Connect
Identity Federation
Integrated App Deployments
Data Backups
Integrated Resource Management
MARKETPLACE
Business Apps
Business Intelligence
DevOps Tools
Security
Networking
Databases
Storage
ANALYTICS
Data Warehousing
Business Intelligence
Hadoop/ Spark
Streaming Data Analysis
Streaming Data Collection
Machine Learning
Elastic Search
APP SERVICES
Queuing & Notifications
Workflow
Search
Email
Transcoding
MOBILE SERVICES
API Gateway
Identity
Sync
Mobile Analytics
Single Integrated Console
Push Notifications
DEVELOPMENT & OPERATIONS
One-click App Deployment
DevOps Resource Management
Application Lifecycle Management
Containers
Triggers
Resource Templates
IoT
Rules Engine
Device Shadows
Device SDKs
Device Gateway
Registry
ENTERPRISE APPS
Virtual Desktops
Sharing & Collaboration
Corporate Email
Backup
SECURITY & COMPLIANCE
Identity Management
Access Control
Key Management & Storage
Monitoring & Logs
Configuration Compliance
Web application firewall
Assessment and reporting
Resource & Usage Auditing
CORE SERVICES
Compute
VMs, Auto-scaling, & Load Balancing
Storage
Object, Blocks, Archival, Import/Export
CDN
Databases
Relational, NoSQL, Caching, Migration
Networking
VPC, DX, DNS
INFRASTRUCTURE
Regions
Availability Zones
Points of Presence



*As of 1 January 2017

AWS Pace of Innovation



A culture of Innovation: Experiment Often & Fail without Risk

On-Premises

Experiment Infrequently

Failure is expensive

Less Innovation

amazon web services

Experiment Often

Fail quickly at a low cost

More Innovation

Why Are Customers Adopting Cloud Computing?

Trade capital expense for variable expense

Increase speed and agility

Benefit from massive economies of scale

Stop spending money on running/maintaining data centers

Stop guessing capacity

Go global in minutes

Lower Costs with AWS Up-Front and Increase Savings as Your Usage Grows

1

Replace up-front capital expense with low variable cost

"Average of 400 servers replaced per customer"

Source: IDC Whitepaper, sponsored by Amazon, "The Business Value of Amazon Web Services Accelerates Over Time." July 2012

2

Economies of scale allow us to continually lower costs

40 Price Reductions

3

Pricing model choice to support variable & stable workloads

On-demand

Reserved

Spot

4

Save more money as you grow bigger

Tiered Pricing

Volume Discounts

Custom Pricing

Many Purchase Options to Support Different Needs

Free Tier

Get Started on AWS with free usage & no commitment

Good for Initial evaluation

On-Demand

Pay for compute capacity by the hour with no long-term commitments

Ideal for Development & Test

Reserved

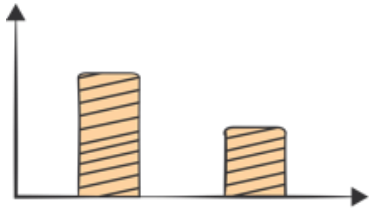
Make a low, one-time payment and receive a significant discount on the hourly charge

Ideal for baseline workloads

Spot

Bid for unused capacity, charged at a Spot Price which fluctuates based on supply and demand

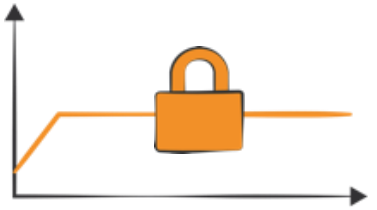
Ideal for Test scenarios, Simulations



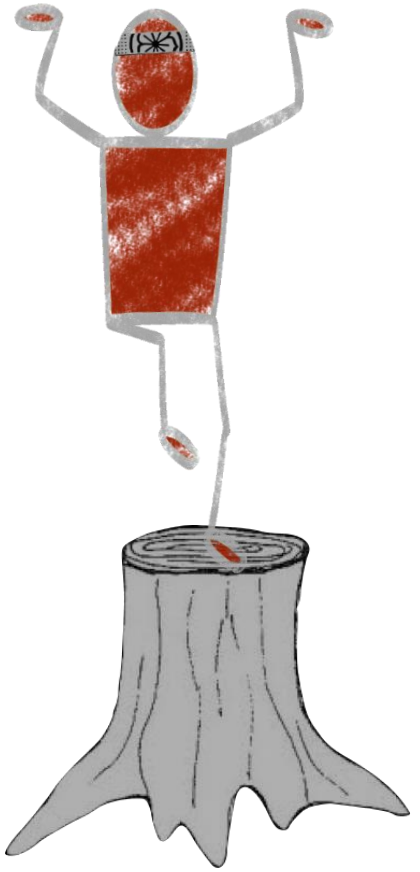
Dedicated

Launch instances within Amazon VPC that run on hardware dedicated to a single customer

For highly sensitive or compliance related workloads

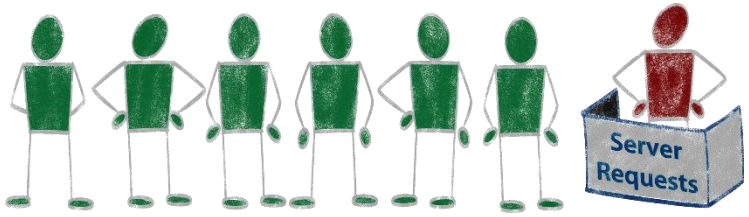


Increased agility has become the #1 reason businesses use the AWS cloud

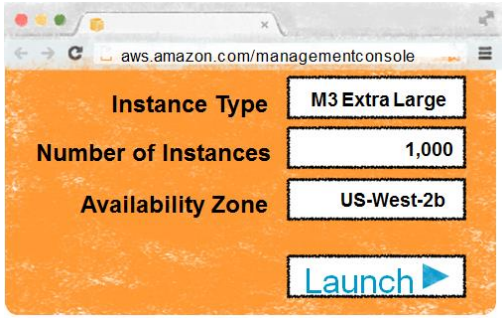


Companies Can't Afford to be Slow

Old World:
Infrastructure in Weeks



AWS:
Infrastructure in Minutes



Add New Dev Environment

Add New Prod Environment

Add New Environment in Japan

Add 1,000 Servers

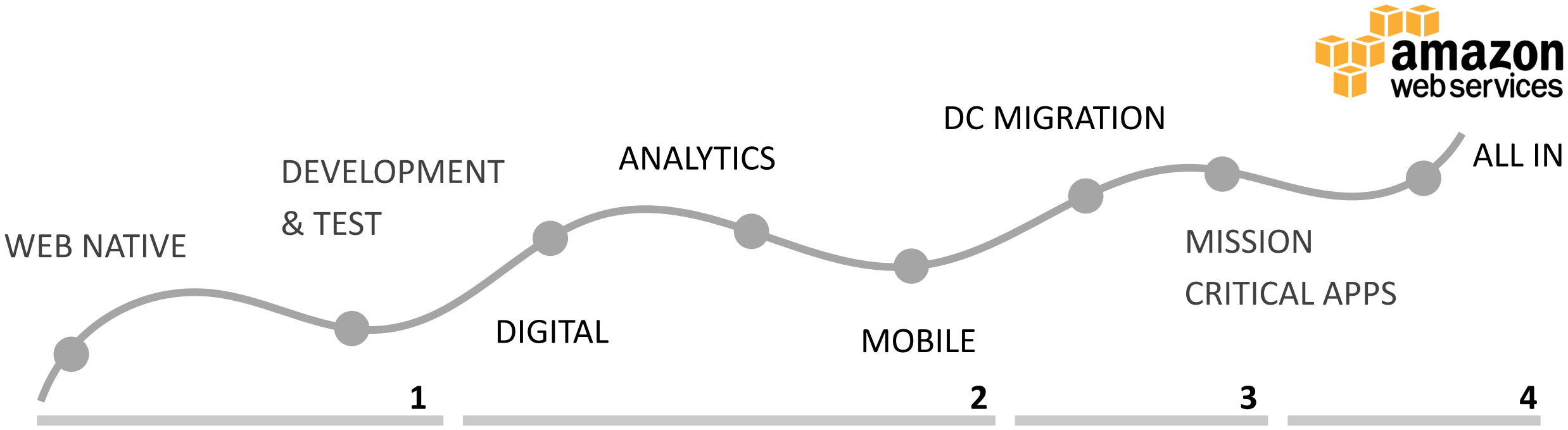
Remove 1,000 Servers

Deploy 1 PB Data Warehouse

Shut down 1 PB Data Warehouse

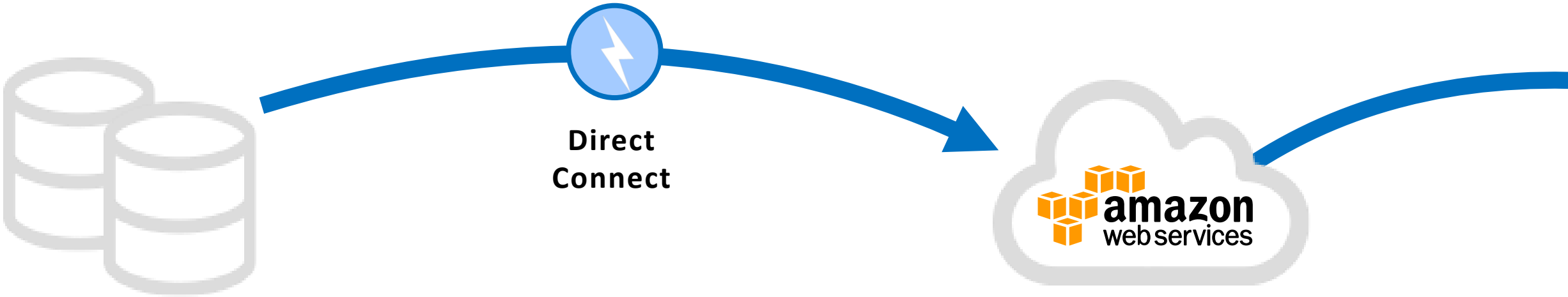
Everything changes with this kind of agility

Cloud Adoption Path



The Cloud Isn’t an “All-or-Nothing” Choice…

…it’s a journey.



On-Premises Apps

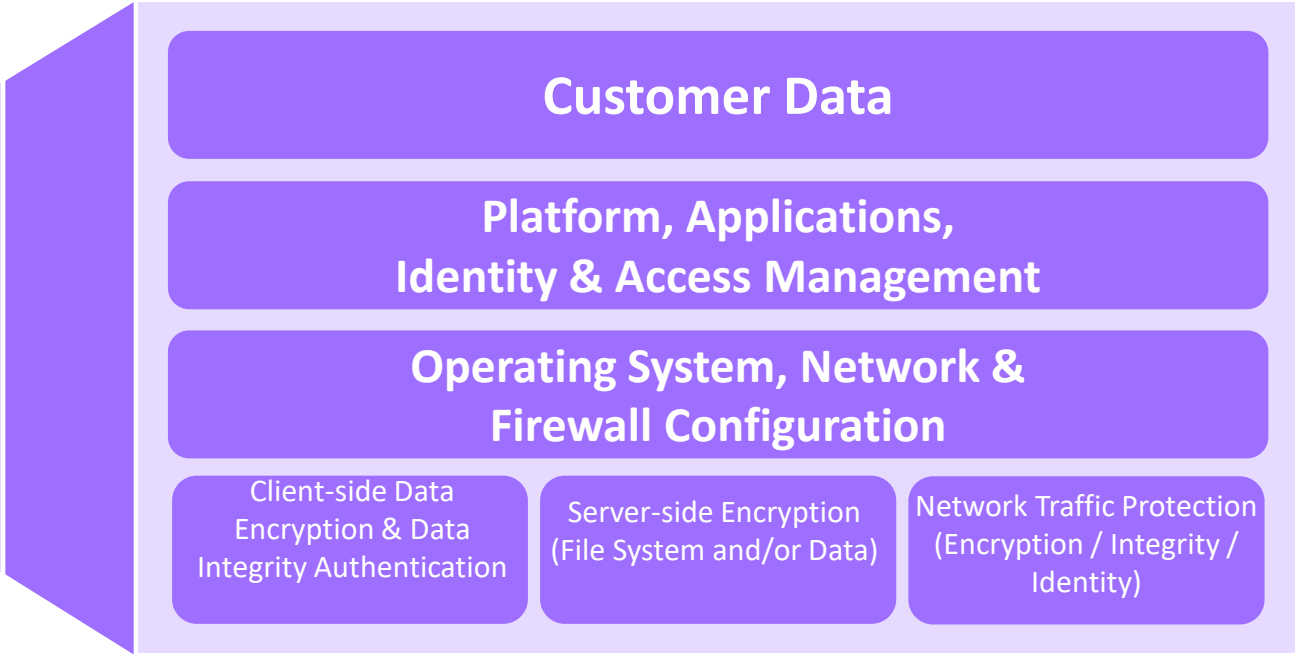
- Active Directory
- Network configuration
- Encryption
- Backup appliances

AWS Cloud Apps

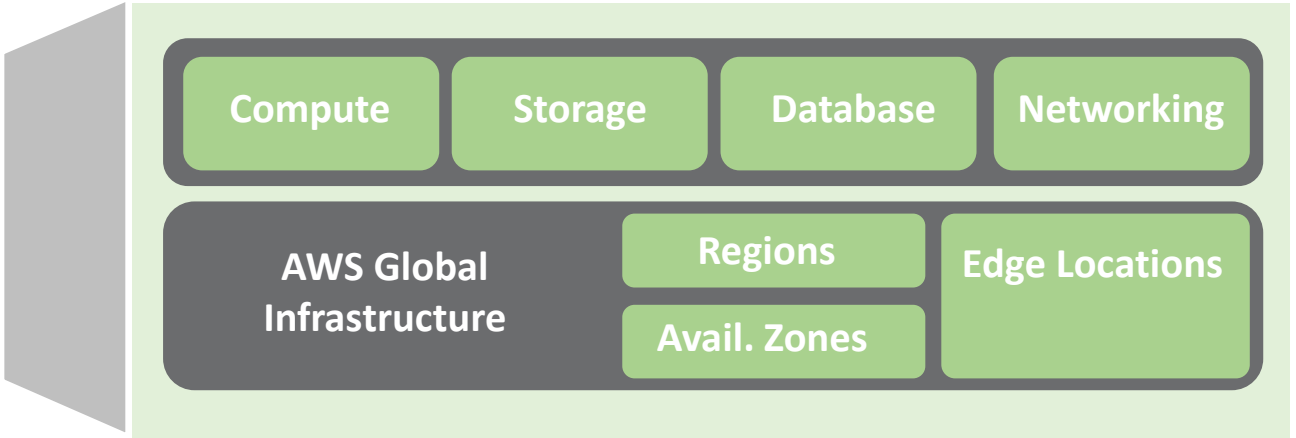
- Users and access rules (IAM)
- Your private network (VPC)
- Encryption (S3, RDS, HSM)
- Backups (Storage Gateway)

With AWS, Security Is a Shared Responsibility

Customers are responsible for security *'in'* the Cloud



AWS is responsible for security *'of'* the Cloud



Architected for Enterprise Security Requirements

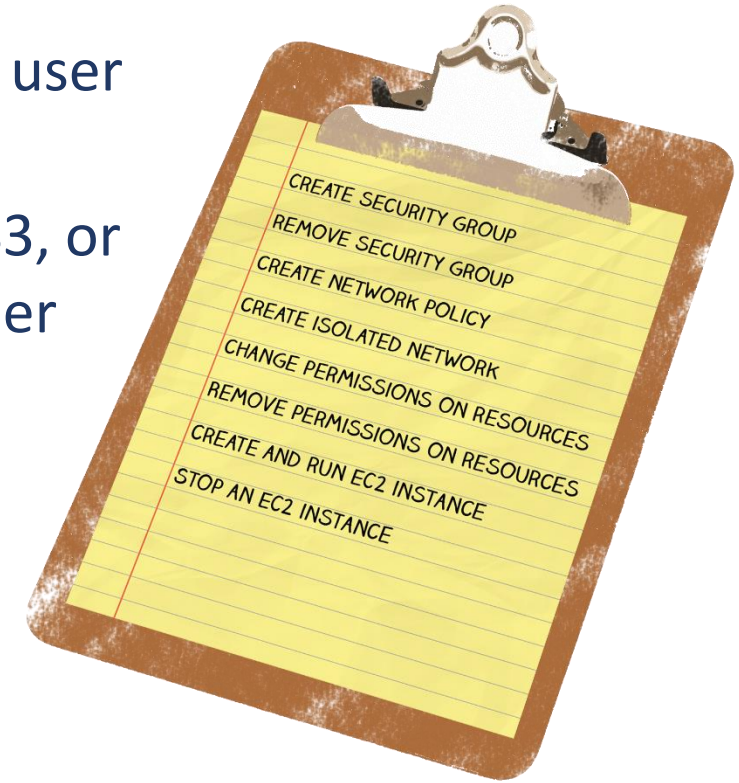
Certifications and accreditations for workloads that matter

new

AWS CloudTrail - AWS API call logging for governance & compliance

Log and review user activity

Stores data in S3, or archive to Glacier



Access a deep set of cloud security tools

Networking

Virtual Private Cloud
Isolated cloud resources

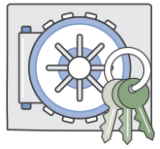
Web Application Firewall
Filter Malicious Web Traffic

Shield
DDoS protection

Certificate Manager
Provision, manage, and deploy SSL/TSL certificates

Encryption

Key Management Service
Manage creation and control of encryption keys



CloudHSM
Hardware-based key storage

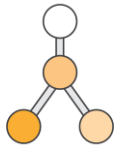
Server-Side Encryption
Flexible data encryption options

Identity & Management

IAM
Manage user access and encryption keys

SAML Federation
SAML 2.0 support to allow on-prem identity integration

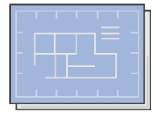
Directory Service
Host and manage Microsoft Active Directory



Organizations
Manage settings for multiple accounts

Compliance

Service Catalog
Create and use standardized products



Config
Track resource inventory and changes

CloudTrail
Track user activity and API usage

CloudWatch
Monitor resources and applications

Inspector
Analyze application security

Artifact
Self-service for AWS' compliance reports

More assurance programs than anyone

Certifications / Attestations	C5 [Germany], Cyber Essentials Plus [UK], DoD SRG, FedRAMP, FIPS, IRAP [Australia], ISO 27001, ISO 27017, ISO 27018, ISO 9001, MLPS Level 3 [China], MTCS Tier 3 [Singapore], PCI DSS Level 1, SEC Rule 17a-4(f), SOC 1, SOC 2, SOC 3
Laws, Regulations, and Privacy	DNB [Netherlands], DPA – 1998 [U.K.], EAR, EU Data Protection Directive, EU Model Clauses, FERPA, Gramm-Leach-Bliley Act (GLBA), HIPAA, HITECH, IRS 1075, ITAR, My Number Act [Japan], PDPA – 2010 [Malaysia], PDPA – 2012 [Singapore], PIPEDA [Canada], Privacy Act [Australia], Privacy Act [New Zealand], Spanish DPA Authorization, VPAT / Section 508
Alignments and Frameworks	CIS, CJIS, CLIA, CMS Edge, CMSR, CSA, EU-US Privacy Shield, FISC [Japan], FISMA, G-Cloud [U.K.], GxP (FDA CFR 21 Part 11), ICREA, IT Grundschutz [Germany], MITA 3.0, MPAA, NIST, PHR, UK Cloud Security Principles, Uptime Institute Tiers

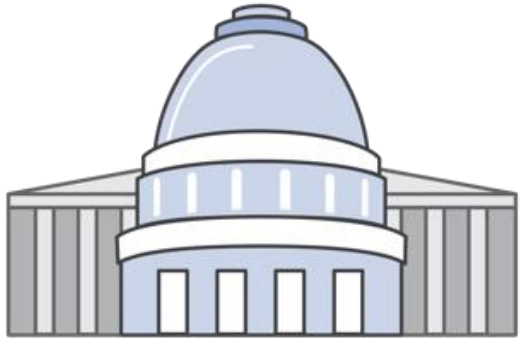
Amazon and GDPR

- DPA (med model clasues) godkänt av Workingparty 29
- Amazons tjänster fullt godkända för GDPR
- GDPR DPA tillgängligt 25e maj 2018
- Medlem i CISPE
- Tjänster godkända av CISPEs Code of Conduct

Best practice:
Medan vi väntar..

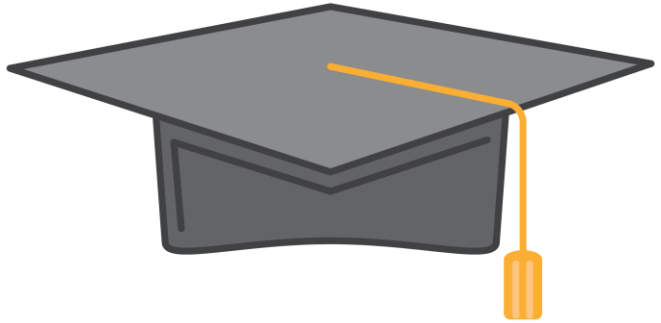
- Territorial Reach
- Data subject rights
- Data Breach notifications
- Data Protection Officer
- Data Protection Impact Assessment
- Data Processing Agreement

AWS in the Public Sector



2,300+

government agencies



7,000+

educational institutions

22,000+

nonprofit organizations

Education Cases

2U
coursera
SF State
The University of Western Australia
Harvard Medical School
UMUC
NYU Langone Medical Center
Gujarat Technical University
Berkeley University of California
KNEWTON
Ivy Tech Community College
The University of Chicago
UCAS
University of Notre Dame
ellucian.
St Luke's anglican school
faith · performance · honour
Gibraltar Area Schools
Seton Hall University
Open Universities Australia
Edmodo
PennState
1855
University of Maryland
Universität Heidelberg
Zukunft seit 1386
canvas
by instructure
東京大学
The University of Tokyo
Universiteit Gent
remind
Villanova University
Ignite Change. Go Nova.
Civitas Learning
Santillana
Galileo Universidad
La Revolución en la Educación
Instituto de Empresa
kidaptive
GEORGETOWN UNIVERSITY
SANBI
Biodiversity for Life
Shinshu University
National Novel Writing Month
Icahn School of Medicine at Mount Sinai
icfes
mejor saber
echo 360
digitalCHALK
Baylor College of Medicine

AWS Educate Value Proposition

Grants for free usage of AWS services

Labs and training on cloud topics and AWS products

Open course content by leading professors and AWS

Communities that share best practices virtually and in person

- ✓ Positively impact students around the world
- ✓ Curriculum change
- ✓ Student app development and entrepreneurship
- ✓ Accelerate hiring pipeline

+JOBS

More than 500 institutions have joined

Launched March 2015:

- Global leaders: computer science, entrepreneurship, big data and business schools
- Educators and students from around the world
- Actively sharing curricular assets

Carnegie Mellon University

UNIVERSITY of WASHINGTON

SEOUL NATIONAL UNIVERSITY

CORNELL NYCTECH

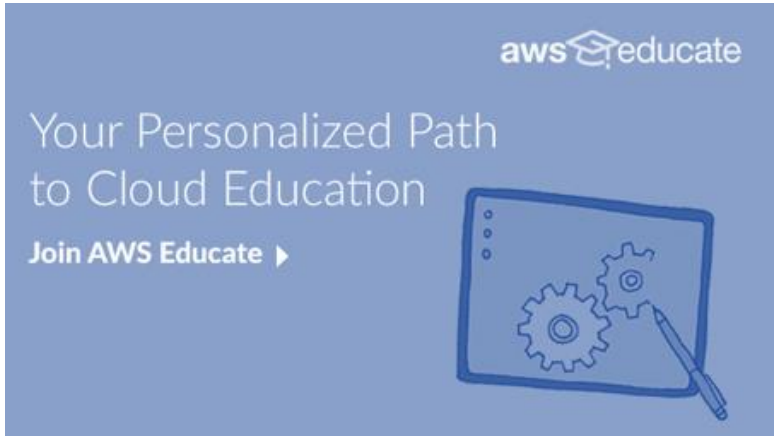
CIT CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ

IHS SOGANG UNIVERSITY

Miami Dade College

National College of Ireland

TECHNISCHE UNIVERSITÄT MÜNCHEN


aws educate
Your Personalized Path
to Cloud Education
Join AWS Educate

aws educate
Earn Your Digital Credentials
for Your Cloud Career
Join AWS Educate

aws educate
Find Your Cloud Career
on the Job Board
Join AWS Educate

aws educate
Create Your
Cloud Portfolio.
Join AWS Educate

AWS is positioned as a Leader in the Gartner Magic Quadrant for Cloud Infrastructure as a Service (IAAS)

Figure 1. Magic Quadrant for Cloud Infrastructure as a Service, Worldwide

Source: Gartner (August 2016)

*Gartner, Magic Quadrant for Cloud Infrastructure as a Service, Worldwide, Leong, Lydia, Petri, Gregor, Gill, Bob, Dorosh, Mike, August 32016

This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from AWS : http://www.gartner.com/doc/reprints?id=1-2G2O5FC&ct=150519&st=sb

Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

Teaching Tomorrow's Cloud Workforce Today