Module 1
Introduction and History of AWS

Amazon History

1994: Jeff Bezos incorporated the company.

1995: Amazon.com launched its online bookstore.

2005: Amazon Publishing was launched.

2006: Amazon Web Services (AWS) was launched.

2007: Kindle was launched.

2011: Amazon Fresh was launched.

2012: Amazon Game Studios was launched.

2013: Amazon Art was launched.

2014: Amazon Prime Now was launched.

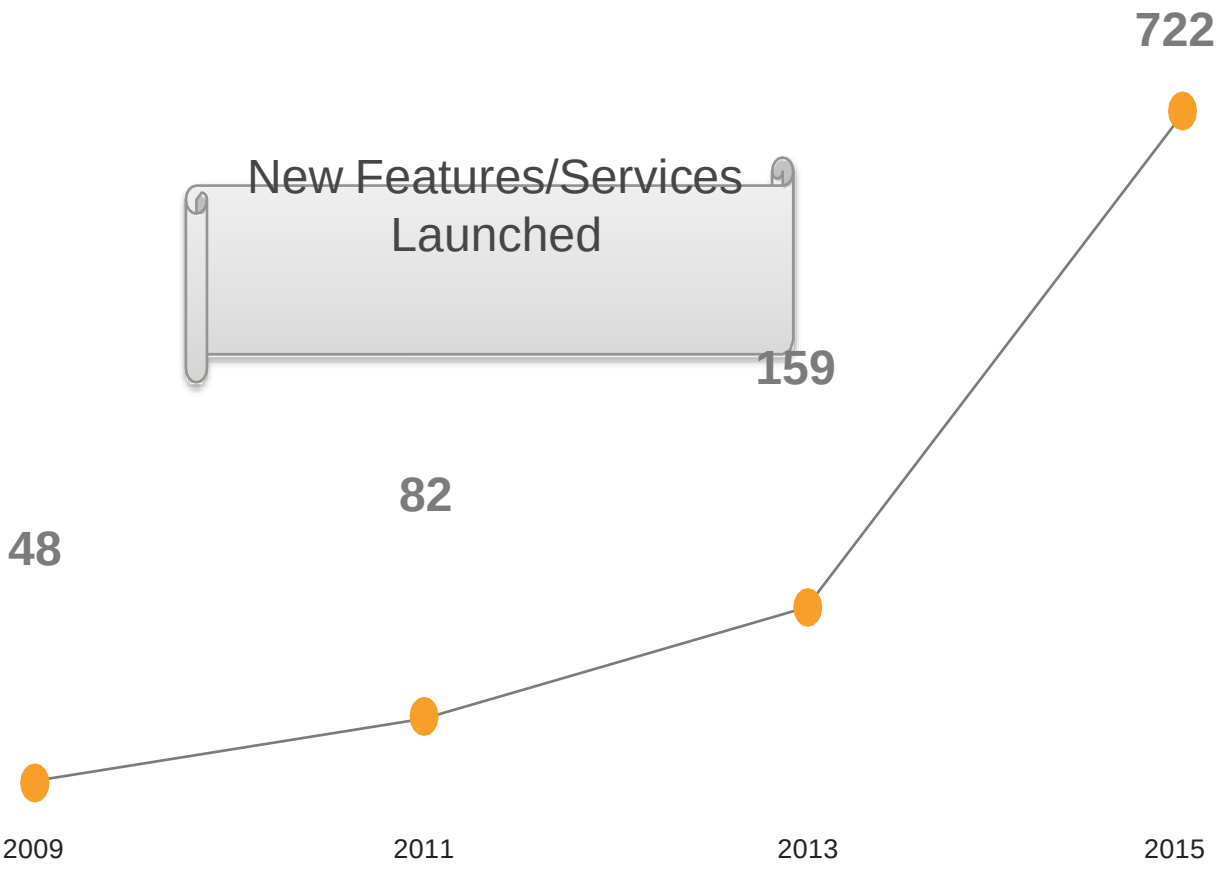
2015: Amazon Home Services and Amazon Echo were launched.

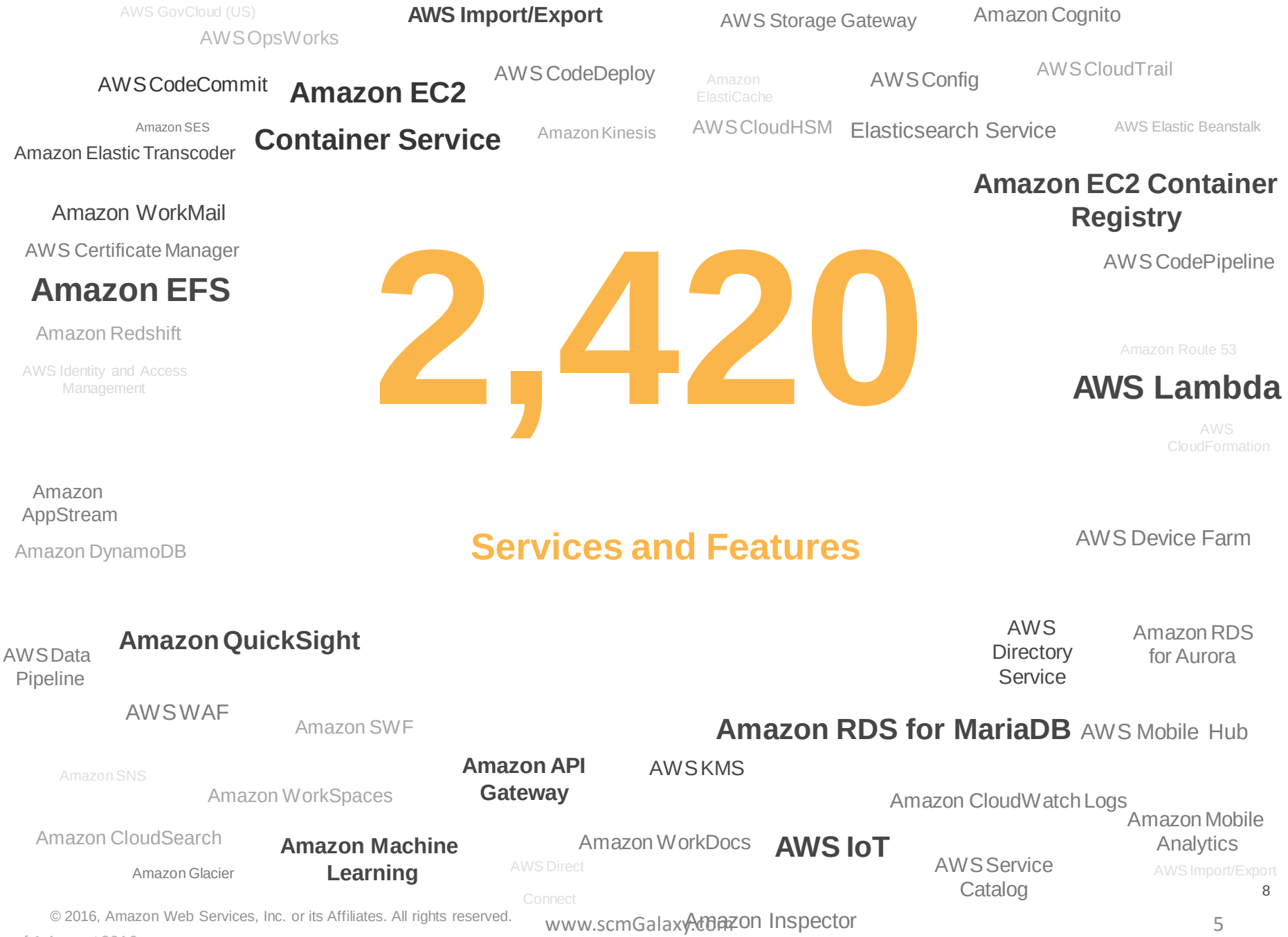
Amazon Web Services (AWS)

Enable businesses and developers to use web services to build scalable,

sophisticated applications.

AWS Rapid Pace of Innovation





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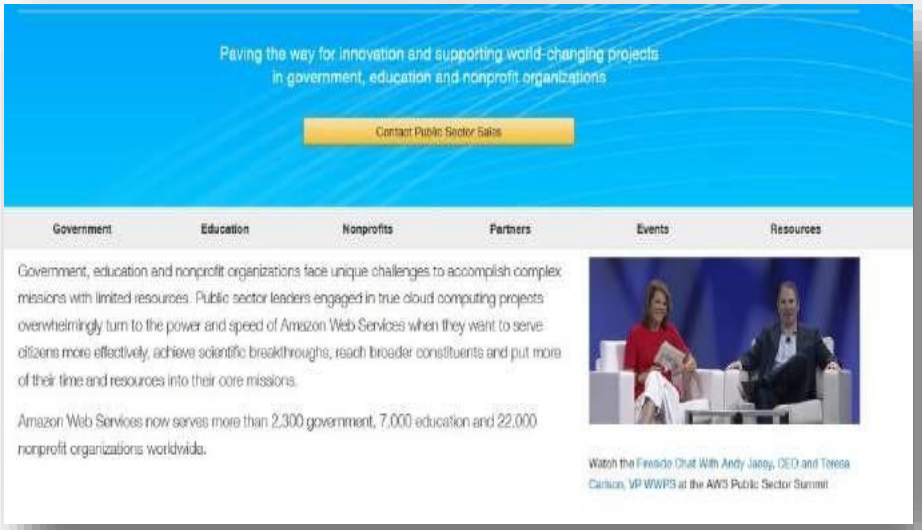
As of 1 August 2016

AWS Customers

Enterprise Customers

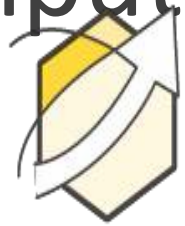
Public Sector Customers



Startup Customers

Advantages and Benefits of AWS Cloud Computing

Trade capital expense for variable expense.



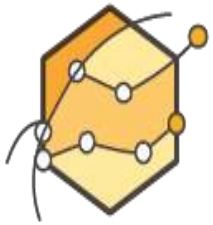
Increase speed and agility.

Benefit from massive economies of scale.

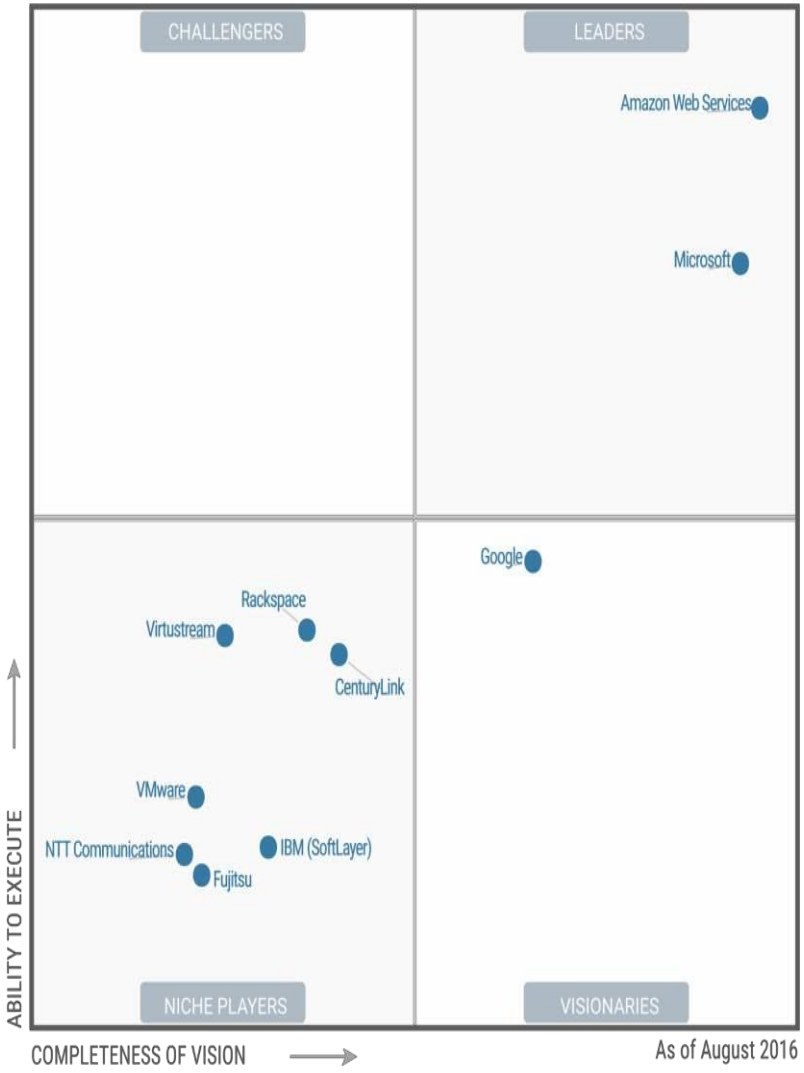
Stop spending money on running and maintaining data centers.

Stop guessing capacity.

Go global in minutes.



Gartner Magic Quadrant for Cloud Infrastructure as a Service, Worldwide



Gartner "Magic Quadrant for Cloud Infrastructure as a Service, Worldwide," Lydia Leong, Gregor Petri, Bob Gill, Mike Dorosh, 03 August 2016. This Magic Quadrant graphic was published by Gartner, Inc. as part of a larger research note and should be evaluated in the context of the entire report. The Gartner report is available at https://aws.amazon.com/resources/analyst-reports/ . 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.

AWS Core Infrastructure and

Traditional Infrastructure

Security

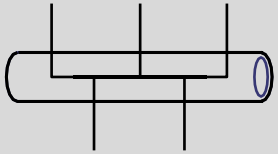

Firewalls


ACLs


Administrators

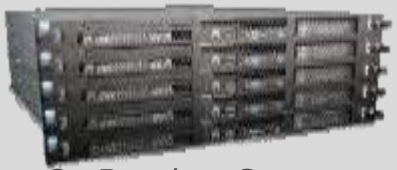
Networking


Router


Network Pipeline


Switch

Servers

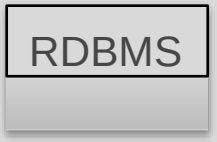

On-Premises Servers

Storage and Database


DAS


SAN


NAS



Amazon Web Services

Security


Security Groups


Network ACLs


AWS IAM

Networking


ELB


Network

Servers


AMI


Amazon EC2 Instances

Storage and Database


Amazon EBS


Amazon EFS


Amazon S3


Amazon RDS

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AWS Cloud Computing

Applications

Virtual Desktops

Collaboration and Sharing

Platform Services

Databases

Relational

NoSQL

Caching

Analytics

Cluster Computing

Real-time

Data Warehouse

Data Workflows

App Services

Queuing

Orchestration

App Streaming

Transcoding

Email

Search

Deployment and Management

Containers

Dev/ops Tools

Resource Templates

Usage Tracking

Monitoring and Logs

Mobile Services

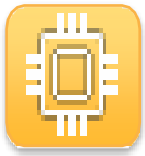
Identity

Sync

Mobile Analytics

Notifications

Foundation Services



Compute
(Virtual, Auto-scaling ar.
Load Balancing)

Networking

Storage
(Object, Block and Archive)

Infrastructure

Regions

Availability Zones

Edge Locations

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AWS Foundation Services

Compute

Amazon EC2

AWS Lambda

Amazon EC2 Container Service

Elastic Load Balancing

AWS Elastic Beanstalk

Auto Scaling

Network

Amazon VPC

Amazon Route 53

AWS Direct Connect

Storage

Amazon S3

Amazon CloudFront

Amazon Glacier

Amazon Elastic File System

AWS Storage Gateway

AWS Import/Export

Security & Identity

AWS Identity and Access Management

AWS Directory Service

AWS KMS

AWS Cloud HSM

AWS WAF

Applications

Amazon WorkDocs

Amazon WorkSpaces

Amazon WorkMail

AWS Platform Services

Databases

Amazon RDS

Amazon DynamoDB

Amazon ElastiCache

Amazon Redshift

AWS Database Migration Service

Analytics

Amazon EMR

AWS Data Pipeline

Amazon Elasticsearch Service

Amazon Machine Learning

Amazon Kinesis

App Services

Amazon SES

Amazon AppStream

Amazon SWF

Amazon Elastic Transcoder

Amazon CloudSearch

Amazon SQS

Amazon API Gateway

Management Tools

AWS CloudFormation

AWS Config

AWS CloudTrail

AWS Service Catalog

AWS OpsWorks

Amazon CloudWatch

Trusted Advisor

AWS Certificate Manager

Developer Tools

AWS CodeCommit

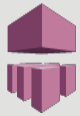
AWS CodeDeploy

AWS CodePipeline

Mobile Services

Amazon Cognito

AWS Device Farm



Amazon SNS

Amazon Mobile Analytics

Mobile Hub

Internet of Things

AWS IoT

AWS Global Infrastructure

Regions

- Geographic locations
- Consist of **at least two** Availability Zones

Availability Zones

- Clusters of data centers
- **Isolated from failures** in other Availability Zones

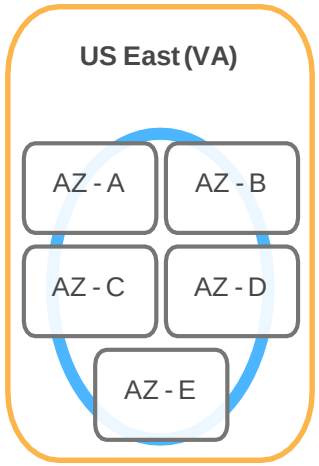
AWS Global Infrastructure

AWS Global Infrastructure

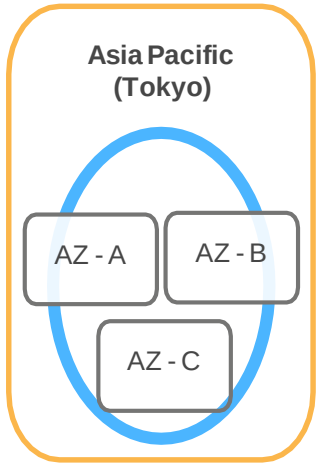
At least 2 Availability Zones per region.

Examples:

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

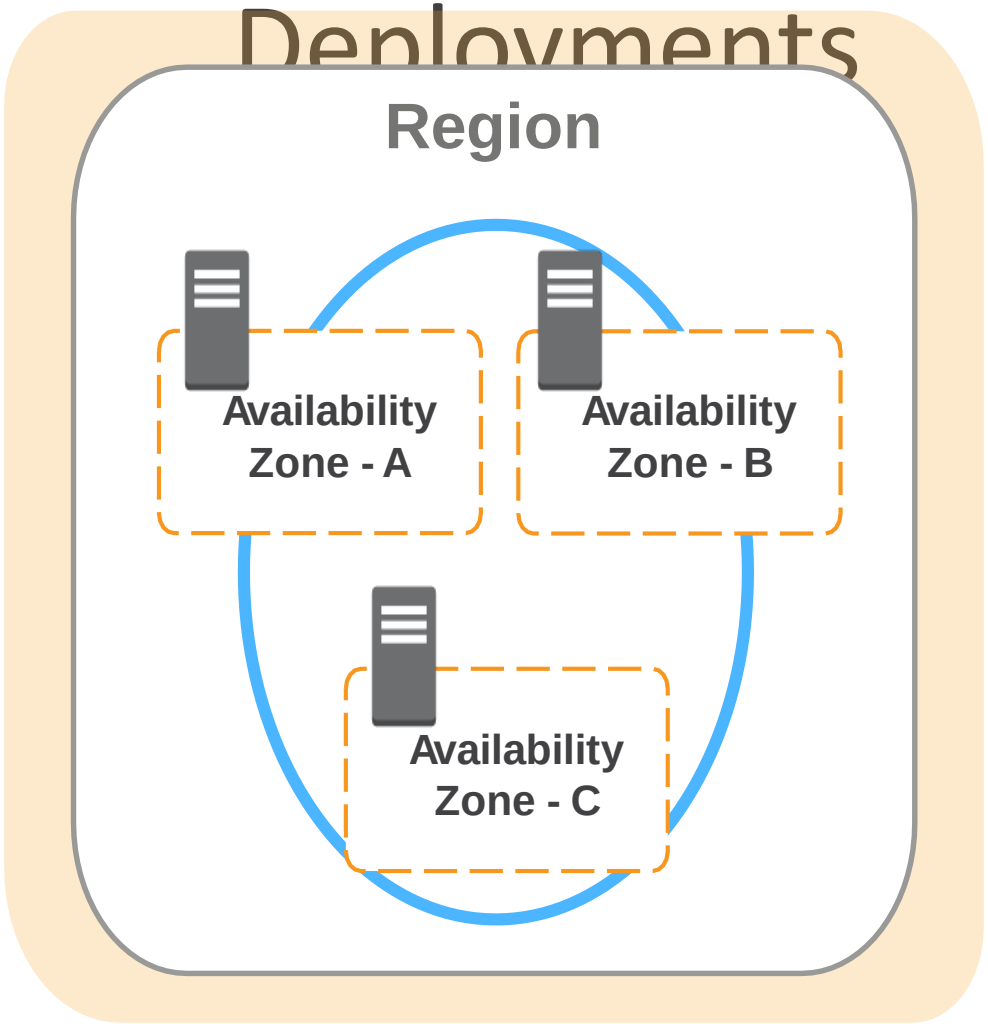


- Asia Pacific (Tokyo)
  - ap-northeast-1a
  - ap-northeast-1b
  - ap-northeast-1c



Note: Conceptual drawing only. The number of Availability Zones (AZ) may vary.

High Availability Using Multi-AZ Deployments



AWS Global Infrastructure

50+ AWS Edge locations - local points of presence commonly supporting AWS services like:

- Amazon Route 53
- Amazon CloudFront

AWS Management Console Demonstration

Knowledge Check

Q: What is the AWS term for physically distinct groups of **data centers** within a region?

Availability Zone

True or False: There are more **Regions** than **Edge locations**.

False

True or False: AWS owns and maintains the infrastructure required for application services. You provision and use them as needed.

True

Q: How do **Availability Zones** in the same region differ?

Each Availability Zone is isolated, but the Availability Zones in a region are connected through low-latency links.