

# Lets Pick AWS Cloud





# Amazon Web Services



- **Amazon Web Services (AWS)** is a secure cloud services platform, offering compute power, database storage, content delivery and other functionality to help businesses scale and grow.
- Amazon Web Services (**AWS**) offers a broad set of global compute, storage, database, analytics, application, and deployment services that help organizations move faster, lower IT costs, and scale applications.

# AWS Platform Services



- **Foundation services:** This is generally the pillars on which the entire AWS infrastructure commonly runs on, including the compute, storage, network, and databases.
- **Application services:** This class of services is usually more specific and generally used in conjunction with the foundation services to add functionality to your applications.
- **Administration services:** This class deals with all aspects of your AWS environment, primarily with IAM tools, monitoring your AWS services and resources, application deployments, and automation.

# AWS Foundation Services



## AWS Foundation Services



# AWS Certifications



Specialty Tier

Advanced  
Networking

Big Data

Security

Machine  
Learning

Professional Tier

Certified Solutions Architect  
Professional

Devops Professional

Associate Tier

Certified Solutions  
Architect Associate

Certified Developer  
Associate

Certified Sysops  
Administrator  
Associate

Practitioner Tier

Certified Cloud  
Practitioner

# Certi Difficulty Levels



Certified  
Cloud  
Practitioner

Solutions  
Architect  
Associate

Sysops  
Administrator  
Associate

Developer  
Associate

Security  
Specialty

Big Data  
Specialty

Advanced  
Networking  
Specialty

Machine  
Learning  
Specialty

Devops Pro

Solutions  
Architect  
Professional

Easy

Medium

Hard

# AWS Global Infrastructure



## Region & Number of Availability Zones

<b>US East</b>	<b>China</b>
N. Virginia (6), Ohio (3)	Beijing (2)
<b>US West</b>	<b>Europe</b>
N. California (3), Oregon (3)	Frankfurt (3), Ireland (3), London (2)
<b>Asia Pacific</b>	<b>South America</b>
Mumbai (2), Seoul (2), Singapore (2), Sydney (3), Tokyo (3)	São Paulo (3)
<b>AWS GovCloud (US-West)</b>	<b>AWS GovCloud (US-West)</b> (2)
<b>Canada</b>	
Central (2)	

- New Region (coming soon)
- Bahrain
- China 
- France
- Hong Kong
- Sweden
- AWS GovCloud (US-East)

19 Regions & 57 Availability Zones – by Dec 2018  
5 More Regions & 15 More Availability Zones - 2019

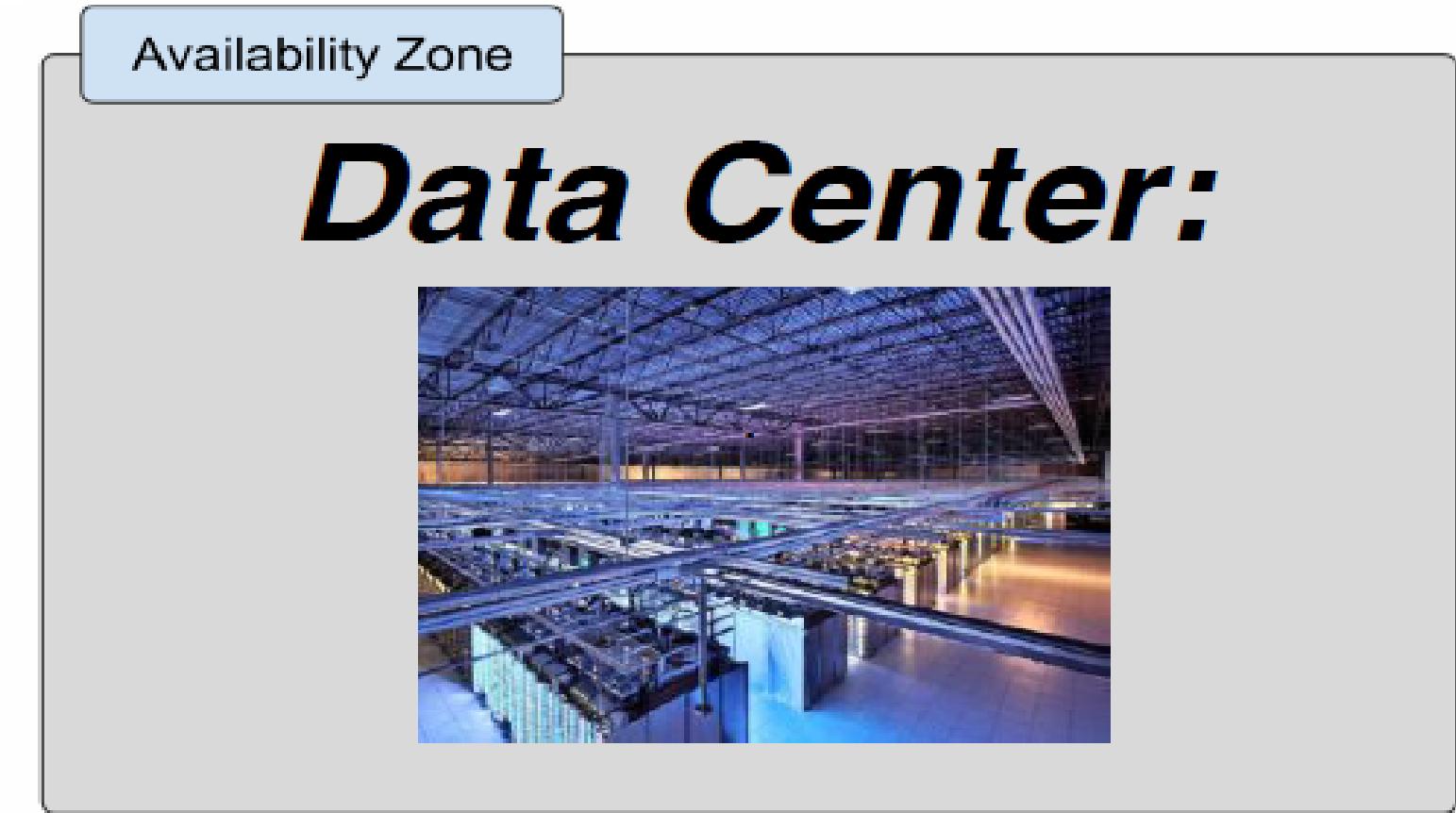
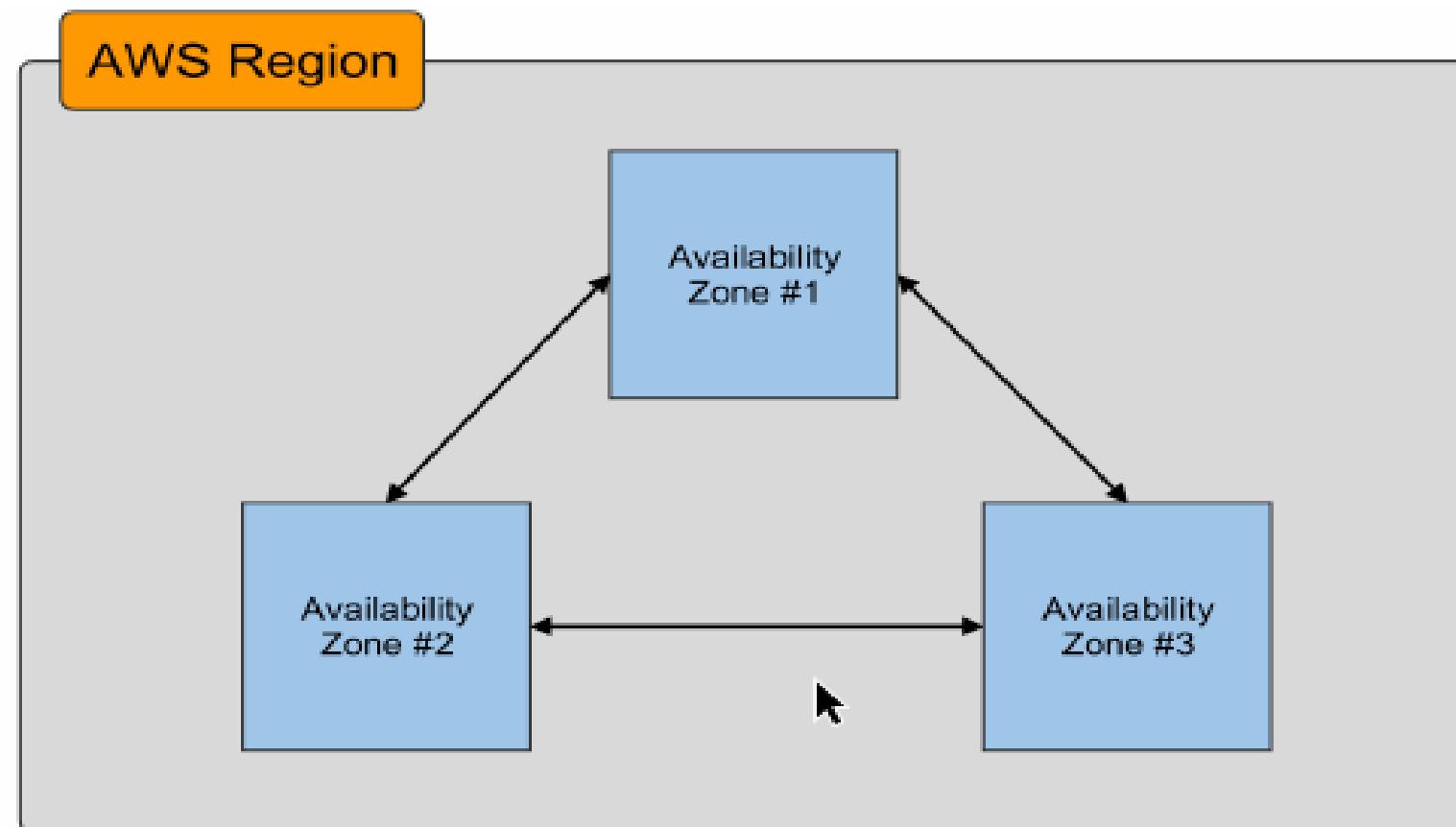
# What is a Region & AZ



- A Region is a Geographical area. Each Region consists of 2 (or more) Availability Zones.
- An Availability zone(AZ) is a Simply a Data Center. Because they are close to each other they are counted as 1 AZ.
- A list of regions and their corresponding codes is provided here for your reference.
- The code is basically how AWS refers to its multiple regions:

Region	Name
US West (Oregon) Region	us-west-2
US West (N. California) Region	us-west-1
US East (Ohio) Region	us-east-2
US East (N. Virginia) Region	us-east-1
Asia Pacific (Mumbai) Region	ap-south-1
Asia Pacific (Seoul) Region	ap-northeast-2
Asia Pacific (Singapore) Region	ap-southeast-1
Asia Pacific (Sydney) Region	ap-southeast-2
Asia Pacific (Tokyo) Region	ap-northeast-1
Canada (Central) Region	ca-central-1
China (Beijing) Region	cn-north-1
EU (Frankfurt) Region	eu-central-1
EU (Ireland) Region	eu-west-1

# What is a Region & AZ



# AWS High Level Services



IOT		Game Development
Customer Engagement	Business Applications	Desktop & App Streaming
AR & VR	Application Integration	AWS Cost Management
Analytics	Security, Identity & Compliance	Mobile
Management & Governance	Media Services	Machine Learning
Robotics	Blockchain	Satellite
Migration & Transfer	Network & Content Delivery	Developer Tools
Compute	Storage	Databases
AWS Global Infrastructure		

# AWS High Level Services



Desktop & App Streaming

Analytics

Security, Identity & Compliance

Management & Governance

Machine Learning

Migration & Transfer

Network & Content Delivery

Compute

Storage

Databases

AWS Global Infrastructure

# AWS High Level Services



Security, Identity & Compliance

Network & Content Delivery

Compute

Storage

Databases

AWS Global Infrastructure

# AWS Services



- Compute
- Storage
- Database
- Migration
- Network and Content Delivery
- Management Tools
- Security & Identity Compliance
- Application Services

# Compute Services



- **Amazon EC2** (Provides virtual servers in the AWS cloud)
- **Elastic Load Balancing** (Distributes network traffic across your set of virtual servers)
- **Auto Scaling** (Automatically scales your set of virtual servers based on changes in demand)
- **Elastic BeanStalk** (The Elastic Beanstalk helps in Easy & Quick deployment of applications)
- **LIGHTSAIL** (**Amazon Lightsail** is the easiest way to get started with **AWS** for developers who just need virtual private servers. **Lightsail** includes everything you need to launch your project quickly – a virtual machine, SSD-based storage, data transfer, DNS management, and a static IP – for a low, predictable price.)
- **AWS Lambda** (Runs your code on virtual servers from Amazon EC2 in response to events)
- **Amazon ECS** (Provides Docker containers on virtual servers from Amazon EC2)

# Storage Services



- [Amazon S3](#) (Scalable storage in the AWS cloud)
- [Amazon EFS](#) (Elastic file system for Linux)
- [Amazon EBS](#) (Network attached storage volumes for your virtual servers)
- [Amazon Glacier](#) (Low-cost archival storage)
- [Amazon SnowBall](#) (Transfer large data)
- [Amazon Storage Gateway](#)

# Database Services



- Amazon RDS (Provides managed relational databases)
- Amazon Redshift (A fast, fully-managed, petabyte-scale data warehouse)
- Amazon DynamoDB (Provides managed NoSQL databases)
- Amazon ElastiCache

# Networking & Content Delivery



- **Amazon VPC** (Provides an isolated virtual network for your virtual servers)
- **Amazon Route 53** (Routes traffic to your domain name to a resource, such as a virtual server or a load balancer)
- Amazon DirectConnect
- **CloudFront** (A global content delivery network (CDN))

# Security and Identity Services



- **AWS Identity and Access Management** (Manage user access to AWS resources through policies)
- **AWS Directory Service** (Manage user access to AWS through your existing Microsoft Active Directory, or a directory you create in the AWS cloud)
- **AWS Inspector** (Amazon Inspector enables you to analyze the behavior of your AWS resources and helps you identify potential security issues.)

# Application Services



- **Amazon CloudSearch** (Add search to your website)
- **Amazon Elastic Transcoder** (Convert digital media into the formats required by your users' devices)
- **Amazon SES** (Send email from the cloud)
- **Amazon SNS** (Send or receive notifications from the cloud)
- **Amazon SQS** (Enable components in your application to store data in a queue to be retrieved other components)

# Management Tools



- [Amazon CloudWatch](#) (Monitor resources and applications)
- AWS CloudFormation (Provision your AWS resources using templates)
- [AWS CloudTrail](#) (Track the usage history for your AWS resources by logging AWS API calls)
- AWS Config (View the current and previous configuration of your AWS resources, and monitor changes to your AWS resources)
- **Others (If time permits)**
  - Amazon Kinesis
  - Data Pipeline
  - Cloud Formation
  - AWS Lambda

# Support Plans provided by AWS



- **Basic Support:**
  - This is the most basic level of support provided by AWS.
  - This support level provides you with access to the AWS community forums.
  - You can additionally contact customer services for any queries related to your account and bill generation.
  
- **Developer Support:**
  - This is a paid support service (\$29 per month).
  - You can create and raise tickets for your support case, which is generally answered within 12 working hours.

# Support Plans provided by AWS



- **Business Support:**
  - This is a paid support service as well and is generally meant for enterprise-level customers running production workloads on AWS.
  - The SLAs for this support are much higher as a case has to be answered within an hour from its creation.
- **Enterprise Support:**
  - A paid support service with the highest SLA available (15 minutes);
  - these cases are generally handled by a separate team at AWS called the Technical Account Manager (TAM) who are subject matter experts in their own fields.
  - Pay \$ 15,000 per month

# Going to AWS Console



# Don't Panic



# AWS Console in 2015



AWS Services

user.name ▾ Oregon ▾ Support ▾

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**Compute**

- EC2** Virtual Servers in the Cloud
- Lambda PREVIEW** Run Code in Response to Events

**Storage & Content Delivery**

- S3** Scalable Storage in the Cloud
- Storage Gateway** Integrates On-Premises IT Environments with Cloud Storage
- Glacier** Archive Storage in the Cloud
- CloudFront** Global Content Delivery Network

**Database**

- RDS** MySQL, Postgres, Oracle, SQL Server, and Amazon Aurora
- DynamoDB** Predictable and Scalable NoSQL Data Store
- ElastiCache** In-Memory Cache
- Redshift** Managed Petabyte-Scale Data Warehouse Service

**Networking**

- VPC** Isolated Cloud Resources
- Direct Connect** Dedicated Network Connection to AWS
- Route 53** Scalable DNS and Domain Name Registration

**Administration & Security**

- Directory Service** Managed Directories in the Cloud
- Identity & Access Management** Access Control and Key Management
- Trusted Advisor** AWS Cloud Optimization Expert
- CloudTrail** User Activity and Change Tracking
- Config PREVIEW** Resource Configurations and Inventory
- CloudWatch** Resource and Application Monitoring

**Deployment & Management**

- Elastic Beanstalk** AWS Application Container
- OpsWorks** DevOps Application Management Service
- CloudFormation** Templated AWS Resource Creation
- CodeDeploy** Automated Deployments

**Analytics**

- EMR** Managed Hadoop Framework
- Kinesis** Real-time Processing of Streaming Big Data
- Data Pipeline** Orchestration for Data-Driven Workflows

**Application Services**

- SQS** Message Queue Service
- SWF** Workflow Service for Coordinating Application Components
- AppStream** Low Latency Application Streaming
- Elastic Transcoder** Easy-to-use Scalable Media Transcoding
- SES** Email Sending Service
- CloudSearch** Managed Search Service

**Mobile Services**

- Cognito** User Identity and App Data Synchronization
- Mobile Analytics** Understand App Usage Data at Scale
- SNS** Push Notification Service

**Enterprise Applications**

- WorkSpaces** Desktops in the Cloud
- Zocalo** Secure Enterprise Storage and Sharing Service

**Additional Resources**

**Getting Started**  
See our documentation to get started and learn more about how to use our services.

**AWS Console Mobile App**  
View your resources on the go with our AWS Console mobile app, available from Amazon Appstore, Google Play, or iTunes.

**AWS Marketplace**  
Find and buy software, launch with 1-Click and pay by the hour.

**Service Health**

All services operating normally.  
Updated: Dec 18 2014 10:31:00 GMT-0600

**Service Health Dashboard**

**Set Start Page**

Console Home

# AWS Console in 2015



Servic... Resource Groups ★

History

Console Home

Search services

Group A-Z

**Compute**

- EC2
- EC2 Container Service
- Lightsail
- Elastic Beanstalk
- Lambda
- Batch

**Storage**

- S3
- EFS
- Glacier
- Storage Gateway

**Database**

- RDS
- DynamoDB
- ElastiCache
- Redshift

**Networking & Content Deli...**

- VPC
- CloudFront
- Direct Connect
- Route 53

**Migration**

- DMS
- Server Migration
- Snowball

**Developer Tools**

- CodeCommit
- CodeBuild
- CodeDeploy
- CodePipeline

**Management Tools**

- CloudWatch
- CloudFormation
- CloudTrail
- Config
- OpsWorks
- Service Catalog
- Trusted Advisor
- Managed Services
- Application Discovery Service

**Security, Identity & Compli...**

- IAM
- Inspector
- Certificate Manager
- Directory Service
- WAF & Shield
- Compliance Reports

**Analytics**

- Athena
- EMR
- CloudSearch
- Elasticsearch Service
- Kinesis
- Data Pipeline
- QuickSight

**Application Services**

- Step Functions
- SWF
- API Gateway
- Elastic Transcoder

**Messaging**

- SQS
- SNS
- SES

**Artificial Intelligence**

- Lex
- Polly
- Rekognition
- Machine Learning

**Business Productivity**

- WorkDocs
- WorkMail

**Internet Of Things**

- AWS IoT

**Game Development**

- GameLift

**Mobile Services**

- Mobile Hub
- Cognito
- Device Farm
- Mobile Analytics
- Pinpoint

▲ close

# AWS Console latest



AWS Services

Services ▾ Resource Groups ▾ 🔍

History

CloudWatch

IAM

Console Home

Support

EC2

Storage Gateway

Compute

EC2

Lightsail ↗

ECR

ECS

EKS

Lambda

Batch

Elastic Beanstalk

Serverless Application Repository

Robotics

AWS RoboMaker

Blockchain

Amazon Managed Blockchain

Satellite

Ground Station

Storage

S3

EFS

FSx

S3 Glacier

Storage Gateway

AWS Backup

Management & Governance

AWS Organizations

CloudWatch

AWS Auto Scaling

CloudFormation

CloudTrail

Config

OpsWorks

Service Catalog

Systems Manager

Trusted Advisor

Managed Services

Control Tower

AWS License Manager

AWS Well-Architected Tool

Personal Health Dashboard ↗

Analytics

Athena

EMR

CloudSearch

Elasticsearch Service

Kinesis

QuickSight ↗

Data Pipeline

AWS Glue

MSK

Business Applications

Alexa for Business

Amazon Chime ↗

WorkMail

End User Computing

WorkSpaces

AppStream 2.0

WorkDocs

WorkLink

Security, Identity, & Compliance

IAM

Resource Access Manager

Cognito

Secrets Manager

GuardDuty

Inspector

Amazon Macie ↗

AWS Single Sign-On

Certificate Manager

Key Management Service

CloudHSM

Directory Service

WAF & Shield

Artifact

Security Hub

Internet Of Things

IoT Core

Amazon FreeRTOS

IoT 1-Click

IoT Analytics

IoT Device Defender

IoT Device Management

IoT Events

IoT Greengrass

IoT SiteWise

IoT Things Graph

Game Development

Amazon GameLift

Additional Info

Getting Started Guide

Monitoring Scripts Guide

Overview and Features

Documentation

Forums

Report an Issue

Group A-Z

Find a service by name or feature (for example, EC2, S3 or VM, storage).

8

# AWS Service Overview

# AWS Global Infrastructure

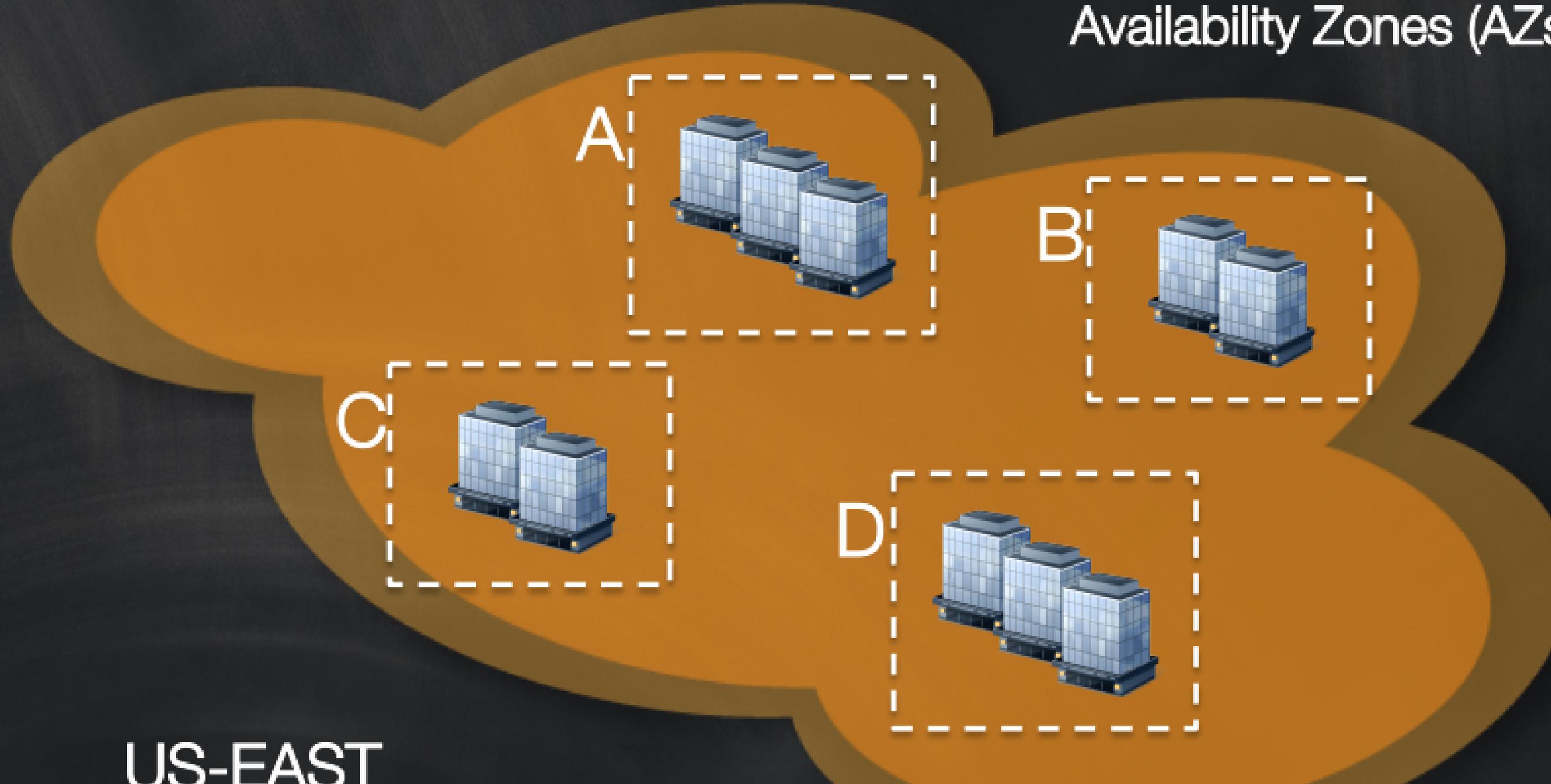
11 regions  
28 availability zones  
52 edge locations



You choose where your apps and data go!

# AWS Global Infrastructure

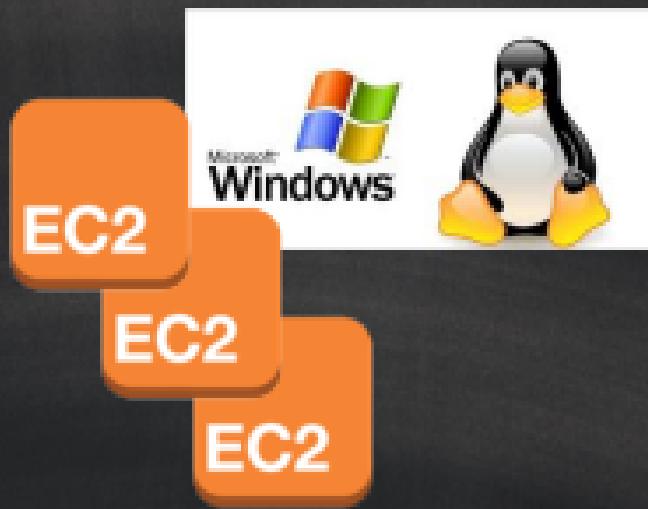
Availability Zones (AZs)



# Compute Services

## Amazon EC2

Elastic **Virtual servers**  
in the cloud



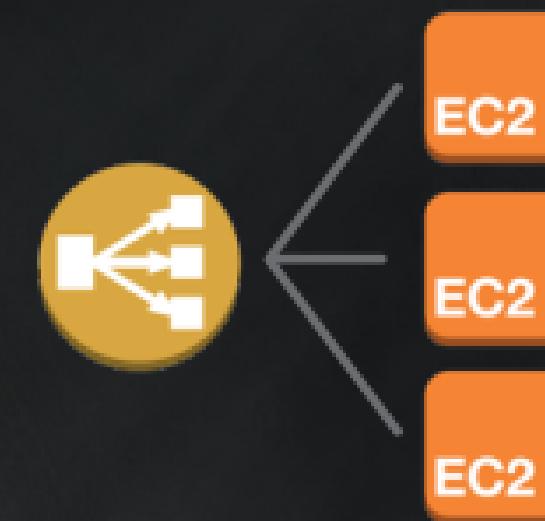
## Auto Scaling

**Automated scaling**  
of EC2 capacity



## Elastic Load Balancing

**Dynamic traffic  
distribution**



# Networking Services

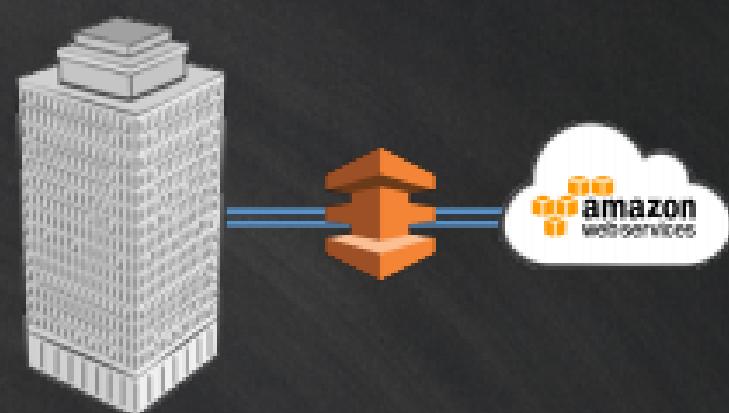
## Amazon VPC

Private, isolated  
section of the AWS  
Cloud



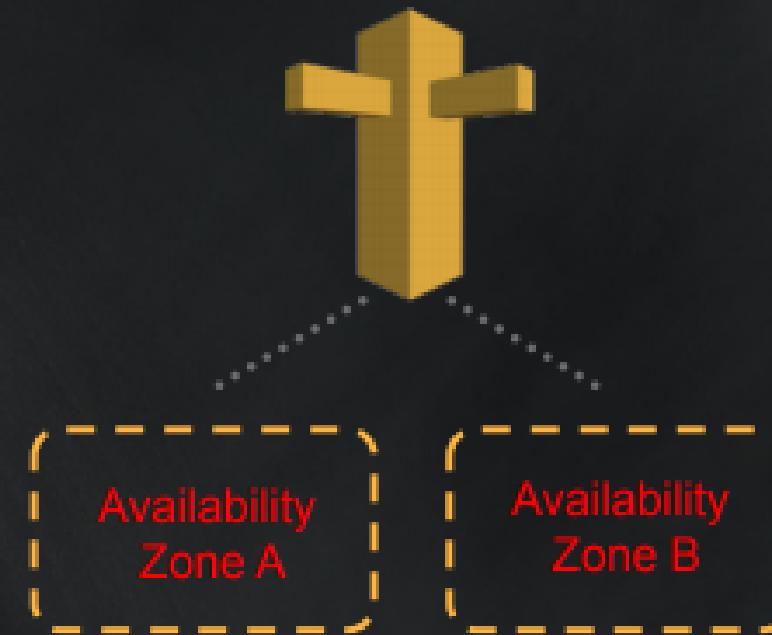
## AWS DirectConnect

Private connectivity  
between AWS and your  
datacenter



## Amazon Route 53

Domain Name System  
(DNS) web service.



# Storage Services

## Amazon EBS

Block storage for use  
with Amazon EC2



## Amazon S3

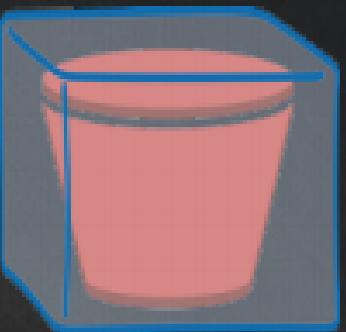
Internet scale  
storage via API



Images  
Videos  
Files  
Binaries  
Snapshots

## Amazon Glacier

Storage for archiving  
and backup



Images  
Videos  
Files  
Binaries  
Snapshots

## AWS Storage Gateway

Integrates on-premises  
IT and AWS storage



# Database Services

## Amazon RDS

Managed relational database service



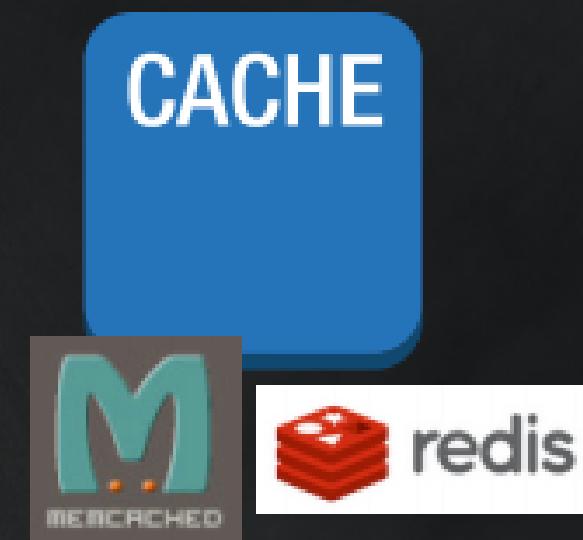
## Amazon DynamoDB

Managed NoSQL database service



## Amazon ElastiCache

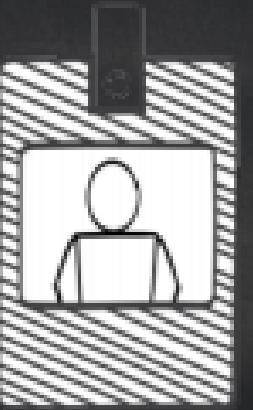
In-Memory Caching Service



# Administration

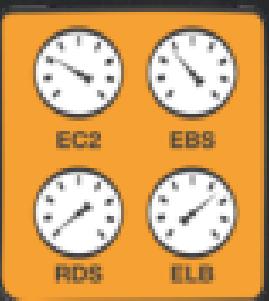
## AWS IAM (Identity & Access Mgmt)

Manage **users**,  
**groups** &  
**permissions**



## Amazon CloudWatch

Monitor resources



## AWS CloudTrail

AWS API call **logging** for  
governance &  
compliance



# Application Services

## Amazon CloudFront

Distribute content  
globally



## Amazon CloudSearch

Managed search  
service



## Amazon Elastic Transcoder

Video transcoding  
in the cloud



# Big Data Services

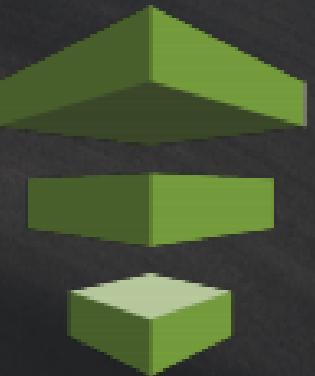
## Amazon EMR (Elastic Map Reduce)

Hosted Hadoop framework



## AWS Data Pipeline

Move data among AWS services and on-premises data sources



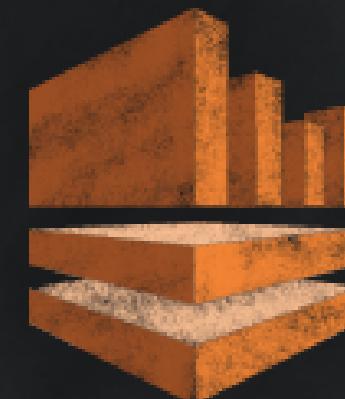
## Amazon Redshift

Petabyte-scale data warehouse service



## Amazon Kinesis

Real time processing of streaming data, at any scale



# Deployment

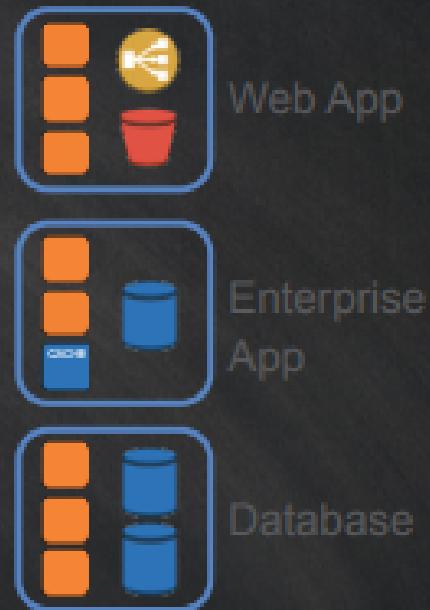
## AWS OpsWorks

Dev-Ops framework  
for application lifecycle  
management



## AWS CloudFormation

Templates to deploy  
& manage



## AWS Elastic Beanstalk

Automate resource  
management



# Exam Tips



- A Region is a physical location in the world which consists of 2 or more availability zones.
- An AZ is one or more discrete data centers, each with redundant power, networking and connectivity , housed in separate facilities
- Edge locations are endpoints for AWS which are used for caching content. Typically this consist of CloudFront, Amazon's Content Delivery Network (CDN)

