CLOUD CERTIFICATION -AWS


Introduction to Cloud Computing
Cloud Computing Service Models
Cloud Deployement Models

WHAT IS CLOUD COMPUTING?

1. Cloud Computing is the on-demand delivery of IT resources (like servers, storage, databases, networking, software) over the internet on a pay-as-you-go basis.

WHAT IS CLOUD COMPUTING?

FeatureDescription

On-Demand Access- Resources available anytime without manual provisioningScalability

Easily scale up or down based on usage

Pay-as-you-go-Pay only for what you use—no upfront investment

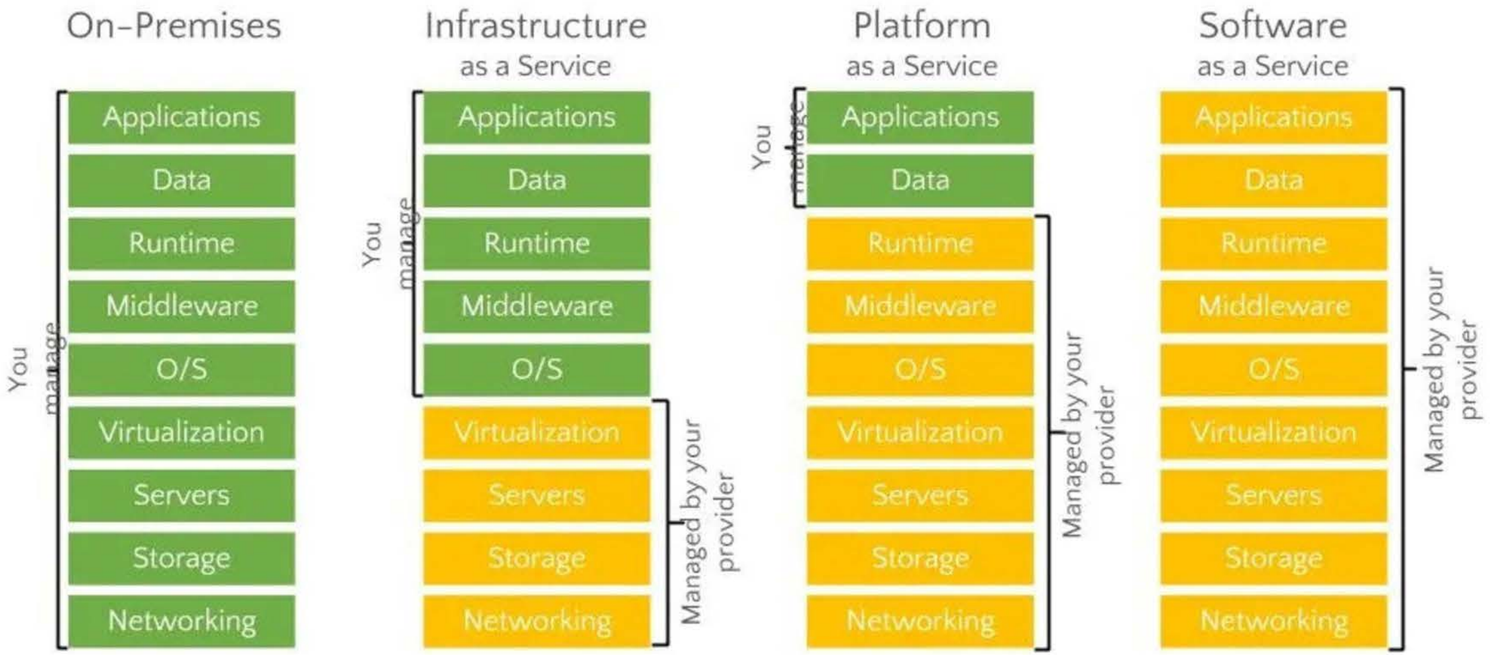
Global Access-Access from anywhere using internet

A**utomatic Updates-**Software and hardware updates are managed by the provider

CLOUD COMPUTING SERVICE MODELS

1. IAAS - Infrastructure As A Service
2. PAAS -Platform As A Service
3. SAAS - Software As A Service

CLOUD COMPUTING SERVICE MODELS



SOFTWARE AS A SERVICE

- **Ready-to-use software delivered over the internet.**
- **Users don’t manage infrastructure or platforms—just use the software.**
- **Accessible via web browsers with minimal setup.**
- **Example: Google Workspace (Gmail, Google Drive), Microsoft 365.**

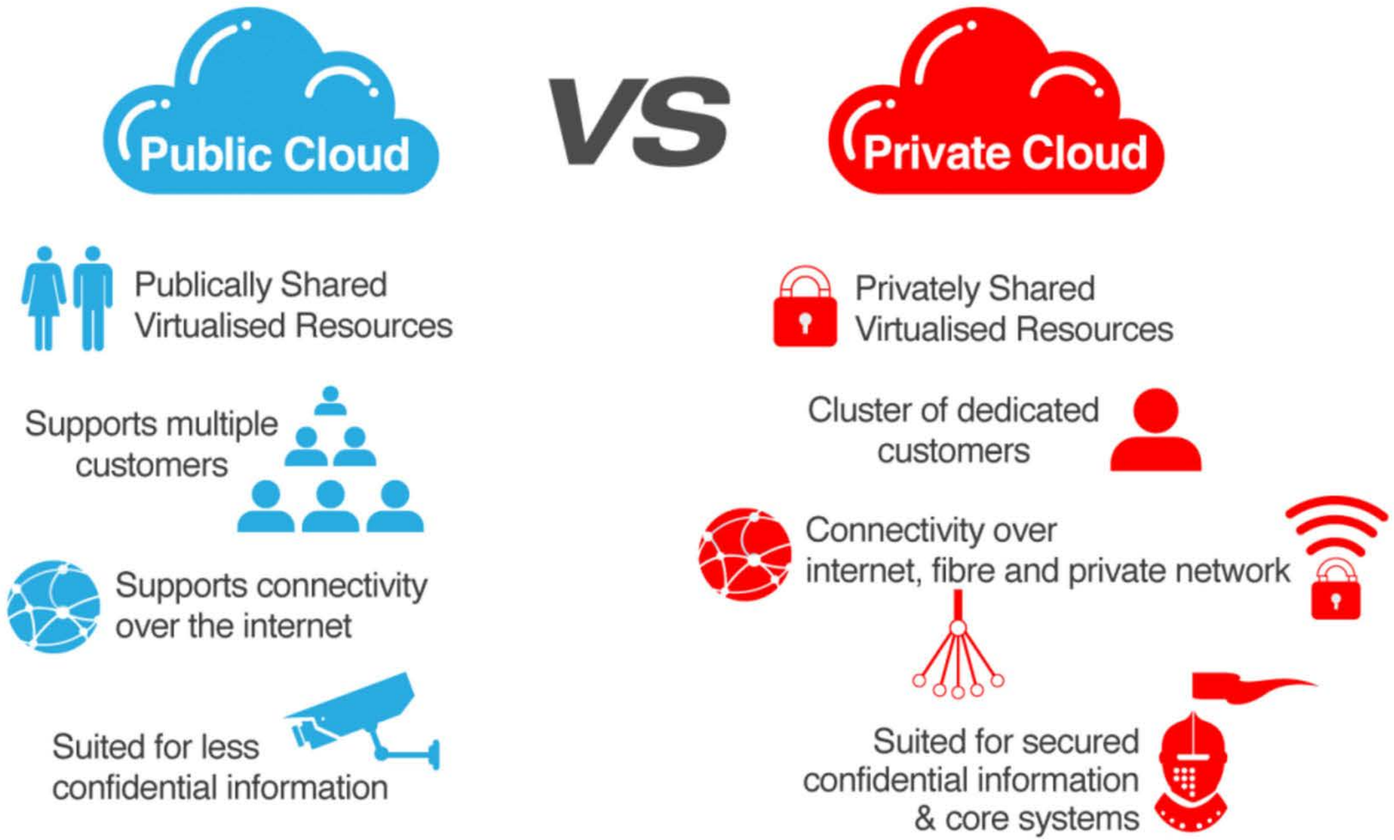
PLATFORM AS A SERVICE

- **Provides tools and environment to build, test, and deploy applications.**
- **Developers focus only on coding—no need to manage servers or OS.**
- **Scales automatically and supports continuous integration.**
- **Example: Heroku, Google App Engine.**

INFRASTRUCTURE AS A SERVICE

- **Offers virtualized hardware resources like servers, storage, and networking.**
- **Users manage OS, applications, and runtime—provider handles hardware.**
- **Ideal for building custom platforms or hosting enterprise applications.**
- **Example: Amazon EC2, Microsoft Azure Virtual Machines.**

CLOUD COMPUTING MODELS



PUBLIC CLOUD

- **Definition:** Cloud services offered over the internet and shared among multiple users.
- **Advantages:** Cost-effective, easily scalable, no hardware maintenance.
- **Disadvantages:** Less control and more security concerns.
- **Examples:** Amazon Web Services (AWS), Microsoft Azure, Google Cloud

PRIVATE CLOUD

- **Definition:** Cloud infrastructure dedicated to a single organization.
- **Advantages:** Higher security, control, and customization.
- **Disadvantages:** Expensive to set up and maintain.
- **Examples:** VMware vSphere, OpenStack private deployments.

HYBRID CLOUD

- **Definition:** Combination of public and private cloud environments.
- **Advantages:** Flexibility to move workloads, better optimization.
- **Disadvantages:** Complex integration and security challenges.
- **Examples:** Microsoft Azure Stack, AWS Outposts.

COMMUNITY CLOUD

- **Definition:** Shared cloud for a specific group of organizations with similar needs.
- **Advantages:** Cost and resource sharing, tailored to industry needs.
- **Disadvantages:** Limited availability, complex governance.
- **Examples:** Government or healthcare shared cloud services.

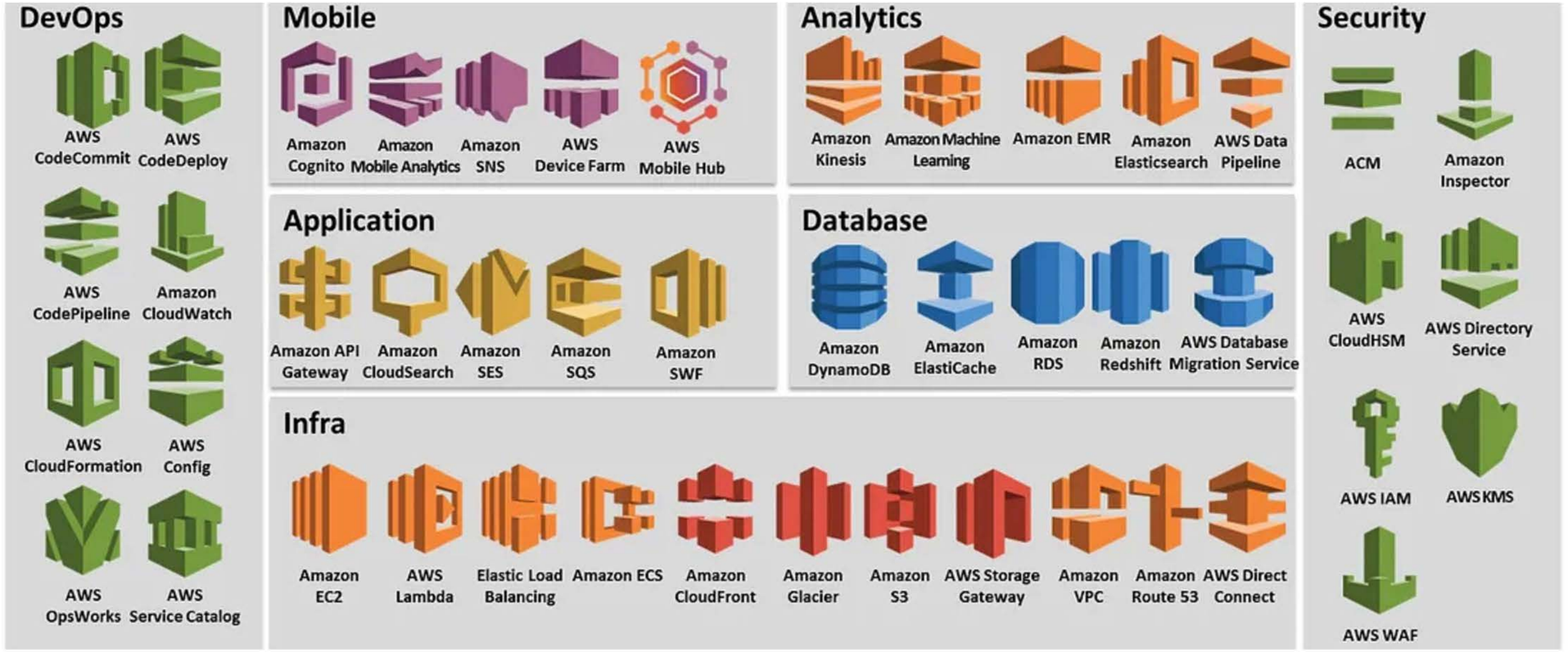
AWS OVERVIEW AND HISTORY

- Amazon Web Services (AWS) is a cloud computing platform launched by Amazon in 2006.
- It started with services like S3 (storage) and EC2 (compute).
- AWS is the market leader in cloud computing, offering scalable, reliable, and low-cost infrastructure solutions.
- It supports businesses of all sizes—from startups to enterprises to government.

AWS GLOBAL INFRASTRUCTURE

- **Region**: A geographical area (like us-east-1, ap-south-1) with multiple, isolated Availability Zones.
- **Availability Zone (AZ):** One or more physically separate data centers in a region with independent power, networking, and cooling.
- This model helps in disaster recovery, fault isolation, and better application performance.
- **Example**: Mumbai Region (ap-south-1) has 3 Availability Zones.

AWS SERVICES



AWS SERVICES

AWS offers 200+ fully featured services under several categories:

A	B
Category	**Examples**
Compute	EC2, Lambda, Elastic Beanstalk
Storage	S3, EBS, Glacier
Database	RDS, DynamoDB, Aurora
Networking	VPC, Route 53, CloudFront
Security	IAM, KMS, Shield, Cognito
Analytics	Athena, Redshift, EMR
AI/ML	SageMaker, Rekognition, Comprehend
DevOps Tools	CodeDeploy, CodePipeline, CloudFormation
Migration	Snowball, DMS, Migration Hub