

# Introduction to AWS



# Agenda

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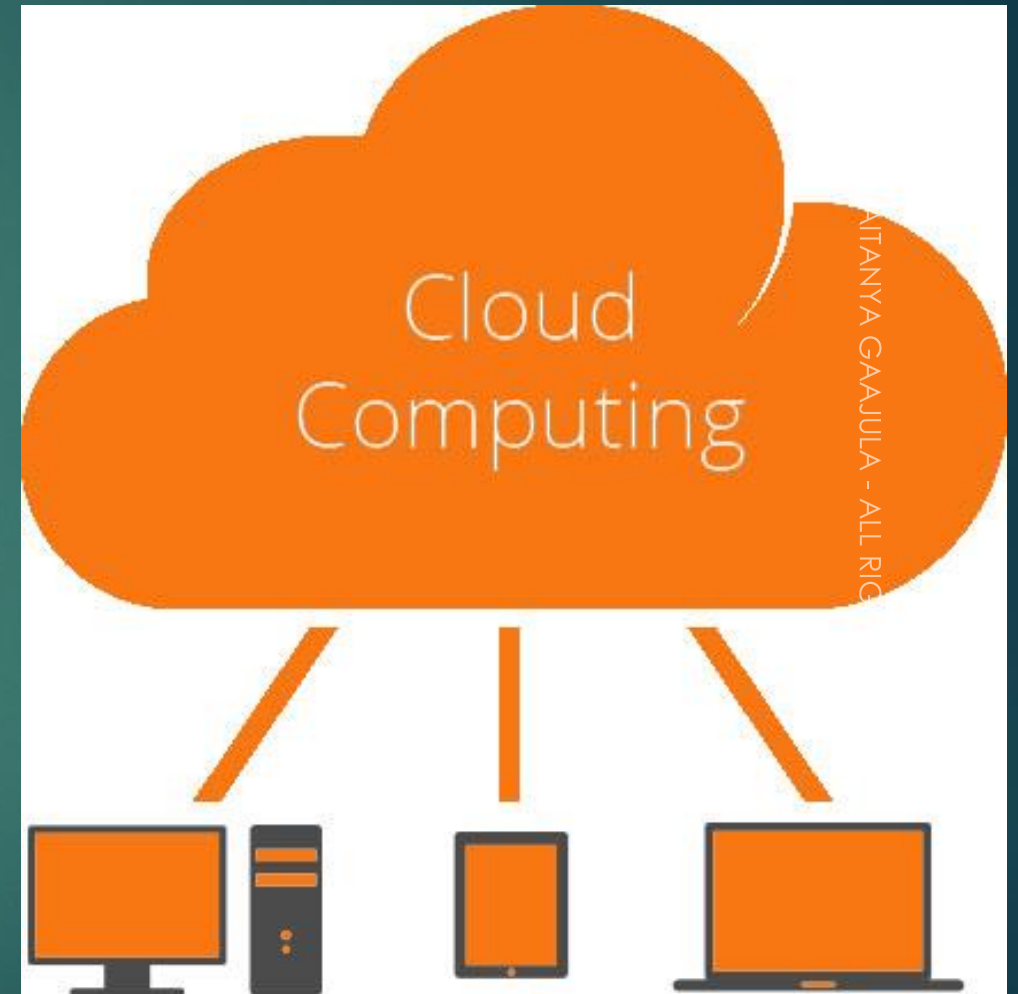
- ❖ Overview of Cloud Computing
  - What is Cloud Computing
  - Definition of Cloud Computing
    - Essential Characteristics
    - Service Models
    - Deployment Models
  - On-premises vs Service Models
  - Advantages & Disadvantages of Cloud Computing
  - Cloud Computing Providers
- ❖ Why AWS
  - What is AWS
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  - AWS Global Infrastructure
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  - AWS Edge Locations
  - How to access the AWS Services
- ❖ Quiz
- ❖ Hands-On Lab

# Overview of Cloud Computing

# What is Cloud Computing

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- ❑ **Cloud computing** is the delivery of computing services - servers, storage, databases, networking, tools and software over the Internet.
- ❑ Cloud computing enables companies to consume a compute resource, such as a servers, storage or an application, as a utility like water or electricity, rather than having to build and maintain computing infrastructures in house.
- ❑ Companies offering these computing services are called **cloud providers** and they charge for cloud computing services based on usage.

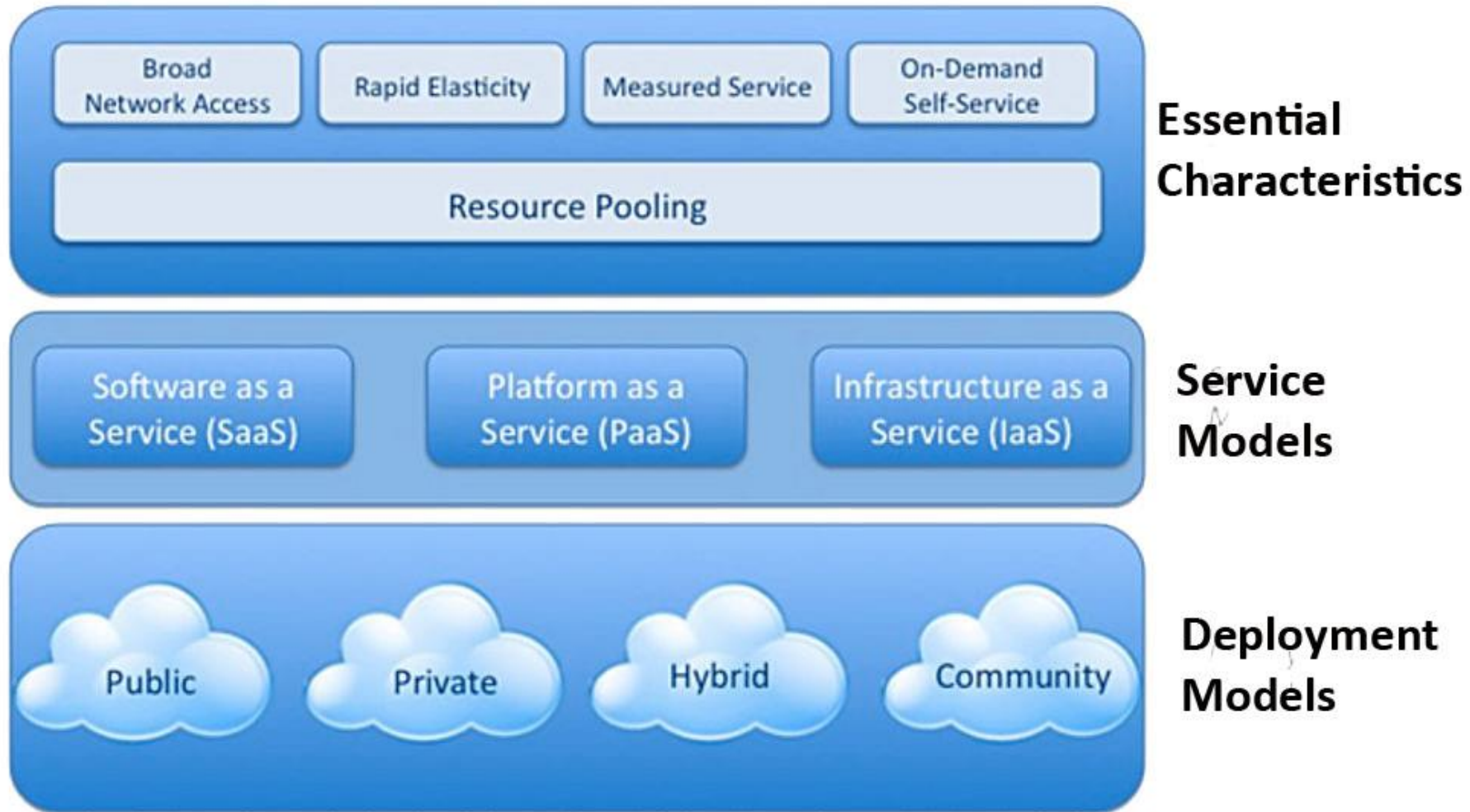


# Cloud Computing: Definition

- ❑ Cloud computing is a model for enabling **ubiquitous, convenient, on-demand** network access to a **shared pool** of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.
  
- ❑ This cloud model is composed of
  - Five essential characteristics
  - Three service models
  - Four deployment models.

# Cloud Computing: Definition

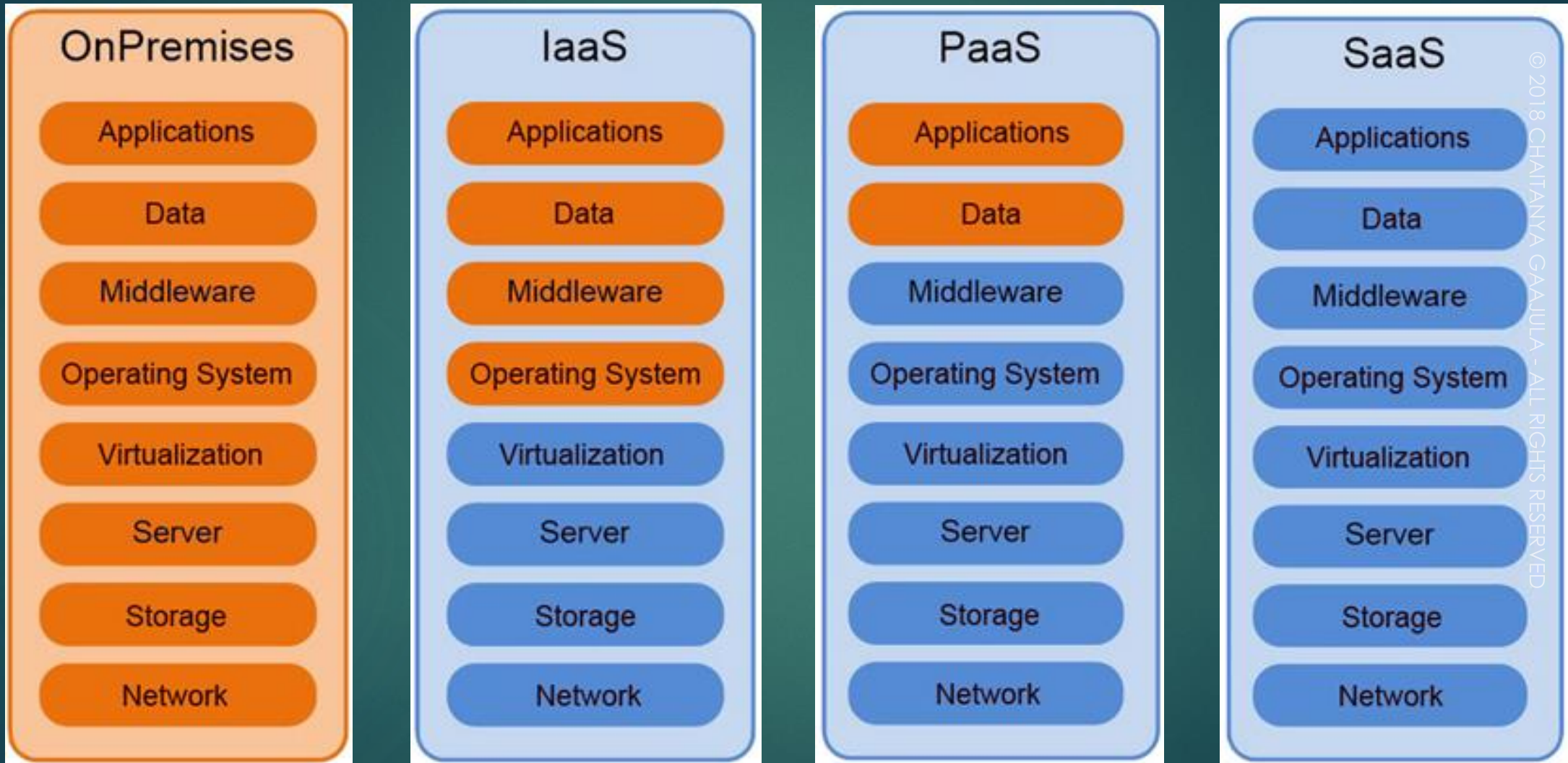
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# Cloud Computing: On-premises vs Service Models

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# Cloud Computing: Advantages & Disadvantages

## Advantages

- ✓ Flexibility
- ✓ Availability
- ✓ Accessibility
- ✓ Scalability
- ✓ Multi-tenancy
- ✓ Disaster Recovery
- ✓ Cost of ownership
- ✓ Metered Services

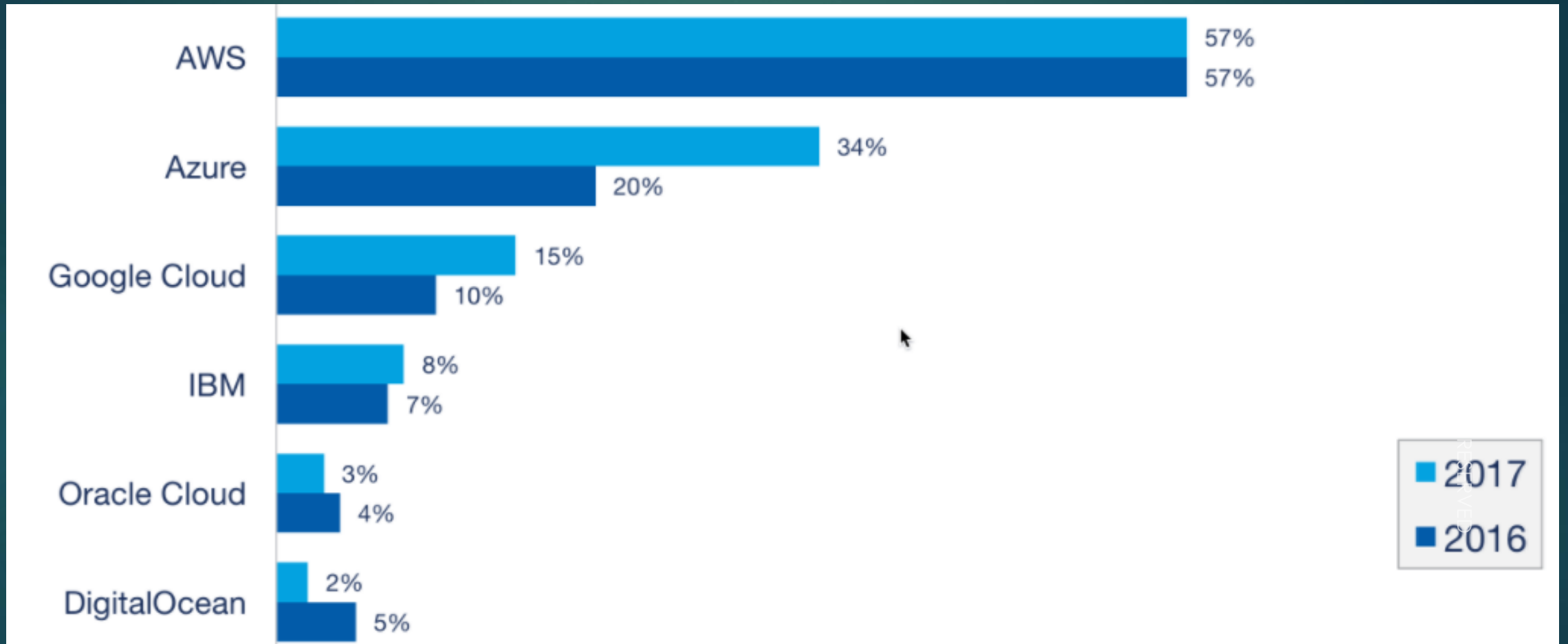
## Disadvantages

- ✓ Downtime
- ✓ Vulnerability to attack
- ✓ Security



# Cloud Computing: Cloud Computing Providers

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\*RightScale 2017

# Overview of AWS

# Why AWS

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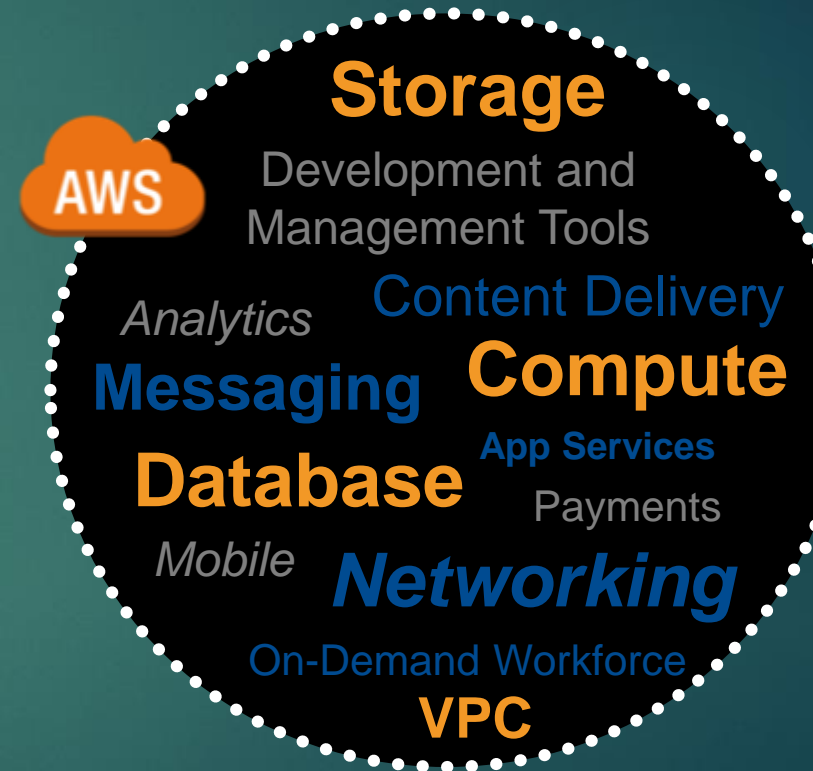
- ❑ Gartner June' 17 magic quadrant for Cloud Infra, AWS is the leader in the Cloud Computing market.
- ❑ Gartner says, AWS is the most mature, enterprise-ready provider, with the deepest capabilities for governing a large number of users and resources.
- ❑ AWS dominates the public cloud market with a 47.1% market share (Q1' 17).
- ❑ AWS is the most popular public cloud infra platform, comprising 41.5% of workloads (Feb' 17 report).
- ❑ AWS certification is fast becoming the must have certificates for any IT professional working with Cloud.



# What is AWS

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- ❑ Amazon Web Services (AWS) is a subsidiary of Amazon.com that provides on-demand cloud computing platforms to individuals, companies and governments, on a paid subscription basis.
- ❑ Enable businesses and developers to use web services to build scalable, sophisticated applications.



# AWS: Benefits

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Trade capital expense for variable expense

Benefit from massive economies of scale

Increase speed and agility

Stop guessing about capacity

Stop spending money running and maintaining data centers

Go global in minutes

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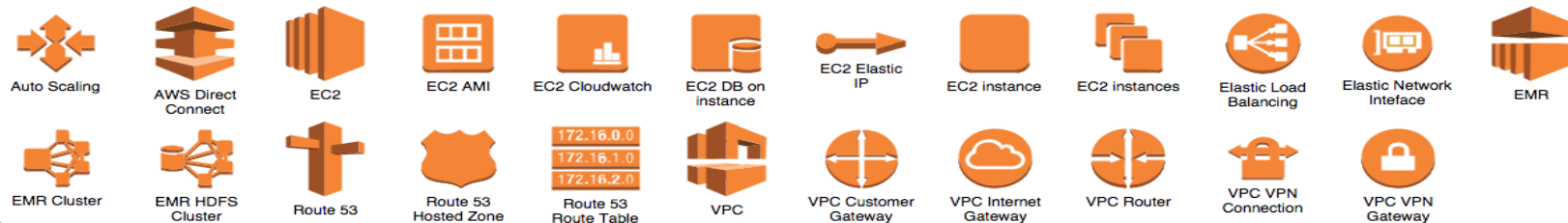
# AWS: Services

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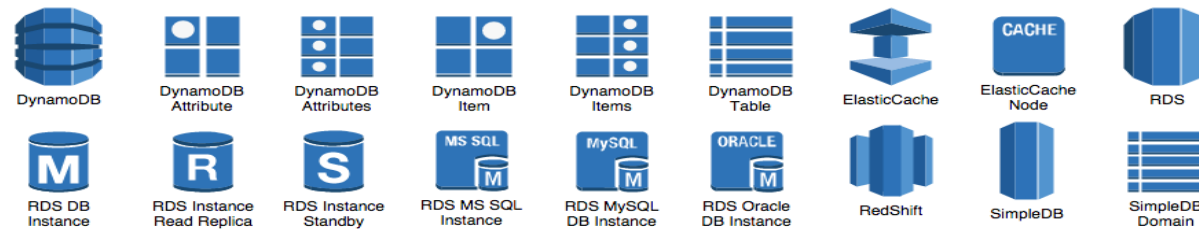
## Application Services



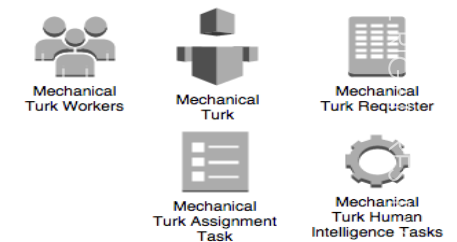
## Compute and Networking



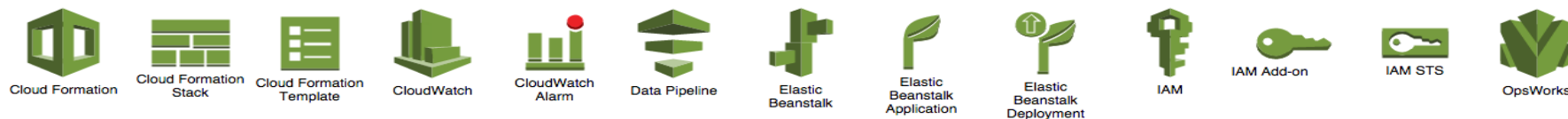
## Database



## On-Demand Workforce



## Deployment and Management



# AWS: Traditional vs AWS Components

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## Traditional Infrastructure



Firewalls



ACLs



Administrators



Router



Network Pipeline



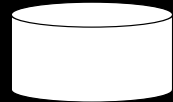
Switch



Operating System



On-Premises Servers



RDBMS



No SQL



### Security



Security Groups



NACLs



IAM

### Networking



ELB



VPC

### Servers



AMI



EC2 Instances

### Storage



EBS



EFS



S3

### Database



RDS



DynamoDB

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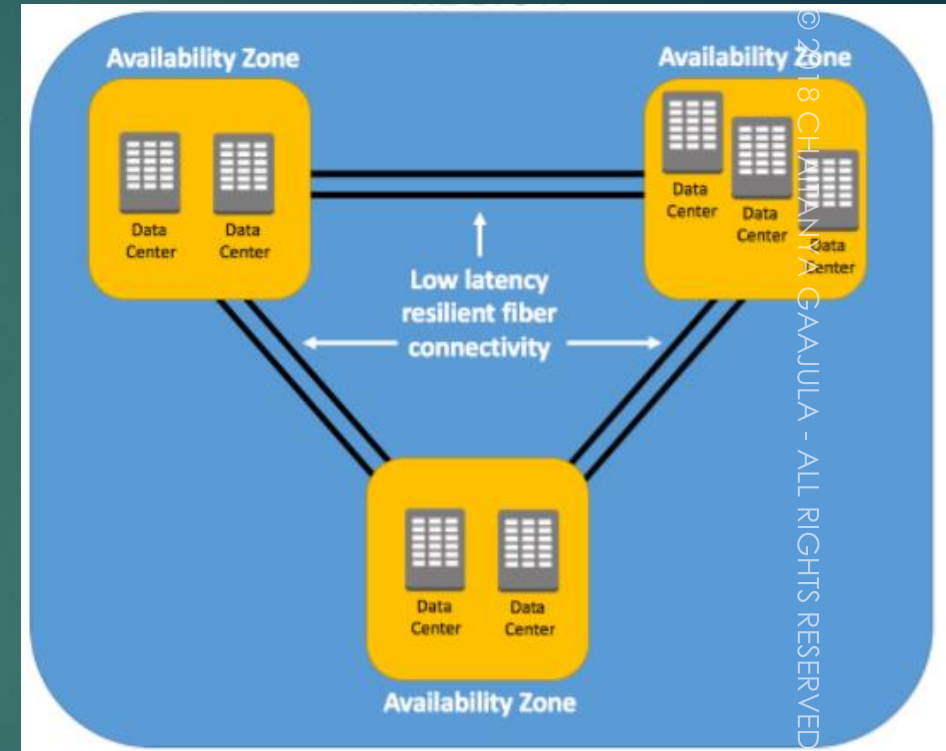
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# AWS: Availability Zone

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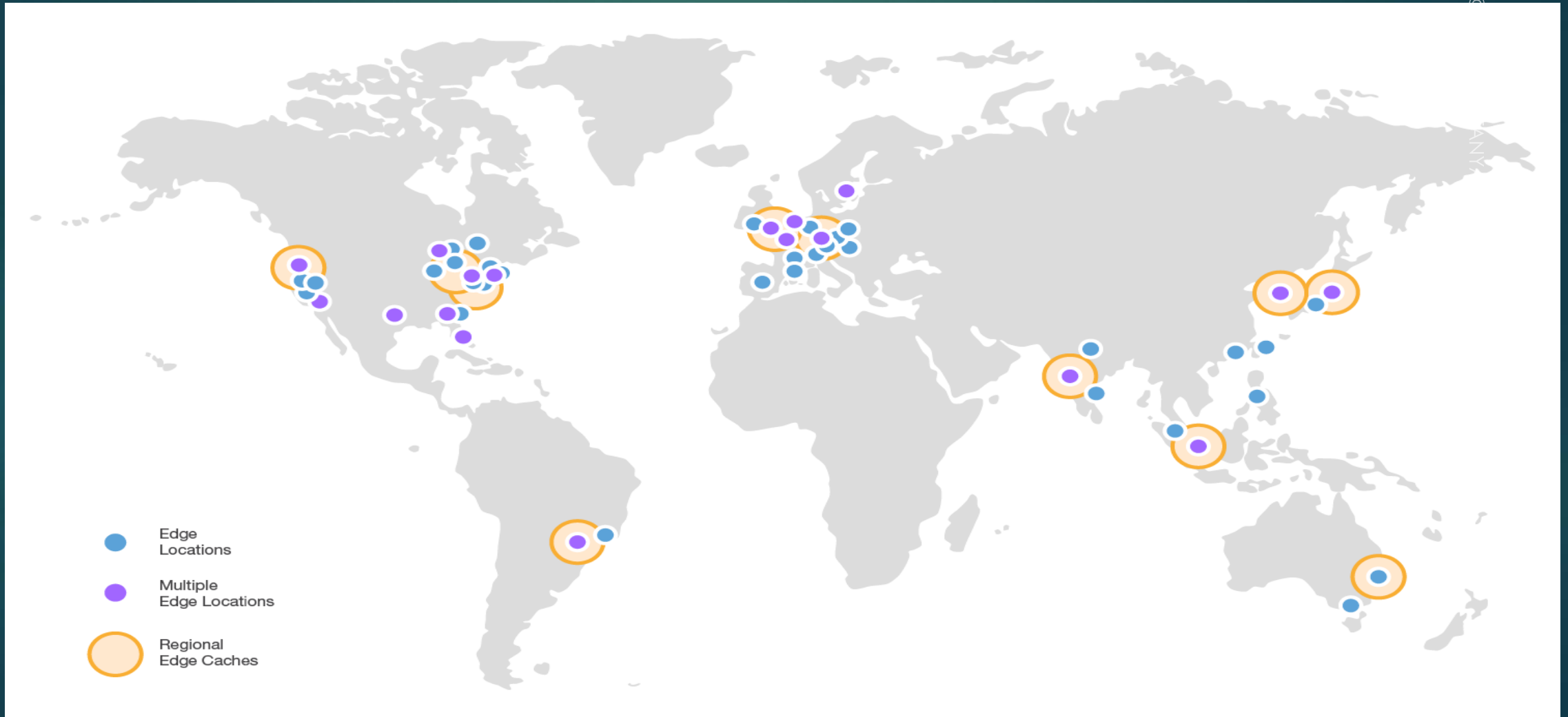
- ❑ High Availability Through Multiple Availability Zones.
- ❑ In each region there will be at least two availability zones for fault tolerance.
- ❑ An AZ is a combination of one or more data centers in a given region.
- ❑ It is a logical grouping of data centers in a given region for service high availability.
- ❑ A datacenter is a location where actual physical data resides.
- ❑ A single or couple of data centers are clubbed in to one AZ.



# AWS: Edge Locations

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The AWS have global network of 98 Edge locations (87 Points of Presence and 11 Regional Edge Caches) in 50 cities across 23 countries.





# AWS: How to access the Services

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**AWS  
Management  
Console**

**AWS  
Command Line  
Interface (CLI)**

**Software  
Development  
Kits (SDK)**

# AWS: Quiz

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1. "Cloud" in cloud computing represents what?  
-Wireless      -Hard drives      -People      -Internet
2. What feature does not belong in a private cloud?  
-Metered billing      -Self-service portal      -Security      -Rapid elasticity
3. Which Amazon cloud product recently experienced a massive outage?  
- SimpleDB      - EBS      - S3      - CloudFront
4. What is the name AWS compute services?  
-Virtual Machine-EC2      -EIP      -AMI
5. What is the number one concern about cloud computing?  
-Too expensive      -Security concerns      -Platforms      -Accessibility



# Hands-on Lab: Sign-up AWS Account

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- ❑ Create and activate a new Amazon Web Services account
  - <https://aws.amazon.com/free/>
  - Payment method:
    - Credit or Debit Card
  - Support plan:
    - Basic
- ❑ Accounts are usually activated within a few minutes, but account activation can take up to 24 hours.
- ❑ When your account is fully activated, you'll receive confirmation email. After you receive this email, you should have full access to all AWS services.

