

# Introduction to Amazon Web Services (AWS)

**AWS** is a cloud computing platform launched in **2006** by Amazon.

It provides **on-demand IT services** like computing power, storage, databases, networking, security, analytics, AI, and more — all over the internet.

Instead of buying physical servers, companies can rent resources from AWS and pay only for what they use.

## ◆ Popular AWS Services:

- **EC2** – Virtual servers
  - **S3** – Storage service
  - **RDS** – Managed databases
  - **Lambda** – Serverless computing
  - **VPC** – Virtual private cloud
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## Advantages of AWS

### 1 Cost Effective

- Pay-as-you-go pricing
- No need to buy hardware

### 2 Scalability

- Easily scale up or down based on traffic
- Auto Scaling feature available

### 3 High Availability

- Multiple regions and availability zones
- Reliable uptime

### 4 Security

- Strong security tools (IAM, encryption, monitoring)

## 5 Global Infrastructure

- Data centers available worldwide (including India – Mumbai & Hyderabad)

## 6 Wide Service Range

- 200+ services available (AI, ML, DevOps, IoT, etc.)
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## ✗ Disadvantages of AWS

### 1 Complex Pricing

- Pricing structure can be confusing
- Unexpected bills if not monitored properly

### 2 Learning Curve

- Many services → beginners may feel overwhelmed

### 3 Dependency on Internet

- Requires stable internet connection

### 4 Vendor Lock-in

- Migrating from AWS to another cloud provider can be difficult

### 5 Limited Free Tier

- Free tier available only for 12 months (with limits)



## AWS Regions

In Amazon Web Services (AWS), a **Region** is a **geographical area** where AWS has multiple data centers.

Each **Region** contains:

- Multiple **Availability Zones (AZs)**
  - Isolated infrastructure
  - High availability and fault tolerance
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## What is an Availability Zone (AZ)?

An **Availability Zone** is one or more data centers inside a region.  
Each region usually has **2–6 AZs**.

 Example:

**Asia Pacific (Mumbai)** region has multiple AZs.

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## Major AWS Regions (Examples)

### US North America

- US East (N. Virginia)
- US West (Oregon)
- Canada (Central)

### EU Europe

- London
- Frankfurt
- Paris
- Ireland

### Asia Pacific

- Mumbai (India)
- Hyderabad (India)
- Singapore
- Tokyo
- Sydney

### Middle East & Africa

- Bahrain
- UAE
- Cape Town

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### IN AWS Regions in India

1. **Asia Pacific (Mumbai)** – Launched in 2016
2. **Asia Pacific (Hyderabad)** – Launched in 2022

These regions help Indian companies reduce latency and improve performance.

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### Why AWS Regions are Important?

- ◆ Low latency (choose region near users)
- ◆ Data compliance (store data in specific country)
- ◆ Disaster recovery
- ◆ High availability