

Key AWS Services for IT Infrastructure & Software Development:-

1) Amazon Elastic Compute cloud (Amazon EC2)

Description: Amazon EC2 provides resizable compute capacity in the cloud, allowing users to quickly scale compute resources as needed.

Use Cases:

- Hosting web applications
- Running backend servers
- Batch processing
- Scientific Computing

Benefits:

- Flexibility to choose instance types
- Scalability
- Pay as you go pricing model
- Integration with other AWS services

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Challenges:

- Managing Instances
- Optimizing costs
- Ensuring security configuration

2) Amazon Simple Storage Service (Amazon S3)

Description: It is an object storage service that offers industry-leading scalability, data availability & performance.

Use Cases:

- Storing & retrieving any amount of data at any time
- Backup & Restore
- Data archiving

Benefits:

- Durability & Availability
- Scalability
- Security
- Cost-effective storage classes

Challenges:

- Managing storage costs
- Ensuring data security & compliance
- Handling large-scale data migrations.

3) Amazon Relational Database Service (RDS)

Description: Easy to set up, operate, & scale a relational DB in the cloud. It provides cost-efficient & resizable capacity while automating time-consuming administration tasks.

Use Cases:

- Running production databases
- Development & Testing environments
- Backend for web & mobile applications
- Data warehousing

Benefits:

- Automated backups, patching & recovery
- Scalability
- High availability with Multi-AZ deployments.
- Support for multiple database engines

Challenges:

- Managing database performance
- Configuring security settings
- Migrating existing databases to RDS

4) Amazon Lambda

Description: AWS Lambda lets you run code without provisioning or managing servers.
We pay only for the compute time consumed.

Use Cases:

- Event-driven Applications
- Backend services for web & mobile applications
- Real time data processing
- Automated backups & logging

Benefits:

- No server Management
- Continuous Scaling
- Sub-second Metering
- Integration with other AWS services

Challenges:

- Cold start latency
- Managing function dependencies
- Monitoring & Debugging