

# AWS Course Content

## 1. Introduction to Cloud Computing and AWS

- What is Cloud Computing?
- Cloud Service Models (IaaS, PaaS, SaaS)
- Cloud Deployment Models (Public, Private, Hybrid)
- Overview of AWS
- AWS Global Infrastructure (Regions, Availability Zones, Edge Locations)

## 2. Getting Started with AWS

- Creating an AWS Free Tier Account
- Introduction to the AWS Management Console
- AWS CLI and SDK Overview
- Identity and Access Management (IAM)
  - Users, Groups, Roles, Policies
  - Best Practices for IAM

## 3. Compute Services

- Amazon EC2 (Elastic Compute Cloud)
  - Launching and Connecting to EC2 Instances
  - Security Groups and Key Pairs
  - AMIs and EC2 Instance Types
  - EC2 Auto Scaling and Load Balancing (ELB)
- AWS Lambda (Serverless Compute)
- Elastic Beanstalk (Platform as a Service)

## 4. Storage Services

- Amazon S3 (Simple Storage Service)
  - Buckets, Objects, Versioning
  - Storage Classes (Standard, Intelligent-Tiering, Glacier)
  - Lifecycle Policies
- Amazon EBS (Elastic Block Store)
- Amazon EFS (Elastic File System)
- Storage Gateway basics

## 5. Networking and Content Delivery

- Amazon VPC (Virtual Private Cloud)
  - Subnets, Route Tables, Internet Gateway, NAT Gateway
  - Security Groups vs NACLs
- Elastic IPs and Bastion Hosts
- AWS CloudFront (CDN Service)
- AWS Route 53 (DNS and Domain Registration)

## 6. Databases

- Amazon RDS (Relational Database Service)
  - Supported Database Engines (MySQL, PostgreSQL, etc.)
  - Multi-AZ and Read Replicas
- Amazon DynamoDB (NoSQL Database)
- Amazon Aurora
- Introduction to AWS Database Migration Service (DMS)

## **7. Monitoring and Management**

- Amazon CloudWatch (Metrics, Logs, Alarms)
- AWS CloudTrail (Audit and Compliance)
- AWS Config (Resource Inventory and Configuration History)

## **8. Security and Compliance**

- AWS Shared Responsibility Model
- AWS KMS (Key Management Service)
- AWS Secrets Manager
- AWS Shield and WAF (Web Application Firewall)
- Best Practices for Securing AWS Resources

## **9. Automation and DevOps on AWS**

- AWS CloudFormation (Infrastructure as Code)
- Elastic Container Service (ECS) and Elastic Kubernetes Service (EKS)

## **10. Application Integration**

- Amazon SNS (Simple Notification Service)
- Amazon SQS (Simple Queue Service)
- AWS Step Functions (Orchestration)

## **11. Real-world Projects and Hands-On Labs**

- Host a Static Website on S3 + CloudFront + Route 53
- Deploy a scalable web app using EC2 Auto Scaling and ELB
- Set up Monitoring with CloudWatch and Alarms