

# Cloud Computing with AWS – Course Outline

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## 1 Duration

- 20 Hours

## 2 Objectives

This course is designed to provide strong foundation on Cloud Computing & AWS core services with hands-on practical sessions and good overview on all AWS services. This course will make you to become AWS Cloud Practitioners and lay very good foundation to pursue careers in AWS Cloud on different roles (viz. AWS Cloud Developer, DevOps Engineer, Solution Architect and so on) and help you to get ready for AWS cloud certifications.

By the end of this course, you will be able to:

- Understand the basics of cloud computing, benefits and various cloud service providers / offerings
- Understand various AWS services and it's usage, sizing and cloud migration strategies
- Have good understanding on Cloud Compute, Storage, Networking, Security and Management services
- Design and configure auto scalable, load balanced, highly available and highly secured cloud apps / solutions
- Manage, monitor and troubleshoot the cloud infrastructure and cloud applications / solutions

## 3 Audience

Developers, QA Professionals, Architects, Database and Big Data professionals, Automation Engineers, IT Administrators and also whoever aspire to design and implement cloud solutions with AWS

## 4 Pre-requisite

- General knowledge on application design, development and hosting is recommended
- General knowledge on networking concepts, storage concepts and IT infrastructure is recommended

## 5 Hardware & Network Requirements

- Desktop or Laptop with minimum 8GB RAM
- Internet connection with good speed
- AWS account for individual participants OR credit/debit card to create free AWS account

## 6 Software Requirements

- Windows / Linux / Mac OS (with Local Admin Access)
- AWS CLI
- Java 8
- Eclipse IDE
- MySQL Client

## 7 Outline

### Module-1: Introduction to Cloud Computing

- What is Cloud Computing?
- Evolution of Cloud Computing
- Cloud Computing Concepts
- Cloud Computing Architecture
- Cloud Service Models - SaaS vs PaaS vs IaaS
- Cloud Deployment Models - Private, Public, Community, Hybrid
- Benefits and Limitations

### Module-2: Cloud Providers Overview and Intro to AWS

- Cloud Service Providers Overview
- AWS, Azure, GCP Overview
- AWS Services Overview
- AWS Management Console Overview
- Availability Zones/Regions
- AWS Pricing Overview
- **Hands-on Practical Labs:**
  - AWS Account Registration
  - Management Console Usage - Account, Billing, Budget and Reports

### Module 3: Design and Implement Cloud Compute

- Cloud Compute Overview
- Amazon EC2 (Elastic Cloud Compute) Overview
- Amazon AMI (Amazon Machine Image)
- EC2/AMI CLI
- Elastic IPs, Security Groups, Key Pairs, Placement Groups
- **Hands-on Practical Labs:**
  - Launching EC2 instance with Windows and Linux OS
  - Attaching EBS volume and Configuring Security Groups
  - How to upgrade / downgrade EC2 instance types
  - Monitoring EC2 instance basic health metrics and logs
  - Creating EBS Snapshot and Restore
  - Creating custom AMIs and manage life cycle

### Module 4: Load Balancing and Auto Scaling

- Load Balancers Overview
- Elastic Load Balancer
- Auto Scaling Overview
- **Hands-on Practical Labs:**
  - Creating and configuring Elastic Load Balancer to load balance the EC2 instances with sample webapp
  - Creating and configuring Auto Scaling Groups to scale EC2 instances based on configured rules

### Module-5: Design and Implement Cloud Storage

- Cloud Storage Overview
- AWS S3 (Simple Storage Service) Overview
- EBS Overview
- EFS Overview
- Glacier Overview
- Storage Gateway Overview

- **Hands-on Practical Labs:**
  - Creating S3 Bucket and how to upload / download the data
  - Applying Version Control
  - Enabling Cross Region Replication
  - S3 Bucket Lifecycle Management
  - Static website hosting using S3

## Module 6: Design and Implement Cloud Network

- Cloud Network Overview
- Amazon VPC (Virtual Private Cloud)
- Amazon VPN
- Amazon Direct Connect
- Amazon Route 53
- **Hands-on Practical Labs:**
  - Creating private VPC Network with different topologies and access restrictions
  - Creating public VPC Network with different topologies and access restrictions

## Module 7: Design and Implement Content Delivery Network (CDN)

- CDN (Content Delivery Network) Overview
- CloudFront Overview
- **Hands-on Practical Labs:**
  - Creating CloudFront distribution for sample web application hosted in S3

## Module 8: Cloud Migration Services

- Cloud Migration Strategies
- Server Migration Service
- Database Migration Service
- Snowball

## Module-9: Cloud Security and IAM

- Cloud Security Overview
- AWS Security Services
- IAM (Identity Access Management) Overview
- AWS IAM Overview
- Security Token Service Overview
- **Hands-on Practical Labs:**
  - Creating IAM users and roles
  - Configuring and applying permissions for IAM users

## Module 10: Cloud Provisioning, Management and Monitoring

- CloudFormation
- Amazon CloudWatch Overview
- AWS CloudTrail Overview