

# Cloud Computing (AWS) – Course Outline

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## 1 Duration

- 3 Days

## 2 Objectives

By the end of this workshop, participant will be able to:

- Understand the basics of cloud computing, benefits and various cloud service providers
- Understand various AWS services and it's usage, sizing and cloud migration strategies
- Design and configure to auto scale, load balance, highly available and secure the cloud apps
- Manage, monitor and troubleshoot the cloud infrastructure and applications

## 3 Audience

Developers, Architects, IT Administrators who aspire to design and implement cloud services.

## 4 Pre-requisite

- Knowledge on application hosting, networking concepts and IT infrastructure
- Knowledge on application design and development
- Knowledge on programming language Java / SQL

## 5 Hardware & Network Requirements

- Desktop or Laptop with minimum 8GB RAM
- Internet connection with good speed
- AWS account for individual participants

## 6 Software Requirements

- Windows / Linux OS
- Oracle VirtualBox

## 7 Outline

### Day 1

#### Module-1: Introduction to Cloud Computing

- Basics of Cloud
- Basic Cloud Infrastructure
- Cloud Service Models - SaaS vs PaaS vs IaaS
- Cloud Deployment Models - Private, Public, Community, Hybrid

#### Module-2: Cloud Providers Overview

- Cloud Service Providers Overview
- AWS, Azure, GCP Overview
- AWS Services Overview
- AWS Management Console Overview
- Availability Zones/Regions
- Demo/Lab: AWS Account Registration, Management Console Usage

#### 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
- Load Balancers, Auto Scaling, Placement Groups
- Demo/Lab: Launching EC2 instance, Attaching EBS volume and Configuring Security Groups
- Demo/Lab: EBS, Snapshot, Restore, Encryption
- Demo/Lab: Working with AMIs
- Demo/Lab: Elastic Load Balancer
- Demo/Lab: Auto Scaling Groups

### Day 2

#### Module-4: Design and Implement Cloud Storage & CDN

- Cloud Storage Overview
- AWS S3 (Simple Storage Service) Overview
- Demo/Lab: Create S3 Bucket
- Demo/Lab: Version Control
- Demo/Lab: Cross Region Replication
- Demo/Lab: Lifecycle Management
- Demo/Lab: S3 Security & Encryption
- Demo/Lab: Static website using S3
- CDN (Content Delivery Network) Overview
- CloudFront Overview
- Demo/Lab: CloudFront
- Demo/Lab: S3 Transfer Acceleration
- EBS Overview
- EFS Overview
- Glacier Overview
- Storage Gateway Overview

## Module 5: Cloud Databases

- Database As Service Overview
- RDS Instance Overview
- Lab: RDS instance
- Lab: Backups, Multi-AZs & Replicas
- DynamoDB Overview
- Redshift Overview
- ElastiCache Overview
- Aurora Overview

## Module 6: Cloud Migration Services

- Cloud Migration Strategies
- Server Migration Service
- Database Migration Service
- Snowball
- Demo/Lab: Migrating on-premise VM to EC2
- Demo/Lab: Migrating data to AWS and vice versa

## Day 3

## Module 7: Design and Implement Cloud Network

- Cloud Network Overview
- Amazon VPC (Virtual Private Cloud)
- Lab: Create VPC Network
- Amazon Route 53
- Demo/Lab: SimpleRouting, WeightedRouting, LatencyRouting, GeolocationRouting

## Module-8: Cloud Security and IAM

- Cloud Security Overview
- AWS Security Services
- IAM (Identity Access Management) Overview
- AWS IAM Overview
- Security Token Service Overview
- Demo/Lab: Implement various AWS security features

## Module 9: Cloud Provisioning, Management and Monitoring

- CloudFormation
- Amazon CloudWatch Overview
- AWS CloudTrail Overview
- Event and Notification Management
- Demo/Lab: Creating alarms and notifications using CloudWatch service
- Demo/Lab: Configuring CloudTrail service and monitoring the logs
- Demo/Lab: Creating CloudFormation templates and provision AWS infrastructure

## Module 10: Cloud Advance Services Overview, Best Practices and Latest Trends

- Compute - EC2 Container Service, Lambda, Batch, Lightsail
- Messaging - SQS, SNS, SES, Pinpoint
- Developer Tools - CodeCommit, CodeBuild, CodeDeploy, CodePipeline
- AWS Analytics & AI Services Overview
- AWS IoT Services Overview
- AWS Mobile Services Overview
- Organizations, Resource Groups & Tagging
- Best Practices and Latest Trends