# AWS architecting

# 40 Hours

## Overview:

The Cloud is the most important advance in designing highly available, fault tolerant and scalable web or data processing applications. AWS is the premiere cloud provider today. This course teaches how to utilize the services offered by AWS in order to design and implement the most efficient, cost effective, easy to code and easy to maintain systems which will run on AWS infrastructure. We will cover both IASS and PASS topics teaching both how to port on-prem applications to the cloud and use AWS as a IASS provider but also how to use AWS as a PASS provider which should cut costs and investment.

## Intended Audience

This course can be attended by anyone with IT experience. In fact, attendees often have diverse backgrounds: Infrastructure, IT, programmers, data base administrators, system administrators, devops people, team traders, architects, finance administrators, managers and more.

Experience in IT is a requirement and a plus.

# At the end of the course participats will be able to..

Receive requirements for applications and design the right architecture for this application in the AWS cloud. This means they will be able to distinguish between the different main services that AWS provides, decide which will be more effective in which case and be able to monitor and change their decisions as conditions change.

This course can also be used to prepare one for AWS associate architect certification exam.

# Outline

- AWS overview.
- Types of applications:
  - pure cloud
  - hybrid
  - on-prem
- Principles of designing highly available, fault tolerant, scalable systems.
- IASS services intro.
  - regions
  - availability zones
  - best practices
- Infrastructure services
  - VPC
  - subnets
  - security groups
  - nacls
  - IGW
  - Elastic IPs
  - ELB
  - Standard petterns
    - multiple availability zones
    - load balancers on entry

- ▪ load balancers between layers
- ▪ separation of subnets
- ▪ mutltiple VPCs
- ▪ bastion hosts
- ▪ multiple accounts
- Identity and secure access services
  - o IAM
  - o users, groups, roles
  - o best practices
  - o interfacing other identity systems.
- EC2
  - o machine types
  - o AMIs
  - o EBS
  - o Pricing
  - o Monitorig (CloudWatch)
  - o Auto scaling
- Storage and mass data access services
  - o S3
  - o Glacier
  - o Storage Gateway
  - o Snow family
  - o EFS
  - o FSx
  - o AWS Backup.
  - o Cloud Front
  - o Security and encryption
  - o Route53.
  - o Other offerings
- Application services
  - o SQS
  - o SNS
  - o Elastic Transcoder
  - o Workspaces
  - o Other offerings
- Database services
  - o RDS

- DynamoDB
- Database Migration Service (DMS).
- Aurora
- ElastiCache
- Redshift
- Other offerings
- High level services
  - Elastoic Beanstalk
  - OpsWorks
  - Cloud Formation
  - Other offerings
- Networking services
  - PrivateLink
  - Direct Connect
  - Transit Gateway
  - Other offerings
- Developer and Devops services
  - CodeCommit
  - CodeBuild
  - CodePipeline
  - CodeDeploy
  - CodeStar
  - Other offerings
- Container and Serverless services
  - Container Registry
  - EKS
  - ECS
  - Fargate
  - API Gateway
  - Lambda
  - How to combine with API gateway, Kinesis, S3, DynamoDb, ...
  - Step Functions
  - Other offerings
- Conclusions
  - Cloud best practices.
  - Keeping up with AWS

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