

# **AWS Solutions Architect**



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## Introduction to Cloud Computing

Legacy Datacenters and Software Defined Datacenters.  
IaaS, PaaS and SaaS.

## Introduction to Amazon Web Services

Account Setup, Introduction to Console, General Settings.

## Virtual Private Cloud (VPC)

1. Introduction to On-Prem Networking and Addressing.
2. Concepts, Limits, Pricing and Features of VPC.
3. Concepts of CIDR, EIP and Public Address in AWS.
4. AWS Regions and Availability Zones.
5. Create and Manage VPC, Subnets.
6. Concepts, creation and management of Internet Gateways, NAT Gateways.
7. Routing theory, design and implementation for VPC.
8. Concepts and creation of Inter VPC Peering.
9. Design and Implementation of network security with ACL's and Security Groups.
10. Designing and configuring On-Prem to Cloud-Prem connectivity with VPN.

## Elastic Compute Cloud (EC2)

1. Introduction to EC2.
  2. VM purchase options in EC2.
  3. VM types and pricing in EC2.
  4. KeyPair concepts, creation on AWS console and non AWS tools.
- A. Instance Management:
1. Instance Tags.
  2. Changing Instance Size.
  3. Increasing Storage.
  4. Opening Ports.
  5. Configuring Elastic IP to Instance.
  6. Boot Scripts.
  7. Monitoring Instance with Cloud Watch.
  8. Using Placement Group.
  9. Configuring Alarms and Event Notification.



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## **B. Instance Storage:**

1. Introduction to Elastic Block Storage(EBS).
2. Types of EBS.
3. Creating EBS volumes
4. Attaching EBS volumes to Instances.
5. EBS Snapshots.
6. Migration of EBS Snapshots.
7. Restoring EBS Snapshots.

## **C. Instance Image:**

1. Introduction to Amazon Machine Image(AMI).
2. Various methods of creating AMI.
3. Creating AMI and using AMI to create Instances

## **D. Instance Load Balancing:**

1. Introduction to Elastic Load Balancer(ELB).
2. Types of ELB.
3. Concepts and implementation of ELB.
4. Target Group and Instance Health Concepts.
5. Adding Instances to Target Groups.
6. Testing the Deployment.

## **E. Instance Auto Scaling:**

1. Introduction and concepts of Auto Scaling.
2. Concepts of Launch Configuration.
3. Creating a custom Launch Configuration.
4. Creating Auto Scaling Group.
5. Auto Scaling Policies.
6. Adding Target Group to Auto Scaling.
7. Testing Auto Scaling Configuration

## **F. Migrating On-Prem VM to EC2:**

1. Migration concepts and Prerequisite.
2. Preparing VM for Migration.
3. IAM Role for Migration.
4. Uploading .ova or .vmdk of VM to S3.
5. AWS CLI Intro.
6. Creating AMI from Files in S3.
7. Create the Instance.



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## AWS Storage

### A. Simple Storage Service (S3):

1. Introduction to S3.
2. Pricing of S3.
3. Concepts of Buckets and creating Buckets in S3.
4. Public vs Private Buckets.
5. S3 Object Class and their differences.
6. S3 Versioning.
7. S3 Objects Replication and Limitations.
8. S3 Objects lifecycle policy.
9. S3 Locks.
10. S3 Bucket Encryption.
11. S3 Static Website Hosting.
12. AWS CloudFront for low latency delivery of S3 Objects

### B. Azure Blob Storage:

1. Introduction to EFS.
2. Pricing of EFS.
3. Concepts of NFS vs SMB.
4. Configuring EFS and various configuration options.
5. Mounting EFS Shares on multiple Instances Simultaneously.

### C. Glacier:

1. Glacier Concepts.
2. Pricing of Glacier vs On-Prem Backup Technologies.
3. Creating Glacier Vault.
4. Backup Data to Glacier Vault.
5. Data Recovery from Glacier Vault.
6. Data Recovery Options and Pricing.

### D. Storage Gateway:

1. Introduction to Storage Gateway.
2. Concepts and Pricing of ASG.
3. Prerequisites for implementation of ASG virtual appliance on premises.
4. Connecting ASG to Cloud-Prem Storage.
5. Testing ASG Implementation.



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## AWS Database

### A. Relational Database Service(RDS):

1. Introduction to SQL and On-Prem SQL solutions.
2. Introduction to RDS.
3. SQL solutions supported by RDS.
4. Special introduction to Amazon Aurora Database.
5. Creating Database in RDS.
6. Multi-Az Deployment.
7. Connection to RDS
8. RDS Snapshots and Restore.
9. RDS ReadOnly Replica.
10. Promoting ReadOnly Replica.
11. RDS Backup.

### B. DynamoDB:

1. Introduction to NoSQL and On-Prem NoSQL solutions.
2. Introduction to DynamoDB.
3. Creating Tables in DynamoDB.
4. Writing to tables in DynamoDB.
5. Security concepts for DynamoDB.
6. Performance configuration and AutoScaling.

### C. RedShift:

1. Data Warehousing concepts and On-Prem Solutions.
2. Introduction to AWS RedShift.
3. Comparing AWS RedShift to On-Prem solution



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## Elastic Bean Stalk (EBS)

1. Introduction to On-Prem Application Hosting Technologies.
2. Introduction to EBS.
3. Creating EBS Applications.
4. Configuration of Application Environment.
5. Hosting a Custom Application.
6. Creating Environment Clone.
7. Swapping Environment URL's

## Identity and Access Management (IAM)

1. Introduction to IAM.
2. Creating Users and Groups.
3. Password Policies.
4. MFA and Access Keys.
5. User Policies and defining custom policies.
6. IAM Roles and creating Roles.

## Route53

1. Introduction to Name Resolution.
2. Domain Name Registration and Domain Name Registrars.
3. Hosting Zones in AWS Route 53.
4. Public and Private Zones.
5. Creating Records and testing them.
6. Record Types, Load Balancing.
7. Traffic Management Concepts

## AWS Lambda

1. Introduction to Serverless Computing.
2. Introduction to Lambda.
3. Creating Functions in Lambda.
4. Creating IAM Roles for Lambda.
5. Triggering Lambda Functions.
6. Testing a simple Python Boto3 function in Lambda.



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## AWS Cloud Formation

1. Introduction to Automated Provisioning.
2. AWS Cloud Formation concepts.
3. Introduction to JSON and YAML.
4. Defining a JSON or a YAML template.
5. Using CloudFormation Designer.
6. Create Stack and Provision Resources in AWS

## Simple Notification Service (SNS)

1. Introduction to SNS.
2. Creating SNS Topics.
3. Email and SMS subscriptions.
4. Triggering SNS Topic.

## Other AWS Services

1. Introduction to AWS SnowBall.
2. Introduction to AWS SnowMobile.
3. Introduction to AWS Kinesis.
4. Introduction to AWS Lex.
5. Introduction to AWS Polly.
6. Introduction to AWS SQS.
7. Introduction to AWS SES.
8. Introduction to AWS CodeCommit.
9. Introduction to AWS CodeBuild.
10. Introduction to AWS CodePipeline.
11. Introduction to AWS ECS.



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