

AWS Solution Architect-Associate Training Syllabus

Module 1:- AWS Cloud Computing Basics

Learning Objective: In this Module you will learn about AWS Cloud Computing Basics, Creation of a Free AWS Account, Understanding of AWS Architecture & Support Plan

- Cloud Computing- IaaS, SaaS, PaaS
- Overview of AWS Cloud
- AWS Global Infrastructure
- AWS Free Tier Account Creation
- AWS Management Console
- AWS Region
- AWS Availability Zone(AZ)
- AWS Support Plan
- AWS Payment Method
- Setting up Billing/Budget Alarm

Module 2:- Identity and Access Management (IAM)

Learning Objective: In this Module you will learn about Identity and Access Management (IAM), AWS Roles/Permissions & How to give access of your AWS account to other users

- Identity and Access Management (IAM)
- Create IAM Users & Group
- Copy Permission from existing users
- Applying Policies/Permission to Groups
- IAM Users Sign-in Link
- Set Password Policy for IAM Users
- Activate Virtual Multi-Factor Authentication(MFA)
- Create access keys, Activate/deactivate keys

Module 3:- Virtual Private Cloud (VPC)

Learning Objective: In this Module you will learn VPC, Subnet, CIDR and Difference in Default and Custom VPC

- Basic of Networking
- Virtual Private Cloud(VPC)
- CIDR/IP Range & Subnet
- Understanding & Working on Default VPC
- Creating Custom VPC
- Adding CIDR in VPC
- Creating Subnet in VPC

Module 4:- Components of VPC i.e. Route Table, NACL, SG, Internet Gateway (IG)

Learning Objective: In this Module you will learn about various components of VPC

- Understanding Route Table
- Create Custom Route Table
- Add Route in Route Table
- Associating Subnet to Route Table
- Internet Gateway
- Create Custom Internet Gateway
- Attach Internet Gateway to VPC
- Security Group(SG)
- Understanding Default SG
- Create Custom SG
- Create Inbound & Outbound Rule
- Permit Rule in SG

- **NACL (Network Access control List)**
- **Understanding Default NACL**
- **Create Custom NACL**
- **Create inbound & outbound rule**
- **Associate NACL to Subnet**
- **Difference Between NACL & SG**

Module 5:- EC2

Learning Objective: In this Module you will learn about EC2 creation, EC2 families, Amazon Machine Image and EC2 Deletion

- **Basic of Virtualization**
- **What is EC2**
- **EC2 Instance Families**
- **Amazon Machine Image(AMI) & AWS Marketplace**
- **Delete on Termination settings**
- **Launching an EC2 Instance**
- **Create Public/Private Key Pair**
- **EC2 SLA**
- **Shared & Dedicated Host, dedicated Instance**
- **EC2 Instance State**
- **Stop & Start of EC2 Instance**
- **EC2 Shutdown behavior**
- **Enable EC2 Termination Protection**
- **EC2 Elastic IP**
- **EC2 Instance State**
- **EC2 Hibernation**

Module 6:- NAT Instance, NAT Gateway & VPC Peering

Learning Objective: In this Module you will learn NAT Type & Peering between VPC

- Need of NAT
- Understanding of NAT Instance
- Private & Public Subnet
- Source/Destination Check setting
- Understanding of NAT Gateway
- Need of VPC Peering
- Create Peering Connection and test
- Editing Route Table for VPC peering to work

Module 7:- Elastic Block Storage (EBS) & Instance Store

Learning Objective: In this Module you will learn about Type of Storages

- What is EBS
- Create EBS Volume
- Type of EBS Volume
- General Purpose & Provisioned IOPS SSD
- Throughput Optimized & Cold HDD
- What is Instance Store Volume
- Persistent/Non-Persistent volume
- Hot Add EBS Volume
- Hot Extend & Modify EBS Volume
- EBS Volume SLA
- EBS Backed Instance & Instance Store Backed Instance

Module 8:- Reserved Instance, On Demand Instance, Saving Plans, Spot Instance

Learning Objective: In this Module you will learn about multiple ways to Save Cost in AWS

- EC2 Purchasing Options
- On Demand Instance
- Reserved Instance
- Standard & Convertible EC2
- EC2 Saving Plan
- EC2 Spot Plan
- Spot Instance Pricing History
- Spot Instance Use Cases

Module 9:- ENI & Placement Groups

Learning Objective: In this Module you will learn about ENI & different types of Placement Groups

- Elastic Network Interface(ENI)
- Attach ENI to EC2
- Assign Elastic IP to ENI
- What is Placement Group
- Need of Placement Group
- Cluster Placement Group
- Spread Placement Group
- Partition Placement Group

Module 10:-EBS Snapshot, EBS Volume Migration

Learning Objective: In this Module you will learn about EBS Snapshot

- Create Snapshot of EBS Volumes
- Restore Snapshot
- Incremental Nature of snapshot
- Copying Snapshot
- Migrating EBS from one AZ to another AZ using Snapshot
- Migrate EBS from one Region to another Region using Snapshot

Module 11:- EBS Encryption, KMS, Private & Public Snapshots, Sharing & Copying EBS Snapshot, Creating AMI

Learning Objective: In this Module you will learn about EBS Volume & Snapshot Encryption, the ways to share the snapshot in AWS, Encryption of Disk to protect data & Creation of AMI

- What is Encryption
- Key Management Service(KMS)
- Encryption keys- Customer Managed Key & AWS Managed Key(Default key)
- Encrypted EBS Volume
- Encrypted Snapshot
- Encryption At Rest
- Encryption in Transit
- Changing the Encryption State
- Private and Public Snapshots
- Sharing EBS Snapshot
- Copying EBS Snapshot
- Creating Custom Amazon Machine Image (AMI)
- De-Registering AMI
- Deleting AMI

Module 12:- Elastic Load Balancer, Installing IIS, Testing Load Balancer & Auto scaling deep dive

Learning Objective: In this Module you will learn about Load balancer & Auto Scaling

- What is Load Balancer
- Types of Load Balancer
- Working on Classic Load balancer
- ELB Nodes
- Adding EC2 in Load balancer
- Configuring health Check in ELB
- Installing IIS in EC2
- Test Load Balancer in Action
- Need of Auto scaling
- Auto Scaling Components
- Launch Configuration
- Auto Scaling Group
- Auto Scaling Policies
- Re Balancing in Auto Scaling
- Cloud Watch with Auto Scaling
- ELB with Auto Scaling

Module 13:- S3 storage, S3 objects Cross Region Replication, Hosting Website in S3, SNS, Relational Database RDS, Configure Active Standby RDS & Check Failover, Create Read Replica

Learning Objective: In this Module you will learn about S3, S3 Replication and Creation of Static Website using S3

- **Simple Storage Service – S3**
- **S3 availability & Durability**
- **S3 Bucket**
- **Versioning in S3**
- **Configuring Cross Region Replication**
- **S3 Storage Class Type & SLA**
- **Hosting Static Website in S3**
- **Creating topic in Simple Notification Service (SNS)**
- **Configuring Simple Notification Service (SNS) on S3**
- **What is Relational database**
- **Relational Database as a services (RDS)**
- **Creating Active & Standby RDS**
- **Multi-AZ Deployment of RDS**
- **Perform Failover**
- **Create Read Replica**
- **Test using MySQL Workbench**

Module 14:- Redshift, Kinesis, AWS Lambda, Dynamo DB, Route 53, Testing Routing Policies, Creating A Record, CNAME Record, Alias Record

Learning Objective: In this Module you will learn about Global DNS & Different Type of Database

- Redshift
- Redshift Use Cases
- What is Non-Relational Database
- Dynamo dB
- Dynamo dB Use Cases
- Testing Dynamo dB
- Kinesis
- Kinesis Use Cases
- Lambda
- Lambda Use Cases
- What is Route 53
- Create Hosted Zone
- Creating A & CNAME Record
- Creating Alias record
- How to register Domain name
- Check Health of Resource
- Test different routing policies
- Using ELB in Route53
- Using S3 in Route53

Module 15:- Cloud Front, Cloud Formation, SQS, Cloud Trail AD Connector, IAM Roles for EC2 and S3 access, On premises user Integration with Cloud(Hybrid Cloud),

Learning Objective: In this Module you will learn about use of CDN in cloud, logging & Messaging Service in AWS, Achieving SSO using AD Connector

- CloudFront
- Using S3 as CloudFront Edge Location
- Create CloudFront
- CloudFormation
- Test Cloud Formation using JSON template
- CloudTrail to Check Logs
- What is Simple Queue Service(SQS)
- Create a Queue & Send Message
- Creation of Domain Controller (DC)
- Creation of AD Connector
- On Premises DC Integration using AD Connector

Module 16:- Deploying & Configuring Fortinet Firewall, VPG & VPN Setup, Letter of Sorry (Bill reversal)

Learning Objective: In this Module you will learn how to connect your on premises office to AWS cloud using VPN and you will learn how to raise a Bill Reversal Request

- Need of VPN
- How to Setup VPN
- Virtual Private Gateway(VPG)
- Deploy Fortinet Fortigate Firewall
- Configuring Firewall
- Create Site – To – Site VPN Tunnel
- Test connectivity using EC2 in 2 different regions
- Request for Reversal of Charges