

# **AWS solution architect and Sysops Syllabus**

## **Module 1: - Intro of cloud computing and AWS**

- I. What are AWS Pre Requisites, and Strategy of Success?
- II. AWS Certification Tracks.
- III. What is Cloud Computing, Cloud Computing Models (IAAS, PAAS, and SAAS)?
- IV. Types of Clouds. (Private, Public, Hybrid)
- V. Understanding AWS Global infrastructure. Regions, Availability Zones.
- VI. AWS Edge Locations, Edge Cache. How to select a best Region.
- VII. Sign-Up for AWS Services. A visit to AWS Control Panel.
- VIII. AWS Services and Terminologies.
- IX. AWS Free Tier, Launch Your first EC2 instance. Windows OS
- X. AWS Free Tier, Launch Your first EC2 instance. Linux OS.
- XI. About AWS Free Tier Resources after Sign up for 12-Months.

## **Module 2: - VPC (Virtual private compute)**

- I. Discussion for how to build data center in AWS.
- II. Virtual Private Cloud (Concept in-depth)
- III. Virtual Private Cloud (Use Cases)
- IV. Nat-gateway and internet gateway.
- V. Public subnet & private subnet.
- VI. Route table & manage the routing table.
- VII. Security Group Basics.
- VIII. Default Security Group for Your VPC.
- IX. Security Group Rules.
- X. Access Control List (ACL's) in VPC.
- XI. Elastic Network Interface ENI.
- XII. Type of IP Addresses in AWS.
- XIII. AWS Bastion Host.
- XIV. Working with VPC Peering.
- XV. Open VPN Server and Client VPN Endpoints
- XVI. Site to Site VPN- (Connect your VPC with on-Premise Network over VPN)

## **Module 3: - IAM (Identity and access management)**

- I. (IAM) Identity and Access Management.
- II. IAM Policy.
- III. IAM Role.
- IV. Cross Account Management.
- V. MFA (Multi Factor Authentication).

## **Module 4: - EBS (Elastic Block Store)**

- I. AWS Cloud Storage Services. Understanding EBS (Elastic Block Storage)
- II. EBS Volume Types.
- III. Elastic Block Storage (EBS) \_ EBS Working with Windows OS.
- IV. Elastic Block Storage (EBS) \_ EBS Working with Linux OS.
- V. Ephemeral Storage, EBS vs. Instance Store EC2 instance (Temporary Storage).
- VI. Understanding EC2 EBS Volume Backup, Snapshot.
- VII. Understanding EBS snapshots (incremental) working.

## **Module 5: - EFS (Elastic file system)**

- I. Understanding EFS (Elastic File System).
- II. Elastic File System (EFS) configuration with Linux EC2 instance.
- III. Restricting Client access

## **Module 6: - S3 (Simple storage service) and S3 Glacier**

- I. How to Create Bucket and Upload object.
- II. How to mount bucket inside Windows Machine.
- III. How to mount bucket inside Linux Machine.
- IV. S3 Versioning for Bucket.
- V. How to host static website on S3 bucket.
- VI. S3 Transfer Acceleration.
- VII. Server Access logging.
- VIII. S3 Bucket replication with in the region.
- IX. Storage Classes in S3.
- X. S3 Requester Pays.
- XI. VPC Endpoint for S3 Bucket.
- XII. AWS Glacier Storage Service and Archive Data.
- XIII. AWS S3 to Glacier Transition, Retrieve Data from Glacier to S3 and Glacier Vault.

## **Module 7: - EC2 (Elastic compute cloud)**

- I. EC2 instance Families and Types.
- II. Calculating EC2 instance Pricing. Pricing Models. On Demand, Reserved, Spot instance.
- III. EC2 Tenancy Models, Shared instance, Dedicated Instance, Dedicated Host.
- IV. Change EC2 instance Type. (Upgrade/Downgrade)- Resize EC2 EBS Backed Instance.
- V. Creating Custom Image.
- VI. How to recover Private key file.
- VII. DLM (Data Lifecycle Manager).
- VIII. Launching Instance by using Launch template.

## **Module 8: - ELB (Elastic Load balancing)**

- I. Elastic Load Balancing. (ELB).
- II. Configuring Elastic Load balancer.
- III. Route Traffic to a particular Target Group Using Application ELB.
- IV. SSL Certificate use with ELB.
- V. Connection Draining.
- VI. Sticky Sessions.
- VII. How to manage ELB Logs.

## **Module 9: - ASG (Auto scaling group)**

- I. Understand AWS Auto Scaling Group (ASG).
- II. Benefits of Auto Scaling.
- III. Auto Scaling Lifecycle.
- IV. Auto Scaling Limits.
- V. Launch Configuration.
- VI. Auto Scaling Group.
- VII. Monitoring auto Scaling Instance and group.
- VIII. Troubleshooting.

## **Module 10: - RDS (Relation database service)**

- I. Parameter Group.

- II. Custom subnet Group.
- III. How to launch Amazon MySQL RDS Instance.
- IV. Take snapshot of DB instance.
- V. Read replicas of DB instance.

#### **Module 11: - CloudWatch**

- I. Cloud Watch, how it Works, Alarms, Notification, EC2 Action. EC2 Status Check, Monitoring.
- II. Custom Metric Monitoring, Memory/Disk Utilization. (Using Scripts).
- III. Cloud Watch-Windows EC2 disk space utilization monitoring using Power shell script.
- IV. Cloud Watch Log Agent- Monitor Log Files.

#### **Module 12: - AWS – CLI**

- I. Installing AWS CLI tool inside Linux/Windows machine by using AWS bundle installer.
- II. AWS CLI tool in windows and Linux by using PIP method.
- III. AWS CLI setup and practical.

#### **Module 13: - Route 53**

- I. How to create Private hosted zone.
- II. How to register domain from Third party ISP.
- III. Integrating ELB with route53 service.
- IV. Integrating S3 website with route53 service.
- V. Failover Policy Lab.
- VI. Latency Policy Lab.
- VII. Weighted Policy Lab.
- VIII. Geolocation Policy Lab.
- IX. Multivalue Answer Policy Lab.

#### **Module 14: - SNS (Simple notification service)**

- I. How to create a SNS topic; publish a Message to topic and Subscription.
- II. Use SNS topic to receive notification on mobile and publish a text message.
- III. SNS Notifications When Auto Scaling Group Scales.
- IV. Setting Up an SNS Topic Using the AWS CLI

#### **Module 15: - Migration (on-premises to AWS cloud)**

- I. On Premises DC migration to Cloud.
- II. Planning for migration.

#### **Module 16: - Cloud Formation**

- I. Use cases of Cloud Formation.
- II. How to create, update and delete a stack.
- III. How to understand syntax of YML and JSON templates.
- IV. Creating VPC, Volumes and Instances by using Cloud Formation

#### **Important Info: -**

- 1. Course cover in approx. max 25 classes
- 2. Recorded video and note will provide after every class and access life time.
- 3. Provide interview question for sure selection.
- 4. Help to make impressive resume.
- 5. Join upcoming all AWS batch free for revision.
- 6. Share job openings.
- 7. Life time support for doubts and also help in your office server issue