Objectives

- Core infrastructure services discussion
- Ensure data integrity and data security on AWS technology.
- Formulate solution plans and provide guidance on AWS.
- Design and deploy scalable, highly available, and fault tolerant systems on AWS.
- Decipher the inbound and outbound of data to and from AWS.
- Select the appropriate AWS service based on data, computer, database, or security requirements.
- Estimate AWS costs and identify cost control mechanisms.
- Identify the lift and shift of an existing on-premises application to AWS.
- AWS Architecture best practices

Modules of the course

- Module 01   :   Cloud Computing Overview
- Module 02   :   AWS Overview
- Module 03   :   Identity and Access Management
- Module 04   :   Linux Introduction
- Module 05   :   Elastic Compute Cloud (ec2)
- Module 06   :   Load Balancers and Auto Scaling Group
- Module 07   :   AWS Systems Manager
- Module 08   :   Amazon Route 53
- Module 09   :   Networking Basics
- Module 10   :   Virtual Private Cloud (VPC)
- Module 11   :   Amazon Relational Database
- Module 12   :   Amazon Simple Storage Service (S3)
- Module 13   :   Security Services
- Module 14   :   Application Services
- Module 15   :   Migration Services (Server and Databases)
- Module 16   :   DevOps and Container services in AWS
- Module 17   :   ETL Services in AWS
- Module 18   :   Monitoring Services
- Module 19   :   Multi AWS Account Management
- Module 20   :   Job/Certification ready discussions

Prerequisites

- Absolute Beginners. No prior AWS experience is necessary.
- Previous System Administration/ Development knowledge would be an added advantage.
- Cloud Computing enthusiasts

AWS Course Content

Introduction to Cloud Computing

- Introduction to cloud computing
- Essential Characteristics of Cloud Computing
- Service Models in Cloud computing
    - o SaaS
    - o PaaS
    - o IaaS
- Deployment models in Cloud Computing
    - o Public Cloud
    - o Private Cloud
    - o Hybrid Cloud
    - o Community Cloud
- Introduction to AWS
- AWS Account creation & free tier limitations overview

Identity Access Management

- Root Account Vs IAM user
- Multi Factor Authentication for Users
- IAM Password Policies
- Creating Customer Managed Policies.
- Policy generator
- IAM Policy Simulator
- Auditing User Activity

Linux Introduction (Free Course)

- Basics of Linux for AWS
- Linux Installation and Basic commands overview
- Web Server and Services Configurations

Compute

- EC2 Instance Launch Wizard with Windows and Linux OS

- EC2 Instance Types and Classes

- Security groups

- Amazon EBS Volumes and Snapshots

- Amazon Data lifecycle manager (DLM)

- Creating customized Amazon Machine Images

- User Data and Metadata

- Creating Billing Alarm and EC2 instance alarms.

- CloudWatch Dashboard creation

- Amazon Eventbridge

- Elastic File System

- Elastic Beanstalk

- Placement Groups

- AWS CLI and IAM Roles

Load Balancing and Auto Scaling

- What is Load Balancing
  - Application Load Balancer
  - Network Load Balancer
- Auto Scaling Groups
  - Manual Scaling
  - Step Scaling
  - Target Tracking Scaling
  - Schedule Scaling

AWS Systems Manager

- Run Command
- Session Manager
- Resource Naming Standards in AWS
- Tag Editor and Resource Groups

- AWS Secrets Manager

Route 53

- DNS Records overview
- Routing Policies
- Hosting sample Website and configuring Policies.
    - o Simple RP
    - o Weighted RP
    - o Failover RP
    - o Geo Location RP
    - o Failover RP

VPC (Virtual Private Cloud)

- Networking Basics
    - o Public IPs & Private IPs
    - o CIDR Range
    - o Subnet Calculations
- Creating custom VPCs and custom Subnets
- Network ACL's
- Route Tables & IGW
- VPC Peering
- Flowlog creation to S3 and Cloudwatch Logs Group
- VPC Endpoints
- AWS Transit gateway
- VPN Configuration with AWS (OpenVPN/Site-to-site VPN)

Databases

- Launching a RDS Instances (MySQL, MSSQL & Aurora)
- Multi Availability Zone Cluster/Instance

- Read Replicas for RDS Cluster/Instance
- What is DynamoDB
- Redshift and Elastichache overview

Storage

- What is Simple Storage Service (S3)
- Storage Classes
- Versioning
- Cross-region replication / Same Region replication
- Life Cycle Management
- Security & Encryption
- KMS (Key Management Service)
- Static Webhosting with S3 bucket
- Events configuration on S3 buckets
- Enabling cross account access for S3
- S3 Data management and backup using 3rd Party applications.
- Pre-Signed URLs
- Storage Gateway
- Direct Connect and AWS Snowball

Security Services:

- CloudTrail
- AWS Config
- Key Management Services
- AWS Certificate Manager
- AWS Trusted Advisor
- Content Delivery Networks / CloudFront
- AWS Shield and WAF (Web Application Firewall)

Application Services

- Simple Email Service
- Simple Queue Service
- Simple Notification Service
- Directory Services and Adding EC2 instance to Domain.
- AWS Simple Monthly calculator

Migration Services

- **SMS -** Server Migration Service
  o Azure to AWS
  o GCP to AWS
  o On-Premise to AWS
- **DMS –** Database Migration Service

DevOps Tools Overview

- What is DevOps in Cloud
- Code Pipeline
- Code Commit
- Code Deploy
- Lambda
- Cloudformation (IaC Service)
- AWS Backup

Containers in AWS
- Elastic Container Registry
- Elastic Container Service with Fargate
- Automating ECS deployments

ETL Services in AWS:
- Glue
- Athena

- Configuring ETL with S3, Glue and Athena

Monitoring on AWS:
- AWS Budgets
- AWS Cost Explorer
- Creating Custom Metrics with CloudWatch

AWS Multi Account Management
- AWS Organizations
- Amazon Single Sign-On

5 Capstone Project that covers end-to-end services.

Quiz and Scenario based questions discussions.

Resume Key Points and AWS Certifications overview.

Interview and Certification Exam Questions discussion while discussing topics.