



## Amazon Web Services (AWS)

### Benefits to You

- You will benefit from this course as you learn detailed information on the architecture of an AWS Services and enabling you to effectively manage your AWS Services, techniques and tools, Troubleshooting On All Topics , AWS Best Practices and Use Cases On All Topics

### Course Topics

#### Introduction to Cloud computing

- Introduction to cloud computing
- Why Cloud computing?
- Benefits of Cloud Computing Types of Cloud Computing
- Public Cloud, Private Cloud, Hybrid Cloud
- Software as a Service, Platform as a Service
- Infrastructure as a Service
- Horizontal vs. vertical scaling Cloud Computing Issues
- Security

#### Introduction to AWS

- Elastic computing
- Introduction to the AWS products
- Regions and Availability Zones
- Signing up for AWS
- AWS Free usage tier
- Introduction AWS management Console

#### EC2(Elastic Compute Cloud)

- Instances creation
- Understanding AMI
- Launching first AWS instance



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- On-demand Instance pricing, Reserved Instance pricing
- Setting up Security Groups
- Choosing the AMI
- Creating new AMI
- Deploying a new instance from the created AMI, Key Pairs,
- Sharing AMI to different Account
- Elastic IP's

## **EBS(Elastic Block Storage)**

- Creating EBS volumes
- Deleting EBS volumes
- Attach and Detach EBS volumes
- Mounting and unmounting EBS volumes
- Creating and deleting snapshots
- Modify an Existing EBS Volume

## **AWS Accounts and Billing**

- Create a Billing Alert
- EC2/RDS/Many More Services Pricing Options
- Cost Explorer
- Reducing Costs / Cost Control Strategies
- Managed vs. Unmanaged Services

## **AWS VPC(Virtual Private Cloud)**

- VPC configuration
- Subnet Overview and Hands On
- Internet Gateways & Route Tables
- VPC security
- VPC Peering



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- NAT Instances
- NAT Gateways
- DNS Resolution Options
- Elastic IP
- Inbound and outbound ACL's
- NACL & Security Groups
- Configure ACLs
- Security groups
- Network Access Control List
- Web Application Firewall (WAF)
- Types of VPC
- VPC Flow Logs
- VPC Endpoints
- Bastion Hosts
- Egress Only Internet Gateway
- Types of gateways

## **AWS Route53**

- Creating Zones
- Route 53 Hands On
- CNAME vs Alias
- Routing Policy – Simple
- Routing Policy – Weighted
- Routing Policy - Failover
- Routing Policy – Latency
- Routing Policy - Geolocation
- Understanding routing policies
- Weighted simple and failover policies

## **AWS IAM(Identity Access and Management)**

- Creating users and groups
- Listing IAM Groups



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- Adding and Removing Users in an IAM Group
- Attaching a Policy to an IAM Group
- Renaming an IAM Group
- Deleting a Group
- Providing Access Across AWS Accounts
- Providing Access to AWS Services
- Creating a Role for an IAM User
- Creating a Role for an AWS Service
- Granting a User Permissions to Switch Roles
- Switching Roles (AWS CLI)
- Applying policies
- Password Policy
- Roles Command line Management
- MFA
- Delegate Access Across AWS Accounts Using IAM Roles
- Identify federation

## AWS CloudWatch

- Cloudwatch dashboard
- Configuring Monitoring Services
- Setting thresholds
- Configuring actions
- Creating a cloud watch alarm
- Getting statistics for ec2 instances
- Monitoring other AWS services
- Configuring Notification
- Integrating cloudwatch with auto scaling Simple Notification Service(SNS)
- What is SNS?
- Create a topic
- Create subscription

## Auto Scaling and Load balancing



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- Create an Auto Scaling Group
- Create a policy for your Auto Scaling Group
- Set up an Auto-scaled, load-balanced Amazon EC2 application
- Identity access management
- Create load balancer
- Manage Load balancer

## AWS Simple Storage Service

- What is S3
- S3 Infrequent Access Storage
- S3 durability and redundancy
- S3 Buckets
- S3 Uploading Downloading
- S3 permissions
- S3 object versioning
- AWS S3 Encryption
- AWS S3 CORS
- AWS S3 Static Website Hosting
- S3 Lifecycle Policies Glacier storage
- AWS CLI Practice with S3
- IAM Roles and Policies Hands On
- AWS Policy Simulator
- AWS EC2 Instance Metadata
- S3 Access Logs
- Storage Classes for Frequently Accessed Objects
- Storage Classes for Infrequently Accessed Objects
- Storage class for Unknown or Changing Access Objects

## AWS Relational Database Service (RDS)

- Selecting the Database type
- Configuring the Database
- Creating a DB Instance



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- Connecting to a DB Instance
- Modifying a DB Instance
- Maintaining a DB Instance
- Upgrading the Engine Version
- Renaming a DB Instance
- Rebooting a DB Instance
- Stopping a DB Instance
- Starting a DB Instance
- Deleting a DB Instance
- Tagging RDS Resources
- Creating Database
- Configuring backups
- Configuring the maintenance windows
- Connecting to the database
- Backing Up and Restoring
- Working With Backups
- Creating a DB Snapshot
- Restoring from a DB Snapshot
- Copying a Snapshot
- Sharing a Snapshot
- Point-in-Time Recovery
- Deleting a Snapshot
- Working with Read Replicas
- Multi-AZ RDS
- RDS and Cloudwatch
- Troubleshooting for Amazon RDS

## AWS DynamoDB

- Working with Tables in DynamoDB
- Working with Items in DynamoDB
- Working with Queries
- Working with Scans



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- Improving Data Access with Secondary Indexes
- Capturing Table Activity with DynamoDB Streams
- DAX Cluster Components
- Creating a DAX Cluster
- DAX and DynamoDB Consistency Models
- Using the DAX Client in an Application
- Managing DAX Clusters
- Configure AWS Credentials in Your Files Using Amazon Cognito
- Loading Data From DynamoDB Into Amazon Redshift
- Backing Up a Table
- Restoring a Table from a Backup
- Restoring a Table To a Point in Time
- Deleting a Table Backup

## Amazon Elastic File System (Amazon EFS)

- Create an EFS File System
- Mount the File System
- Test the File System
- Instance Lifecycle
- Launch
- Connect
- Stop and Start
- Hibernate
- Reboot
- Retire
- Terminate
- Recover

## AWS Elastic Beanstalk(EB)

- Elastic Beanstalk Overview
- EB First Environment
- EB Second Environment



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- EB Deployment Modes
- EB Deployment of PHP Platform Application
- EB Deployment with External RDS Connectivity
- EB Advanced Concepts

## **AWS Simple Notification Service(SNS)**

- Creating a Topic
- Listing, Adding, and Removing Tags for an Amazon SNS Topic
- Subscribing an Endpoint to an Amazon SNS Topic
- Enabling Server-Side Encryption (SSE) for an Amazon SNS Topic
- To Deploy and Subscribe the Event Search and Analytics Pipeline
- Publishing a Message to an Amazon SNS Topic
- Publishing a Message with Attributes to an Amazon SNS Topic
- Deleting an Amazon SNS Subscription and Topic

## **AWS Simple Queue Service(SQS)**

- Amazon SQS Architecture
- Message Lifecycle
- Standard Queue
- AWS SQS FIFO
- Message Attributes
- Resources Required to Process Messages
- Cost Allocation Tags
- Long Polling
- Dead-Letter Queues
- Visibility Timeout
- Delay Queues
- Message Timers
- Moving from an Amazon SQS Standard Queue to a FIFO Queue
- Accessing CloudWatch Metrics for Amazon SQS
- Creating CloudWatch Alarms for Amazon SQS Metrics





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- Automating Notifications using CloudWatch Events
- Adding, Updating, and Removing Cost Allocation Tags for an Amazon SQS Queue

## AWS CloudFront

- Steps for Creating a Distribution (Overview)
- Creating a Distribution
- Values That You Specify When You Create or Update a Distribution
- Values That CloudFront Displays in the Console
- Testing a Distribution
- Updating a Distribution
- Deleting a Distribution
- Adding and Accessing Content That CloudFront Distributes
- Updating Existing Content with a CloudFront Distribution
- Removing Content so CloudFront Won't Distribute It
- Customizing the URL Format for Files in CloudFront
- Invalidating Files
- Serving Compressed Files
- Creating a CloudFront Origin Access Identity and Adding it to Your Distribution

## AWS Redshift

- Modern Analytics and Data Warehousing Architecture
- Data warehouse technology options
- Amazon Redshift Deep Dive
- Tools for DB migration
- Designing Data warehousing workflows
- Managing Clusters Using the Console
- Querying a Database Using the Query Editor
- Configuring Connections in Amazon Redshift
- Configure a JDBC Connection



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- Connect to Your Cluster by Using SQL Workbench/J
- Managing Snapshots Using the Console
- Resizing a Cluster
- Create an alarm on a cluster metric in the Amazon Redshift

## AWS ElastiCache

- ElastiCache for Memcached Resources
- Deploy a Memcached Cluster
- ElastiCache for Redis Terminology
- Create a standalone Redis (cluster mode disabled) cluster
- Delete Your Cluster
- Engine Versions and Upgrading
- Choosing Regions and Availability Zones
- Managing Maintenance
- Managing Nodes
- Managing Your ElastiCache Clusters
- Accessing Your Cluster or Replication Group
- Shards
- High Availability Using Replication Groups
- Finding Connection Endpoints
- ElastiCache for Redis Backup and Restore
- Scaling ElastiCache for Redis Clusters

## DMS(Database Migration Service)

- Modern Analytics and Data Warehousing Architecture
- Data warehouse technology options
- On-premises Database Migration to RDS

## AWS CloudTrail

- Viewing Events with CloudTrail Event History
- Creating a Trail



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- Updating a Trail
- Deleting a Trail
- Turning off Logging for a Trail
- Finding Your CloudTrail Log Files
- Downloading Your CloudTrail Log Files
- Configuring CloudTrail to Send Notifications
- Amazon SNS Topic Policy for CloudTrail
- Create Multiple Trails
- Logging Data and Management Events for Trails
- Receiving CloudTrail Log Files from Multiple Regions
- Sending Events to CloudWatch Logs
- Creating CloudWatch Alarms with an AWS CloudFormation Template
- Creating CloudWatch Alarms for CloudTrail Events
- Configuring Notifications for CloudWatch Logs Alarms
- Stopping CloudTrail from Sending Events to CloudWatch Logs
- CloudWatch Log Group and Log Stream Naming for CloudTrail

## AWS Athena

- Create or select a database.
- Create, view, and delete tables.
- Filter tables by starting to type their names.
- Preview tables and generate CREATE TABLE DDL for them.
- Show table properties.
- Querying Amazon VPC Flow Logs
- Querying Amazon CloudFront Logs
- Querying AWS CloudTrail Logs

## AWS CloudFormation

- Creating a Stack
- Update Behaviors of Stack Resources
- Modifying a Stack Template
- Monitor and Roll Back Stack Operations



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- Deleting a Stack
- Protecting a Stack From Being Deleted
- Resource Specification
- Resource Attributes
- Intrinsic Functions
- Pseudo Parameters
- Application Frameworks
- Creates a LAMP stack on a single Amazon EC2 instance MySQL database for storage.
- Creates a LAMP stack on Amazon EC2 instances in an Auto Scaling group with a multi-AZ Amazon RDS database instance for storage.

## AWS Lambda

- Lambda Functions
- Configuring Functions
- Invoking Functions
- Lambda Runtimes
- Lambda Applications
- Lambda Metrics
- Accessing CloudWatch Logs

## AWS API Gateway

- Create a REST API with Lambda Integrations
- Create a REST API as an Amazon S3 Proxy in API Gateway
- Set up an API Using the API Gateway Console
- Create the Resource
- Create the GET Method
- Create the AWS Service Proxy Execution Role
- Specify Method Settings and Test the Method
- Deploy the API
- Test the API



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## Overview Topics

- Overview of AWS Marketplace
- Overview of AWS direct connect

## AWS Troubleshooting and Best Practices

- AWS troubleshooting On All Topics
- AWS Best Practices and Use Cases On All Topics

## AWS Certification

- Overview of AWS certification

**For Any Clarification please feel free to Contact / Whatsapp:**

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Cheers,

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