

# AWS

## AWS Training

---

- Training by Industry Expert (12 Years of experience)
- Involvement in Real-Time Projects
- Get assistance for certifications
- Assistance in job placement

# Identity and Access Management

- Creating and Assuming an IAM Role for Developer Access
- Generating a Least Privilege IAM Policy Based on Access Patterns
- Enforcing IAM User Password Policies in Your AWS Account
- Testing IAM Policies with the IAM Policy Simulator
- Delegating IAM Administrative Capabilities Using Permissions Boundaries
- Connecting to EC2 Instances Using AWS SSM Session Manager
- Encrypting EBS Volumes Using KMS Keys
- Storing, Encrypting, and Accessing Passwords Using Secrets Manager
- Blocking Public Access for an S3 Bucket
- Serving Web Content Securely from S3 with CloudFront

# Amazon EC2 (Elastic Compute Cloud)]

- Create your EC2 Instance through Console
- Create your EC2 instance through SDK
- Create your EC2 instance through configuration templates
- Create your EC2 instance through CloudFormation templates
- Life Cycle of an EC2 Instance
- Create Ec2 from Amazon Machine Images (AMI)
- Elastic Block Storage (EBS) Volumes and attach to EC2
- Backing up your data with EBS snapshots.
- Create EC2 placement group
- Using user Data to run a script on start-up of EC2 Instances
- Control Traffic to virtual machine using security groups
- EC2 Instance Screenshot
- Create Auto Scaling group and test it with live load
- Add an additional network interface to a virtual machine.
- Sharing data volumes between machines using EFS

# VPC

- Defining Your Private Virtual Network in the Cloud by Creating an Amazon VPC
- Creating a Network Tier with Subnets and a Route Table in a VPC
- Connecting Your VPC to the Internet Using an Internet Gateway
- Using a NAT Gateway for Outbound Internet Access from Private Subnets
- Create NACL Network Access Control Lists (NACLs)
- Granting Dynamic Access by Referencing Security Groups
- Using VPC Reachability Analyzer to Verify and Troubleshoot Network Paths
- Redirecting HTTP Traffic to HTTPS with an Application Load Balancer
- Simplifying Management of CIDRs in Security Groups with Prefix Lists
- Controlling Network Access to S3 from Your VPC Using VPC Endpoints
- Enabling Transitive Cross-VPC Connections Using Transit Gateway
- Peering Two VPCs Together for Inter-VPC Network Communication
- Create Transit Gateway & Gateway Points
- Establish Direct connect (Hybrid Cloud Network Connections)

# S3

- Using S3 Lifecycle Policies to Reduce Storage Costs
- Using S3 Intelligent-Tiering Archive Policies to Automatically Archive S3 Objects
- Replicating S3 Buckets to Meet Recovery Point Objectives
- Observing S3 Storage and Access Metrics Using Storage Lens
- Configuring Application-Specific Access to S3 Buckets with S3 Access Points
- Using Amazon S3 Bucket Keys with KMS to Encrypt Objects
- Creating and Restoring EC2 Backups to Another Region Using AWS Backup
- Restoring a File from an EBS Snapshot
- Replicating Data Between EFS and S3 with DataSync
- Create Replication rules on s3 bucket
- How to host static website on S3
- Cross Region Replication in S3
- Query data from S3 files using Amazon Athena

# API Gateway

- Create API Gateway and add a trigger to lambda
- How to send Request header/ request body to AWS API Gateway
- How to read from Query parameters and path parameters to lambda function
- Pass API Keys to API Gateway
- Resources and Methods with Lambda integration
- Deploying and invoking API Endpoint
- Create Request header/ request body
- Query parameters and path parameters to lambda function
- Proxy vs Non-Proxy Lambda
- Steps to create Proxy Resource
- Resource Policy
- Canary Release through API Gateway

# Database Services

- Create MS SQL database in AWS and connect to Windows/Linux Ec2 Instance.
- Importing database to RDS SQL Database
- Backup and restoring of Microsoft SQL database in AWS
- Create read replica in Microsoft SQL/Postgres
- Configuring Automated manually/snapshots
- Using IAM Authentication with an RDS Database
- Leveraging RDS Proxy for Database Connections from Lambda
- Encrypting the Storage of an Existing Amazon RDS for MySQL Database
- Automating Password Rotation for RDS Databases
- Migrating Databases to Amazon RDS Using AWS DMS
- Creating an Amazon Aurora Serverless
- Enabling REST Access to Aurora Serverless Using RDS Data API
- Autoscaling DynamoDB Table Provisioned Capacity
- Load csv data from S3 to DynamoDB
- DynamoDB Table Backups at S3
- Create ElastiCache instance for Redis
- Create an ElastiCache instance for Memcached

# Elastic Load Balancing & Auto Scaling

- High Availability and Scalability
- Elastic Load Balancing (ELB)
- How to create Gateway Load Balancer
- How to create Classic Load Balancer (CLB)
- How to create Application Load Balancer (ALB)
- How to create Network Load Balancer (NLB)
- Cross Zone Load Balancing in ELB
- Connection Draining in Elastic Load Balancer Configure
- How to Add SSL Certificate to EC2 Load Balancer
- Elastic Load Balancer - Connection Draining
- Create Elastic Load Balancer and balance the load drafted.
- Create Auto Scaling groups and scaling the load.
- How to deploy a new application version into Auto Scaling Group



# AWS Route 53

- Registering a domain in Route53
- Creating our first records
- Route 53 the DNS service for a domain
- CNAME vs Alias
- Set up different Routing Policy – Simple, Weighted, Latency
- Create Health Checks in Route53
- Routing Policy – Failover, Geolocation, Geoproximity
- Routing Policy - Multi Value
- 3rd Party Domains & Route 53
- Improve API Security & Performance through Route 53

# Decouple Applications

- Setting up a message queue
- Producing messages to queue
- Reading data from SQS
- Purging data in SQS
- How to setup queue Access Policy
- How to set Message Visibility Timeout
- Send messages to dead Letter Queues those not processed even after retries
- Modify Request Response
- Delay Queues
- Create FIFO Queues (First in First Out)
- Amazon SNS
- SNS and SQS - Fan Out Pattern
- Using a Kinesis Stream for Ingestion of Streaming Data
- Streaming Data to Amazon S3 Using Amazon Kinesis Data Firehose

# AWS Glue

- Automatically Discovering Metadata with AWS Glue Crawlers
- Querying Files on S3 Using Amazon Athena
- Transforming Data with AWS Glue Data Brew

# Elastic Beanstalk

- Elastic Beanstalk Components
- Elastic Beanstalk Web Server Architecture:
- Creating Elastic Beanstalk Application
- Modify deployment properties
- Blue green deployments in Elastic Beanstack

# AWS Lambda

- Configuring an ALB to Invoke a Lambda Function
- Packaging Libraries with Lambda Layers
- Invoking Lambda Functions on a Schedule
- Configuring a Lambda Function to Access an EFS File System
- Running Trusted Code in Lambda Using AWS Signer
- Packaging Lambda Code in a Container Image
- Create Lambda that imports CSV Data to DynamoDB from S3 with Lambda
- Reducing Lambda Start-up Times with Provisioned Concurrency
- Accessing VPC Resources with Lambda

# Cloud Formation

- Building a pipeline for test and production stacks
- AWS CloudFormation artifacts
- Stack Updates
- Working with Nested stacks
- Stack Failure Options
- Use of Intrinsic Functions
- AWS CloudFormation registry
- Detecting unmanaged configuration changes to stacks and resources

# AWS monitoring

- How to enable Basic monitoring and detailed monitoring
- How to create CloudWatch Custom Metrics
- Query your metrics with CloudWatch Metrics Insights
- Use metrics explorer to monitor resources by their tags and properties
- How to create Alarms if ec2 instance is down or lambda is down or sqs is down.
- Grafana integration with CloudWatch
- Create a CloudWatch alarm based on a static threshold
- Creating a CloudWatch alarm based on anomaly detection
- Creating a CloudWatch alarm based on a metric math expression
- Creating a load balancer latency alarm that sends email
- Creating a storage throughput alarm that sends email
- Create alarms to stop, terminate, reboot, or recover an EC2 instance
- Creating a billing alarm to monitor your estimated AWS charges
- Set up an application to use CloudWatch RUM
- How to setup CloudTrail

# AWS Security & Encryption

- AWS Security
- KMS (Key Management)
- KMS Key Rotation
- SSM Parameter Store
- AWS Secrets Manager
- CloudHSM
- Shield - DDoS Protection
- Web Application Firewall (WAF)
- WAF & Shield
- GuardDuty
- Inspector
- Macie
- Shared Responsibility Model



# Cloud Migrations

- Migrating On Premise VM to AWS | VM Import/Export
- AWS Database Migration Service (DMS) - MS SQL Server to AWS RDS Migration
- Migrating an Enterprise Web-app from on-premises to AWS Cloud
- Migrating On Prem to AWS Cloud
- Cloud Migration Tools, Strategy, Technique
- AWS Migration Hub
- AWS DataSync
- AWS Transfer Family
- AWS Snow Family

# DevOps on cloud

- Introduction to DevOps
- Version Control Systems
- Continuous Integration, Continuous Deployment, and Build Tools
- Software and Automation Testing Frameworks
- Configuration Management Tools
- Containerization with Docker
- Continuous Monitoring
- Need of Cloud in DevOps
- Terraform
- Chef & Ansible

# Docker

- Introduction to Docker
- Image Creation, Management, and Registry
- Orchestration
- Networking
- Installation and Configuration of Docker Enterprise
- Security

# Kubernetes

- Kubernetes Overview
- Setup Kubernetes
- Kubernetes Concepts
- YAML Introduction
- Kubernetes Concepts - PODs, ReplicaSets, Deployments
- Networking in Kubernetes
- Services
- Microservices Architecture

# Containers

- Building, Tagging, and Pushing a Container Image to Amazon ECR
- Scanning Images for Security Flaws/Vulnerabilities on Push to Amazon ECR
- Deploying a Container Using Amazon LightSail
- Using AWS Copilot to Deploy Containers
- Run Blue/Green Deployments for Containers
- Amazon ECS Autoscaling Container Workloads
- Launching a Fargate Container Task in Response to an Event
- Gathering Logs from Amazon ECS-Running Containers on Amazon ECS