

AWS Course Content

1: AWS Architecture and Terminology

- **What is Cloud Computing**
- **Service Models in Cloud computing**
- **Introduction to AWS**
- **AWS Architecture and Terminology**
- **AWS Core infrastructure and Services**
- **Benefits of AWS cloud computing**

2: Amazon IAM (Identity and Access Management)

- **IAM Essentials**
- **IAM Best Practices For New Accounts**
- **API Keys And Roles & IAM Policies**
- **Creating Customer Managed Policies**

3: Amazon S3 (Simple Storage Service)

- **AWS S3 Essentials**
- **S3 Permissions**
- **S3 Bucket/Object Versioning And Lifecycle Policies**
- **Website Hosting With S3 & Standard – Infrequently Accessed**
- **Reduced Redundancy**
- **Amazon Glacier**

4: Amazon EBS (Elastic Block Store)

- **Different EBS Volume Types**
- **General Purpose SSD & Provisioned IOPS**

- **Creating Snapshots (Backups)**
- **Restoring From Snapshots**
- **Resizing Volumes**
- **Securing EBS volumes**

5: Amazon EC2 (Elastic Compute Cloud)

- **EC2 Essentials**
- **Selecting And Building EC2 Instances**
- **EBS Volumes And Snapshots**
- **Working With Public And Private IP Addresses**
- **Cloud-init User data And Metadata**
- **Security Groups**
- **Cloud Watch And EC2**

6: Amazon ECS (Elastic Container Services)

- **Task Definition**
- **Security Groups**
- **Cloud Watch And EC2**

7: Amazon RDS (Relational Database Service)

- **RDS Essentials**
- **Working With RDS & Subnet Groups**
- **RDS Security Groups And Connecting To RDS From EC2**

8: VPC and Networking

- **Introduction To VPC And AWS Networking**
- **Building A VPC From Scratch**
- **VPC Networking & VPC Security -NACL**

- **Configuring A NAT Instance**
- **VPN Configuration with AWS (OpenVPN)**
- **VPC Flow Logs**

9: High Availability and Fault Tolerant (ELB)

- **Working With Amazon Machine Images (AMI's)**
- **ELB With High Availability Hands On**
- **Troubleshooting Connectivity Issues**
- **Applying Auto Scaling And ELB To Create High Availability And Fault Tolerance**

10: Auto Scaling

- **Auto Scaling Group**
- **Launch Configuration & Step Simple Scaling**
- **Lifecycle Hooks & Scheduled Scaling**

11: Amazon Cloud front

- **Cloud Front Essentials**
- **Architecting Applications With Cloud Front**
- **Performance Considerations With Cloud Front**

12: Route 53

- **Route53 and DNS Failover & DNS Records overview**
- **Hosting sample Website and configuring Policies**
- **Simple Routing Policy & Latency Based Routing**

12: Amazon Cloud watch

- **Different Metrics**
- **Monitoring**

13: Amazon SNS & SQS

- SNS Essentials
- Topics & Subscription
- Notification & application

15: Amazon AWS CLI

- Configuration of AWS CLI
- Creating EC2 using AWS CLI
- IAM using AWS CLI & S3 using AWS CLI

16: Amazon Cloud Formation

- Cloud formation templates
- Complete resources & explanation with sample templates

17: AWS Lambda (Server less Architecture)

- Lambda

18: Project (Using Amazon Cloud)

- Cloud project using Amazon Resources

19: Preparation for “Amazon Certified Solution Architect – Associate Level “exam

DevOps Training Course

➤ Infrastructure Setup

- Installation of – CVS & Git, Jenkins, Ansible, Docker, , Nagios, Maven, Database

✚ Hands-on Exercise

- All infra setup

➤ DevOps Foundation

- Career Scope for DevOps professionals
- Desired Skillset of a DevOps Engineer
- Continuous Delivery & Deployments
- Configuration Management & Monitoring
- Advantages of DevOps

➤ Source Code Management System (GIT)

- Git with Bit Bucket
- Managing Branches & Branching Strategies
- Git as SCM, Git Command Line,
- Git setup with CI tool Jenkins, SVN, CVS
- Merging Strategies
- Git Tags
- Git Stash, Rebase, Reset, Revert Checkout

✚ Hands-on Exercise

- Create a git project, Checkout a branch,
- Create a file and add to git, Edit file, Commit the code,
- Set up Jenkins and integrate with Git

➤ Automating Build and Test (Maven)

- Introduction to build tools
- Maven Repositories
- Automating Builds with Maven and Ant
- Building Delivery Pipeline in Jenkins (CI/CD)
- Test Automation, Security, Notification System in Jenkins

Hands-on Exercise

- Create a Maven Project, Edit pom.xml file to install a version of junit
- Set up build delivery pipeline
- Set up notification alerts in Jenkins
- Configure test plan in Jenkins

➤ **Continuous Integration (CI) - Jenkins**

- Jenkins Installation & Configuration
- Managing Users Permissions
- Frequent merge of code to a shared repository
- Automated builds and tests are run using Jenkins

Hands-on Exercise

- Freestyle Jobs
- Commit code and integrate Jenkins
- build scripts and tests the code using automation script
- Email Slack Notifications
- Implementing CI & CD
- Managing plugins

➤ **Docker Container & Kubernetes**

- Introduction to Dockers
- Understanding the concept of containers
- How containers differ from Virtual Machines

- Dockerizing Applications using Docker Instructions
- Basics of Dockers, how to create and run a Docker Image, distributing Image
- How to create a Docker Registry
- scripts composition and Remote Docker Image
- creating a Kubernetes cluster
- creating YAML with Kubernetes deployment
- Kubernetes rolling updates, using an app with the dashboard.

Hands-on Exercise

- Configure a Docker, Create an image in Docker and run it
- Docker Compose
- Docker Volume & Networking
- creating a Kubernetes cluster
- Kubernetes deployment

Ansible

- Introduction to Ansible & Configuration
- Static & Dynamic inventory
- Writing Ansible Playbooks
- Ansible based Configuration Management, Different Roles and Command Line usage.
- Hosts Groups Variables & Group Variables
- Ansible connection types

Hands-on Exercise (Ansible)

- Write Ansible playbook
- Assign different roles in configuration tool
- Encrypting sensitive data using Vault
- Ansible rolling deployments

- Writing reusable playbooks
- Ad-hoc commands

➤ Nagios – Automated Monitoring Tool

- Installing & Configuring Nagios
- Nagios Setup, Commands, Objects, notifications
- Configure Nagios to monitor webserver

✚ Hands-on Exercise

- Perform Nagios and Netdata monitoring,
- Configuring Alerts
- Syslog and verify the logs are getting generated

➤ Linux Essential for DevOps

- Linux Fundamentals
- Managing Users Groups & Permissions

✚ Hands-on Exercise

- Linux important commands
- Linux troubleshooting commands
- Vi Editor & top netstat vmstat
- ssh scp ps grep sed & find