



Jenkins



Learn the AWS Cloud with DevOps

(AWS Solution Architect + Developer + SysOps Admin+ DevOps)

About the Course

A course designed to meet the ongoing need for professionals who gain good understanding of how companies use AWS Cloud and Deploy applications using DevOps to Cloud.

This course also helps you to understand about Continuous Integration (CI)/Continuous Deployments (CD) using pipelines for new age development.

This Course theory and practical based hands-on so that you can gain maximum exposure towards handling realtime scenarios projects

Who can take this course?

As every organization started to adapt to DevOps/Cloud, they expect every individual who directly or indirectly connected to IT jobs are to be aware of Complete DevOps process.

If you an individual aspiring to learn something new, and be part of newer SDLC, then this is right course for you. Be open to learn this new

Prerequisites

To learn this course, you need to be familiar with the Linux environment and have a basic knowledge on networking and cloud computing system

Need to be familiar with the Windows environment and recommended knowledge on Software Development Life Cycles (SDLC)

AWS AND DEVOPS COURSE CONTENT

Overview of AWS Cloud

- Introduction to AWS Cloud
- AWS Free Tier & billing
- AWS Cloud Services

AWS Global Infrastructure

- What is Region?
- What is Availability Zone?
- Edge Locations
- Content Distribution Network (CDN)

AWS Identity Access Management (IAM)

- Basics of IAM
- Groups, Users, Roles, Policies, MFA
- How to use IAM
- Active Directory /Web Identity Federation

AWS Command Line Interface (CLI)

- Introduction to CLI
- Download and installation of CLI
- Configuring CLI and authenticate with your account

AWS-Virtual Private Cloud (VPC)

- What is VPC, and Why VPC is required
- Launching VPC using VPC Wizard
- Designing Custom VPC
- Concepts about Network Address Translation (NAT)
- Create your own NAT Gateway
- Security Groups
- What is Bastion, and uses of Bastion?

AWS-EC2

- What is Elastic Cloud Compute (EC2) service?
- EBS Volumes
- Windows EC2 Instances Launch
- Linux EC2 Instances Launch
- Windows and Linux based AMI
- Elastic Load Balancers (ELB)
- Auto Scaling Groups

AWS-Route53

- What is DNS and Route53
- Understanding DNS
- What are different Route53 Policies

AWS S3

- What is Storage as a Service (S3 over AWS)
- Basics of S3- Bucket/object/namespace
- Consistency Modeling
- Security & Tiered Storage
- SLAs for Availability and Durability

AWS RDS

- DB as a Service (DBaaS) on AWS- RDS
- RDS Instances and supported DB Engines
- Automated Backups
- Multi-AZ & Read Replicas

AWS Lambda

- Introduction to AWS Lambda
- Benefits for using AWS Lambda
- Lambda Functions
- Lambda Triggers

Serverless Computing with AWS Lambda

- Introduction to Serverless Computing
- Serverless with AWS Lambda
- Real Time applications with AWS Lambda
- How to trigger Lambda with S3 Bucket?

DevOps-Introduction to DevOps

- Overview of DevOps
- DevOps Pipelines
- Why DevOps?
- Roles and Responsibilities
- DevOps Ecosystem

DevOps-Source Code Management-GIT/GITHUB

- What is Version Control System?
- GIT/GITHUB
- GITHUB Desktop
- Installation
- Configuration
- Basic Commands
- Branches
- Repositories

DevOps-Build Management-MAVEN

- Automated Build Process
- Maven
- Maven Structure
- Maven Dependencies
- Maven Repositories
- Maven Plugins
- Integrated Maven Build

DevOps-Continuous Integration Tool-Jenkins

- Installation
- Configuring Jenkins
- Configuring node
- Setting up a node
- Jobs/Plugins
- Creating Application Builds
- Cloning the sample Project
- Creating the Jenkins job and Configuring a Git Repo



- Compiling in Jenkins
- Browsing the workspace in Jenkins
- App Packaging in Jenkins
- Cleaning up past build

DevOps-Middleware Tier-Apache Tomcat

- What is Apache Tomcat?
- Installation, Setup and configuration
- Running Apache Tomcat
- Jenkins Integration of Apache Tomcat

DevOps-Image Building Tool –Packer

- What is Packer?
- Why do we use Packer?
- How to Install Packer?
- Running Packer to create AWS AMI Images

DevOps-Provisioning Tool-TERRAFORM

- Use Cases
- Install Terraform
- Using Terraform
- Launching infra using Terraform
- Learn how to Create AWS Infrastructure using Terraform
- Learn how to manage AWS Infrastructure using Terraform

DevOps-Source Code-AWS Code Commit

- What is AWS Code Commit?
- Using AWS Code Commit?
- Creation of IAM Code Commit Users
- SSH/HTTPS usage
- Code Commit Clone/Push

DevOps-Build-AWS Code Build

- Introduction to AWS Code Build?
- Using AWS Code Build?
- Creation of project using Code Build

DevOps-Deployment-AWS Code Deploy

- Introduction to AWS Code Deploy
- Components to AWS Code Deploy
- AppSpec File Configuration
- Deployment Using Code Deploy

DevOps-Continuous Integration-AWS Code Pipeline

- What is Code Pipeline?
- Use cases of Code Pipeline?
- Configuring Test Builds
- Performing test Builds
- Pushing App to Production



DevOps-Infrastructure as Code (IaC)-AWS CloudFormation

- What is Cloud Formation
- Using Cloud Formation
- Stack/Template
- Cloud Formation Summary

DevOps-Platform as a Service (PaaS)-AWS Elastic Beanstalk

- What is Elastic Beanstalk
- Using Elastic Beanstalk
- Environment Provisioning

DevOps-Containerization-DOCKER

- What is Docker
- Installing Docker on Windows, Linux
- Docker Pull, Build, Run
- Working with images
- Container Life cycle
- Dockerfile
- Pushing App to GitHub

DevOps-Container Orchestration-Elastic Kubernetes Services (EKS)

- What is Kubernetes?
 - Kubernetes Architecture
- Nodes
 - Pods
- Services and Deployment
 - AWS Elastic Kubernetes Services (EKS)
 - Pushing App to Kubernetes Cluster

DevOps-Configuration Management Tool-ANSIBLE

- Introduction to Ansible
- Installing Ansible
- Testing with First Ansible
- Ansible Configuration Basics
- Plays & Playbooks' basics
- Basic Play book
- Advanced Playbook usage

DevOps-Continuous Code Inspection – SonarQube

- What is SonarQube?
- Installation on SonarQube?
- How to use SonarQube?
- Integration of SonarQube with Maven Project

AWS Application Services

- What are App Services?
- What is SQS and SNS?
- What is SES?
- Implementing SES Service
- Implementing SNS and SQS

AWS Monitoring Services

- Introduction to AWS CloudWatch
- Introduction to AWS CloudTrail
- CloudWatch Alarms/CloudWatch Logs
CloudTrail API package

AWS Certification Path

- Why AWS Certification
- Solution Architect Roadmap
- Developer Certification Road/SysOps Certification Roadmap

REAL TIME PROJECTS TO BE COVERED (Hands-On Lab)

Project-01:

Name of the Project: AWS Infrastructure project
Targeted Module: Design and build highly available infra to host Multi-Tier Web Apps on AWS
CloudServices to be used: AWS IAM, VPC, EC2, ELB, Auto Scaling, Route53, CloudWatch, S3, RDS

Project-02:

Name of the Project: Serverless Architecture Project
Targeted Module: Build a Serverless Apps with AWS Lambda functions, triggered by file uploads
to s3Services to be used: AWS Lambda, Serverless, VPC, IAM, S3, DynamoDB, CloudWatch, Python

Project-03

Name of the Project: CI/CD with Complete DevOps Project
Target Module: Set out CI/CD pipeline to release apps along with infrastructure automation
Services to be used: GITHUB, MAVEN, APACHE TOMCAT, JENKINS, PACKER, TERRAFORM, AWS EC2

Project-04:

Name of the Project: Cloud Native DevOps on AWS (Project A)
Targeted Module: Build CI/CD pipeline to release the code to AWS Infrastructure
Services to be used: AWS Code Commit, Code Deploy, Code Pipeline, EC2, VPC, IAM, ELB

Project-05:

Name of the Project: Cloud Native DevOps on AWS (Project B)
Targeted Module: Build CI/CD pipeline to release the code to AWS Infrastructure
Services to be used: AWS Code Commit, Code Build, Elastic Bean stalk, Code Pipeline, EC2, VPC, IAM, ELB

Project-06

Name of the Project: Kubernetes Project
Target Module: Building Docker images using DevOps Pipeline and deploy to AWS
EKS Services to be used: AWS EC2, Docker Hub, Dockerfile, GitHub, AWS VPC, AWS IAM, AWS EKS