

# AWS

## **Module 1: AWS Overview**

- Definition and Fundamentals of Cloud Cloud Service Models
- Cloud Deployment Models
- Description of AWS
- History and Evolution of AWS
- Overview of AWS Products and Services
- Walk through of AWS Free Tier Account

# DEVOPS

DevOps is the practice of operations and development engineers participating together in the entire service lifecycle, from design through the development process to production support.

Course Contents:

## **DEVOPS INTRODUCTION**

- What is Devops
- History of Devops
- What is Dev and Ops
- DevOps definitions
- Devops and its life Cycle
- Devops Main objectives
- Prerequisites for Devops
- What is SaaS/ PaaS/ IaaS
- Cloud usage in Devops
- Introduction to Linux
  - Unix and Linux operating system basics
  - Linux system administration commands
- Tools(Chef, Jenkins, Puppet, Nagios and Docker etc)
- Continuous Integration and Continuous Deployment
- Continuous Release and Deployment

## **LINUX Basics:**

- Unix and linuxdifference
- Linux File systemstructure
- Basic linux/unixcommands
- Changing file permissions andownership
- Types of links soft and hardlink
- Filter commands
- Simple filter and advance filtercommands
- Start and stopservices
- Find and kill the process with id andname
- Package installation using RPM andYUM

## **Module 1: DevOps**

### **Essentials Learning Objectives**

- Introduction to DevOps
- DevOps Delivery Pipelines  
DevOps Eco System
- DevOps and SDLC
- Continuous Integration & Continuous Deployment
- Containerisation
- Configuration Management Tools

## **Module 2: Overview of Systems Administration**

- Introduction to Networking
- Linux Role in DevOps
- Introduction to Linux Basics
- Overview of Linux Administration

## **Module 3: Overview of Cloud Computing**

- Introduction & Evolution of Cloud Computing.  
Cloud Models – IAAS, SAAS, PAAS.
- Overview of Private and Public Clouds.
- Essentials & Instances of Elastic Compute Cloud (EC2).  
Security Groups.
- Key Pairs.

## **Module 4: Version Control Tool – GIT & SVN**

- Introduction of Version Control Systems. GIT Workflow
- Important GIT Commands Setup and Configuration
- Creating Repositories
- SVN Workflow
- Setup and Configuration Creating Repositories
- Create and Configure Users
- Difference between GIT & SVN

## **Module 5: Build Tools**

- Introduction to Compilers (Java)
- Installation and Configuration
- Build Pre-requisites
- Creating Builds

### **Maven for DevOps**

- Install Apache Maven successfully
- Understand Maven dependencies and control Maven classpaths
- Install plugins, manage plugins with a parent POM, and find available plugins

- Comprehend Maven buildproperties
- Create a projectwebsite
- Release Mavenartifacts
- Build a website for multi-moduleproject
- Build a simple installer and run functionaltests
- Take advantage of popular Maven tricks andpatterns

## Continuous Integration Tool – Jenkins

- Introduction of BuildTools(Jenkins).
- Setup andConfiguration
- Plugins
- Securityin Jenkins
- NotificationSystem

## Module 6: Containerisation

Install anduseDocker

Write DockerFiles

Push Docker Images to the hub.

Automate Building Docker ImagesfromJenkins

- DockerHub.
  - Downloading Dockerimages.
  - Uploading the images in Docker Registry and AWSECS
  - Understanding thecontainers
  - Running commands incontainer.
  - Running multiplecontainers.
- Customimages
  - Creating a customimage.
  - Running a container from the customimage.
  - Publishing the customimage.
- DockerNetworking
  - Accessingcontainers
  - Linkingcontainers
  - Exposing containerports
  - ContainerRouting
- DockerCompose
  - Installing The Dockercompose
  - Terminology in Dockercompose
  - Build word press site using Dockercompose
- Docker with webapplication
  - Deploy webapplication application on dockercontainers

## Module7:ConfigurationManagement

- Puppet & ChefIntroduction.
- PuppetArchitecture.
- Basic PuppetTerminologies

- Puppet Modules,Environment,Classes. NodeClassification
- Setup and Configuration of WorkstationsandOrganizations
- NodeSetups
- RolesandEnvironments Introduction toAnsible
- AnsibleServerConfiguration AnsibleInventory
- AnsibleModules

### **Ansible : configuration management**

What isAnsible?

- How Ansibleworks?
- AnsibleArchitecture?
- Ansible terminology and aboutPlaybooks

Installation andConfiguration

- Installing Ansible on Linux(Redhat family and Debianfamily(ubuntu))
- Ansible client and serverconfiguration
- Writing playbooks usingYAML
- Deploy webapplications usingAnsible
- Ansible roles and it's structure& Ansiblegalaxy
  - Tasks
  - Files
  - Templates
  - Meta
  - Vars
  - Defaults
  - Tests
  - Handlers
- What is host inventoryfiles
- What is static inventoryfile
- What is dynamic inventoryfile
- Ansible variables(Global and localvariables)
- Ansible templates usingjinja2
- Ansiblemodules
- Debugmodule
- Ansible conditionalstatements
- Ansibleloops
- Ansibletasks
- Ansible adhoccommands
- Ansiblevault
- Ansible logconfiguration
- Provisioning ec2 instance using Ansibleplaybook
- Ansible withdocker
- What is Ansible
- play

### **Module 8:Monitoring**

- Install and ConfigurationofNagios
- Nagios Plugins
- Nagios Notifications

- Integration of Jenkins, Docker and Puppet

## **Module 9: KUBERNETES**

### Introduction

- Why and what is kubernetes
  - Kubernetes Objects
  - Kubernetes Architecture
  - Pods
  - Service
  - Volume
  - Namespace
  - ReplicaSet
  - Deployment
  - StatefulSet
  - DaemonSet
  - Job
- Create a Cluster using Kubectl, Minikube
  - Using kubectl to Create a Deployment
  - Using a Service to Expose Your App
  - Scale Your App
  - KUBERNETES ON AWS
  - Using kubectl to Create a Cluster
  - Pod delete

## **Module 10: Scripting**

- Overview of Shell Scripting & Python