

## Course Content for DevOps Training

### Introduction

- What Is DevOps and History of DevOps
- DevOps Main Objectives
- DevOps implementation Software Development Life Cycle
- What is CI/CD?

### LINUX Basic and Admin

- Introduction to Linux OS
- File & Directory Management
- Vi Text Editor
- Utility Commands
- User Group Management
- File and Directory Permissions
- Package & Service Management
- Scripting

### GIT-SCM

- Introduction to Version Control System
- Centralized vs Distributed Version Control Systems
- Introduction to Git
- Git Workflow, Branching and Tagging
- Git Ignore and Undoing changes
- Source Code Repositories
- Github Remote

### Build Management with Maven

- Introduction to Build Management
- Build Tools History
- Introduction to Maven
- Maven Objectives

- Maven Central
- Maven Build Lifecycle
- Maven Projects Setup
- Building Projects using Maven

## **Nexus Repository Management**

- Introduction to Binary Repositories
- Nexus Setup
- Creating Repositories
- Pushing maintaining build artifacts to Nexus

## **Jenkins-CI/CD**

- Introduction to Continuous Integration & Delivery
- Overview of Jenkins
- Jenkins Setup
- Plugins and its uses
- Setting up your Build Jobs
- Jenkins security.
- Automated Builds using web-hooks
- Code Quality Integration
- Integrating Nexus
- Distributed Builds/Master-Slave Configuration
- Performing Continuous Delivery
- Implementing Pipelines

## **Ansible-Configuration Management & IaC**

- Introduction to Ansible
- Ansible vs. Other Tools
- Introduction to YAML
- Ansible Setup
- Ansible Inventories
- Ansible Modules
- Ansible Playbooks
- Ansible Templates

- Ansible Facts & Variables
- Ansible Roles
- Ansible Vault

## **Terraform & Packer**

- Terraform Plan, show, Apply, Destroy
- Exploring Terraform Registry
- Tainting and Updating Resources
- Terraform Variables
- Introduction to Modules
- Module repositories
- Using git repositories to save modules
- Templates
- Built-in Functions
- Working with state files
- Outputs, count and Join Function
- Terraform Integration
- AWS Networking: VPC, IGW, and Route Tables
- AWS Networking: Subnets, Security, and the Count Attribute
- What is Packer?
- Supportig Provisioners?
- Building a Packer Template
- Packing an Image

## **Docker-Containerization**

- Introduction to Containerization
- Monolithic vs Microservices Architecture
- Virtualization vs Containerization
- Docker Architecture
- Docker Setup
- Docker Registry, Image & Container
- Managing Containers Life Cycle
- Data Persistency & Docker Volumes
- Networking with Docker

- Working with Docker images
- Setting up three tier Application using Docker
- Building Custom Images

## **Kubernetes-Container Orchestration**

- Kubernetes Introduction
- Kubernetes Architecture
- Kubernetes Setup
- Pods, Services, Replication Controllers & Labels
- Networking, Load Balancers
- Updates, Auto scaling
- Deployments, Jobs
- Storage & Running Stateful Applications
- Monitoring & Logging

## **Monitoring - Prometheus & Graphana**

- Introduction to Monitoring
- What is Prometheus and Graphana?
- Installing and Configuring Node-Exporter
- Get the Metrics from hosts
- Introduction to Dashboards in Graphana
- Configuring the data sources
- Creating/Importing Dashboards
- Configuring Alerts

#####END-OF-DOC#####