

## **SECTION1: INTRODUCTION TO DEVOPS**

- What is DevOps?
- DevOps Culture
- Understanding DevOps & DevOps Process
- DevOps Benefits
- How DevOps Works
- Software Development Life Cycle (SDLC)
- Waterfall Model
- Agile Model
- DevOps Lifecycle
- CI/CD Process

## **SECTION2: CLOUD COMPUTING**

- What is Cloud Computing?
- Benefits of Cloud Computing
- Cloud Service Models
- Cloud Deployment Models
- Public Cloud Providers:
- Amazon Web Services (AWS)
- Microsoft Azure
- Google Cloud Platform (GCP)
- AWS VS AZURE VS GCP
- Why AWS for DevOps
- AWS Free Tier
- Tools for DevOps

## **SECTION3: WEBSERVERS**

- What is Web Server?
- Apache HTTPD
- What is NGINX
- NGINX Configuration
- HTTPD vs NGINX
- Nginx Server Configuration
- HA Proxy Configuration

## **SECTION4: APPLICATION SERVER**

- What is Application server
- Apache Tomcat Server
- Tomcat Installation and Configuration
- Ports Configuration
- Application Deployments
- Webservers vs Application server

## **SECTION5: ANSIBLE**

- Ansible Introduction
- Puppet Introduction
- Ansible Vs Puppet
- Ansible Architecture
- What is SSH?
- SSH Password Less Login
- Ansible Setup
- YAML Scripts
- YAML Data Types
- Handling Tasks
- Host Inventory
- Ad-Hoc Commands
- Introduction to Playbooks
- Variables & Facts
- Conditions & Loops
- Templates
- Modules
- Ansible Roles
- Ansible Secrets

## **SECTION6: DOCKER**

- Introduction to Docker
- What is Virtualization?
- What is Virtual Machine?
- VM vs CONTAINER
- Docker Installation
- Docker Command Line Interface
- What is Docker Image?
- What is a Container?
- Manipulating Containers
- Docker HUB & HUB Registry
- Docker File
- Build Docker Image from File
- Docker Networking
- Explore Container Network
- Creating, connecting and Disconnecting
- Docker Volumes
- Persistent Data Problem.
- Bind Mounts & Data Volumes
- Docker Compose
- Docker Swarm

## **SECTION7: KUBERNETES**

- Kubernetes Introduction
- Architecture
- Kubernetes Components
- What is Minikube
- Minikube setup
- Kubernetes cluster Setup
- Kubeadm
- Running Docker Containers on Kubernetes
- Kubectl
- Kubectl exec
- Kubernetes Cluster Management
- Kubernetes Object Management
- Kubernetes Pods
- Managing Services
- Deploying Applications through Pods
- Building Multiple Pods with High Availability
- Kubernetes Networking
- Pod to pod communication
- Volumes in Kubernetes
- Temporary volumes
- Persistent volumes
- Application Deployment
- Kubernetes Advance
- Scaling in Kubernetes

## **SECTION8: VERSION CONTROL (GIT)**

- Version Control System
- Centralized and Distributed Systems
- What is GIT?
- GIT Features
- GIT Setup
- GIT BASH
- GIT commands
- GIT workflow
- GIT Clone / Commit / Push
- GIT HUB
- GIT HUB Management
- Repositories
- SSH configuration
- GIT Branch Strategy
- GIT Branch Management

## **SECTION9: JENKINS**

- Introduction to Jenkins
- Jenkins Architecture
- What is CI / CD
- Continuous Integration with Jenkins
- Configure Jenkins
- Jenkins Management
- Scheduling Build Jobs
- Source code Polling in Jenkins
- Maven Build Jobs
- Jenkins Integration with GIT & GIT HUB
- Configure Jenkins with GIT & Maven
- Jenkins Master & Slave Node Configuration
- Jenkins Workspace Management
- Jenkins Email
- Jenkins Plugins
- Securing Jenkins
- Jenkins File
- Pipeline
- Building docker images through Pipeline
- CI / CD + Jenkin Pipeline + Docker

## **SECTION10: MONITORING & LOGGING**

- Introduction to NAGIOS
- Installation of NAGIOS Server
- Configuration of NAGIOS Server
- Monitoring Hosts
- Monitoring Server Infrastructure

## **SECTION11: ROLES & RESPONSIBILITIES**

## **SECTION12: RESUME PREPARATION**

### **TRAINER DETAILS:**

**Mr. R N RAJU**

**(Senior Cloud Consultant)**

**(Red Hat & Cloud Certified)**