

Introduction to DEVOPS

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Objectives of the Course

- To understand the DevOps Concepts and DevOps Tools
- Deploying the main DevOps tools
- To implement automated system update and DevOps lifecycle
- To understand virtualization and performance
- Providing the perfect security for the entire infrastructure

Introduction to DevOps

- What is **DevOps**?
- History of DevOps
- **Dev and Ops**
- DevOps definitions, Software Development Life Cycle and main objectives of the DevOps
- Infrastructure As A Code
- Prerequisites for DevOps
- Tools (Jenkins, Chef, Docker, Vagrant and so on.)
- Continuous Integration and Development

Automation Concepts

- OS Basics
- Scripting Introduction
- Learn Shell Scripting
- Database Concepts
- Shell Variable, Decision Making and Shell Test Conditions
- Shell Loops, Re-directors, Exit status

Revision Controls System

- Subversion Controls/Git
- Working with local repositories, remote repositories
- branching
- merging
- cloning

- fetch/pull
- Installation of Git Server

Jenkins Framework

- Introduction to Jenkins
- Jenkins Installation
- User Profile and Management
- Security and Plugins Management
- Builds Setup
- Integration with Git, Maven, Tomcat

Working with Docker

- Introduction to Docker
- Docker Terminologies
- **Installation of Docker**
- Docker image creation and Docker hands-on

Core Concepts of Kubernetes

- **Cluster Orchestration**
- **Looking at K8S Origination at Google**
- **Open Source**
- **Benefits**
- **Design Principles**
- **Navigating Kubernetes Architecture**
- **Master/Node**
- **Kubectl**

Using Kubernetes Features

- **Pods**
- **Labels**
- **Services**
- **Namespaces**
- **Resource Quota**

Ansible Fundamentals

- **Introduction to Ansible**
- **Ansible Overview**
- **Describe Ansible concepts and install Red Hat Ansible Engine.**
- **Inventory**

- **YAML - this is not the indentation you are looking for**
- **Ansible Playbook Structure**
- **Deploy Ansible**
- **Configure Ansible to manage hosts and run ad hoc Ansible commands.**
- **Implement playbooks**
- **Write a simple Ansible playbook and run it to automate tasks on multiple managed hosts.**

DevOps Project Work

- **Project LAMP Setup**
- **Web layer**
- **DB Layer**
- **App Layer**
- **Monitoring**