

DevOps Certification

Duration: 2 Months (25 hrs.)

1. Introduction to DevOps:

- What is Devops?
- Devops Lifecycle
- Overview of DevOps Tools
 - ✓ Git
 - ✓ Maven
 - ✓ Jenkins
 - ✓ Chef
 - ✓ Ansible
 - ✓ Docker
 - ✓ Kubernetes
 - ✓ Nagios
- Categories of DevOps Tools
- DevOps Delivery Pipeline

2. Implementing Git

- Overview of Version Control Systems
- What is Git
- Installing Git

- Git Commands
 - ✓ git init
 - ✓ git clone
 - ✓ git add
 - ✓ git status
 - ✓ git commit
 - ✓ git branch
- Git Life cycle Commands
- Pushing Code to Github
- Creating, Deleting Git Branches
- Reverting a Push to GitHub
- Merging branches using git merge
- Resolving merge conflicts

3. Build automation with Maven

- Maven Introduction
- Maven Installation
- Maven - Core concepts
- Maven Lifecycle
- Maven Repositories
- Dependency Management

4. Continuous Integration with Jenkins

- Overview and Importance of Continuous Integration
- Overview and Features of Jenkins
- Jenkins Master Slave Architecture
- Understanding CI/CD Pipelines
- Creating an end to end automated CI/CD Pipeline

- Installing Plug-ins in Jenkins
- Continuous Integration with Jenkins, Git and Maven
 - ✓ Maven Compile job in Jenkins
 - ✓ Maven Unit Test job in Jenkins
 - ✓ Maven Package job in Jenkins
- Building Delivery Pipeline

5. Configuration Management Tools: Ansible & Chef

- Need of Configuration Management
- Overview of Configuration Management Tools
- Managing Infrastructure
- Overview of Ansible & Chef
- Comparison of Ansible & Chef
- Ansible Installation
- Ansible Architecture
- Setting up Master Slave using Ansible
- Introduction to YAML
- Ansible Playbook, Modules
- Ansible Roles
- Applying configuration using Ansible

6. Containerization with Docker

- Overview of Virtualization
- Overview of Docker
- Dockers vs Virtualization
- Introduction to Docker Ecosystem
- Docker Installation on Multiple OS

- Important Docker commands
- Database in Docker Container
- Using Docker Compose to Manage a Container
- What is Container Orchestration
- Container Orchestration Tools
- Introduction to Docker Swarm
- Deploying a 2-Node Cluster using Docker Swarm
- Docker Networking
- Docker Container Networking

7. Containerization using Kubernetes

- Introduction to Kubernetes
- Docker Swarm vsKubernetes
- Kubernetes Architecture
- Deploying Kubernetes using Kubeadms
- Understanding and using YAML files
- Creating a Deployment in Kubernetes using YAML
- Creating a Service in Kubernetes
- Installing Kubernetes Dashboard
- Deploying an app through Kubernetes Dashboard

8. Continuous Monitoring using Nagios

- What is Continuous Monitoring
- Types of Monitoring Systems
- Introduction to Nagios
- Nagios Architecture
- Working with Nagios Monitoring Tool
- Monitoring Services in Nagios
- What are NRPE Plugins
- Monitoring System Info using NRPE plugins

DevOps Initial (Course-Prerequisites)

Linux Essentials

- Installing Linux
- The Course Overview
- Introducing Concepts of Virtualization
 - ✓ Installing CentOS 7 in Virtualbox
 - ✓ How to work with Virtualbox
 - ✓ Connect to Your VM Through SSH

Getting To Know The Linux Command Line

- Working with Commands
 - ✓ Quoting Commands
 - ✓ Getting Help in the Command Line
 - ✓ Working in the Shell Efficiently
 - ✓ Streams, Redirects, and Pipes
 - ✓ Regular Expressions and grep
 - ✓ The sed Command
 - ✓ The Awk Command
 - ✓ Navigating the Linux Filesystem

Working with Files in Linux

- How to Work with File Links
- Searching for Files
- Working with File Permissions
- Working and Viewing Text Files in Linux
- The VIM Text Editor

Course Projects:

- **Project1: CD Pipeline using AWS**
Develop a continuous delivery pipeline for a small web application.
- **Project 2: Web Server using Docker**
Create a Web Server for hosting services and applications using Docker.
- **Project3: Deploy an application with Kubernetes**
Enable the application to run in docker containers.

Contact Us

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