DEVOPS

Duration: 1 week

Prerequisite -

- Organizational commitment.
- Automation with discipline.
- Tools and infrastructure.
- Understanding of Linux/ Unix system concepts.
- Basics of core Java.
- Familiarity with command line interface.
- Knowhow of build and deployment process.
- Basic knowledge of tools.

Course Objectives : Our DevOps training is designed keeping in mind the latest trend in the world of technologies.Thiscourse will provide you the in-depth knowledge of various DevOps tools including Git, Jenkins, Docker, Ansible, Puppet, Kubernetes and Nagios. This training is completely hands-on oriented and designedin a way that will help you in becoming a certified practitioner by providing you an intensified training for the best practices about Continuous Development, Continuous Testing, Configuration ,Management, including Continuous Integration and Continuous Deployment and finally Continuous Monitoring of the software throughout its development life cycle.

Lab Setup Details :
Hardware requirement:

CPU :   I4/I5 , Hard Disk : 50GB , RAM :8 GB

Software Requirement:

 - XAMPP https://www.apachefriends.org/download.html (DOWNLOAD VERSION 5.6.31)
 - MSOFFICE 2010
 - NOTEPAD++ https://notepad-plus-plus.org/download/v7.5.1.html (DOWNLOAD VER 7.5.1)
 - SUBLIME TEXT3 https://www.sublimetext.com/3
 - Visual Studio Code https://code.visualstudio.com/download
 - PDF READER https://adobe-reader.en.softonic.com/download
 - Browser Google Chrome OS Window 10

Course Outline

Module 1:
Learning Objective: In this module you will be introduced to DevOps environment.
Topics:

- Why DevOps?
- What is DevOps?
- DevOps Market Trends
- DevOps Engineer Skills
- DevOps Delivery Pipeline

- DevOps Ecosystem

Module 2:
Learning Objective: In this module you will be introduced to DevOps environment.
Topics:

- What is version control
- What is Git
- Why Git for your organization
- Install Git
- Common commands in Git
- Working with Remote Repositories

Module 3:
Learning Objective: In this module, you will learn about the different actions performed through git
and will be introduced to Jenkins and maven.
Topics:

- Branching and Merging in Git
- Git workflows
- Git cheat sheet
- What is CI
- Why CI is Required
- Introduction to Jenkins (With Architecture)
- Introduction to Maven

Module 4:
Learning Objective: In this module, you will know how to perform Continuous Integration using Jenkins by building and automating test cases using Maven.
Topics:

- Jenkins Management
- Adding a slave node to Jenkins
- Building Delivery Pipeline
- Pipeline as a Code

Module 5:
Learning Objective: This module introduces Docker to readers, the core concepts and technology
behind Docker. Learn in detail about container and various operations performed on it.
Topics:

- Shipping Transportation Challenges
- Introducing Docker
- Understanding images and containers
- Running Hello World in Docker
- Introduction to Container
- Container Life Cycle
- Sharing and Copying
- Base Image
- Docker File
- Working with containers

- Publishing Image on Docker Hub

Module 6:
Learning Objective: In this module, you will learn to integrate different containers using docker.
Topics:

- Introduction to Docker Ecosystem
- Docker Compose
- Docker Swarm
- Managing Containers
- Running Containers
- Introduction to Docker Networking
- Network Types
- Docker Container Networking

Module 7:
Learning Objective: In this module, you will learn to install and configure Puppet. Additionally, understand the master-agent architecture in Puppet.
Topics:

- Introduction to Puppet
- Puppet Installation
- Puppet Configuration
- Puppet Master and Agent Setup
- Puppet Module
- Node Classification
- Puppet Environment
- Puppet Classes
- Automation & Reporting

Module 8:
Learning Objective: In this module, you will learn to install Ansible and configure ansible roles. You
will also learn to write playbooks and finally execute ad-commands using Ansible.
Topics:

- Introduction to Ansible
- Ansible Installation
- Configuring Ansible Roles
- Write Playbooks
- Executing adhoc command

Module 9:
Learning Objective: In this module, you will learn the basics of Kubernetes and its integration with
Docker.
Topics:

- Revisiting Kubernetes Cluster Architecture
- Spinning up a Kubernetes Cluster on Ubuntu VMs
- Exploring your Cluster
- Understanding YAML
- Creating a Deployment in Kubernetes using YAML
- Creating a Service in Kubernetes
- Installing Kubernetes Dashboard

- Deploying an App using Dashboard
- Using Rolling Updates in Kubernetes
- Containers and Container Orchestration
- Introduction to Kubernetes

Module 10:
Learning Objective: Learn how to continuously monitor your tasks using various plugins and implementing Nagios Commands.
Topics:

- Introduction to Continuous Monitoring
- Introduction to Nagios
- Installing Nagios
- Nagios Plugins(NRPE) and Objects
- Nagios Commands and Notification

Module 11:
Learning Objective: Learn about various cloud services and service providers, also get the brief idea
of how to implement DevOps using AWS.
Topics:

- Why Cloud?
- Introduction to Cloud Computing
- Why DevOps on Cloud?
- Introduction to AWS
- Various AWS services