Devops Foundation

Duration: 5 Days

Course Outline:

Devops course will help you learn DevOps and master various aspects of software development, operations, CI/CD, automated build, test, and deployment.

In this DevOps training course, you will learn DevOps tools like Git, , Jenkins, SVN, Maven, Docker, Ansible and more.

Course Pre-requisites:

- Containers Understanding
- Understanding the DevOps Tools and Technologies
- Knowledge of Scripting Languages
- DevOps Training and Certification
- Knowledge of Automation Tools
- Testing
- Excellent Collaboration and Communication Skills
- Knowledge of Networking fundamentals

Introduction to Devops

- What is Waterfall Model
- Challenges in Waterfall Model
- What is Devops
- Devops Life Cycle and its components

Build and Release

- What is Build and how we get the build
- Build lifecycle and Releases

Ansible

- Introduce Ansible
- Install Ansible and run ad hoc commands.
- Write Ansible plays and execute a playbook.
- Describe variable scope and precedence, manage variables and facts in a play, and manage inclusions.
- Manage task control, handlers, and tags in Ansible playbooks.
- Implement a Jinja2 template.
- Create and manage roles.

Terraform

- Introduction to Terraform
- Installing the terraform in Linux environment
- Configuring the terraform environment

- Initiate, check and apply the terraform scripts
- Deploying the EC2 instances with tf script
- Deploying the S3 bucket with tf script
- Deploying multiple resources in the terraform script
- Deploying launch configuration and autoscaling using terraform
- Deploying ELB and Target groups in Terraform

Maven

- Maven - Introduction and Overview
- Maven - Environment Setup
- Maven – POM, Build Life Cycle and Build Profiles
- Maven - Repositories and Plug-ins
- Maven - Creating Project and Build & Test Project
- Maven - External Dependencies
- Maven - Project Documents and Project Templates
- Maven – Snapshots and Build Automation
- Maven - Manage Dependencies
- Maven - Deployment Automation
- Maven - Web Application and Eclipse IDE

CI\CD tools Knowledge

- Jenkins:
- Introduction of Jenkins, how it differs from other CI tools
- what is CI/CD and CI with Jenkins
- Installation of Jenkins in Windows and Linux OS
- Scheduling jobs in Jenkins ⬚ Configuring Build pipeline in Jenkins
- Configuring Upstream and Downstream Project in Jenkins
- Security in Jenkins
- Jenkins interview Questions

Basic Programming Knowledge (.net, java)

Version Control tools

- Introduction of Version Controls
- Different type of version controls
- Features of Version control
- Introduction to Git and how it differs from other Version control tools
- Installation of GIT in windows and Linux and Perform various operations in GIT

Azure DevOps
- Azure DevOps Boards
- Azure Repos
- Azure Pipelines
- Azure test plans
- Azure Artifacts
- Scripting

- Configuration Management
- Reporting

Clouds

- Introduction of basics of Cloud
- Different type of clouds and its features
- Creating the VPC and explain the features of it.

Basic Networking

- OSI different layers
- Subnetting concepts
- How Router works Gateway works

Lab Details:

Hardware Requirement required for the participant	One Physical Machine per participant (16GB RAM, Core i5 CPU & 500GB Hard Disk BaseOS Windows 10 or higher x64 Bit Operating System (Windows 10 pro)
Software Requirement required for the participant	Virtualization should be enabled on all the physical machines (BIOS Level HyperV enabled) Install 7 Zip. https://www.7-zip.org/a/7z1801-x64.exe Install Virtual Box. https://download.virtualbox.org/virtualbox/5.1.28/VirtualBox-5.1.28-117968-Win.exe Install Docker Desktop for Windows https://docs.docker.com/docker-for-windows/install/ Jenkins Windows MSI Installer 2.176.2 version (LTS version) : https://jenkins.io/download/ Oracle Java SE Development Kit 8u221 https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html Apache Maven 3.6.1 https://maven.apache.org/download.cgi Git Client for windows : https://git-scm.com/download/win Azure subscription