

Introduction to DevOps on Cloud

Learning Objective: Learn about various cloud services and service providers and get an 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
- DevOps using AWS

Overview of DevOps

Learning Objective: In this module you will be introduced to the DevOps environment.

Topics:

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

Version Control with Git

Learning Objective: In this module, you will gain the insights of the functionalities and version controlling using Git.

Topics:

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

- Git commands

Hands On:

- GIT Installation, Version Control, Working with remote repository

Git, Jenkins & Maven Integration

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

Hands On:

- Branching and merging, reverting and resetting
- Build and automation using Jenkins and Maven

Continuous Integration using Jenkins

Learning Objective: In this module, you will learn how to perform Continuous Integration using Jenkins by building and integrating with Git and Ansible

Topics:

- Jenkins Management
- Adding a slave node to Jenkins
- Master Slave Setup
- Jenkins pipeline
- Jenkins user creation
- Providing permission to global level as well as project level
- Running concurrent jobs
- Triggering the jobs from outside
- Explanation on important components in Jenkins dashboard

Hands On:

- Integrate Git, Ansible and Jenkins together and change the webpage of tomcat server.

Continuous Deployment: Containerization with Docker

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

Topics:

- Shipping Transportation Challenges
- Difference between virtual machine and Docker
- 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

Hands On:

- Create and Implement Docker images and containers

Containerization with Docker: Ecosystem and Networking

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

Hands On:

- Use Docker Compose to create a WordPress site
- Start Containers on a Cluster with Docker Swarm
- Deploy a multi-tier application over a cluster
- Scale an application

Configuration Management with Puppet

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 Manifest
- Difference between push and pull approach

Hands On:

- Install and configure Puppet
- Configure and implement servers using Puppet
- Puppet Set up Master and slave architecture
- Certificate generation from master as well as slave
- Writing manifests and applying it to the slave nodes.

Configuration Management with Ansible

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
- Ansible inventory

Hands On:

- Installing Ansible
- Configuring Ansible Role
- Writing Playbooks
- Executing adhoc commands
- Configure ansible inventory file
- Grouping the nodes in an inventory