



DEVOPS CURRICULUM

Overview of DevOps

- What is DevOps?
- DevOps Culture
- SDLC Life Cycle
- Agile Vs DevOps
- DevOps Ecosystem

Version Control Systems

- What is version control
- Centralized Version Control System vs Distributed Version Control System
- Introduction to Git
- Various Git Flavors: GitHub, BitBucket, GitLab etc
- GitHub Server and Client set up – Registration on GitHub
- Git Branching Model, Repository Organization and Hooks

Hand's On

- GIT Installation, Version Control, Working with remote repository
- Git commands- Add, Commit, log, status, tracking new files, ignoring file types.

Continuous Integration with Jenkins

- Introduction to Jenkins
- Jenkins Installation and Initial Set Up
- Plugins in Jenkins
- Jenkins Pipeline
- Master-Slave configurations
- Deep Dive into Jenkins tool and its configurations

Hand's On

- Installation of Jenkins
- Creation of complete Jenkins Pipeline end to end
- Setting up Master-Slave configuration

Configuration Management with Ansible

- Introduction to Configuration Management
- Chef vs Puppet vs Ansible
- Ansible Architecture
- Ansible Inventory
- Ansible Initial Setup and AdHoc Commands
- Ansible Playbooks
- Ansible Roles
- Introduction to Ansible Vault , Ansible Galaxy and Ansible Tower



Hand's On

- Ansible Setup
- Adhoc Commands
- Creating Playbooks and executing on Servers
- Creation of Ansible Roles

Introduction to Containerization

- Introduction to Dockers
- Dockers Architecture
- Virtualisation vs Containerization
- Docker file and Its commands
- Containers and its configuration
- Docker Hub and Managing Images with registries
- Networking in Dockers
- Docker Volumes
- Docker Compose

Hand's On

- Creation of Docker file, Images and Containers
- Port forwarding and exposing application outside
- Creation of Docker volumes to make applications stateful
- Pulling and Pushing Docker images to Hub

Container Orchestration

- Introduction to Container Orchestration
- Docker Swarm vs Kubernetes
- Introduction to Kubernetes and its Architecture
- K8s Cluster setup
- Network Policies
- Persistent Volumes and PVC
- Pod Creation and Management

Hand's On

- Setting up Kubernetes Cluster
- Creation of Pods and Managing the pods
- Kubectl basic commands

Continuous Monitoring

- what is continuous Monitoring
- Introduction to Nagios
- Nagios setup and Overview
- Introduction to Prometheus and Grafana
- Monitoring Dashboards



Hand's On

- Setup Nagios and Monitor metrics
- Prometheus and Grafana Setup

Introduction to IAC

- Introduction to Infrastructure as Code
- Overview of Terraform
- Terraform Plan, Apply and Destroy
- Introduction to Cloud Formation

Hand's On

- Terraform setup

DevOps on Cloud

- What is Cloud?
- Different Cloud Providers
- Overview of AWS DevOps
- Overview of Azure DevOps

