

Prerequisite

Basic understanding of network concepts, OS, Bash scripting and Web Application architecture.

1) Introduction to devops

What is Software Development

Software Development Life Cycle

Traditional Models for SDLC

Why Devops?

Advantage of Devops over other SDLC models

Devops Lifecycle

Devops Tools

- ❖ Infrastructure (AWS)
- ❖ Configuration management (Ansible)
- ❖ Version control (git)
- ❖ Build tools(jenkins, maven)
- ❖ Virtualization(docker)
- ❖ Monitoring

2) Infrastructure management

Introduction to AWS

Exploring core AWS components

- ❖ AWS IAM policies IAM roles
- ❖ AWS Storage
- ❖ AWS networking , subnets, VPC
- ❖ AWS Databases.

Hands on: Launching instances in AWS and deploying workload

3) Configuration Management

- ❖ Introduction to Ansible
- ❖ Ansible Architecture
- ❖ Installing ansible
- ❖ Ansible playbooks
- ❖ Ansible roles
- ❖ Applying configuration using ansible

Handson: Applying apache webserver configuration using ansible in AWS infrastructure.

4) Version Control

- ❖ What is version control
- ❖ Different types of version control softwares
- ❖ Introduction to Git

- ❖ Git lifecycle
- ❖ Common used git commands
- ❖ Branches in Git
- ❖ Merging the branches.

5)Build Tools

- ❖ Introduction to CI and CD
- ❖ Exploring Maven and Ant
- ❖ Introduction to jenkins
- ❖ Installation and setup of jenkins
- ❖ Executing maven build using jenkins
- ❖ Creating Jenkins pipelines
- ❖ Exploring jenkins plugins.

Hands on: Checking out project from git and build and deploy into Apache server.

6) Virtualization

Introduction to Virtualization

- ❖ VM Ware workstation
- ❖ Virtual box
- ❖ Introduction to containers
- ❖ Difference between virtual machines and containers
- ❖ Introduction to microservices

Introduction to docker

Docker installation and configuration

Setting up of docker registry

Creating and packing image in docker

Pushing image to docker registry.

Hands on: building and running application inside docker container

7) Monitoring

What is monitoring

Why monitoring

Exploring monitoring tool Prometheus

Prometheus configuration

Monitoring nodes with Prometheus

Client libraries

Pushing metrics to Prometheus server

Setting up of alerts using alert manager.

