DevOps Master Course

by Pranav Surampudi 2021 Edition

Syllabus

1. Linux Basics
2. Containerization
3. CI/CD
4. Public Cloud

1. Linux Basics

a. Structure of Linux

What is Linux, Why Linux and the structure of the Linux operating system

b. Linux File System

What is a File System and what is the need for one, different types of file systems and introduction to Ext4 and ZFS.

c. Commands and shell

- What is a Linux shell and introduction to bash scripting?
- OS Commands
- Network Commands
- Storage Commands
- General Linux Utilities (grep, curl etc.)

d. Package Management

Package manager in Linux, Installing, Uninstalling, Updating packages in Linux.

e. Storage

Block Storage in Linux, Creating a basic NFS in Linux, Volumes in Linux

f. Admin

Managing Users and Groups in Linux, Permissions in Linux, The root user and permission operations in Linux.

2. Containerization

- What is a Linux Namespace?
- What is Container
- Need for Containerization
- OCI Spec

- Containerization Engines
- Docker (from scratch)
- Container Repository (Docker Hub)

2.a. Kubernetes

- Introduction to Kubernetes
- Local Kubernetes Cluster (Minikube)
- Objects in Kubernetes
- Cloud-based Clusters (Managed + Self Hosting)
- Logs and Metrics
- Service Mesh
- Helm Charts

3. CI/CD

- What is CI/CD and the need for such a system?
- Version Control using Git
- GitHub Actions CI/CD pipeline
- Jenkins
- Ansible
- Terraform
- Cloud Pipelines

4. Public Cloud (Anyone out of AWS, GCP and Azure)

- Virtual Servers (Compute Instances)
- Object Store(s)
- File Service
- Running Web Servers (Managed Service) [VMS + Containers]
- Serverless
- Networks
- Architecture based on the use case.