

Syllabus : DevOps



Topics Covered as Follows

Introduction to Devops

- Software development LifeCycle - Waterfall and Agile
- Understanding Devops
- Toolsets(Bigger Picture & Trending tools) and Advantages
- CI/CD

Cloud Basics (AWS)

- Virtualization, Cloud Computing & Advantages
- Linux virtual machine in Cloud
- CLI

Linux Essentials

- Linux File System Hierarchy & Understanding CLI
- File & Directory Management Operations - vim, mkdir, cp, mv, rm
- Software Management
- Service Management

Git

- What is SCM and Types of SCM
- Git and its workflow
- Installing Git in Windows and Linux
- Creating Project and Initializing
- Stages of Git
- Ignoring, Modifying
- Committing
- Tagging
- Branching - Creating, Merging and Deleting

Github

- What is Github
- Creating Repository
- Distributed Workflow
- Managing Remote
- Pushing to Remote Repository
- Cloning
- Forking and Pull Request
- Integration Manager Workflow

Containerization & Docker (Sample Website & To-do app)

- Containerization & Advantages
- Docker Basics - Image & Containers
- Docker Storage
- Building Docker Images
- Docker Registry

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- Docker in Devops

Jenkins

- Setting up Jenkins Server
- Plugins in Jenkins
- Run Jenkins Jobs
- Integrate Git with Jenkins
- Run Jenkins Job to Pull Code from Github
- Build using jenkins
- Automated Build and Deploy using Poll SCM
- Jenkins Administration
- CI/CD with Jenkins
- Jenkins Security

Containerization Orchestration (Kubernetes)

- Understanding Kubernetes and Architecture
- Building a Multi - Node Cluster
- Labels and Selectors
- Pods
- ReplicaSet
- Deployment (Rolling Update)
- Service - NodePort & Load Balancer

Introduction to Automation and IAC

- Manual vs automation
- Imperative vs Declarative
- What is IAC and Advantages
- Deployment vs Configuration Management vs Provisioning

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- Ansible vs Terraform

Terraform

- Installation
- Understanding Providers and Registry
- Resource Type and HashiCorp Configuration Language
- Terraform State
- Terraform Output, Attribute and Cross Referencing
- Terraform Variables
- Terraform Module
- Managing Terraform with Git
- Integrating with CI/CD

Ansible

- What is Ansible
- Terminologies
- Installation of Control and Managed Nodes
- Inventory
- Ad Hoc Commands
- Writing Playbook
- Dry Run and Real Run
- Implementing Apache via Ansible

Reporting and Analysis

- What is Grafana
- Developing Reports and Dashboard

Logging and Monitoring

- Prometheus
- Exporter and Deploy Node
- Monitoring with Cloud
- Docker & Kubernetes Monitoring with Prometheus