

# DevOps

---

**Duration: 8-9 Weekends**

## Prerequisites

Basic Knowledge of Operation & Infrastructure

## Basics for DevOps

---

### 1. Linux Basics

- Intro to Linux
- Basic Commands
- Network Configuration
- Software Management
- User and Group management.

### 2. Networking Basics

- IP assignment.
- Dns(Domain name systems)
- Service Ports usage.

- Firewall.
- Troubleshooting network.
- Secure Copy and login.

### 3. Storage Basics

- Filesystem usage.
- Mount Options.
- Checking free space.
- Giving permissions.
- Increasing Filesystem space

## DevOps: Basic to Advanced1.

---

### 1. Overview on DevOps

- Software Delivery Process
- Why DevOps?
- DevOps pipelines

### 2. Version Control Systems

- Overview
- History of version control systems
- Centralized vs Distributed version control systems
- Introduction to Git
- Installation of Git
- Configuring Git
- Basic operation on Git

### 3. Building & Testing

- Build automation
- Build automation tools
- ANT build automation tool
- MAVEN build automation tool
- Gradle build automation tool
- Dependency Management
- JFrog as a Dependency management tool

### 4. Continues Integration

- What is continues integration?
- Components of CI systems
- Advantages of CI

### 5. Jenkins - CI Server

- Overview
- History of Jenkins
- Jenkins nodes

- Jenkins build Process
- Jenkins plugins
- Project

### 6. Infrastructure as a Code

- Overview
- Challenges
- Provisioning new systems
- Updates to existing systems

### 7. Infrastructure Provisioning Tool Terraform

- Overview
- Why Terraform?
- Build infrastructure
- Change infrastructure
- Destroy Infrastructure
- Provide resource Dependency
- Modules
- Remote backups
- Project

### 8. Configuration Management Tool Ansible

- Overview
  - Why Ansible?
  - Ansible modules
  - Ansible playbooks
  - Ansible variables
  - Ansible vault
  - Project
-

## **9. AWS - Amazon Web Services**

- Cloud Computing
- Overview of AWS
- Evolution of AWS
- AWS Infrastructure
- Messaging services
- Security & Identity services
- Storage services
- Database services
- Networking & content delivery services
- Compute service

## **10. Docker - Software Packaging Tool**

- - Docker Overview
- - Installing Docker
- - Docker hub
- - Docker images
- - Docker containers
- - Working with containers
- - Docker file
- - Project to ship web site as docker

## **11. DevOps Tools: Puppet**

- Introduction to Puppet
- Installation and Configuration of Master server and agents
- Managing Manifests
- Creating and Managing modules
- Version control with Puppet

## **12. Overview DevOps Tools: Chef**

- Overview of Chef Workstation Setup  
Organization Setup
  - Common Chef Terminology (Server, Workstation, Client, Repository etc.)  
Servers and Nodes
  - Chef Configuration Concepts
-