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# DevOps

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**Duration: 6-7 Weekends**

## Prerequisites

Basic knowledge of Operation & Infrastructure

## Basics for DevOps

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### 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 Advanced

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### 1. DevOps

- 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. 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

### 7. Infrastructure as a code

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

### 8. Infrastructure provisioning tool - Terraform

- Overview
  - Why Terraform?
  - Build infrastructure
  - Change infrastructure
  - Destroy Infrastructure
  - Provide resource Dependency
  - Modules
  - Remote backups
  - Project
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## **9. Configuration management tool -**

### **Ansible**

- Overview Ansible, Pupper, Chef
- Why Ansible?
- Ansible modules
- Ansible playbooks
- Ansible variables
- Ansible vault
- Project

## **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
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