

## Syllabus of DevOps Course in Chennai

### Module1: Introduction to DevOps (Duration-1hr)

- DevOps Principles in detail
- DevOps Engineer Skills in the market
- Knowing DevOps Delivery Pipeline
- Market trend of DevOps
- DevOps Technical Challenges
- Tools we use in DevOps

### Module 2: GIT A version control tool (Duration-5hrs)

- Knowing about Version control
- Git A CLI
- Essentials of GIT in industry

#### How to setup GIT

- Installing Git
- First-Time Git Setup
- Getting a Git Repository

- Working with various commands in GIT

## Recording Changes to the Repository

- How to check the Status of Your Files
- How to track New Files
- Staging our modified files
- Ignoring Files from GIT
- Viewing Your Unstaged and Staged Changes
- How to commit Your Changes
- Skipping the Staging Area and commit
- Removing Files from GIT

## Viewing the Commit History

- Limiting Log Output
- Using a GUI to Visualize History

## Undoing Things

- Changing Your Last Commit
- Unstaging a Staged File
- Unmodifying a Modified File

## Working with Remotes

- Showing Your Remotes
- Adding Remote Repositories
- Fetching and Pulling from Your Remotes
- Pushing to Your Remotes
- Inspecting a Remote
- Removing and Renaming Remotes

## Branching and Merging in Git

- What a Branch Is
- Basic in Branching and Merging
- Branch Management in GIT
- Branching Workflows and its usage
- `git Remote Branches` create and delete
- Rebasing
- Git workflows
- Git cheat sheet

- Essentials of Continuous Integration
- An example scenario where CI is used
- Know about Jenkins and its architecture in detail
- Jenkins tool Management in detail
- Installing Jenkins

#### Post-installation setup wizard

- Unlocking Jenkins
  - Customizing Jenkins with plugins
  - Creating the first administrator user
- Know about User management in Jenkins

#### Authentication

- Jenkins own database user creation
- Options to enable integration with LDAP

#### Authorization

- Matrix based authorization
- Project based authorization

#### Overview of Maven

- Maven project structure
- Maven plugins
- Project Object Model (POM)    fundamental unit of work in Maven project
- Maven build lifecycle
- Adding external dependencies to maven pom.xml
- Maven build and test project

#### Creating jobs and automatic build settings

- What is Jenkins Pipeline?
- Why Pipeline?
- Integration with GIT
- How to enable project based authorization for a job
- Source code management while creating jobs
- Triggering automated build
- Maven job setup

Know about post build options for jobs like notifications, trigger another build, publishing reports, etc.

- Adding a slave node to Jenkins
- Building Delivery Pipeline

- Notification settings in Jenkins
- Plugin management in Jenkins

## Module 4: Docker A containerization technology (Duration-8hrs)

### Introduction

- Real-world Shipping Transportation Challenges
- Introducing Docker and its technology
- Understanding of Docker images and containers

### Working with container

- How to Share and copy a container
- Container Life Cycle
- How to use Base Image and customize
- Creation of Docker File
- How to Publish Image on Docker Hub

### Introduction to Docker Networking

- Network Types in docker technology
- Docker Container Networking

- `py Docker Compose`    An introduction

`py Docker Swarm`    An introduction

- Use Docker Compose to create php, wordpress, mysql
- How to Start Containers on a Cluster with Docker Swarm
- Creating and Scaling an application in Docker swarm

## `py Module 5: Ansible`    A configuration Management (Duration-9hrs)

`py Introducing Ansible`    A configuration management tool

- Basics / What Will Be Installed
- Understanding Ansible architecture
- Control Machine Requirements
- Managed Node Requirements

Inventory

- Hosts and Groups
  - Host Variables
  - Group Variables
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- Learn various ansible Modules

## How to use adhoc commands

- Parallelism and Shell Commands
  - File Transfer
  - Managing Packages
  - Users and Groups
  - Deploying From Source Control
  - Managing Services
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- Introduction to YAML script

## Playbook

- About Playbooks
- `Playbook Language Example` `YAML`
- How to Write Playbooks
- Tasks in Playbooks
- Understanding about various tasks in playbook
- Introduction to Handlers and variables
- Learn about using handlers, variables in the playbook
- Become (Privilege Escalation)



## Roles

- Role Directory Structure
- Using Roles
- Role Duplication and Execution
- Role Default Variables
- Role Dependencies
- Role Search Path
- Ansible Galaxy

## Including and Importing

- Includes vs. Imports
  - Importing Playbooks
  - Including and Importing Task Files
  - Including and Importing Roles
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- Writing a playbook to install and configure web servers and deploy an application
  - How to create Ansible Role and use it
  - Using an ansible role in playbook
  - How to use Ansible Galaxy to download roles.

- `Example` Install and use Jenkins roles from ansible galaxy

## Module 6: DevOps on Cloud (Duration-2hrs)

- Essentials of Cloud computing?
- Cloud and virtualization architecture
- Cloud deployment architecture
- `Cloud providers` An overview
- Why we need DevOps on Cloud?
- Introducing to Amazon web services
- `Various AWS services for Devops` An overview
- `DevOps using AWS` Demo