

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
 - Remote Branches – create and delete
 - Rebasing
- Git workflows
- Git cheat sheet

Module 3: Jenkins – Continuous integration (Duration-10hrs)

- 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
 - Docker Compose – An introduction
- 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

Module 5: Ansible – A configuration Management (Duration-9hrs)

- 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
- 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
- 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
- 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 a 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