

## **GIT AND JENKINS ADVANCED SYLLABUS**

This course is intended for IT professional who wants to learn source code management tools and CI/CD tools.

### **GIT:**

- Basic Linux
- Introduction to GitBash
- Introduction to Version Control System
- What is Git?
- Difference between Git and GitHub?
- Difference between Git and other Version Control Tools.
- Introduction of GitHub, GitLab, BitBucket
- Getting Started With Git And Its Architecture
- Install Git on Linux
- Understand Git life cycle
- Create Git repository - Local repository and configure it to GitHub
- Create a repository on GitHub and clone it
- Understand basic Git commands
- .git folder details
- Git command shortcuts
- Revisit the Git file lifecycle with Git terminology
- Work with remote repositories
- Configure remote repository on GitHub
- Understand Git buzzwords
- Understand remote commands
- Work with Fork and Pull requests in GitHub
- Perform git operations on the remote repository
- Branching and Merging
- Branching in Git
- How Git internally manages branches
- How to switch between branches and different commits
- Merging Strategies
- Git Fetch and Git Pull
- Git Diff
- Merging and rebasing (using Source tree)
- Git tags
- Difference between branching and tagging
- Performing different Branching and Merging operations
- Using Git Tags
- How to use git stash
- Gitflow Workflow
- Forking Workflow

- Git Patch
- Git Revert
- Git cherrypick
- How to use git in real time open source projects
- Integration of Git with Jenkins.

## **JENKINS:**

- Introduction to continuous integration
- Advantages of Continuous integration
- Implementation of continuous integration
- Introduction to Jenkins
- Install Jenkins on Linux System (standalone server as well as on Docker Container)
- Starting Up with Jenkins
- Jenkins Architecture and terms of Jenkins
- Overview of Jenkins UI
- Creating a Jenkins Job
- Configuring a Jenkins job
- Installing the Jenkins setup, create a simple Jenkins job, delete, fail, disable the job
- Introduction to Plugins
- Adding Plugins to Jenkins
- Configuring Jenkins to work with java, Git and Maven
- Creating a Jenkins Build and Jenkins workspace
- Configure Jenkins to check for source code changes periodically.
- Working with Maven Build Jobs
- Adding the plugins to the Jenkins job, creating a Jenkins job to check for source code changes, creating maven build jobs
- Creating a Freestyle Build Job
- Introduction to Build Triggers and to Build Steps
- Pre-and Post-Build Actions: Adding properties and properties files
- Running Your New Build Job
- Parametrized Builds
- Setting Email notification
- Enabling Security in Jenkins
- Different Levels of Authentication
- Creating Freestyle jobs, demo on security and authorization in Jenkins, sending email notifications, running the Jenkins job
- Introduction to Distributed Jenkins Build
- Configuring Master Jenkins node
- Configuring the Jenkins slave
- Managing nodes and distributing jobs over nodes
- Binding Jobs on the master and slave setup
- Labelling the nodes to run a specific job
- Configuring slave node in your Jenkins, adding labels to nodes, managing the nodes

- Backup of Jenkins and Migrating Jenkins from one server to another.
- Deployment Overview
- Implementing Automated and Continuous Deployment
- Deploying an application to an application server
- Install and configure tomcat.
- Deployment of Simple Java web application using Tomcat.
- Jenkins Build Pipeline
- Jenkins integrations with GitHub
- Continuous deployment using Jenkins, parallel and pipeline builds, Jenkins integrations
- Overview of Pipeline as code
- Overview of Pipeline Plugin
- Automated Jenkins Pipeline
- Hands-On on Jenkins pipeline

**NOTE: we also focus on the INTERVIEW POINT of QUESTIONS related to the topic.**