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The Continuous Integration with Jenkins Certification Training course provides an overview of Jenkins and Continuous Integration Fundamentals. The course equips the delegates with the essential knowledge and skills required to develop and monitor their own Jenkins plugins. The delegates will be introduced to the Continuous Deployment and Continuous Integration concepts and processes related to Jenkins. All the Components and Plugins used in Jenkins will be explained in detail. Master the concepts of Build Pipeline, Secure Jenkins, Master/Slave Topologies and Tomcat 7 with our two day Continuous Integration with Jenkins Certification Training program. Throughout the Jenkins course, the delegates will learn how to install Jenkins CI Server on windows, how to configure several tools which can be used with Jenkins and how to effectively use Jenkins for deploying and testing Java projects.

Jenkins is extremely flexible and powerful and easy to install and configure on different operating systems. It allows continuous integration and delivery of projects. In the training course, the delegates will gain an understanding of Continuous Integration and Jenkins-Ci, A JENKINS Job, Jenkins Plugin, Installing and Running Jenkins and Distributed Builds with Jenkins. This comprehensive course will help the delegates to draw real connections among different components of Jenkins. The course enables the delegates to deploy, install and monitor several tools associated with Jenkins. By the completion of the course, the delegates will learn why Jenkins is a better option when compared to Hudson, setup Jenkins environment and Build Jobs.

## Prerequisites

The prerequisites of the course include:

- Knowledge of basic testing frameworks like JUNIT or TestNG
- Knowledge of application servers like tomcat, jboss etc.
- Intermediate scripting knowledge in Windows

However, some awareness of Server topologies and Release management would be beneficial, but not mandatory.

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## Course Objectives

- Understand the concepts of Continuous Integration/Delivery
- Set up Build Pipelines using Jenkins
- Perform Backups/Restores to administer Jenkins
- Configure and build basic Tools/Plugins
- Perform Unit and Integration testing with Jenkins
- Get insights into Master/Slave Topologies
- Build and deploy simple applications to Tomcat 7 containers

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## An Introduction to Jenkins

- Introduction
- Continuous Integration Fundamentals
- History of Jenkins
- Introducing Jenkins
- Jenkins Fundamentals
- Shift from Hudson to Jenkins
- Whether to Use Jenkins or Hudson
- An introduction to Continuous Integration into Your Organization

## Getting Started with Jenkins

- Introduction
- Setting up Environment
- Starting Up Jenkins
- Download and Install Jenkins
- Configuring the Tools
- Your First Jenkins Build Job
- Your First Build Job in Progress
- Building reports and Displaying Javadocs

## Plugins and its uses

- Introduction to Plugins
- Adding Plugins to Jenkins
- Managing Plugins
- Upgrading Plugins
- Plugins in Action
- Commonly used plugins (Git Plugin, Parameter Plugin, HTML Publisher, Copy Artifact and Extended choice parameters)

## Setting up your Build Jobs

- Introduction to Jenkins Build Jobs
- Build a Freestyle Build Job
- Configuring Source Code management
- Introduction to Build Triggers
- Introduction to Build Steps
- Pre and Post-Build Actions: Adding properties and properties files
- Running Your New Build Jobs
- Working with Maven Build Jobs
- Using Jenkins with Other Languages

## Advanced Build Jobs features and Security

- Parameterized Builds
- Distributed builds
- Setting Email notification
- Enabling Security in Jenkins
- Different Levels of Authentication
- Types of Access
- Administration of the Access

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- Unit Automation and Tests Integration
- Configuring Test Reports in Jenkins
- Displaying Test Results
- Ignoring Tests
- Code Coverage
- Automated Acceptance Tests and Automated Performance Tests with JMeter

## Improving Code Quality using Other Metrics

- Introduction
- Looking for faulty codes through Code Coverage
- Activating more PMD Rulesets
- Custom ruleset creation
- Finding Bugs with FindBugs
- Enabling Extra FindBugs Rules
- Discovering Security Defects with FindBugs
- Verifying HTML Validity
- Reporting with JavaNCSS
- Checking Style Using an External pom.xml

## Nodes and Master-Slave Configuration

- Introduction to Nodes
- Configuring nodes
- Managing nodes
- Distributing jobs over nodes
- Binding Jobs to the Nodes
- Setting up master and slave setup

## Maintain and Use Jenkins

- How to maintain Jenkins
- Do’s and Don’ts of Jenkins
- Backup of Jenkins
- Migrating Jenkins from one server to another

## Performing Automated Deployment and Continuous Delivery

- Introduction to Automated Deployment and Continuous Delivery
- Implementing Automated and Continuous Deployment
- Deploying an application to an application server
- Deployment of Simple Java web application using Tomcat

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