

Jenkins CI Server Training

Description

The Jenkins is continuous Integration server for complete build automation of software projects. Jenkins also allows monitoring executions of repeated jobs, such as building a software project or jobs run by schedulers and updating the people involved by notifications configured.

This Jenkins Continuous Integration training course provides the learning and hands-on experience required to jump start a software development team's adoption of continuous integration.

Prerequisite Knowledge

Participants should have sound programming knowledge on Java platform and aware of J2EE web application development with Eclipse environment.

Objectives

To introduce the continuous Integration with Jenkins usage and configurations for software project build automation process.

Training Methodology

The theoretical topics are discussed interactively and technical details are demonstrated with practical examples. The participants work on the hands on exercises which strengthen the concepts learned.

This is complete practical oriented training session with 80% emphasis on practical work.

Each topic is supplemented with practical demonstrations and hands on exercises for the participants.

Target Population

Maximum 15 participants matching the prerequisites with every one working on separate System having the preconfigured set up as follows.

Class Room Setup

Participants Machine: The i3/4/5 dual core compatible CPU with Windows 7 (64 bit) System with minimum 4GB RAM and 160GB HDD.

Demo Machine: For demonstration on Linux another system with RedHat linux 5.6 to be installed on separate machine.

Following software to be installed on both the above systems.

Adobe PDF Reader, WinZip latest and IE 9.0 onwards, JDK 1.8, The Rational ClearCase Client-Server, Mozilla Firefox latest browser, Apache HTTP Web Server 2.2.5 and Nexus Repository Server 1.9.2 to be installed and configured. The zip files for Eclipse-Jee-

Kepler, Sonar code quality analysis tool, Ant and Jenkins (CloudBees)) latest to be made available.

The participants must have admin rights on their machines.

Live internet connection with reasonable speed and download permissions has to be made available for updating the packages and plug-ins.

Training Duration

2 Days

Course outline

This course outline has been defined after discussions with Mr.Sudip.

Getting Started

- Introduction to Continuous Integration
 - What Is CI?
 - Why CI?
 - CI Philosophy
 - Advantages of CI Within Software Development
- How to Implement CI
 - Setting Up a CI Environment
 - CI Tools
 - Automated Builds
 - Automated Tests
 - Committing Code
- Continuous Testing
 - Automated Unit, Integration, System and Functional Tests
 - Writing Tests for Defects
 - Integration of Automated Testing With CI
- Continuous Quality
 - Code Inspection vs. Code Testing
 - Automated Code Analysis
 - Code Analysis Tools
- Continuous Deployment
 - Philosophy
 - Release and Labeling Strategies
- Continuous Improvement
 - The Feedback Loop
 - The Metrics Loop
 - The Improvement Cycle

The CI process

- What you need for CI
- General Working Procedure

- CI Practices
- Commit Code Frequently
- Don't Commit Broken Code
- Run private Builds First
- Fix Broken Builds immediately
- Avoid Getting Broken Builds
- Write Automated Developer tests
- All Tests Must Pass
- Automate As Much As Possible
- Shared Ownership

The Jenkins CI Server

- Jenkins Features
- Jenkins installation and configuration on Apache Server
- Create Freestyle/Maven Build jobs
- Eclipse ClearCase integration
- Jenkins ClearCase integration
- Trigger the build process
- Execute the JUnit test cases/suites
- Configure pre-build and post-build activities
- Integrate with code quality tools Sonar, Findbugs, PMD etc.
- Generate test report
- Display the code quality metrics.
- Notify via email
- Monitor the jobs.
- Test Driven Development and CI integration.

More with Jenkins

- Configure Non Java builds such as C++ applications
- Jenkins plug-ins overview
- Write your own plug-in
- Distributed Builds(Master/Slave) overview
- High availability/Clustering overview
