Publication date : 05/31/2024

Course : Continuous integration: Best practices for implementation

Practical course - 3d - 21h00 - Ref. DIN
Price : 2360 CHF E.T.

4,2 / 5

BEST

Teaching objectives

At the end of the training, the participant will be able to:

- Understand the components and principles of continuous integration
- Work with a version control manager
- Understand the software's construction mechanisms and the corresponding Build tools
- Configure a project on a continuous integration server.
- Decipher the most common code analysis tool metrics
- Comprehend the role of artifact repositories and configuration management

Course schedule

1 Introduction

- Different types of environments: Development, acceptance, production.
- Configuration management: System and application.
- Role of application containers: Docker.
- Configuration centralization: puppet, Ansible.
- Scaling up deployments.
- Setting up a continuous integration platform.

2 Version management

- Features.
- Different source managers: Centralized or distributed.
- Problems integrating changes.
- The role of branches and tags.

Hands-on work
Handling a Git repository.

PARTICIPANTS

PREREQUISITES

TRAINER QUALIFICATIONS
The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS
The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

TEACHING AIDS AND TECHNICAL RESOURCES
• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

3 Automating builds

- What is a software build?
- Builds: Project lifecycle.
- Build tools with Maven.
- Plug-ins, profiles, and modules.

Hands-on work

Setting up a simple project build (Maven).

4 Repository management

- Roles of repository managers.
- Types of repositories: public, internal.
- Deliverable management (artifacts): releases, snapshots, deployment.
- Organizing repositories: Development, testing, production.
- Integrating repository managers with build tools and task management tools.
- Example solutions: Nexus, Artifactory, etc.

Hands-on work

Publishing artifacts in Nexus.

5 Automating tests.

- What tests, and to do what?
- Testing environments.
- Overview of testing tools.
- Implementing and automating tests.

Hands-on work

Setting up automated tests with JUnit.

6 Continuous integration server

- Role of the continuous integration server.
- Major features.
- Job management.
- Dependency between jobs.
- Servers: Hudson/Jenkins, CruiseControle, Bamboo, etc.

Hands-on work

Configuring the project on a Jenkins continuous integration server.

7 Setting up metrics

- Generating reports.
- Analysis and reporting tools (PMD, Findbugs, Cobertura, Emma, Checkstyle, etc.).
- Publishing results.

Hands-on work

Setting up metric tools.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

8 Feedback management

- Managing a complete cycle.
- Traceability of changes.

Hands-on work
Using Sonar.

Dates and locations

REMOTE CLASS
2026 : 20 May, 20 May, 12 Oct., 12 Oct., 16 Nov., 16 Nov.