Publication date : 03/13/2024

Course : Jenkins, implementing continuous integration in Java

Practical course - 2d - 14h00 - Ref. JEN
Price : 1670 € E.T.

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Jenkins (formerly Hudson) is a continuous integration server that automates testing, auditing and deployment of code, and provides quality indicators for production. This course will introduce you to all the capabilities of this server, an indispensable support for development in Agile mode.

Teaching objectives

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

- Understand the principles of continuous integration with a view to implementation
- Integrate Jenkins with other tools (SCM, ticket manager, etc.)
- Set up a Jenkins server to automate builds
- Automate tests, code audits and deployments on the Jenkins integration platform

Intended audience

Developers, project managers.

Prerequisites

Knowledge of the Java language and notions of the development cycle.

Practical details

Teaching methods

Alternating theory and practice on the Jenkins tool.

Course schedule

PARTICIPANTS

Developers, project managers.

PREREQUISITES

Knowledge of the Java language and notions of the development cycle.

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.

1 Introduction to continuous integration

- Principles of continuous integration.
- Agile development and continuous integration.
- Prerequisites for continuous integration.
- Development techniques adapted to continuous integration.
- Different types of application testing and auditing.
- Development process life cycle.
- Ancillary tools and integration.

Demonstration

Discover Jenkins.

2 Build set-up and automation

- Server setup, different types of installation.
- Configuration: main configuration page, Git/SVN configuration, mail server.
- Jenkins and the Build, best practices and recommended methods.
- Notification strategies and techniques.
- Fix dependencies between Build jobs.
- Jenkins and Maven: reminder of Maven, Maven Build configuration, deployment in a Maven repository.

Exercise

Creation and configuration of a Maven Jenkins project based on a Git repo.

3 Code quality

- Introduction, integrating quality into the build process.
- Analysis tools: Checkstyle, FindBugs, CPD/PMD.
- Configuring quality reporting with the Violations plugin.
- Complexity ratio, on open tasks.

Exercise

Adaptation of the Jenkins project to include tools for analyzing code quality and monitoring quality over time.

4 Test automation

- Introduction, test terminology.
- Automate unit and integration testing.
- Report configuration.
- Measure test coverage.
- Automated acceptance testing.
- Automating performance tests with JMeter.
- Optimize test execution times.

Exercise

Adaptation of the Jenkins project to include JUnit and performance test monitoring with JMeter.

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.

5 Automated deployment

- Set up the deployment script.
- Database updates.
- Minimum tests. Back to the past.

Exercise
Adaptation of the Jenkins project to automate deployment of the built artifact.

6 Jenkins server administration

- Easy security activation and set-up.
- Different types of user database.
- Authorization and role management.
- User action logging.
- Disk space management.
- CPU load monitoring.
- Save configuration.

Dates and locations

REMOTE CLASS
2026 : 23 Mar., 11 June, 21 Sep., 30 Nov.

PARIS LA DÉFENSE
2026 : 23 Mar., 11 June, 21 Sep., 30 Nov.