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# Apache Maven training

3 days (21 hours)

## Presentation

[Apache Maven](#) is a special tool to help you create and manage [Java-based](#) projects. Aimed at developers, Maven simplifies the build process thanks to its uniform system providing quality project information and also enabling seamless migration to new features.

The main features of Maven are its compilation of project source code, its test and execution part with its compilation of test source code and finally its package with the construction of the deliverable.

Formerly part of the Jakarta project, Maven is hosted by the Apache Software Foundation and is therefore also known as Apache Maven.

Mainly used for Java platforms, Maven is just as useful for building and managing projects in [Ruby](#), [C#](#), [Scala](#) and many other languages.

Maven offers many advantages such as :

- Better debugging: Allows artifact source code to be distributed via JAR artifacts.
- Better collaboration: Maven repositories allow a Javadoc of artifacts to be distributed alongside JAR artifacts.
- Reduced duplication: Maven projects can use a project object model (POM) to reduce duplication in Apache Ant projects.

During these three days, you'll get a complete presentation of the tool, learn how to build a project, use it in all its forms and manage your projects on Java to increase your productivity.

As with all our training courses, Maven will be presented with the latest version, [Maven V3.8.5](#).

## Objectives

- Building a project
- Working with Maven's directory structure, plug-ins, repositories, etc.
- Understanding the Project Object Model (POM)

## Target audience

- Java developers
- Project Manager
- Technical architects

## Prerequisites

Basic knowledge of Java and Java Web programming

## Apache Maven training program

### Introducing Apache Maven

- Maven principles
- Declarative execution of dependencies
- Maven Project Object Model (POM)
- Standardized directory structure
- Plugins
- Configuring Maven
- Maven archetypes overview
- Maven repositories

### Maven project basics

- Basic project organization
- pom.xml
- Properties in pom.xml
- Building a project

### Maven dependency management

- Identifying dependency
- Transitive dependencies
- Scope of dependence
- Manual installation of dependencies

### Project presentation and construction

- The project object model (POM)
- Project details
- Dependencies
- POM inheritance and aggregation
- Multi-section projects
- A Spring Boot application in Maven
  - Adding dependencies

## Archetypes

- Maven archetype
- Simple J2EE
- Portlet
- Quickstart
- Maven site skin

## IDE integration

- Creating and importing a Maven project into Eclipse
- Creating and importing a Maven project into NetBeans
- Creating and importing a Maven project into IntelliJ IDEA

## Plugins

- Maven JaCoCo plugin
- Cobertura Maven plugin
- Maven PMD plugin
- Maven Checkstyle plugin
- Maven FindBugs plugin
- Maven JXR plugin
- Maven SonarQube plugin

## Managing typical construction requirements

- Including and excluding additional resources
- Include and exclude source files and folders
- Configuring Maven to search for plugins
- Working offline
- Checking the verbosity of Maven output
- Using the Maven Help plugin
- Using the Maven SCM plugin
- Generate changelogs for a site

## Integrated safety

- Finding bugs
- JaCoCo
- Using m2eclipse
- The Maven console
- Executing builds
- Dependencies

## Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

## Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

## Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

## Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

## Sanction

A certificate will be issued to each trainee who completes the course.