

# Configuration Management with Ant

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| Duration: | 2 days       |
| Type:     | intermediate |

## Description

This is a two day course designed to enable Java developers to create and configure an automated build environment using Ant.

In the first part of the course delegates learn how to automate the building and testing of Java and JEE applications. In the second part delegates learn how to extend and customize Ant itself.

## Prerequisites

Delegates attending this workshop should be competent Java programmers who are familiar with XML and understand the JEE Architecture and component types.

## List of Modules

### Revision of Java Deployment and Testing

- Creating JAR files with jar.exe
- Viewing and editing manifest files
- Deploying an application in a JAR file
- The structure of a JEE Web Module
- Deploying Web Applications in WAR files
- The structure of a JEE EJB Module
- Deploying Enterprise Applications
- Unit Testing Java code using JUnit and TestNG
- Tools for integration testing JEE applications

### An Overview of Ant

- Why Ant was developed
- Ant and the Ant-Contrib project
- Advantages of Ant over MAKE
- Installing and configuring Ant
- Running Ant from the command line
- Running Ant from inside Eclipse
- How NetBeans integrates Ant
- How Ant relates to NAnt and MSBuild
- Comparing Ant to Maven
- Comparing Ant to Raven

## Understanding Ant Buildfiles

- Examining a simple buildfile
- Creating and running targets
- Setting the default target
- Dependencies between targets
- Creating and using properties
- Filesets, Patternsets and Selectors
- Built-in, optional and third party tasks

## Building Basic Java Applications

- Specifying paths and sets of files
- Specifying one or more classpaths
- Navigating the file system and moving files
- Calling executables with apply and exec
- Extracting source code from version control systems
- Compiling code with the javac task
- Running Java applications with java
- Creating archives using the jar task

## Building JEE Applications

- Creating Web and Enterprise archives from scratch
- Building Web Archives with the war task
- Building Enterprise Archives with the ear task
- Building Web Services via tasks supplied with the JAX-WS RI

## Testing Java/JEE Applications

- Running JUnit and TestNG unit tests
- Converting test results to HTML
- Customizing the conversion process
- Testing JEE components and Web Services
- Generating and presenting test metrics

## Managing Multiple Projects

- Creating modular buildfiles
- Handling conditional behaviour
- Specifying shared properties
- Importing tasks from other buildfiles
- Using antcall to trigger tasks
- Using ant to call tasks in other buildfiles
- The subant, antcallback and antfetch tasks

## Customizing and Extending Ant

- An overview of the Ant API
- Understanding how Ant is implemented
- Writing listeners and loggers
- Writing your own Ant tasks
- Testing tasks with AntUnit
- Writing tasks via scripting languages