



# Extreme Java - Advanced Topics

Duration 2 day(s) (JAVA-EXT-01)

Learn how to truly master the Java Programming Language

Official Training



Zenika exclusivity



## Description

The Intensive Training for Java Specialists is developed and facilitated by Heinz Kabutz, recognized Java Champion and author of the newsletter The Java Specialists. It incorporates (licensed) educational elements provided by JavaPerformanceTuning.com. "This training concentrates all my Java expertise and experience gained from publishing more than 200 specialized articles, running hundreds of seminars, and of course writing hundreds of thousands of lines of Java code." Heinz Kabutz author of the newsletter "The Java Specialists" During the 2 days of the training, we will study more than 1000 slides covering the most advanced topics. At the end of each section, practical exercises will put the concepts studied into practice. Even the most experienced Java programmer will find a certain challenge! This course is for any professional Java programmer with at least 3 years of experience who would really like to master the Java language. The "Extreme Java - Advanced Topics" course is written by Dr. Heinz Kabutz, author of The Java Specialists' Newsletter. It also includes (licensed) content produced by JavaPerformanceTuning.com. It is based on the best-selling Java Specialist Master Course training.

## Goals

- Learn advanced techniques to write Java code
- Understand the NIO API
- Understand the intricacies of memory management in Java, and how to diagnose memory problems
- Know the possibilities of the reflection API
- Which data structures are most appropriate for your application
- How to better manage exceptions

## Public

- Architect confirmed developer

## Prerequisites

- Professional Java Programmer with at least 3 years of experience

## Structure

50% Theory, 50% Practice

# Program

## Day 1

- Issues and good practices
- Log4j in action
- Impact on performance

### Introduction

#### Some Java 7 and 8 reminders

#### Java IO - Serialization and network performance

- Object flow and serialization mechanism
- Customize the serialized format
- Performance optimization
- Compatibility and scalability of the bitstreams

#### Java NIO

- Buffers, Channels and Selectors
- Direct access to the file system
- Multiplexing of sockets and non-blocking treatments
- Encoding character flows

#### Java memory

- Structure of memory, generational spaces
- Measurement of GC activity, impact on performance
- Frequent problems
- Optimization of the JVM
- Finalizers and references
- Object pools

## Day 2

### The Reflection API

- Loading and dynamic manipulation of objects
- Special cases: tables and parameterized types

### Data Structures

- Concept of spatial and temporal complexity
- Performance of the algorithms of course and sorting
- Hashing algorithm
- Study and comparison of usual data structures

### Exception handling

- Hierarchy and meaning of exception types
- Analysis and manipulation of Stacktraces
- Assertions and software quality
- Pitfalls and good practices
- Performance considerations

### Management of Dates and TimeZones

- Machine time, human time
- Dates, calendars and timezones in Java
- Good practices

### Logging