

# Sela.

J-Xtrm

## Java for Experts

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J-Xtrm - Version: 5

 4 days Course

## Description:

This advanced course is focused on java and JVM internal. The course deep dives into the internal mechanism of java & JVM and focuses on practical tools in java which are based on these internals for writing better and more optimized code. The course explores several advanced features of java in area of concurrency and I/O. In addition we will learn advanced topics such as class loader, script engine manager and garbage collector. We will also learn the byte code language of the JVM and what we can do to use this knowledge. ?

## Intended audience:

This course is designed for Java programmers, team leaders, and software project managers.

## Prerequisites:

Highly experienced java programmers minimum 3 years

## Objectives:

- JVM internal mechanisms and optimization
- efficient error management and data storage
- Thread management

## Topics:



## Introduction

- JVM architecture and optimization
- How to write good java code

## Jigsaw and class loader

- What is class loader
- Modules in Java
- AOT and native compilation

## Memory management

- Memory management introduction
- Reference framework
- How to avoid memory leaks
- Cloning

## Threading

- Thread creations and thread pools
- Synchronization tools
- Working with streams and lambda functions

## JNI

- Calling from java code to C++
- Pinning objects
- Call back from C++ to java



## NIO

- Buffers
- Channels
- Selectors
- Multicast
- Working with the file system

## Profiling and JMX

- JMX
- How to work with profilers
  - Analyze memory leaks with profiler
  - Finding your bottle neck with profiler
  - Analyzing deadlocks with profiler
- Understanding bytecode

## Optimization

- How to optimize my java code
- Best practices for optimizations
- Optimization pitfalls