



JAVA PERFORMANCE - EFFICIENT CODING PRACTICES

Two-day workshop with Victor Rentea

www.itkonekt.com



VICTOR RENTEA

// Java Champion, ex Lead Architect @IBM

<https://twitter.com/VictorRentea>

Victor is a Java Champion, and one of the top Technical Trainers, **having trained more than 5000 developers in dozens of companies worldwide.**

Victor's talks are regularly top-rated at the largest international conferences in Europe: his live-coding sessions are lightning-fast but well crafted, full of enthusiasm, deep insights and take-away tips. His passion is Simple Design, Refactoring, and Unit Testing, about which he regularly talks at top conferences. His personal commitment is to seed passion for writing clean, professional code.

About workshop

JAVA PERFORMANCE - EFFICIENT CODING PRACTICES

- A DEEP DIVE IN JAVA CONCURRENCY, MEMORY MANAGEMENT, PROFILING, AND BENCHMARKING, SPICED WITH UNDER-THE HOOD DETAILS OF THE JVM AND DEBATES AROUND TYPICAL PERFORMANCE ISSUES OF JAVA PROJECTS.
- THE WORKSHOP IS PACKED WITH EXPERIMENTS DISTILLED FROM REAL-LIFE PROJECTS TO EXPLORE AND DEMONSTRATE DIFFERENT PERFORMANCE ISSUES.

About workshop - what will you learn?

✓ Introduction:

- War stories from participants
- Key Concepts, Metrics and Questions
- Principles and Strategies to improve Performance o Typical bottlenecks of modern applications

About workshop - what will you learn?

✓ Multi-threading

- Thread Pools: mechanics, tuning parameters, typical usage scenarios
- Multi-threading Risks: race bugs, deadlocks, thread pool starvation
- [on request] Concurrency Primitives: Lock, Semaphore, CyclicBarrier, wait-notify
- Concurrency Control: 'synchronized', atomic primitives, synchronized+concurrent collections
- Exercise: Designing a thread-safe concurrent workflow
- Non-blocking concurrency with CompletableFuture Intro: fork/join, exceptions, applications
- Spring support: ThreadPoolTaskExecutor, non-blocking HTTP Endpoints, @Async
- Exercise: parallelizing a non-blocking REST API
- Parallel streams: mechanics, best practices, pitfalls

About workshop - what will you learn?

- ✓ [optional] CompletableFuture deep dive workshop (4h – 8h with participants hands-on)
 - Combining, Chaining
 - Exception handling
 - Controlling Parallelism
 - Best Practices and Common Patterns for Non-blocking Flows
 - Testing & Debugging
 - Advanced: Tracing (ThreadLocal), Monitoring (Micrometer) & Profiling (JFR)

About workshop - what will you learn?

✓ Tracing the Bottleneck:

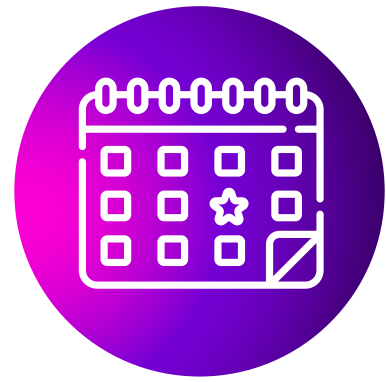
- Profiling execution with Glowroot, Java Flight Recorder / Java Mission Control, Micrometer
- Exercise: Using a “flame graph” to detect bottlenecks in a sample app
- Benchmarking with Gatling, jMeter, Java Measuring Harness
- JIT Compiler: mechanics, dynamic optimizations, writing JIT-friendly code

About workshop - what will you learn?

✓ Memory Management

- Java Memory Model: old/young, metaspace, TLAB
- Garbage Collector: Key concepts, Monitoring, GC Types
- Techniques for using less memory
- Thread Local data: best practices, propagation over thread pools, pitfalls
- Heap Dump analysis: retained/shallow heap, GC Roots, profiling allocations
- Exercise: Tracing ten types of Memory Leaks

Workshop details



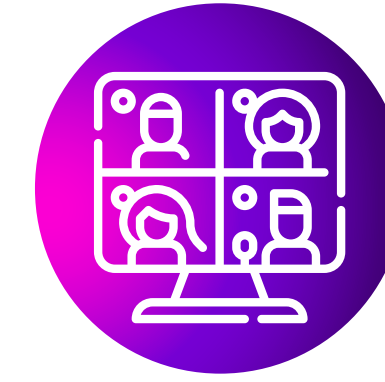
OCTOBER 26TH & 27TH



TIME: 9h-17h CEST



**LIMITED NUMBER
OF PARTICIPANTS:
25**



ONLINE

**NUMBER OF
PARTICIPANTS IS
LIMITED! HURRY
UP AND BOOK
YOUR SPOT!**

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