

AGENDA

Kombikurs Java 17, 21 & 25 – intensiv: Records, Virtual Threads, Stream Gatherers & alle Neuerungen von Java 12 bis 25

6 Tage · Individueller Termin · Vor Ort oder Online · Deutsch / Englisch · Anpassbare Agenda · Teilnahmezertifikat

Teil 1: Java 12-17

Major Features:

- switch Expressions
- Text Blocks
- Records
- Pattern Matching for instanceof
- Sealed Classes
- Strongly Encapsulate JDK Internals

Weitere Neuerungen:

- Helpful NullPointerExceptions
- Hidden Classes
- Warnings for Value-Based Classes
- Context-Specific Deserialization Filters
- Unix-Domain Socket Channels

API-Erweiterungen:

- Neue String-Methoden
- Neue Stream-Methoden
- Files.mismatch()
- Neue ByteBuffer-Methoden
- Der Teeing-Collector
- Hex Formatting and Parsing Utility
- Enhanced Pseudo-Random Number Generators
- InstantSource
- Compact Number Formatting

Garbage Collection:

- Verbesserungen an G1 und Parallel GC
- ZGC und Shenandoah produktionsreif
- Elastic Metaspace

Performance:

- Default + Dynamic CDS Archives
- Non-Volatile Mapped Byte Buffers
- Spezialisierte TreeMap-Implementierungen
- Entkopplung von Compressed Oops und Compressed Class Pointers

Tools:

- JFR Event Streaming
- Packaging Tool

Deprecations & Löschungen:

- Thread.suspend() und resume(): Deprecated for Removal
- ThreadGroup: stop(), destroy(), isDestroyed(), setDaemon() und isDaemon()
- Biased Locking
- Security Manager: Deprecated for Removal
- Entfernt: CMS Garbage Collector
- Entfernt: Nashorn JavaScript Engine
- Entfernt: Pack200
- Entfernt: RMI Activation
- Entfernt: experimenteller AOT- und JIT-Compiler (Gaal)
- und mehr...

Teil 2: Java 18-21

Major Features:

- Virtual Threads
- Sequenced Collections
- Record Patterns
- Pattern Matching for switch

Weitere Neuerungen:

- UTF-8 by Default
- Simple Web Server
- Code Snippets in Java API Documentation
- Internet-Address Resolution SPI
- New System Properties for `System.out` and `System.err` Encoding
- Compiler Warnings for Lossy Conversions in Compound Assignments
- Key Encapsulation Mechanism API
- Alternative Fast-Locking Scheme (experimentell)

Bugfixes:

- `IdentityHashMap`'s `remove()` and `replace()` Methods Use Object Identity

API-Erweiterungen:

- Neue `String`-, `StringBuilder`-, `StringBuffer`-Methoden
- Neue `Character`-Methoden
- Neue `Math`-Methoden
- `HashMap.newHashMap()` und weitere Factory-Methoden
- Additional Date-Time Formats

Garbage Collection:

- String Deduplication for ZGC, SerialGC, ParallelGC
- G1 Verbesserungen
- Generational ZGC

Deprecations & Löschungen:

- Deprecate Finalization for Removal
- `Locale` constructors
- `URL` constructors
- `Thread.stop()`, `suspend()`, `resume()`
- `ThreadGroup`
- Prepare to Disallow the Dynamic Loading of Agents

Teil 3: Java 22-25

Major Features:

- Unnamed Variables & Patterns
- Foreign Function & Memory API
- Markdown Documentation Comments
- Stream Gatherers
- Synchronize Virtual Threads without Pinning
- Scoped Values
- Compact Source Files and Instance Main Methods
- Flexible Constructor Bodies

Weitere Neuerungen:

- Module Import Declarations
- Launch Multi-File Source-Code Programs
- Console Methods With Explicit Locale
- Class-File API
- Key Derivation Function API
- Linking Run-Time Images without JMODs

API-Erweiterungen:

- `Locale`-Dependent List Patterns
- Support for Duration Until Another Instant

Garbage Collection:

- Verbesserungen für den G1 GC
- ZGC: Generational Mode by Default
- Generational Shenandoah

Performance / Memory Footprint:

- Compact Object Headers
- Ahead-of-Time Class Loading & Linking
- Ahead-of-Time Command-Line Ergonomics
- Ahead-of-Time Method Profiling
- Relax alignment of array elements
- Change `LockingMode` default from `LM_LEGACY` to `LM_LIGHTWEIGHT`

Java Flight Recorder:

- JFR Cooperative Sampling
- JFR Method Timing & Tracing
- JFR CPU-Time Profiling (experimentell)

Deprecations & Löschungen:

- `Thread.countStackFrames()`
- Old Core Reflection Implementation
- Deprecations und Löschungen in `sun.misc.Unsafe`
- `Thread.suspend()`, `resume()` und `ThreadGroup.suspend()`, `resume()`, `stop()`
- Security Manager

Ausblick:

- Primitive Types in Patterns, `instanceof`, and `switch`
- Lazy Constants (ehemals Stable Values)
- Vector API
- Structured Concurrency