



Java Developer Day | March 21

Agenda | Sessions at a Glance | Driving Directions

Oracle Conference Center | 350 Oracle Pkwy, Redwood City, CA 94065

Registration: <https://developer.oracle.com/devlive-level-up/>

10:00 – 10:45	(Keynote) “Java First. Java Always”		
10:45 – 11:00	Coffee Break		
Sessions			
11:00 – 11:45	New in JDK 20: Reviewing the Enhancements in the Latest JDK Release	Continuous Monitoring with JDK Flight Recorder	Helidon: Microservices on Modern Java
11:45 – 12:00	Coffee Break		
Sessions			
12:00 – 12:45	Java Virtual Threads	Z Garbage Collector: The Next Generation	GraalVM Native Image—Faster, Smarter, Leaner
12:45 – 13:15	Lunch		
Sessions			
13:14 – 14:00	Java Language Futures, Spring 2023 Edition	Troubleshooting Native Memory Issues in Java Applications	JavaFX 20 and Beyond
14:00 – 14:15	Coffee Break		
Sessions			
14:15 – 15:00	Project Panama: Interconnecting the Java Virtual Machine and Native Code	Evolving the Security of the Java Platform	Building High Performance Microservices for Java with Micronaut and GraalVM
15:00 – 15:15	Coffee Break		
Hands-On Labs			
14:15 – 15:45	Bring On the Virtual Threads!	Getting Started with GraalVM Native Image	Getting Started with Virtual Threads
Sessions			
15:15 – 16:00	Managing Your Java Estate Just Got Easier with Java Management Service	The OpenJDK Project: Change the Future of Java	Moving the Java Community Forward
16:00 – 17:00	Happy Hour		

**Keynote: Java First. Java Always.**

Modern application development is unrecognizable without Java. For more than 25 years, Java has empowered developers to create the next generation of rich, scalable, and secure applications. In this keynote, explore updates from the Java 20 release and learn how Oracle's ongoing Java technology leadership and community stewardship are creating a contemporary language and platform that helps developer productivity.

Georges Saab, Senior Vice President of Development, Java Platform and Chair, OpenJDK Governing Board

Breakout Session: New in JDK 20: Reviewing the Enhancements in the Latest JDK Release

In what is now a semi-annual tradition, we offer an overview of the JDK Enhancement Proposals (JEPs) delivered with the latest JDK release. Along with thousands of performance, stability, and security updates, JDK 20 offers advances in Project Amber, Project Loom, and Project Panama. In this session, learn all about the value JDK 20 offers developers.

Aurelio Garcia-Ribeyro, Senior Director of Product Management

Breakout Session: Continuous Monitoring with JDK Flight Recorder

The serviceability and observability of the Java platform is unparalleled. It provides numerous, different tools and APIs that provide insights into the application and the Java runtime itself. JDK Flight Recorder (JFR) is a monitoring and troubleshooting framework built directly into the Java runtime, designed to be always-on in production with negligible overhead. It has access to all the internal data of the JVM and can capture and surface events on a fine-grained level with extremely low overhead. This session will step through JFR and offer a demonstration of some of its powerful capabilities.

Mikael Vidstedt, Senior Director

**Breakout Session: Helidon: Microservices on Modern Java**

This session covers the practical aspects of using Project Loom's Virtual Threads (from OpenJDK) with Helidon Níma. Created by Oracle and currently in the Alpha stage, Helidon Níma is the first service framework designed for Virtual Threads. This session will explain what Project Loom brings to service development, compare it to Oracle's reactive implementation, and show performance improvements that can be achieved. You'll also get a short introduction into Helidon MicroProfile and understand how it benefits from Oracle's switch to Virtual Threads.

Joe Di Pol, Development Manager, Helidon

Breakout Session: Java Virtual Threads

Concurrent applications, those serving multiple independent application actions simultaneously, are the bread and butter of Java server-side programming. The thread has been Java's primary unit of concurrency since its inception and is core to the entire Java platform. However, it can no longer efficiently represent a domain unit of concurrency. As a result, Java has seen a proliferation of libraries and frameworks that offer scalability while abandoning the thread as the unit of software concurrency—and, with it, the support of Java's observability tooling. In this session, learn how Project Loom aims to reinstate the thread as an efficient unit of concurrency by adding a lightweight implementation of threads to the Java platform.

Sergey Kuksenko, Principal Member of Technical Staff

Breakout Session: Z Garbage Collector: The Next Generation

The Z Garbage Collector (ZGC)—a scalable, low-latency garbage collector providing sub-millisecond max pause times—continues to evolve. This session will review the design goals behind ZGC and provide a look into the impact of the upcoming support for multiple generations. It will also present general guidance on selecting a garbage collector given certain use case characteristics.

Paul Su, Software Development Director

**Breakout Session: GraalVM Native Image—Faster, Smarter, Leaner**

With support from all the leading microservice frameworks, compatible SDKs from all of the top cloud platforms, and ease of containerization, GraalVM Native Image is a great choice for cloud native application development. Join this session for an update on the latest GraalVM Native Image developments including JDK 20 support, Spring Boot 3 and Micronaut 4 integration, improved monitoring and debugging (perf, JFR, vmstat, and native debug), record breaking peak throughput, and more.

Shaun Smith, Senior Director of Product Management

Breakout Session: Java Language Futures, Spring 2023 Edition

Through Project Amber, the Java programming language is evolving faster than ever. In this session, participants will receive a summary of many of the Java language enhancements that have appeared in recent Java versions, including Java 20. You'll also get a glimpse of the future as we look ahead to directions and features that are in development for future Java releases.

Stuart Marks, Consulting Member of Technical Staff

Breakout Session: Troubleshooting Native Memory Issues in Java Applications

Are you having trouble understanding native memory usage growth or leaks in your Java application? Learn about diagnosing and resolving native memory problems in Java applications. We'll talk about different memory pools available in a Java Virtual Machine (JVM)-based Java application. You'll learn how to identify a native `OutOfMemoryError` and confirm if you're encountering a native memory leak. Importantly, we'll take a closer look at the various diagnostic data and troubleshooting tools needed to understand and troubleshoot native memory problems.

Poonam Parhar, Consulting Member of Technical Staff

**Breakout Session: JavaFX 20 and Beyond**

JavaFX continues to be developed and released with the same rapid cadence as the Java Development Kit, with a new release every six months. Explore what's new in JavaFX 20 and beyond as we highlight the improvements to JavaFX over the past few releases. We show how developers can create and distribute applications leveraging the JavaFX platform and explain how developers can contribute to the OpenJFX Project to improve the platform even further. We'll preview some of the ideas we're working on to help make JavaFX more approachable for students and developers who are new to JavaFX.

Kevin Rushforth, Consulting Member of Technical Staff

Breakout Session: Project Panama: Interconnecting the Java Virtual Machine and Native Code

Project Panama improves and enriches the connections between the Java Virtual Machine (JVM) and non-Java APIs, including many interfaces commonly used by C programmers. This session will offer an overview and demo of features from Project Panama, including JDK Enhancement Proposal (JEP) 434 from Java 20.

Paul Sandoz, Software Architect

Breakout Session: Evolving the Security of the Java Platform

Maintaining and improving the security of the Java platform is an essential and continuous process. This session will discuss recent improvements to Java's security and cryptographic APIs and libraries. In addition, you'll learn about the process and changes made to update releases via the Java Cryptographic Roadmap.

Frances Ho, Software Development Director

Brad Wetmore, Principal Member of Technical Staff



Breakout Session: Building High Performance Microservices for Java with Micronaut and GraalVM

Micronaut is a full-stack framework for Java meant for building any type of application, with extensive support for microservices, serverless, and containerized environments such as Kubernetes. From the beginning, Micronaut has had first-class support for GraalVM native image, which we'll see in action, demonstrating the significant reductions in startup time and memory usage. We'll also take a look at new support for developing portable multicloud applications and microservices and preview some of the new features in the upcoming Micronaut version 4, including support for features in recent JDK releases such as Records and Virtual Threads.

Burt Beckwith, Principal Member of Technical Staff

Breakout Session: Managing Your Java Estate Just Got Easier with Java Management Service

Operating an organization's Java estate is complex. Typically, there will be multiple versions of Java, deployed across dozens of environments, supporting many applications. The complexity of managing the estate is the product of these multiplied together.

Java Management Service from Oracle is a cloud service that can help address this complexity. Basic discovery services, available to everyone, provide critical insights into Java application behavior and compliance. Advanced features, available to Java SE Subscription customers and OCI customers, deliver centralized runtime management, performance, and cryptographic usage information. Users of Java Management Service can:

- Track Java runtimes and applications.
- Update or upgrade old Java installations.
- Monitor and gather additional insights on Java applications.

In this session, you'll learn about the latest features of Java Management Service and how it can help you better manage your Java estate.

Aurelio Garcia-Ribeyro, Senior Director of Product Management

**Breakout Session: The OpenJDK Project: Change the Future of Java**

Java, its libraries, and the HotSpot Java Virtual Machine (JVM) are all built through OpenJDK, an open source project. Your participation in this project can help shape the future of Java. To make the journey easy to understand, Oracle has created the OpenJDK Developers' Guide for aligning developers around terminology and processes for participating in the OpenJDK Project. Learn how you can contribute to the future of Java.

Chad Arimura, Vice President, Java Developer Relations

Breakout Session: Moving the Java Community Forward

For more than 25 years, Java has offered unique value to developers worldwide. It's shaped the world we live in by offering new ways to address the ever-evolving technology landscape. That innovation is only possible because of you. The developer community plays an important role in ensuring Java stays vibrant. In this session, learn about the many programs available to the Java community, all contributing to the cause of moving Java forward.

Sharat Chander, Senior Director of Product Management

**Hands-On Lab: Getting Started with Virtual Threads**

Project Loom introduces virtual threads—a new kind of lightweight threads—which are unarguably one of the most anticipated features coming to Java. Virtual threads are much lighter than platform threads. In fact, they're so light that you don't need to pool them anymore. Loom also adds Structured Concurrency to Java—a new concurrent programming model based on a more traditional, easier, blocking approach. Bring your own laptop so you can use Project Loom's Structured Concurrency API to handle multiple asynchronous tasks using a simple synchronous-blocking model. You'll experience how Project Loom will revolutionize concurrent code development in Java, including debugging. This hands-on lab is only available to in-person attendees.

David Delabassée, Director, Java Developer Relations

Hands-On Lab: Helidon: Bring On the Virtual Threads!

This lab will guide you through the implementation of a service using Helidon Níma APIs. First, we'll focus on features and benefits provided by Java's Project Loom, such as Virtual Threads and Structured Concurrency. Then, we'll use Helidon starter to create a Helidon MicroProfile application to demonstrate how Virtual Threads are used and show you how to easily upgrade applications to the latest Alpha version of Helidon 4. At the conclusion of this lab, you'll walk away with multiple high-performance techniques and options for writing services with Helidon that are designed and optimized for Loom. Bring your own laptop to begin your learning journey with Helidon. This hands-on lab is only available to in-person attendees.

Joe Di Pol, Development Manager, Helidon

Hands-On Lab: Getting Started with GraalVM Native Image

GraalVM Native Image makes it possible to ahead-of-time (AOT) compile Java bytecode applications into native machine executables that start almost instantaneously, provide peak performance with no warmup, and require less memory and less CPU. Because it's perfect for containerized workloads and microservices, it's been embraced by Micronaut, Spring Boot, Helidon, and Quarkus. In this lab, we'll provide a short practical introduction to GraalVM Native Image AOT that covers what it is, what it can do, and how you can get started building native Linux, macOS, and Windows executables. Bring your own laptop and work either locally or on a hosted lab environment that runs in a browser. This hands-on lab is only available to in-person attendees.

Shaun Smith, Senior Director of Product Management



Directions to Oracle Conference Center

Address: 350 Oracle Parkway, Redwood City, CA 94065

Southbound - Take Highway 101 South (toward San Jose) to the Ralston Ave./Marine World Parkway exit. Take Marine World Parkway east which will loop you back over the freeway. Make a left at the first light onto Oracle Parkway. 350 Oracle Parkway will be on the right.

Northbound - Take Highway 101 North (toward San Francisco) to the Ralston Ave./Marine World Parkway exit. Take the first exit ramp onto Marine World Parkway. Make a left at the first light onto Oracle Parkway. 350 Oracle Parkway will be on the right.

Parking – The Conference Center has a designated parking lot located directly across from the building. If the lot is filled there is also additional parking in any of the parking garages located nearby. No parking permits are needed.

Driving Alternative - SamTrans (San Mateo County's Transit Agency) provides public bus service between the Millbrae BART station and Palo Alto with three stops on Oracle Parkway - one of which is directly in front of the Oracle Conference Center.

