



# Celebrating 25 Year Anniversary of the JCP Program

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VP Community Engagement and  
Chair & Director of the JCP

 @heathervc



# Safe harbor statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.



Celebrating 25 years of JCP this year



# Working Together – We Achieve More







**28 years** of Java

**25 years** of JCP Program

Java continues to be an  
**important choice** for  
enterprises and developers

The Java technology  
**innovation pipeline** has  
never been richer

**Java 21** available now



Performance

Stability

Security

Compatibility

Maintainability

# Moving Java forward



Trust



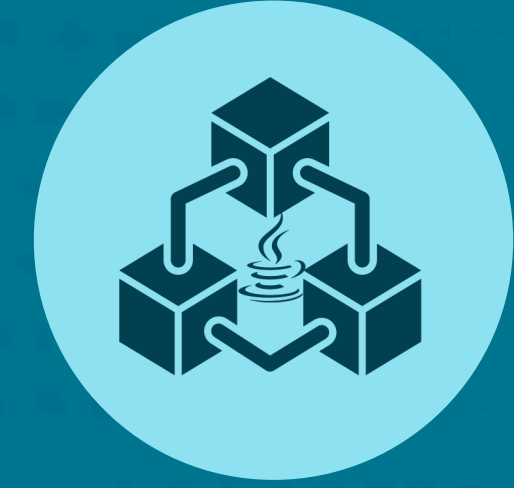
Innovation



Predictability



**#1 LANGUAGE**  
for today's  
technology trends



**#1 LANGUAGE**  
in overall development  
organizational use



**60 BILLION**  
active JVMs



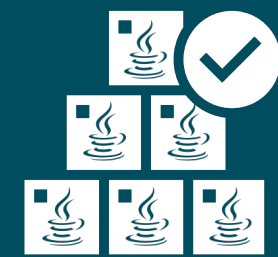
**38 BILLION**  
cloud-based JVMs

\* Source: VDC Research

# Moving Java forward



Investing in long term innovation



Delivering a rich pipeline of features



Maintain the feeling of Java



**AMBER**

Improve developer productivity



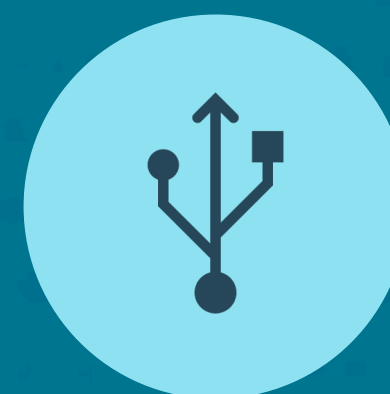
**LEYDEN**

Reduce start-up time, warm-up time, and footprint



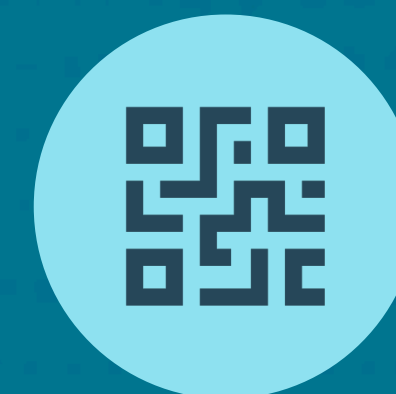
**LOOM**

Massively scale lightweight threads



**PANAMA**

Connecting JVM and native code



**VALHALLA**

Better memory density and performance through value types



**ZGC**

Low latency garbage collector on large heaps



# Java 21 available now

15 JDK Enhancement Proposals (JEPs)

Updates to Project Amber, Project Panama and Project Loom

Thousands of performance, stability and security improvements

JavaFX 21



# JDK 21 – 2023/09/19

## Language Features

- Record Patterns [440]
- Pattern Matching for switch [441]

## Language Features Previews

- String Templates <sup>Preview</sup> [430]
- Unnamed Patterns and Variables <sup>Preview</sup> [443]
- Unnamed Classes and Instance Main Methods <sup>Preview</sup> [445]

## Performance Improvement

- Generational ZGC [439]

## Library Improvements

- Virtual Threads [444]
- Sequenced Collections [431]
- Key Encapsulation Mechanism API [452]

## Library Improvements Previews and Incubator

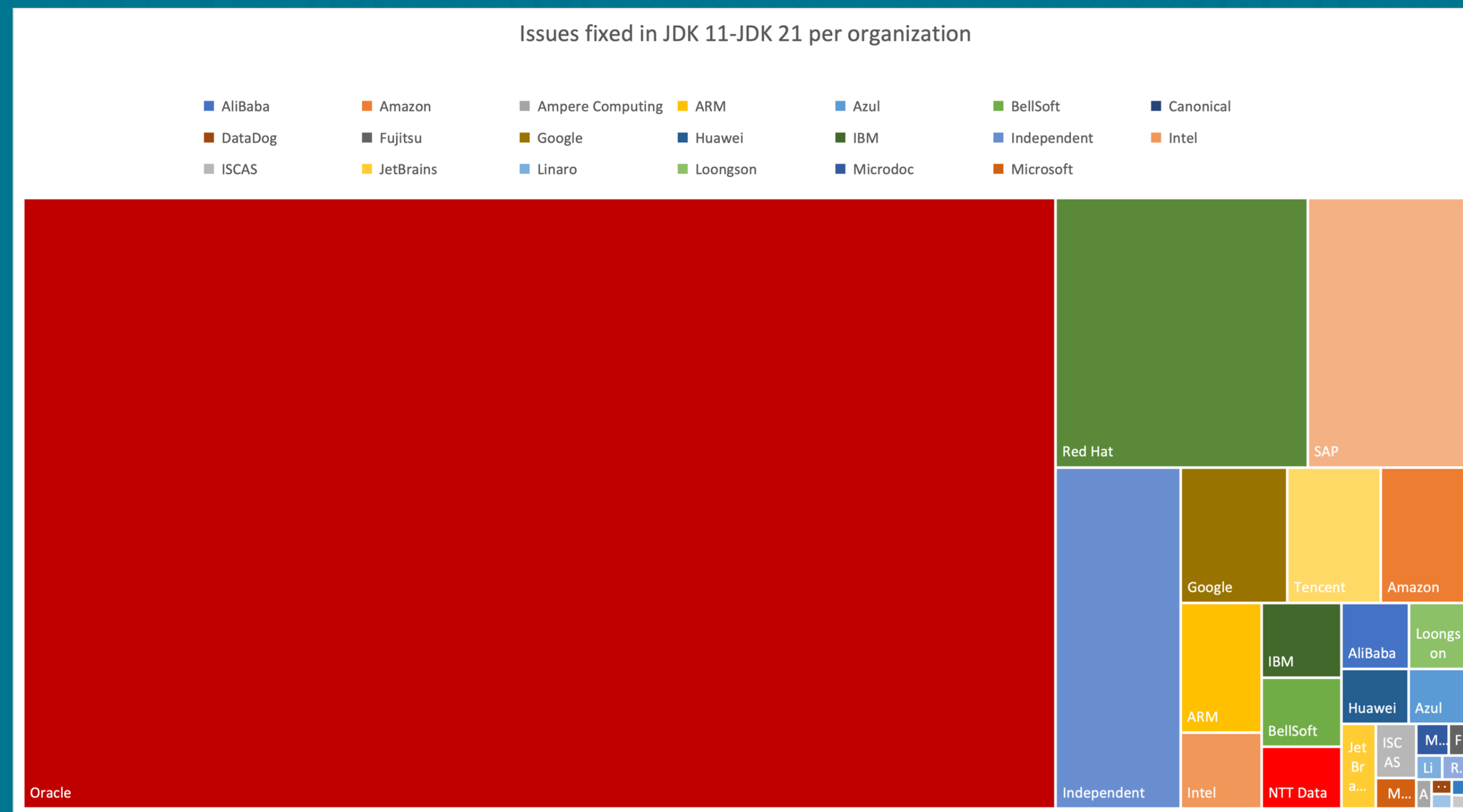
- Foreign Function & Memory API <sup>3rd Preview</sup> [442]
- Structured Concurrency <sup>Preview</sup> [453]
- Scoped Values <sup>Preview</sup> [446]
- Vector API <sup>6th Incubator</sup> [448]

## Stewardship

- Prepare to Disallow the Dynamic Loading of Agents [451]
- Deprecate the Windows 32-bit x86 Port for Removal [449]

# OpenJDK

Issues fixed in JDK 21 per organization





# Strength in numbers



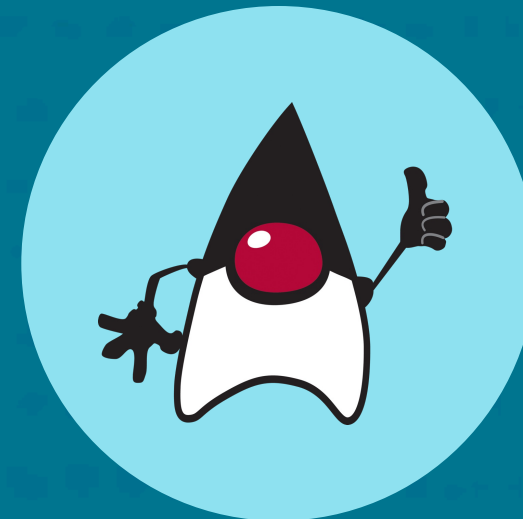
Trust



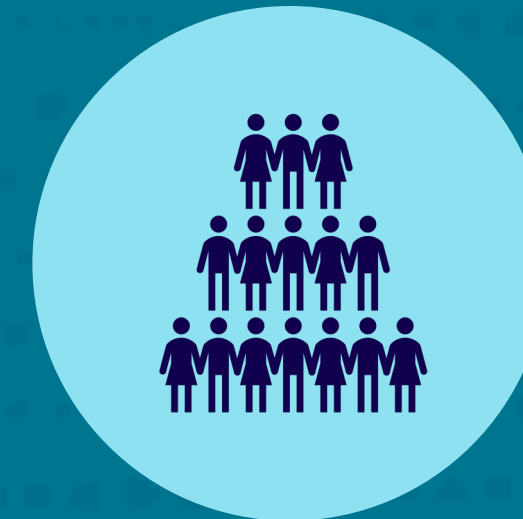
Innovation



Predictability



**28 YEARS**  
SINCE LAUNCH



**10 MILLION**  
JAVA DEVELOPERS



**1.8 MILLION**  
STACK OVERFLOW  
QUESTIONS



**360+**  
JAVA USER GROUPS



**365**  
JAVA CHAMPIONS



**1 MILLION**  
JAVA CERTIFICATIONS  
COMPLETED



OpenJDK



Java™  
Champions

Java™  
magazine

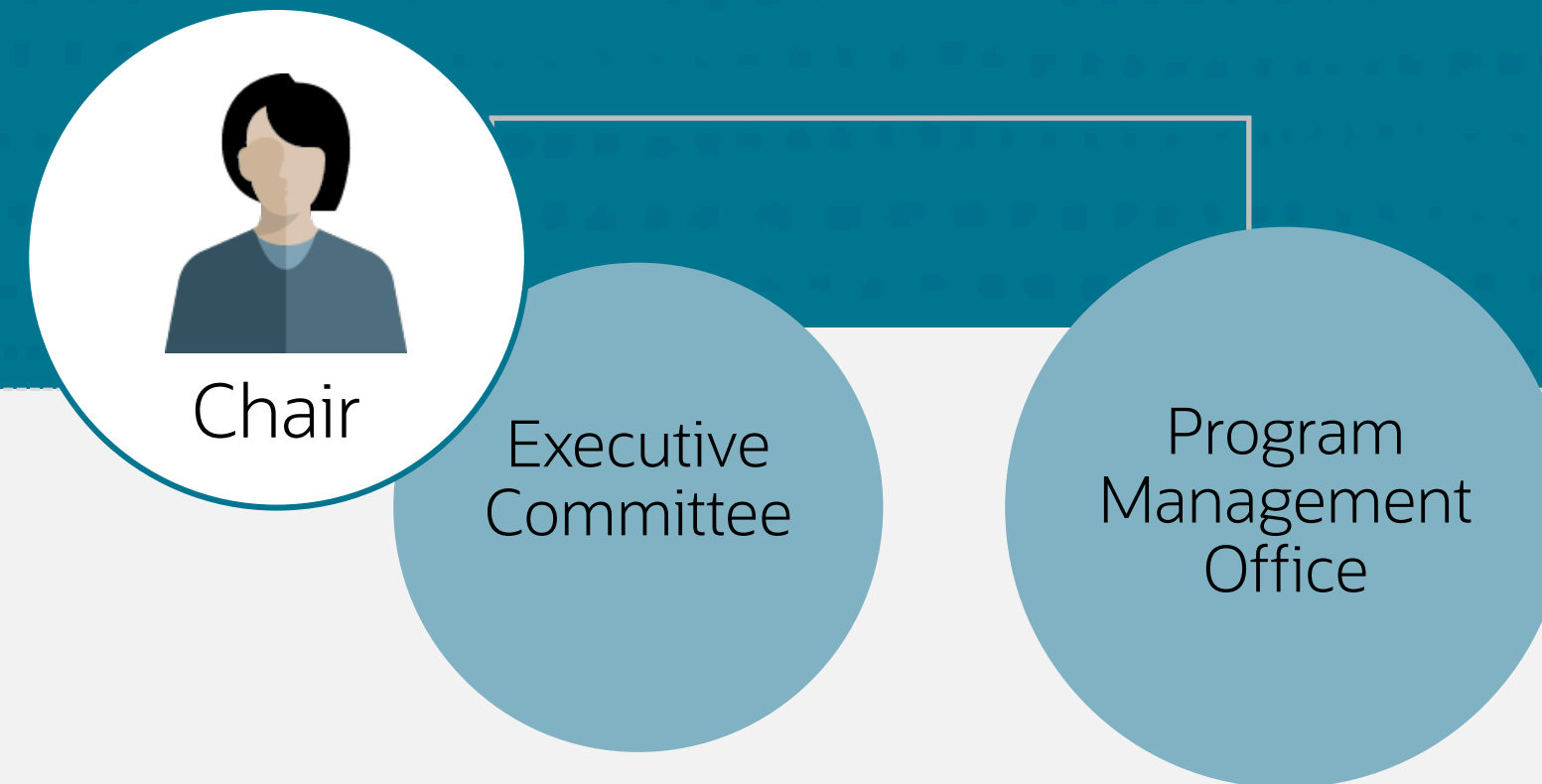


jDuchess

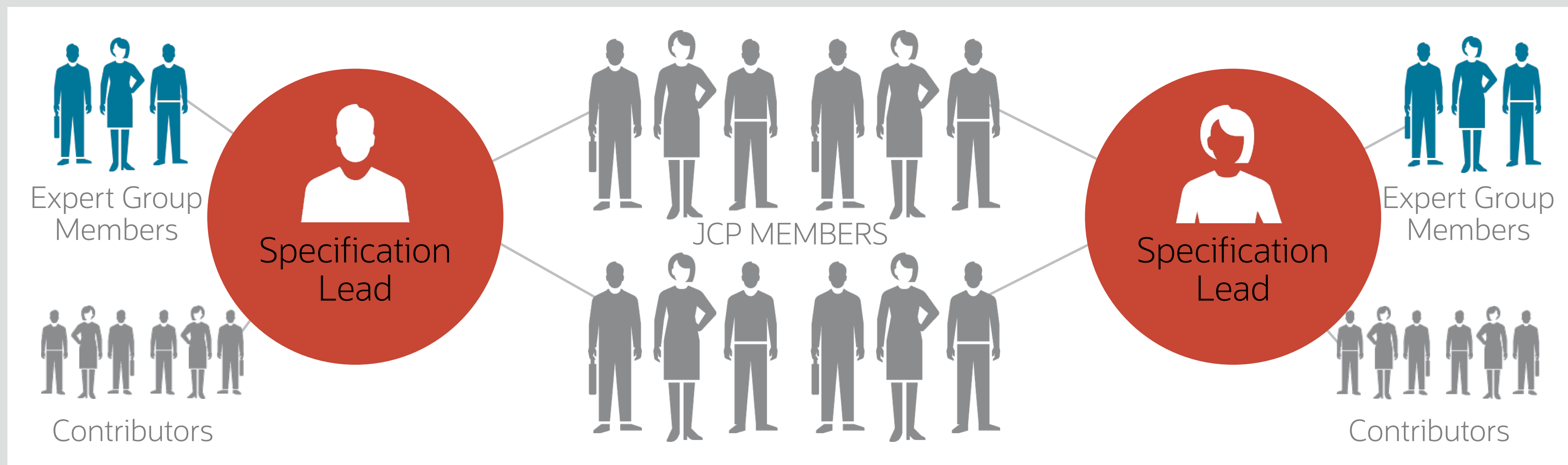
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# The JCP Organization



## JSR PARTICIPATION





# JCP Membership Levels

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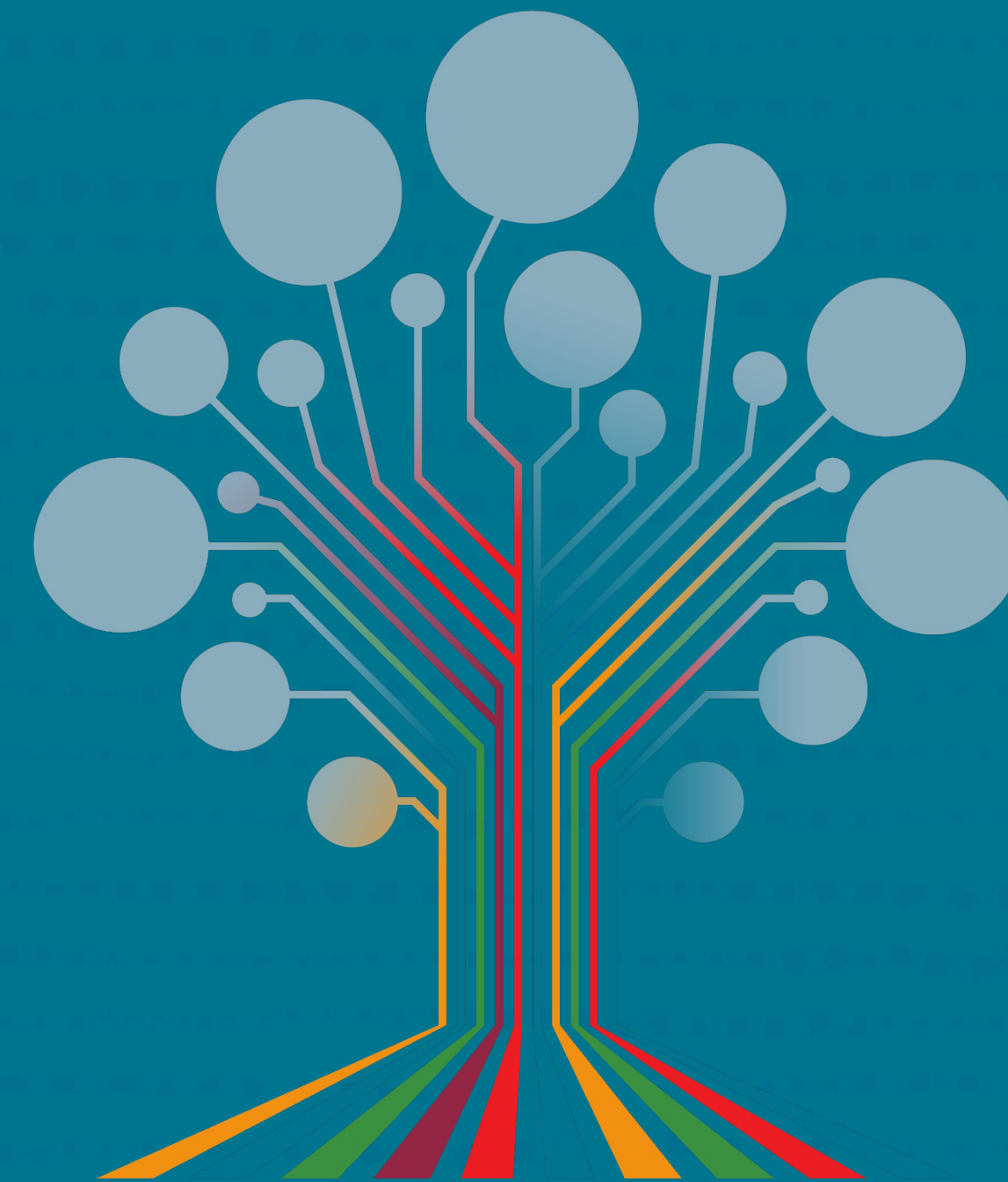
Associate Members are individuals who can be listed as contributors to JSRs and vote for the Executive Committee.

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Partner Members are Java User Groups and other non-profit organizations that can serve on and vote for the Executive Committee.

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Full Members can serve on Expert Groups, lead JSRs, serve on and vote for the Executive Committee



# Who Are The Members of the JCP?



Corporations

Non-Profit & Open Source

Java User Groups (JUG)

Individual Developers



# JCP Executive Committee





# Collaborative Development - How does it work?

## JCP Members

- Collaborate on Experts Groups
- Contribute to JSRs
- Vote in Elections
- Comment and review

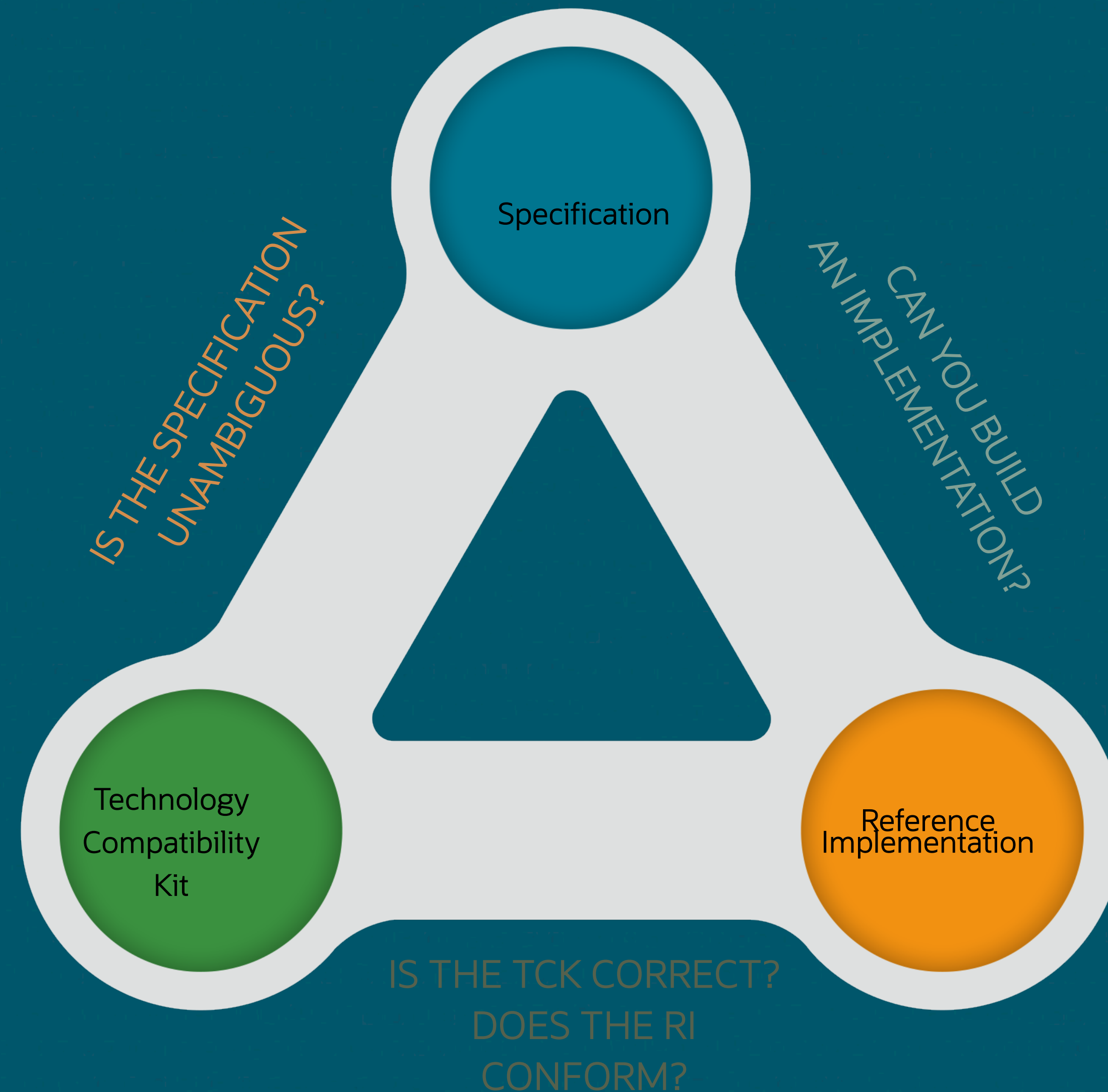
## Java Specification Requests (JSRs)

- A JSR is a single version of a Java specification.
- JSRs are led by a community member (the Spec Lead), with a group of interested members (the Expert Group) helping with the day-to-day decisions and work.
- Any JCP member can submit and lead a JSR

## Each Expert Group must deliver:

- The Specification
- A Reference Implementation
- A Technology Compatibility Kit

# Compatibility Triangle



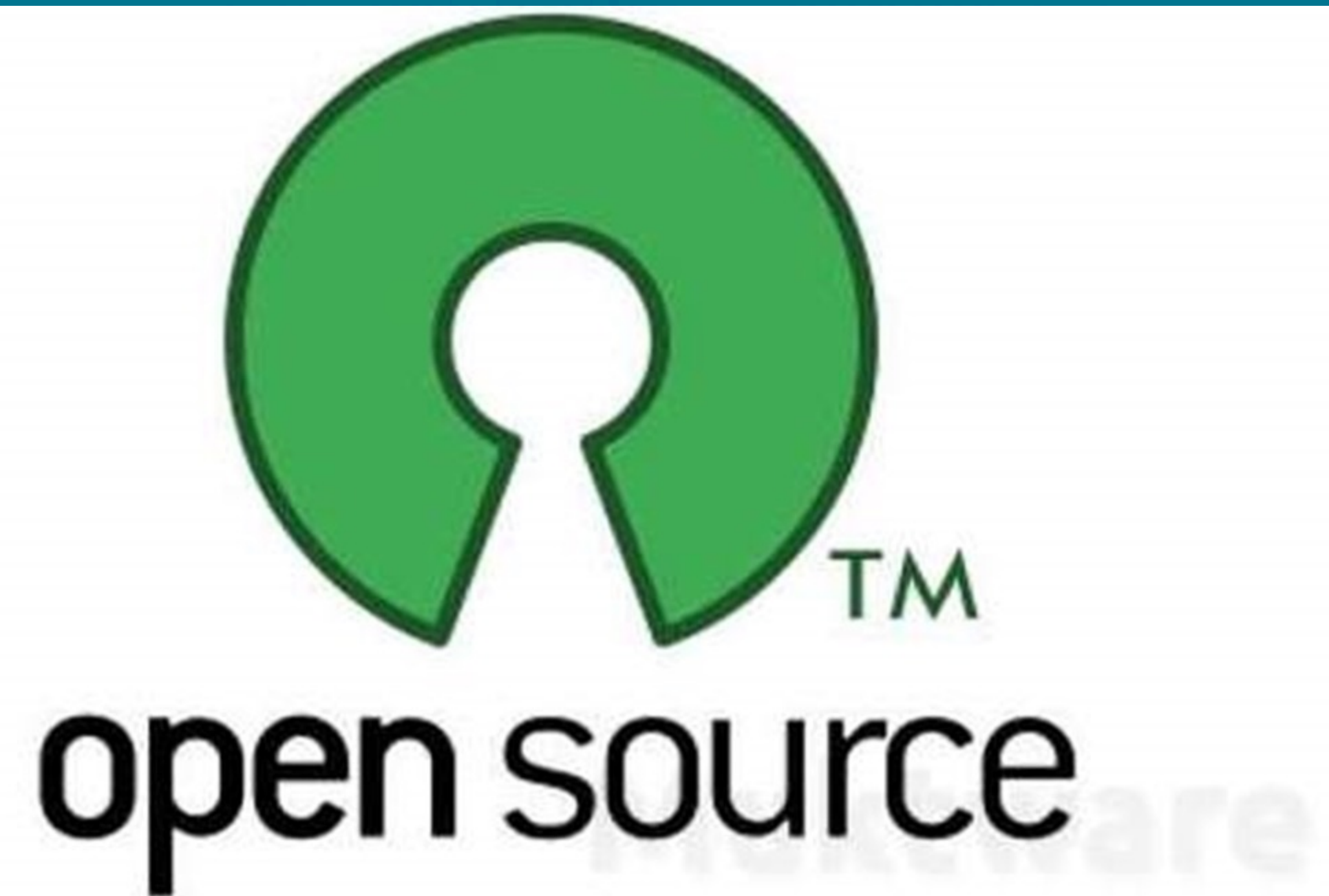
# The JSR Development Cycle

Every project developed through the JCP follows the JSR lifecycle  
It Includes formal public reviews and votes by the Executive Committee.  
Full Members can submit & lead JSRs, serve as Expert Group members on JSRs.  
Associate Members can participate as Contributors on JSRs.



# How: Open Standards & Open Source

We need both!



# Open Source Implementations

The Reference Implementations of the Java platform are developed collaboratively and released under open-source license

Java SE: OpenJDK



# Now on GitHub as well...

The screenshot shows the OpenJDK GitHub profile page. At the top is a dark navigation bar with links for Product, Team, Enterprise, Explore, Marketplace, and Pricing, along with a search bar and Sign in / Sign up buttons. The profile header includes the OpenJDK logo (a red devil character), the name 'OpenJDK', and links to the website (https://openjdk.org) and Twitter (@openjdk). Below the header are tabs for Overview, Repositories (94), Packages, and People (155). The 'Pinned' section displays six repositories in a grid:

- jdk** (Public): JDK main-line development. https://openjdk.org/projects/jdk. 13.9k stars, 3.8k forks.
- loom** (Public): https://openjdk.org/projects/loom. 1.5k stars, 176 forks.
- amber** (Public): https://openjdk.org/projects/amber. 113 stars, 39 forks.
- valhalla** (Public): https://openjdk.org/projects/valhalla. 363 stars, 67 forks.
- jfx** (Public): JavaFX mainline development. 1.8k stars, 317 forks.
- jmc** (Public): Repository for OpenJDK Mission Control, a production time profiling and diagnostics tools suite. https://openjdk.org/projects/jmc. 577 stars, 136 forks.

On the right side, the 'People' section shows a grid of contributor avatars with a 'View all' link. Below that, the 'Top languages' section shows a bar chart for Java, C++, Python, HTML, and Shell. The 'Most used topics' section at the bottom right features tags for openjdk, java, jvm, javafx, and jmc. A 'System Preferences' button is visible at the bottom center.



# Early Access Builds

- Every 2 weeks
- Download and test your applications
- Provide Feedback
- Make adjustments

## jdk.java.net

**Production and Early-Access OpenJDK Builds, from Oracle**

**Ready for use: JDK 21, JavaFX 21, JMC 8**

**Early access: JDK 23, JDK 22, JavaFX 23, JavaFX 22, Jextract, Loom, & Valhalla**

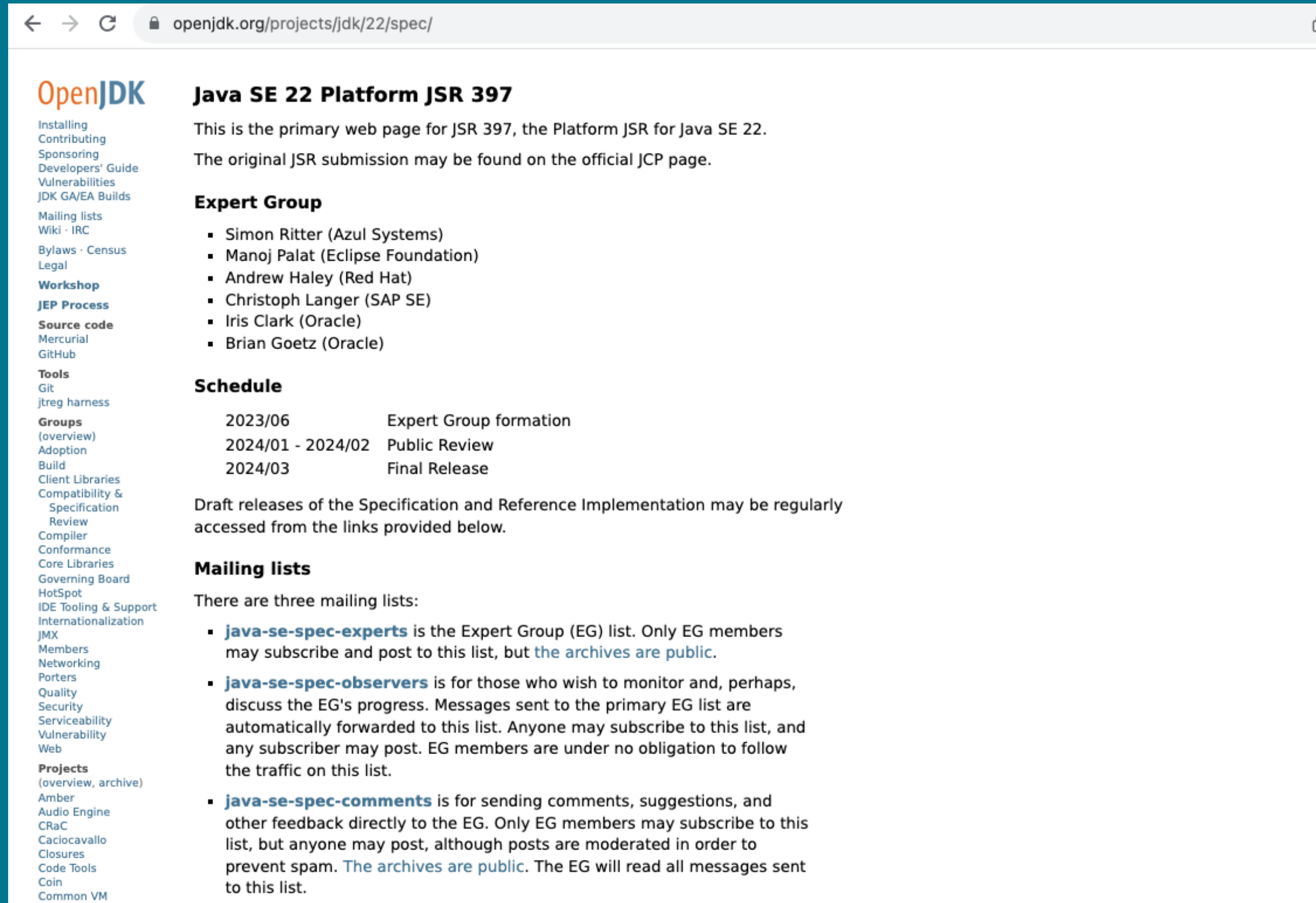
*Looking to learn more about Java? Visit [dev.java](#) for the latest Java developer news and resources.*

*Looking for Oracle JDK builds and information about Oracle's enterprise Java products and services? Visit the [Oracle JDK Download page](#).*

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# Java SE 22 – JSR 397



The screenshot shows the OpenJDK website for Java SE 22 Platform JSR 397. The page has a left sidebar with a navigation menu and a main content area. The main content area includes the title "Java SE 22 Platform JSR 397", a description of the page, a list of expert group members, a schedule table, and a list of mailing lists.

**OpenJDK**

Installing  
Contributing  
Sponsoring  
Developers' Guide  
Vulnerabilities  
JDK GA/EA Builds  
Mailing lists  
Wiki · IRC  
Bylaws · Census  
Legal  
Workshop  
JEP Process  
Source code  
Mercurial  
GitHub  
Tools  
Git  
Jtreg harness  
Groups  
(overview)  
Adoption  
Build  
Client Libraries  
Compatibility &  
Specification  
Review  
Compiler  
Conformance  
Core Libraries  
Governing Board  
HotSpot  
IDE Tooling & Support  
Internationalization  
JMX  
Members  
Networking  
Porters  
Quality  
Security  
Serviceability  
Vulnerability  
Web  
Projects  
(overview, archive)  
Amber  
Audio Engine  
CRA/C  
Caciocavallo  
Closures  
Code Tools  
Coin  
Common VM

## Java SE 22 Platform JSR 397

This is the primary web page for JSR 397, the Platform JSR for Java SE 22.

The original JSR submission may be found on the official JCP page.

### Expert Group

- Simon Ritter (Azul Systems)
- Manoj Palat (Eclipse Foundation)
- Andrew Haley (Red Hat)
- Christoph Langer (SAP SE)
- Iris Clark (Oracle)
- Brian Goetz (Oracle)

### Schedule

2023/06	Expert Group formation
2024/01 - 2024/02	Public Review
2024/03	Final Release

Draft releases of the Specification and Reference Implementation may be regularly accessed from the links provided below.

### Mailing lists

There are three mailing lists:

- java-se-spec-experts** is the Expert Group (EG) list. Only EG members may subscribe and post to this list, but the archives are public.
- java-se-spec-observers** is for those who wish to monitor and, perhaps, discuss the EG's progress. Messages sent to the primary EG list are automatically forwarded to this list. Anyone may subscribe to this list, and any subscriber may post. EG members are under no obligation to follow the traffic on this list.
- java-se-spec-comments** is for sending comments, suggestions, and other feedback directly to the EG. Only EG members may subscribe to this list, but anyone may post, although posts are moderated in order to prevent spam. The archives are public. The EG will read all messages sent to this list.

Early Access builds-available now

<https://jdk.java.net/22>

March 2024 planned release

<http://openjdk.java.net/projects/jdk/22/>



# JSR example page

Java

Community Process

Community Development of Java Technology Specifications

Press Room | Get Java Here |

JSRs

» JSRs by Platform

» JSRs by Technology

» JSRs by Stage

» JSRs by Committee

» List of All JSRs

My JCP

Register for Site

Use of JCP site is subject to the JCP Terms of Use and the Oracle Privacy Policy

JCP Info

» About JCP

JSRCommunityExpert Group

Summary | Proposal | Detail (Summary & Proposal) | Nominations

JSRs: Java Specification Requests

JSR 396: Java™ SE 21

Stage	Access	Start	Finish
Public Review Final Approval Ballot	<a href="#">View results</a>	22 Aug, 2023	28 Aug, 2023
Public Review	<a href="#">Download page</a>	18 Jul, 2023	21 Aug, 2023
Expert Group Formation		07 Dec, 2022	

Status: **Active**

JCP version in use: 2.11

Java Specification Participation Agreement version in use: 2.0

Description:

The JSR for the Java SE 21 Platform. The Reference Implementation of this Specification is the Java Development Kit, version 21.

Expert Group Transparency:

[Public Project Page](#)

[Public Communications](#)

[Issue Tracking](#)

Team

# Java in Education





# Bring Java to the next generation of developers

<https://jcp.org/java-in-education>



How to get started – host a workshop



Reaching out to Universities



Secondary School Engagement



Best practices & tips for teaching/mentoring/reaching out



Success stories from other JUG Leaders



Mailing List

# Get Involved

Follow on Twitter  
[@OpenJDK](https://twitter.com/OpenJDK)



# Join the OpenJDK Mailing List

mail.openjdk.org Mailing Lists

Welcome!

Below is a listing of all the public mailing lists on mail.openjdk.org. Click on a list name to get more information about the list, or to subscribe, unsubscribe, and change the preferences. For an unadvertised list, open a URL similar to this one, but with a '/' and the list name appended.

List administrators, you can visit [the list admin overview page](#) to find the management interface for your list.

If you are having trouble using the lists, please contact [mailman@openjdk.org](mailto:mailman@openjdk.org).

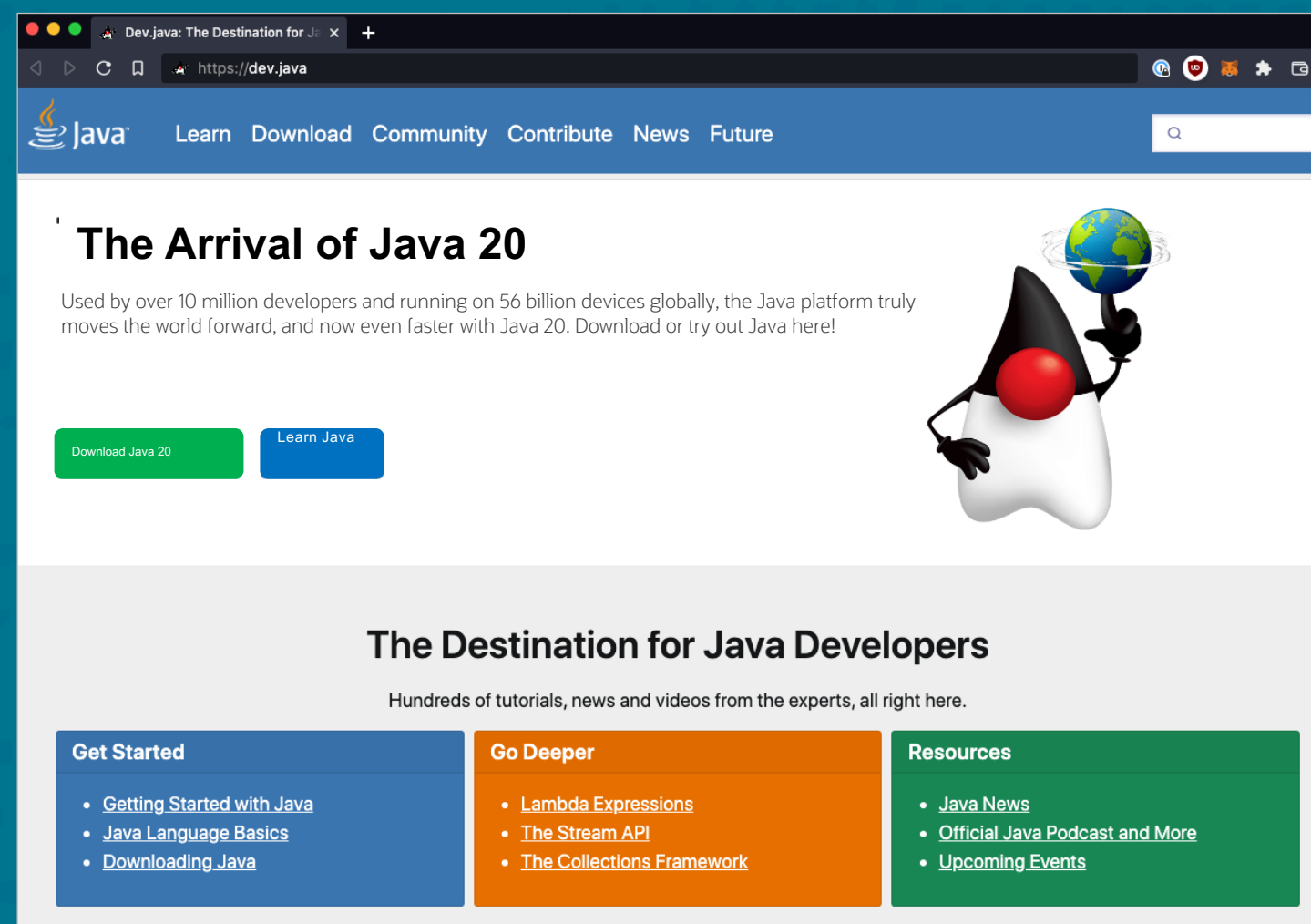
List	Description
<a href="#">2d-dev</a>	[ARCHIVED] Technical discussion about the Java 2D API and its implementation
<a href="#">aarch32-port-dev</a>	Technical discussion about the AArch32 Port Project
<a href="#">aarch64-port-dev</a>	Technical discussion about the AArch64 Port Project
<a href="#">adoption-discuss</a>	General discussion about bundling and aiding OpenJDK collaboration
<a href="#">amber-dev</a>	Technical discussion related to Project Amber
<a href="#">amber-spec-comments</a>	Amber Expert Group Comments
<a href="#">amber-spec-experts</a>	Amber Expert Group (moderated)
<a href="#">amber-spec-observers</a>	Amber Expert Group Observers
<a href="#">anno-pipeline-dev</a>	[ARCHIVED] Technical discussion about improving annotation handling in the javac compilation pipeline
<a href="#">announce</a>	General project announcements, very low traffic, tightly moderated
<a href="#">asmttools-dev</a>	Technical discussion related to Assembler Tools (JAsm/JDis and JCod/JDec) [Code Tools]
<a href="#">audio-engine-dev</a>	[ARCHIVED] Technical discussion about the development of audio synthesis
<a href="#">awt-dev</a>	[ARCHIVED] Technical discussion about the development of the AWT (Abstract Window Toolkit)
<a href="#">beans-dev</a>	[ARCHIVED] Technical discussion about the development of the JavaBeans API and its implementation
<a href="#">bsd-port-dev</a>	Technical discussion about the BSD Port Project
<a href="#">btrace-dev</a>	Technical discussion related to BTrace [Code Tools]
<a href="#">build-dev</a>	Technical discussion about building the JDK
<a href="#">build-infra-dev</a>	[ARCHIVED] Technical discussion related to the Build Infrastructure Project
<a href="#">bylaws-ratification</a>	[ARCHIVED] Vote to ratify the OpenJDK Community Bylaws (2011)
<a href="#">caciocavallo-dev</a>	Technical discussion about the Caciocavallo Project



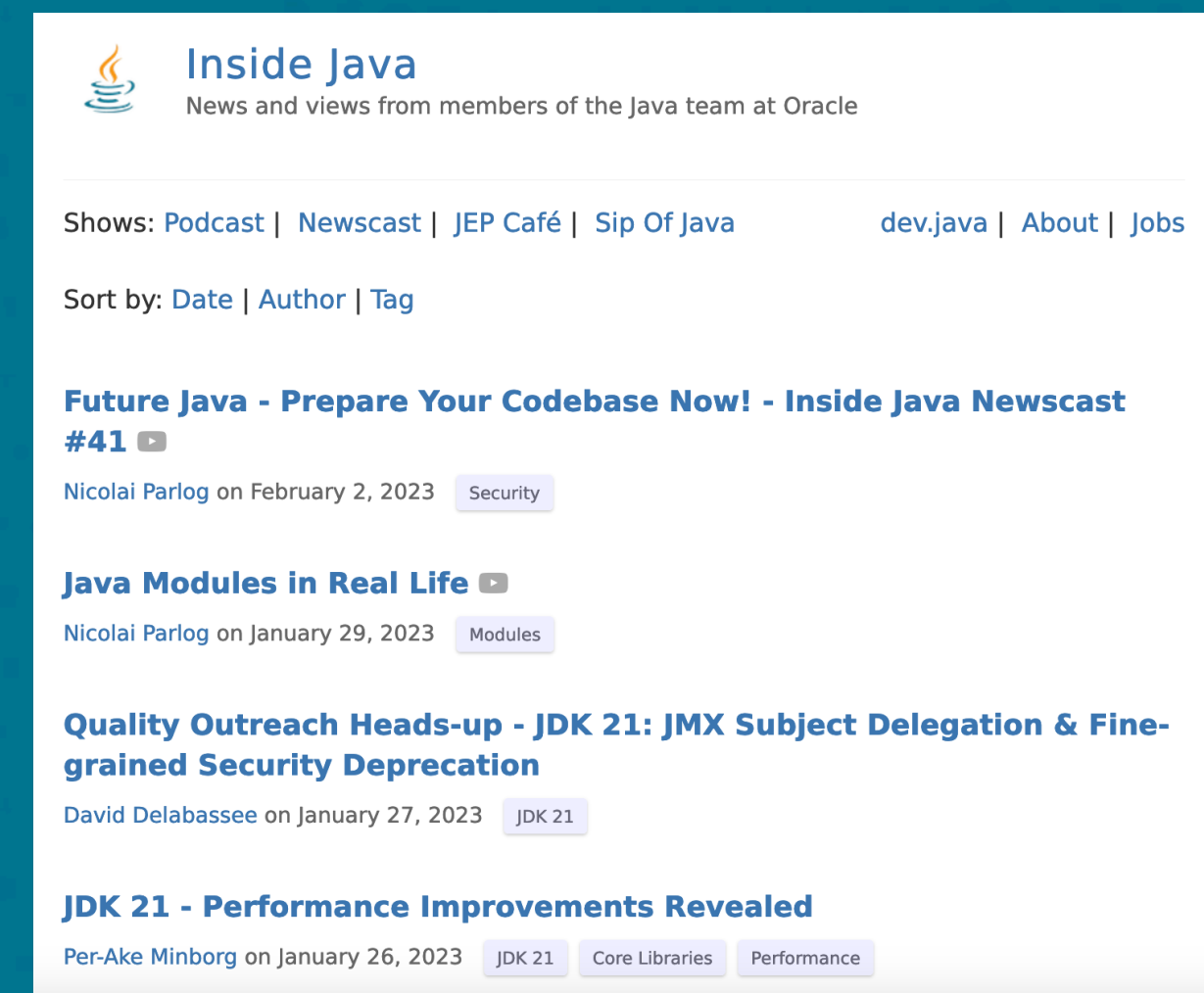




# High-quality information from the source



Dev.java



Inside.java



# We need you!

Follow the JCP online:

- Join the JCP:  
<https://jcp.org/en/participation/membership>
- Twitter @jcp\_org #JCP,
- Facebook: Java Community Process
- Join Public EC Meetings







thank you, ευχαριστώ, shukriya, dziekuje , நன்றி,  
tak, tack, grazie, gracias, danke, Благодаря, teşekkür ederim  
Shukran, merci, obrigado, bedankt, kiitos, xie xie, ありがとう.

Questions?