

# AdoptOpenJDK

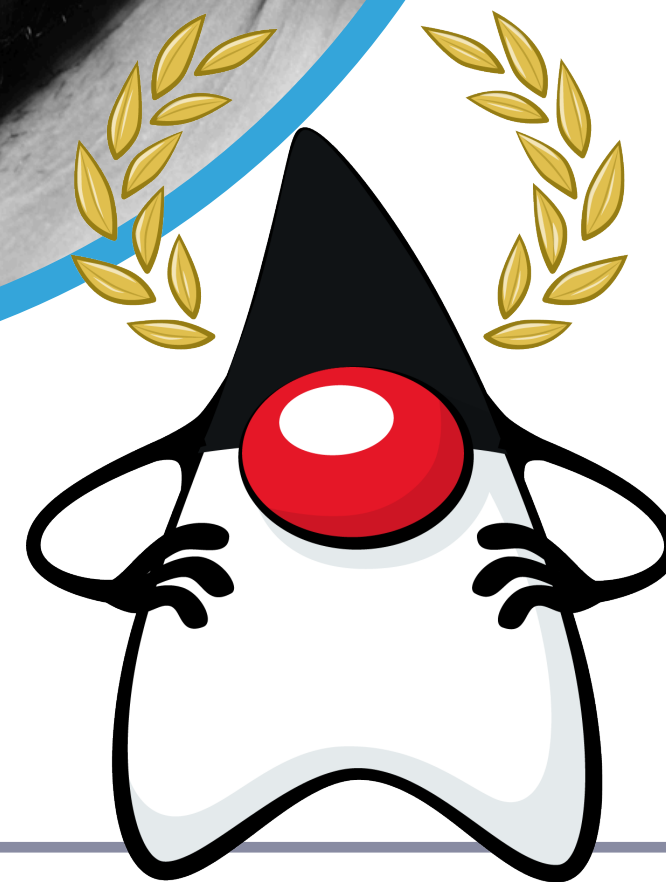
Making Java free again

George Adams & Hendrik Ebbers

# Hendrik Ebbers



- ▶ Karakun Co-Founder
- ▶ Founder of JUG Dortmund
- ▶ JSR EG member
- ▶ JavaOne Rockstar, Java Champion
- ▶ AdoptOpenJDK TSC member



@hendrikEbbers



github.com/hendrikebbers



@gdams\_

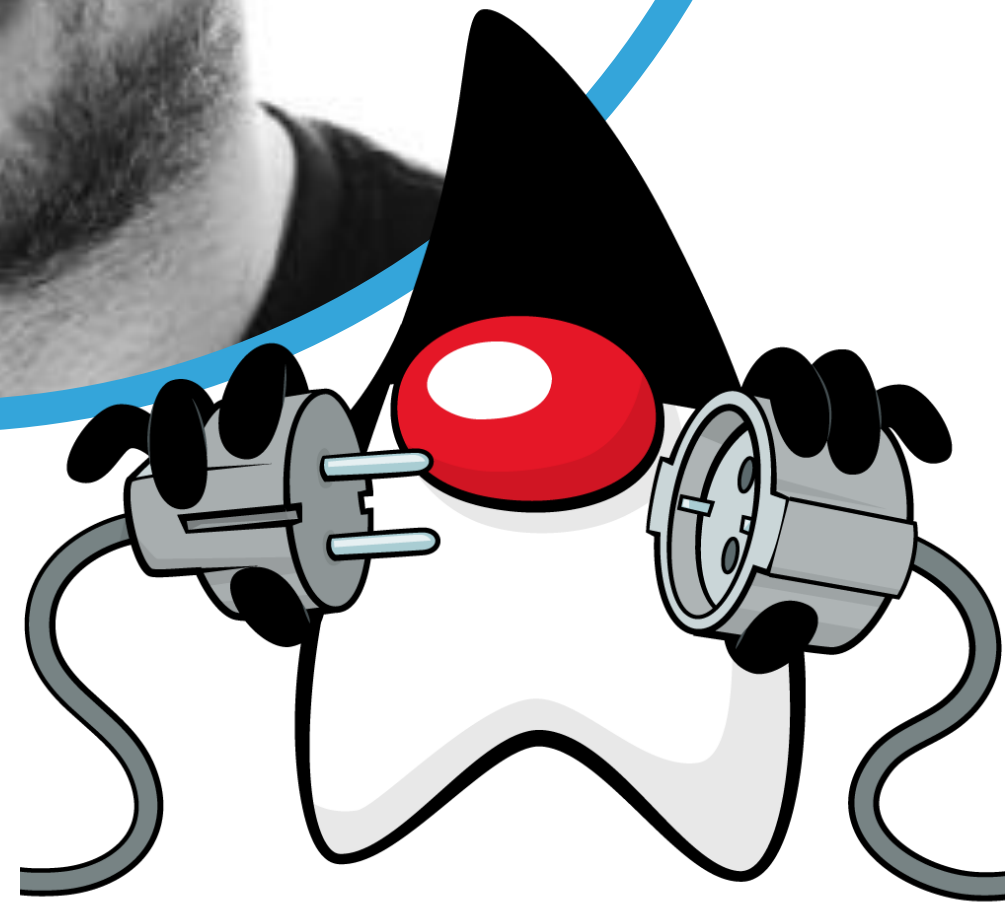


github.com/gdams



Microsoft

# George Adams



- ▶ Java Program Manager @ Microsoft
- ▶ AdoptOpenJDK Co-Founder
- ▶ Chairman of TSC @ AdoptOpenJDK
- ▶ Core Collaborator @ Node.js
- ▶ Foundation Bootstrap Team Member @ OpenJSF

# We'll Cover...

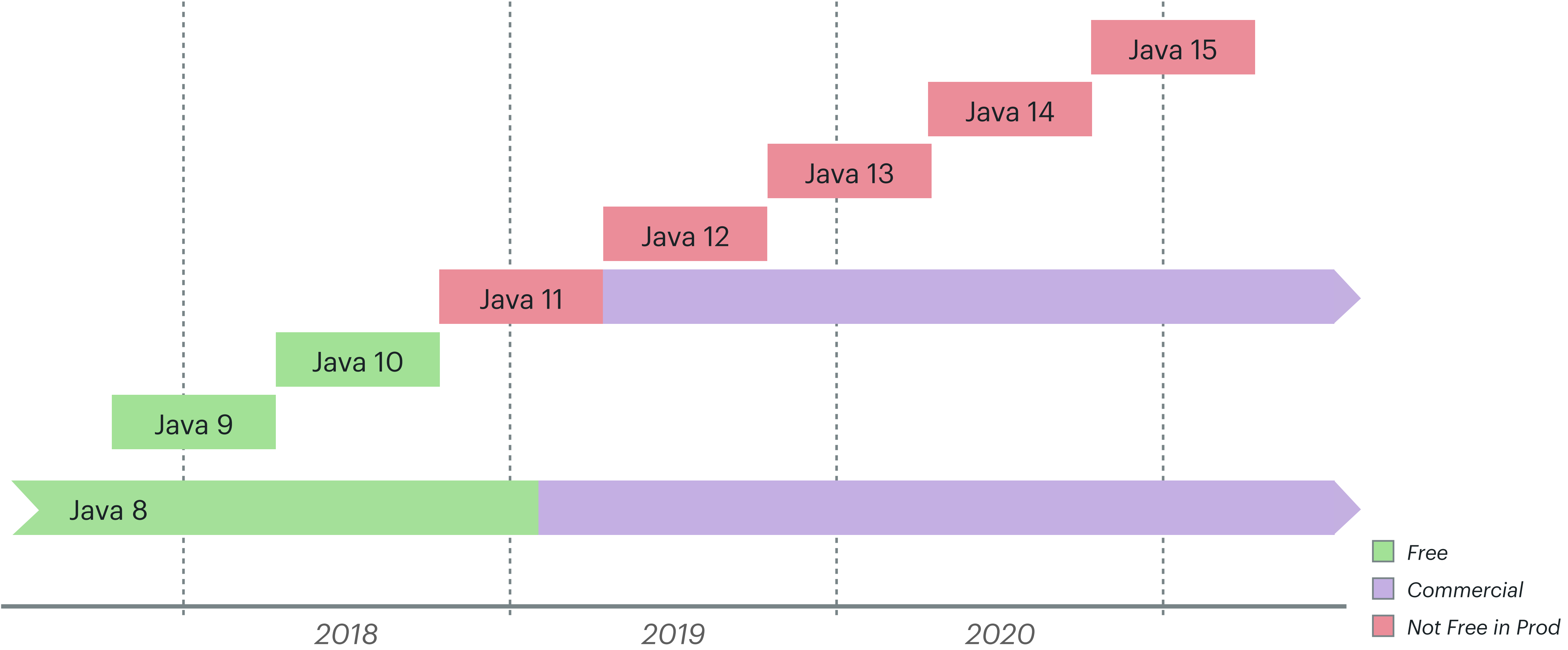
- ▶ Terminology
- ▶ OpenJDK Workflow
- ▶ Vendor distribution / differences of vendors
- ▶ AdoptOpenJDK
  - ▶ History
  - ▶ Eclipse Adoptium
  - ▶ Build/Test
  - ▶ Roadmap

# Terminology

# Terminology

- ▶ OpenJDK
  - ▶ The Open source project which is the Reference Implementation (RI) of Java SE standard.
- ▶ OpenJDK binary
  - ▶ JDK built directly from OpenJDK source code.
- ▶ OpenJDK Provider
  - ▶ A (vendor) who provides an OpenJDK binary.

# Oracle JDK Release Train



 [@hendrikEbbers](https://twitter.com/hendrikEbbers)

 [github.com/hendrikebbers](https://github.com/hendrikebbers)

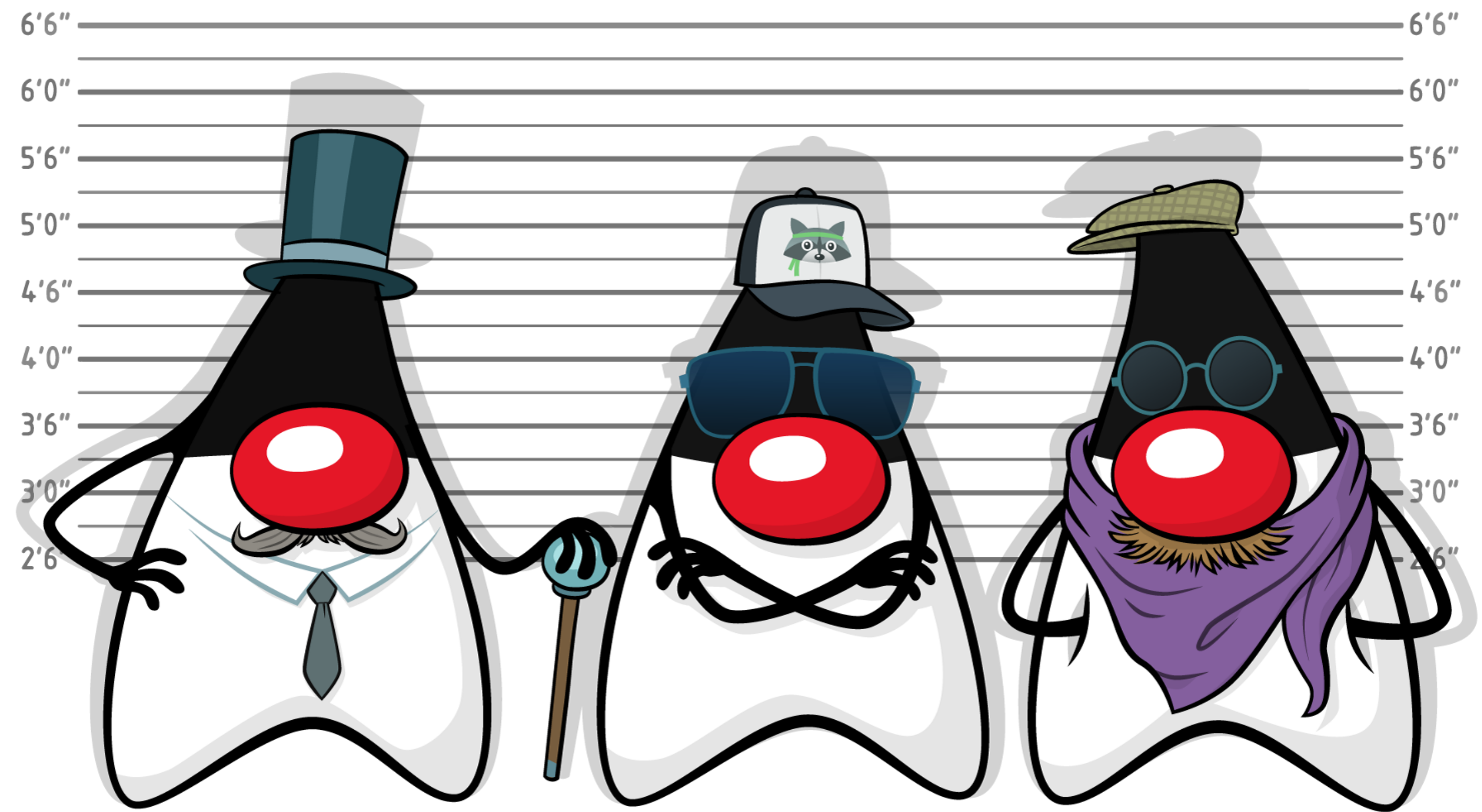
 [@gdams\\_](https://twitter.com/gdams_)

 [github.com/gdams](https://github.com/gdams)



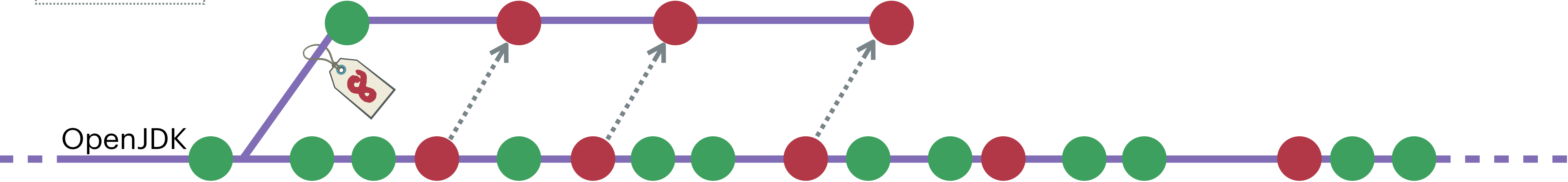
# Vendor distribution / differences of vendors

- ▶ **AdoptOpenJDK** (IBM, Microsoft et al)
- ▶ Amazon Corretto
- ▶ Azul Zulu
- ▶ BellSoft Liberica
- ▶ Linux Distros
- ▶ Red Hat
- ▶ SapMachine
- ▶ Alibaba Dragonwell





# OpenJDK Workflows



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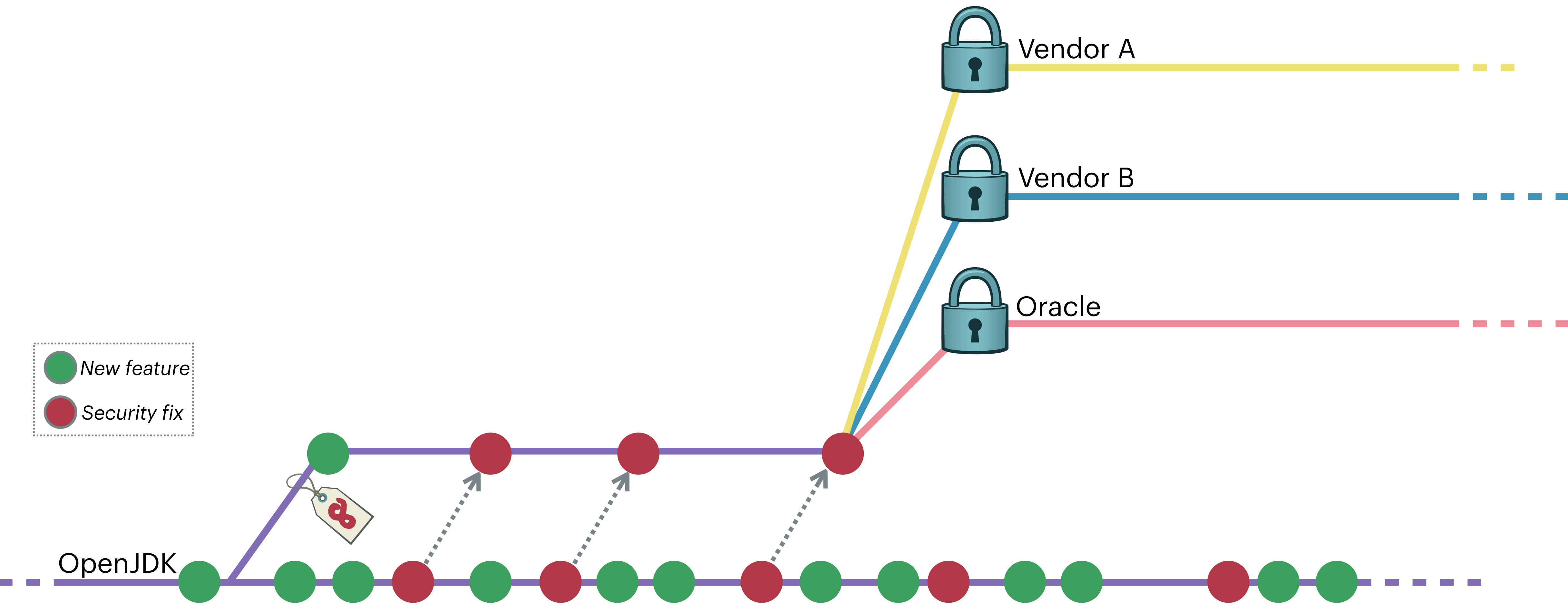
 [github.com/hendrikebbers](https://github.com/hendrikebbers)

 [@gdams\\_](https://twitter.com/gdams_)

 [github.com/gdams](https://github.com/gdams)



# OpenJDK Workflows



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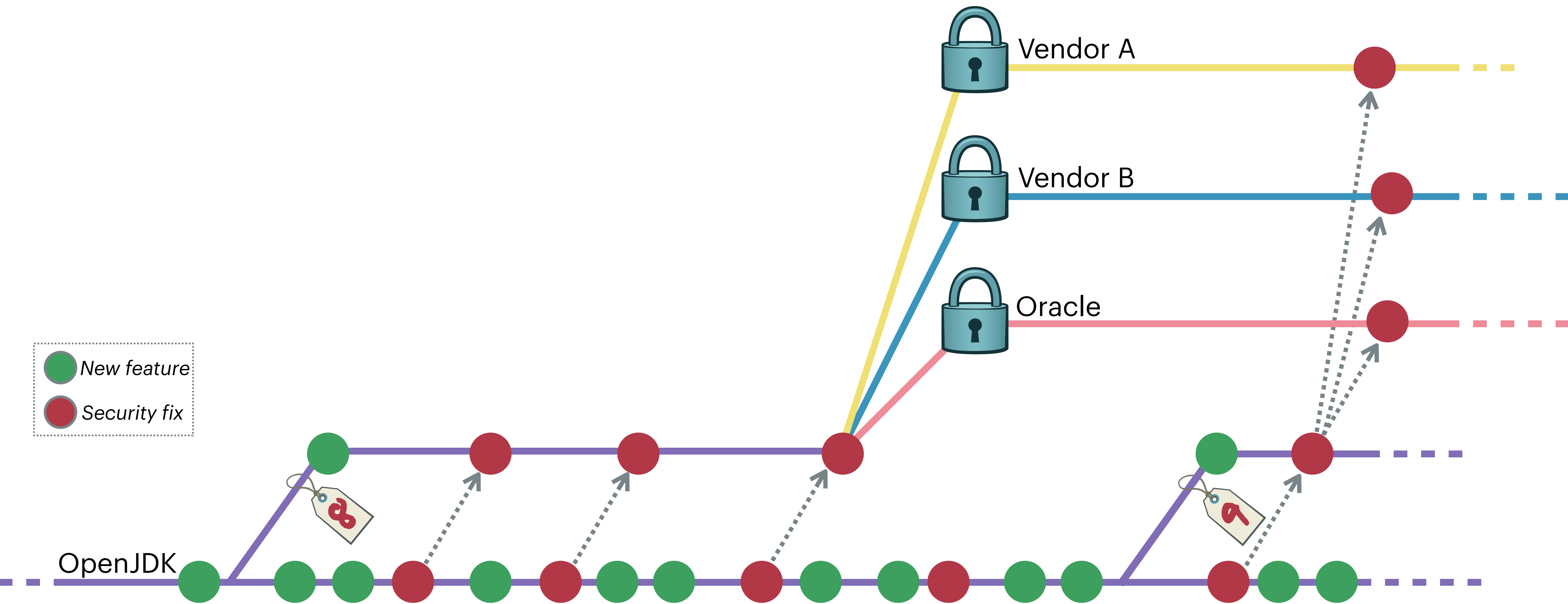
 [github.com/hendrikebbers](https://github.com/hendrikebbers)

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# OpenJDK Workflows



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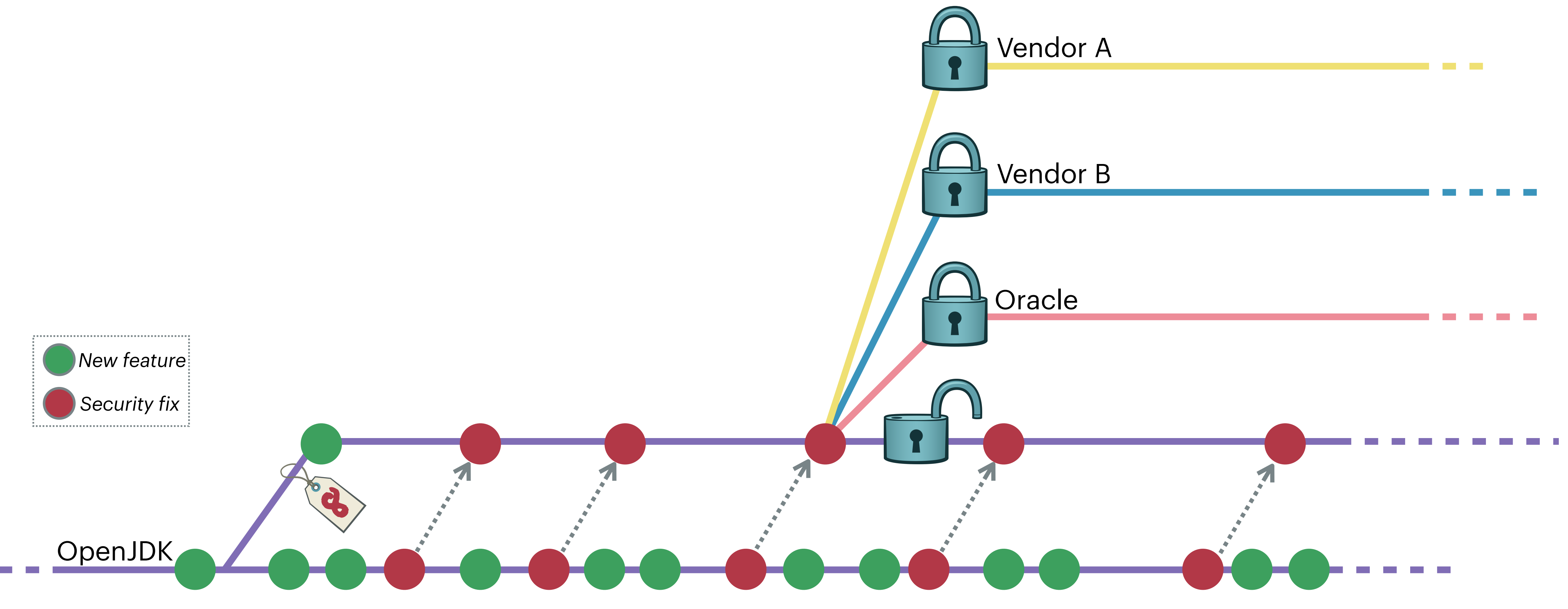
 [github.com/hendrikebbers](https://github.com/hendrikebbers)



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# OpenJDK Workflows



-  *New feature*
-  *Security fix*



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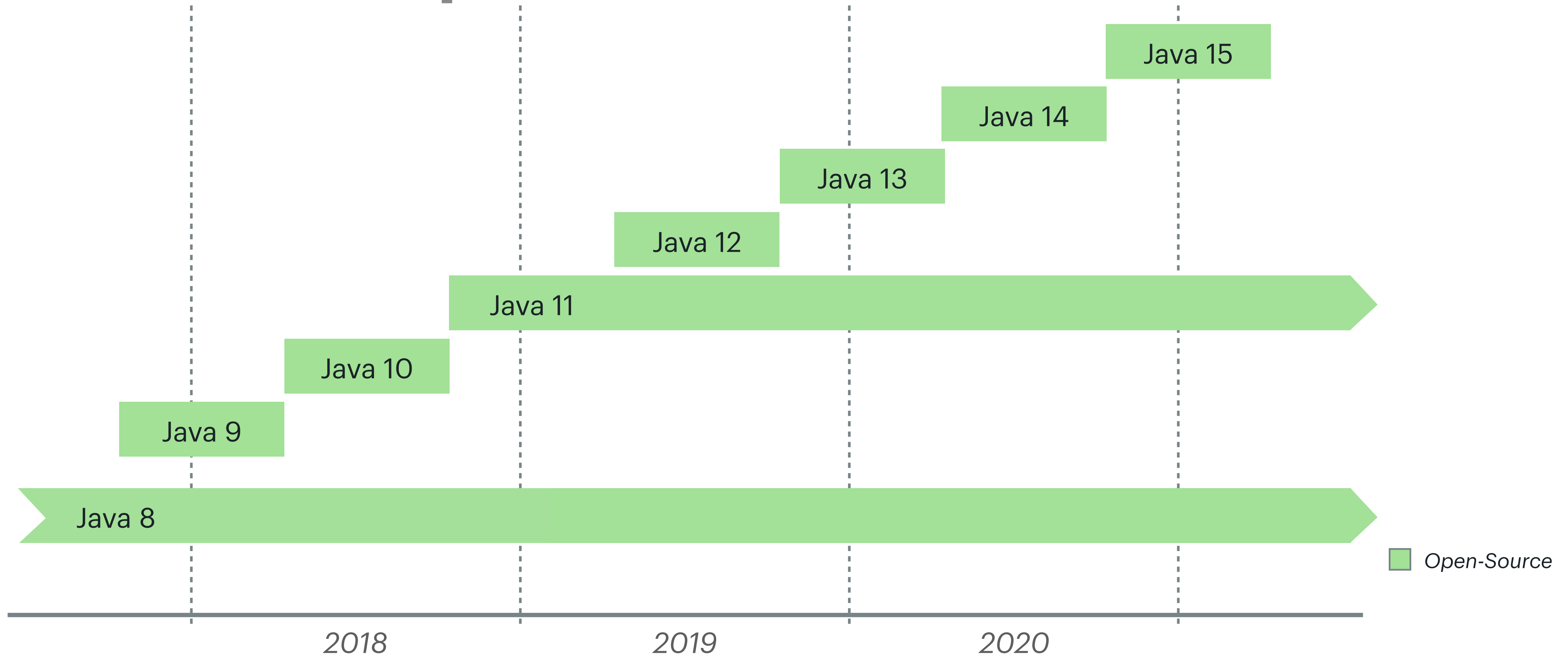
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# OpenJDK Release Train



Open-Source



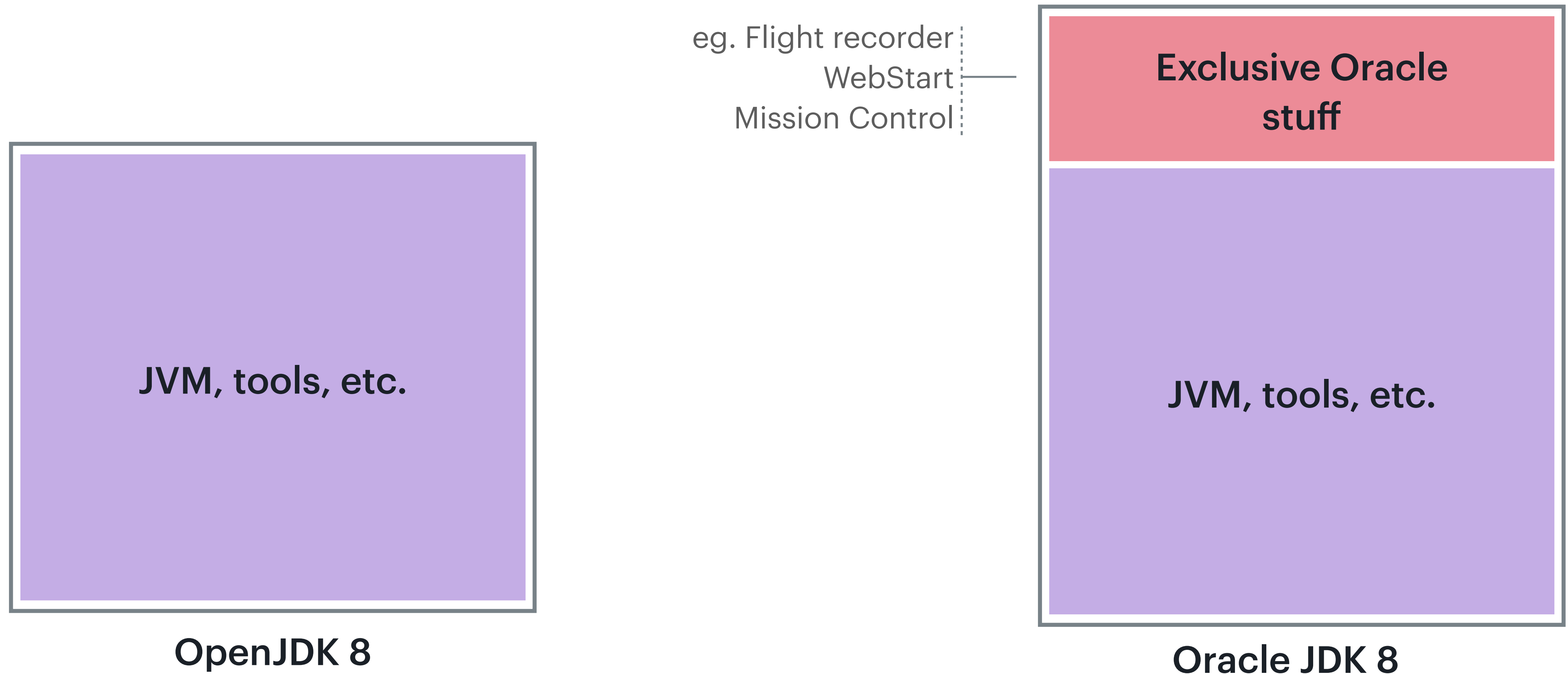
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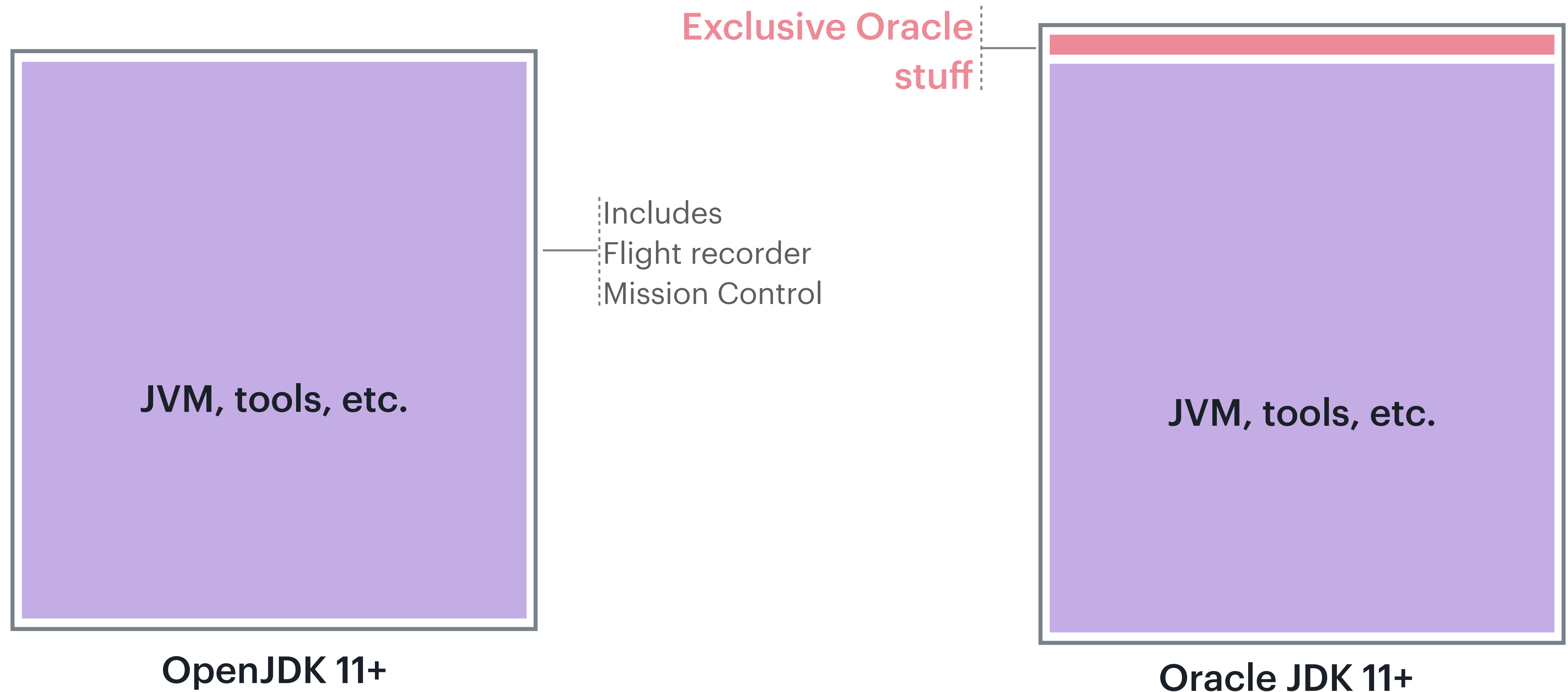
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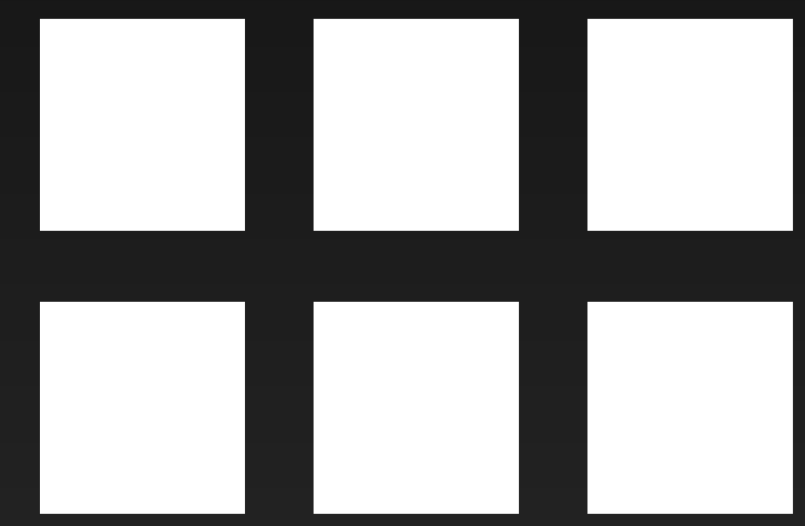


# Composition of OpenJDK 8



# Composition of OpenJDK 11+

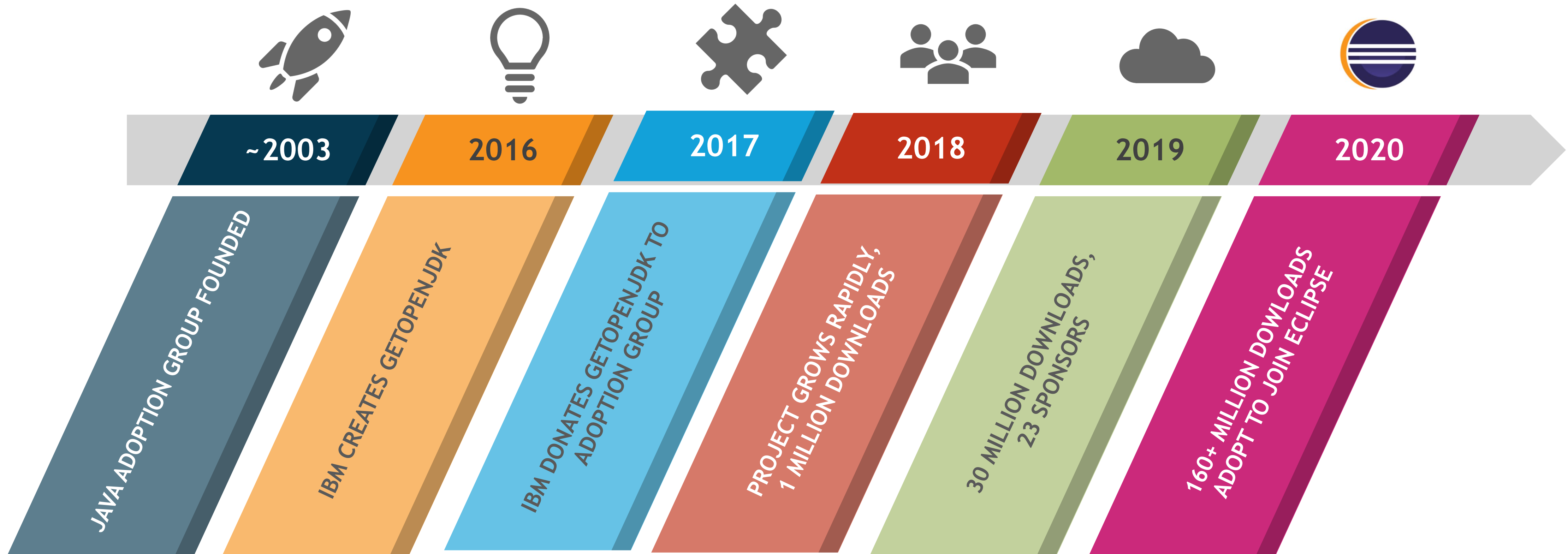




AdoptOpenJDK



# History of AdoptOpenJDK



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Microsoft

# AdoptOpenJDK => Eclipse Adoptium

- ▶ *Project Management Committee (PMC)*
- ▶ *Working Group + Steering Committee*



# Business Ready Binaries

## The place to get free binaries by the community

- ▶ *Broad platform Coverage*
- ▶ Professionally tested
- ▶ Clear Support Policy
- ▶ Backed by major vendors and the Java community
- ▶ Already at 170 Million Downloads

# Open and Transparent

- ▶ Technical Steering Committee in the open
- ▶ The entire project is OSS
- ▶ Everything happens on GitHub and Slack



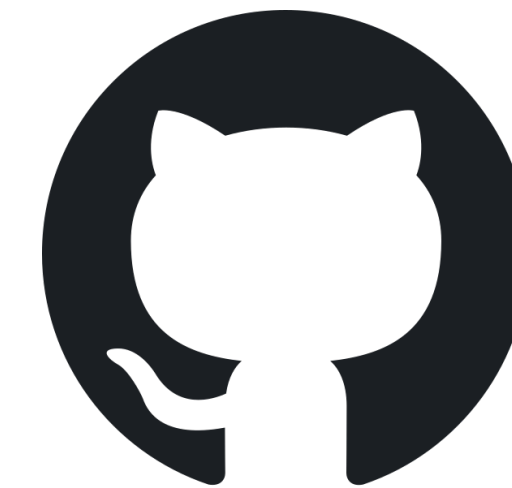
# Running an Open-Source project at Scale



170 Million Downloads



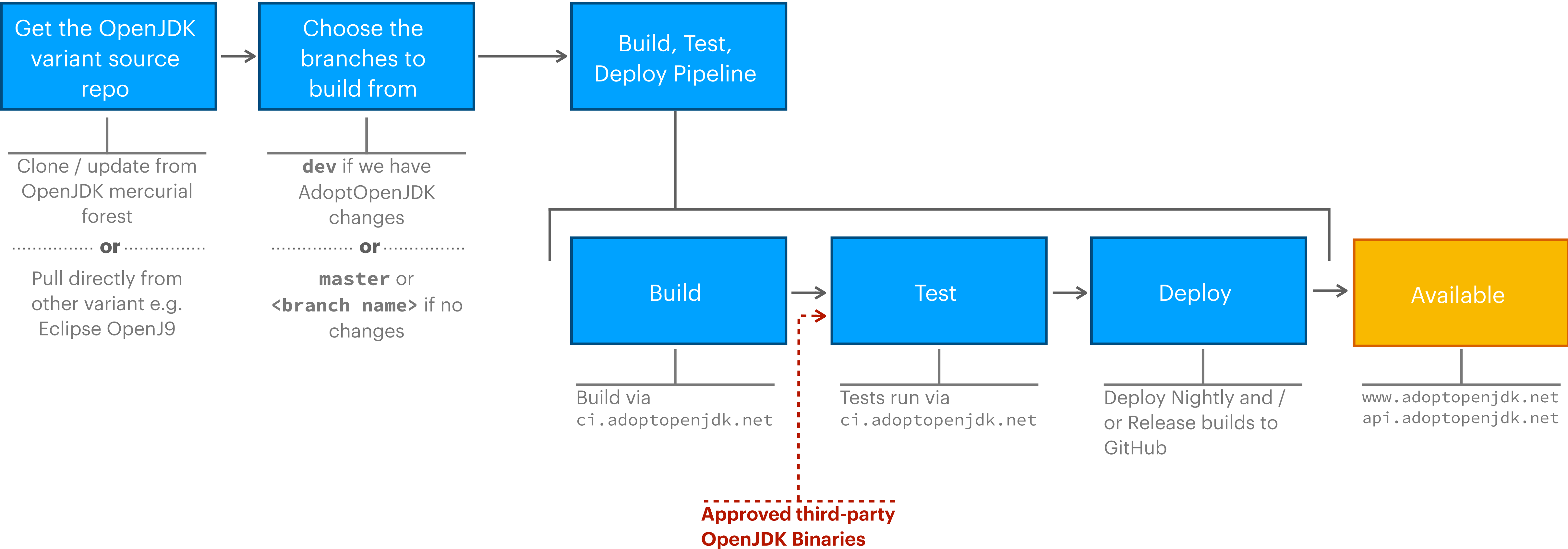
200+ Dedicated Machines



106 GitHub Repositories

# Build & Binaries

# Example Build/Test Pipeline



# Jenkins - CI

AdoptOpenJDK

Search

GEORGE ADAMS LOG OUT

Jenkins > build-scripts > jobs > jdk8u

← Up

ⓘ Status

⚙️ Configure

+ New Item

✖ Delete Folder

👤 People

🕒 Build History

ⓘ Project Relationship

🔍 Check File Fingerprint

📁 Move

🔧 Job Config History

🌊 Open Blue Ocean

🔄 Rename

📄 Config Files

🔑 Credentials

📁 New View

Cloud Statistics

adopt_azdo	98.4%
azurebuildagent	98.4%

**jdk8u**

Automatically generated build jobs. [add description](#)

All +

S	W	Name ↓	Last Success	Last Failure	Last Duration	Fav
✓	☁	<a href="#">jdk8u-aix-ppc64-hotspot</a>	2 days 0 hr - #654	2 days 2 hr - #653	2 hr 12 min	🎮 ☆
✓	☀	<a href="#">jdk8u-aix-ppc64-openj9</a>	1 day 21 hr - #757	17 days - #740	3 hr 4 min	🎮 ☆
✓	☁	<a href="#">jdk8u-freebsd-x64-hotspot</a>	5 mo 13 days - #24	9 mo 0 days - #22	17 min	🎮 ☆
✓	☀	<a href="#">jdk8u-linux-aarch64-hotspot</a>	17 hr - #578	10 days - #567	1 hr 34 min	🎮 ☆
✓	☀	<a href="#">jdk8u-linux-arm-hotspot</a>	1 day 0 hr - #326	4 mo 23 days - #159	2 hr 1 min	🎮 ☆
✓	☁	<a href="#">jdk8u-linux-ppc64le-hotspot</a>	2 days 0 hr - #613	2 days 2 hr - #612	1 hr 10 min	🎮 ☆
✓	☀	<a href="#">jdk8u-linux-ppc64le-openj9</a>	1 day 21 hr - #672	17 days - #655	2 hr 34 min	🎮 ☆
✓	☀	<a href="#">jdk8u-linux-ppc64le-openj9-linuxXL</a>	1 day 21 hr - #246	17 days - #229	2 hr 34 min	🎮 ☆
✓	☁	<a href="#">jdk8u-linux-s390x-hotspot</a>	2 days 0 hr - #624	2 days 2 hr - #623	4 hr 12 min	🎮 ☆
✓	☀	<a href="#">jdk8u-linux-s390x-openj9</a>	1 day 21 hr - #696	17 days - #679	2 hr 53 min	🎮 ☆



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🐦 @gdams\_

🐙 github.com/gdams





# Supported VMs

# HotSpot

**HotSpot is the VM from the OpenJDK community.**

- ▶ It is the most widely used VM today. e.g Oracle's JDK.
- ▶ HotSpot is shipped as part of the OpenJDK source code.
- ▶ It is suitable for all workloads.

# OpenJDK

# Eclipse OpenJ9

## Eclipse OpenJ9 is an alternative VM to Hotspot

- ▶ As a separate download, AdoptOpenJDK bundles this VM with OpenJDK class libraries.
- ▶ For some cloud/container workloads, it's faster/more efficient.

OpenJ9

# Supported Platforms



macOS



ARM



# Sources

- ▶ All builds are based on OpenJDK
- ▶ OpenJDK Mercurial repositories are mirrored into AdoptOpenJDK GitHub
- ▶ No additional functionality (GC, etc.)
- ▶ Additional build steps like notarisation for macOS

Test

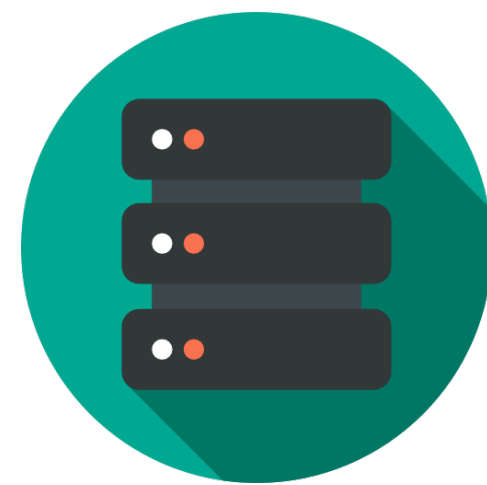
# Test Suite

- ▶ AdoptOpenJDK provides the test suite AQA
- ▶ Open source test suite comprising of tests from the Java Ecosystem
  - ▶ Includes tests contributed by IBM and other large application/framework tests
- ▶ Can be used to test any OpenJDK build

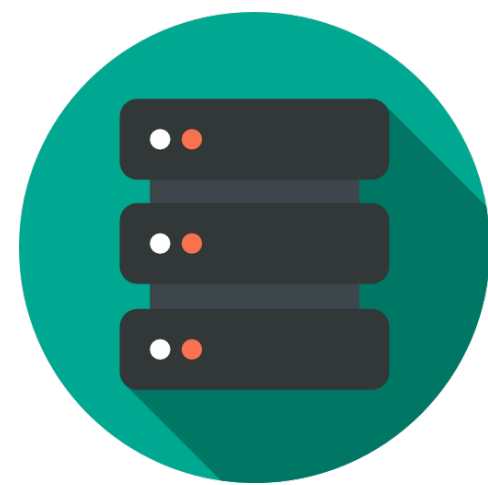
# Nightly & Release Tests

58 platforms

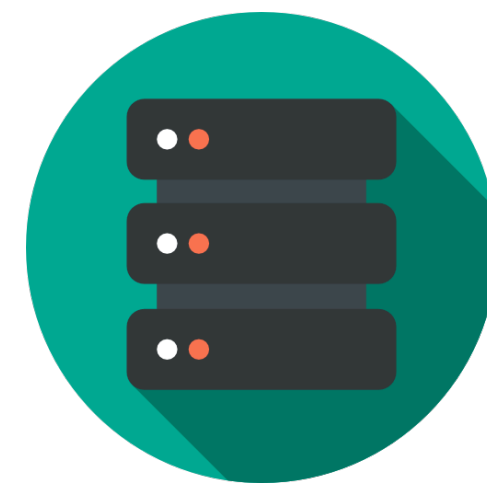
**X**



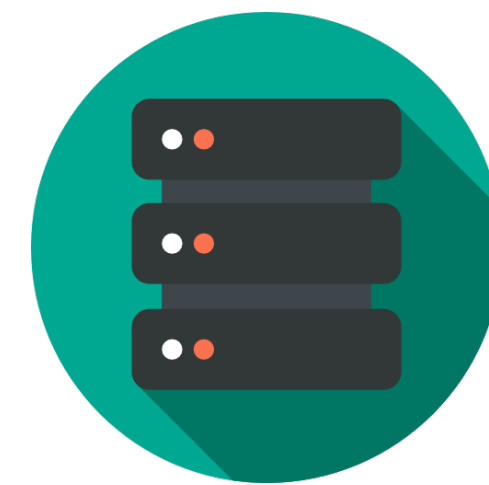
Win x64



Win x86

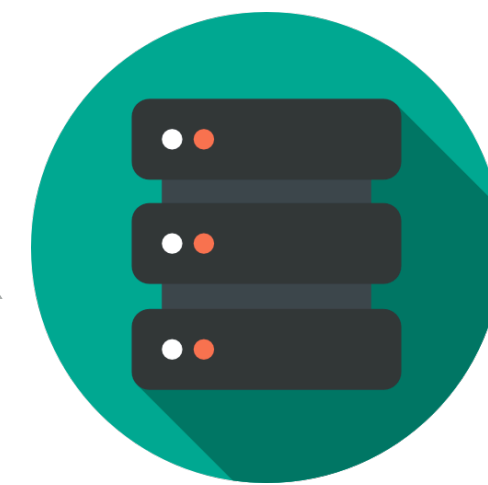


AIX ppc64



Linux x64

**X**



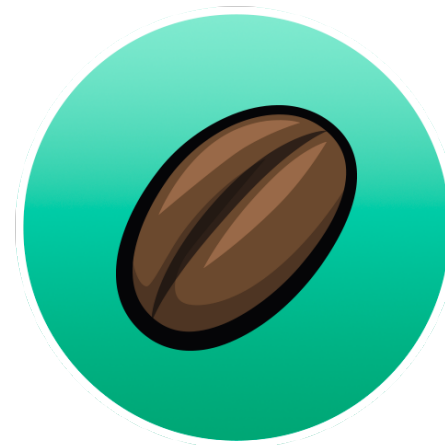
OpenJ9



HotSpot

6 versions

**X**



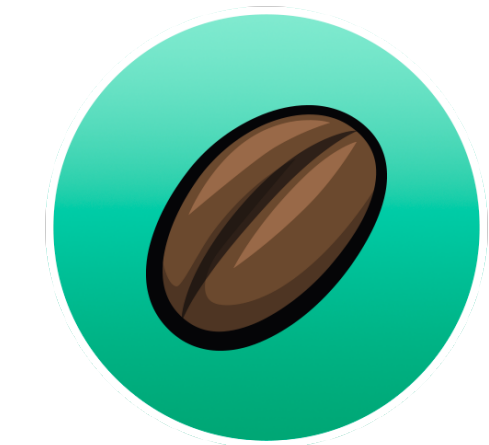
Java 8



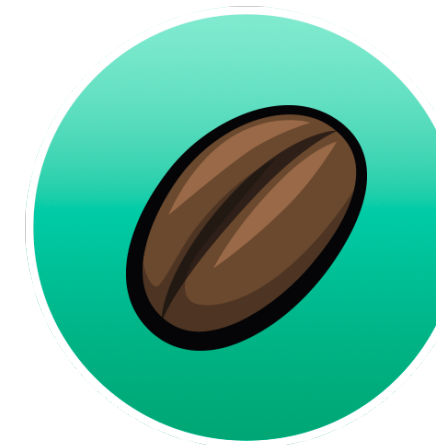
Java 11



Java 13



Java 14

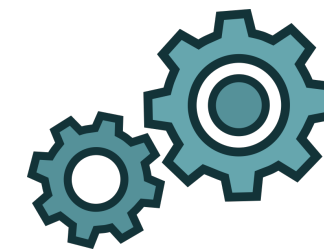
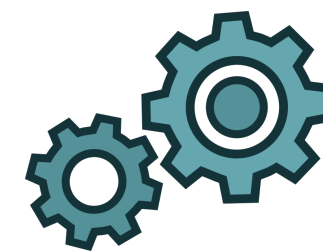
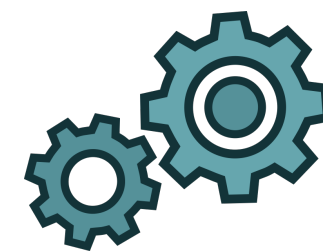
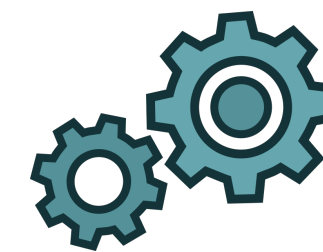
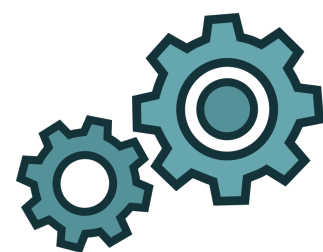
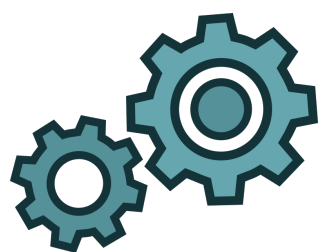
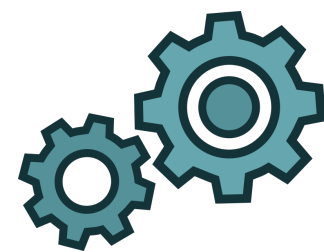
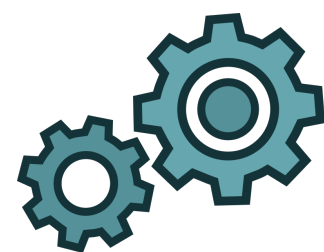
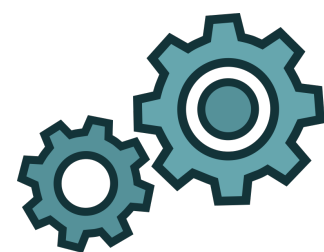
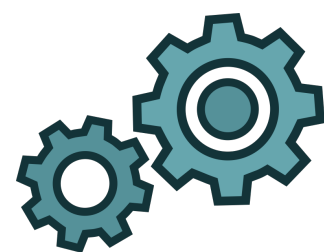


Branch h.x



+

250.000 tests

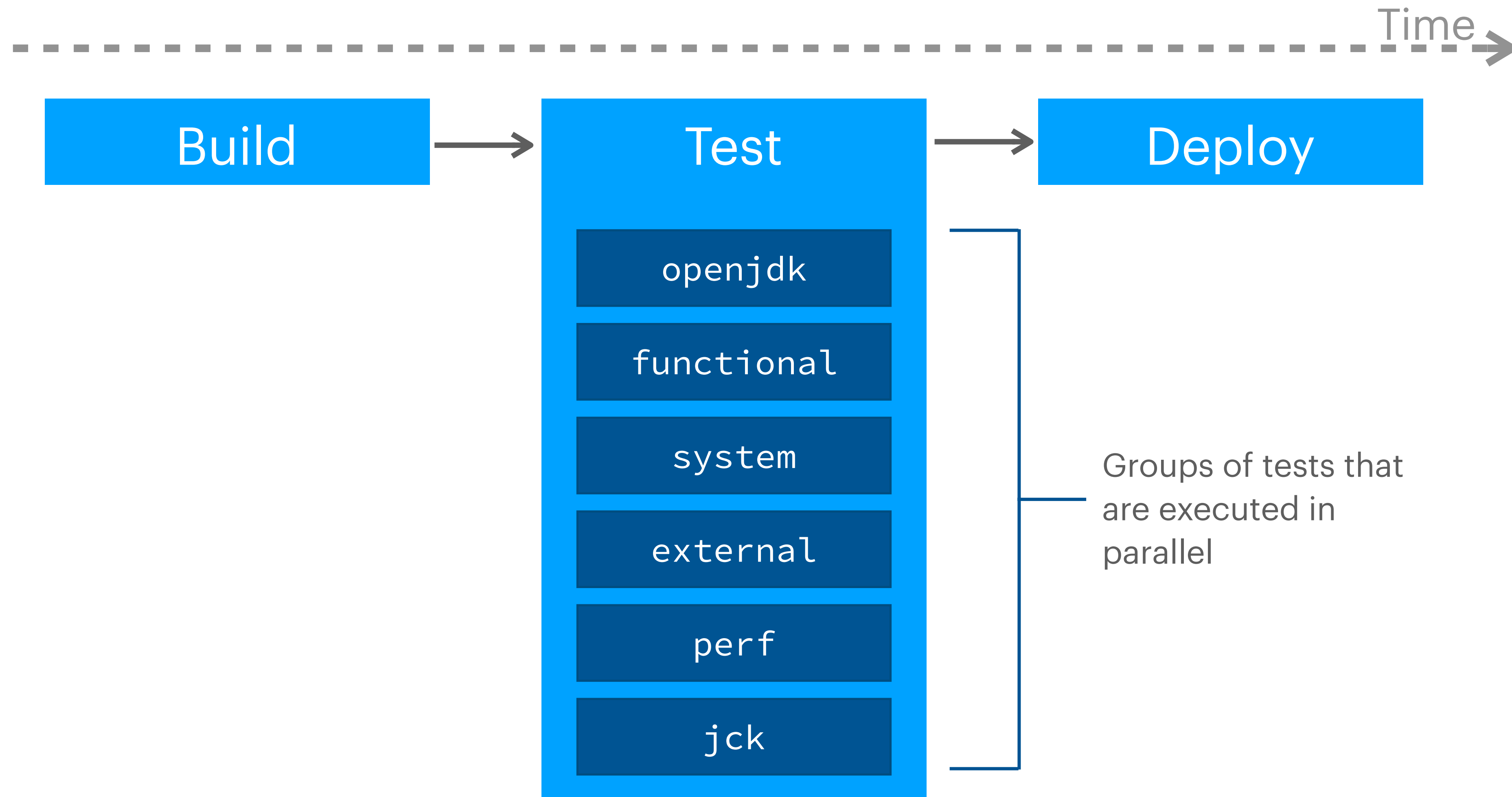




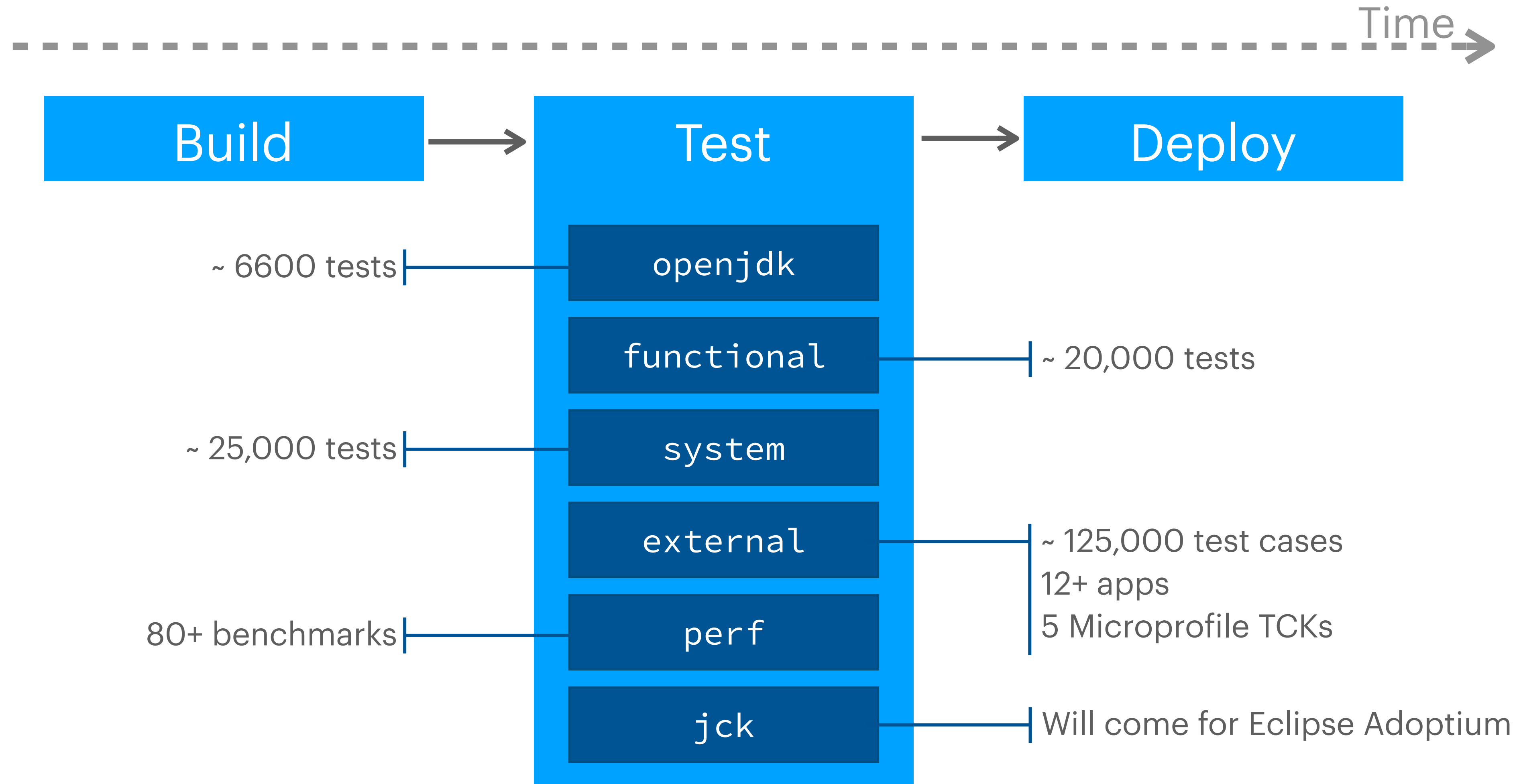
87,000,000+

Tests run per release

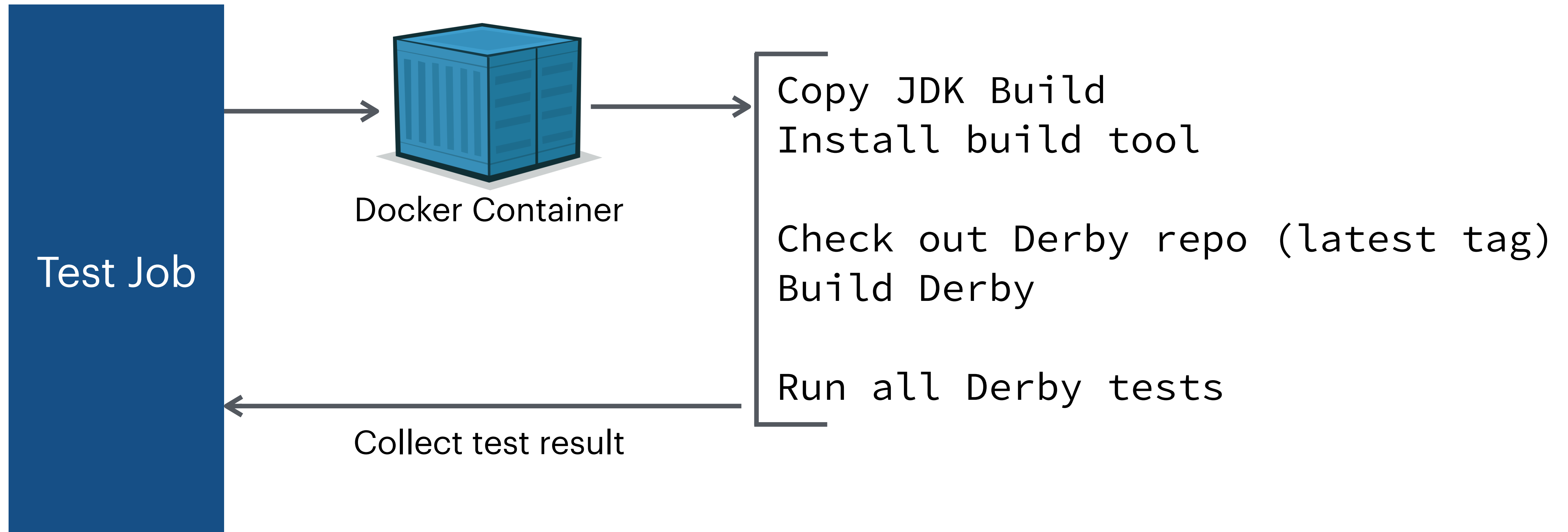
# Tests



# Tests



# Tests



# AdoptOpenJDK Projects

- ▶ Iced-Tea Web
- ▶ JITWatch
- ▶ jlink.online
- ▶ JDK Mission Control (binaries)
- ▶ AQA
- ▶ Red Hat upstream builds (binaries)

# Technical Roadmap

# API V3



<https://api.adoptopenjdk.net/swagger-ui>



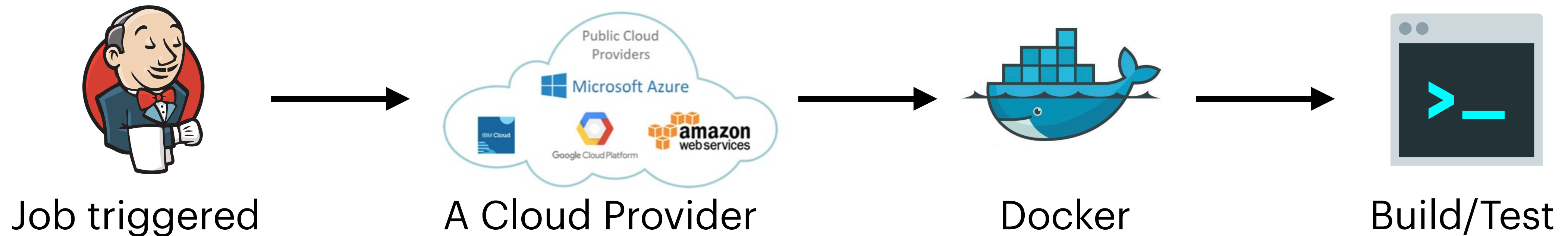
<https://api.adoptopenjdk.net/graphql>

# Dynamic Infrastructure





# Dynamic Infrastructure



# Consistent Build Environments



# Parallelisation



# Other Roadmap Items



WEBSITE  
REDESIGN



JLINK.ONLINE

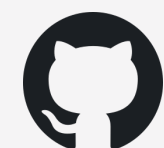


GITHUB ACTIONS

# Sponsors



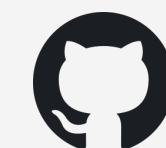
@hendrikEbbers



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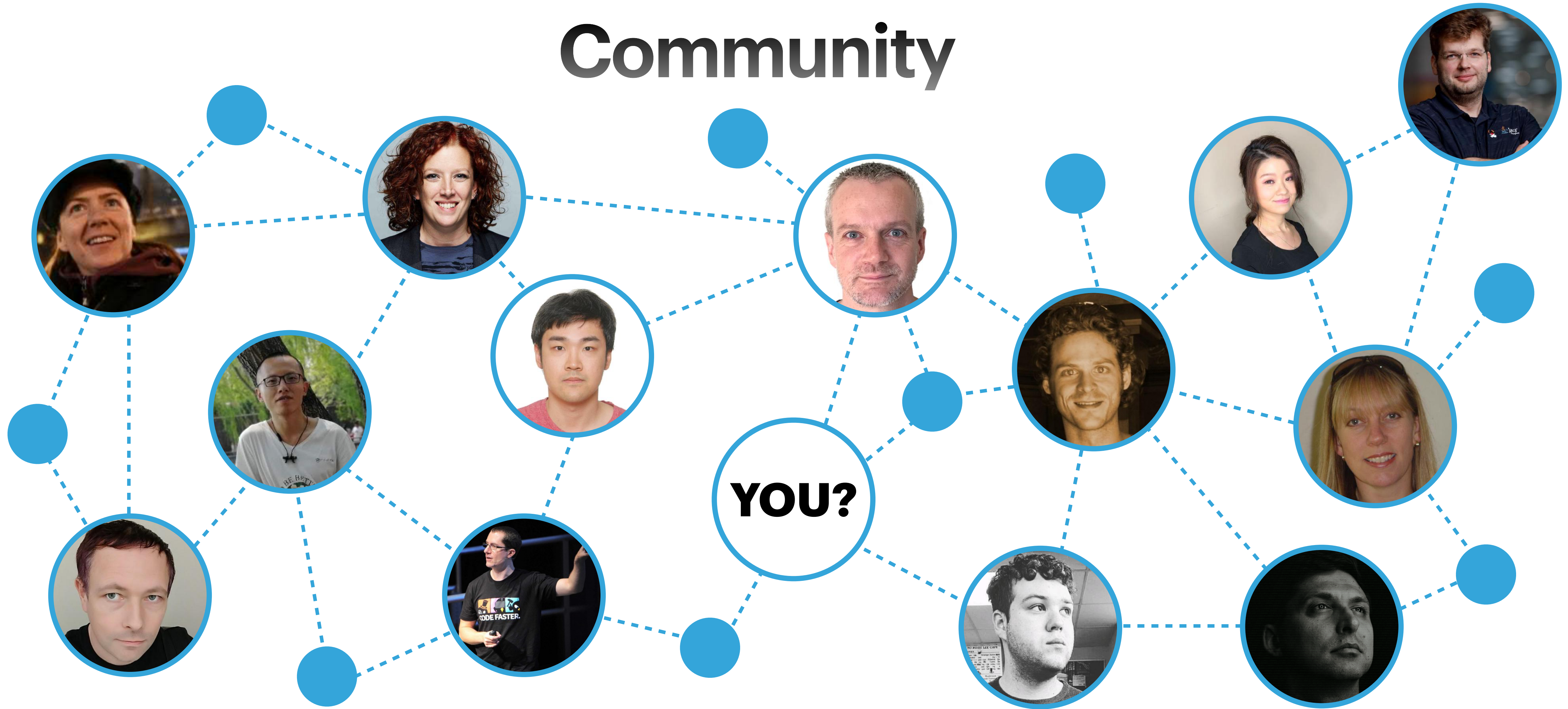
@gdams\_



github.com/gdams



# Community



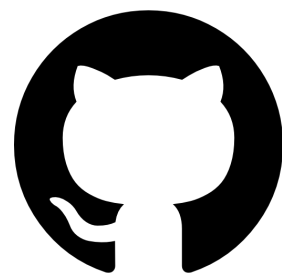
# Any Questions?



@adoptopenjdk



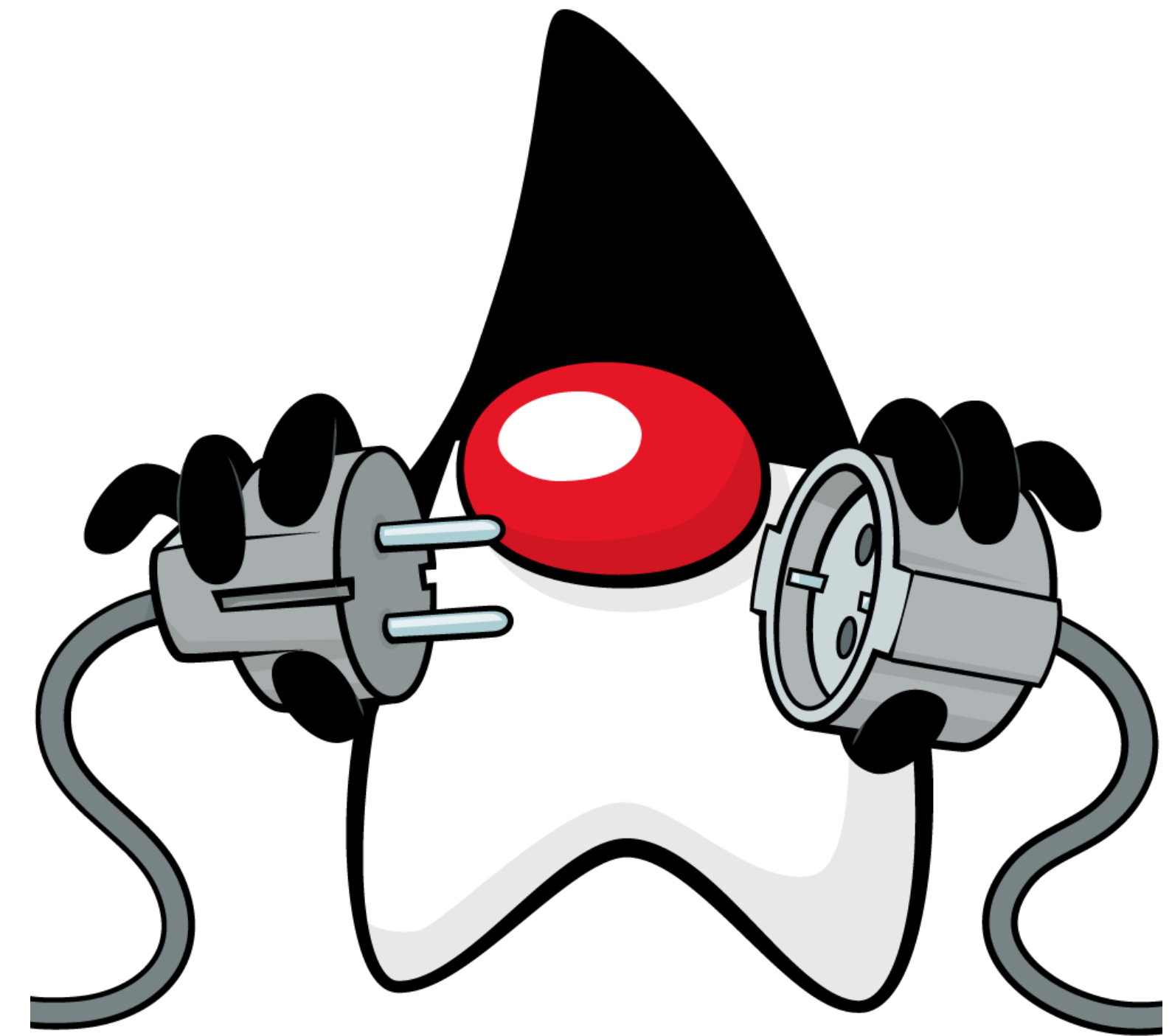
<https://adoptopenjdk.net>



[github.com/adoptopenjdk](https://github.com/adoptopenjdk)



[adoptopenjdk.net/slack](https://adoptopenjdk.net/slack)



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