

Oracle Java SE Subscription

- update about changes with Java
- impact on Java in the Enterprise
- how to address impact and changes

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Werner Ressle

- With Oracle Austria GmbH since 09/2012
- born 1965 in Kempten, Allgäu
- Living in Austria since 1993 (Obertrum + Bergheim)
- Globally responsible for Oracle Java for Top-75 German Key Accounts, like
 - Siemens, Robert Bosch, Deutsche Bank, Genossenschaftsbanken, Allianz, Volkswagen, BMW, Daimler, Deutsche Telekom, United Internet, METRO, REWE, ALDI (Hofer), Lidl-Schwarz Gruppe, Edeka, Adidas, Puma, Deutsche Post-DHL, Bayer, Henkel, Axel Springer, Bertelsmann, ...
- if I don't talk about Java, I love playing Golf with my family, enjoy cooking incl. a good glass of wine, skiing, diving and offshore sailing



Safe Harbor Statement

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93%

of organizations run multiple, older versions of Java SE, no longer receiving “public updates”

Java SE Powers Enterprise Business in Every Industry

- **80%** of enterprises run Java SE on desktop, servers, and cloud deployments
- **#1 programming language**
- **38 billion** active Java Virtual Machines globally
- **#1 developer choice for cloud**
- **12 million developers run Java**

***With this much Java
in development and deployed,
where do you get your Java SE Support?***



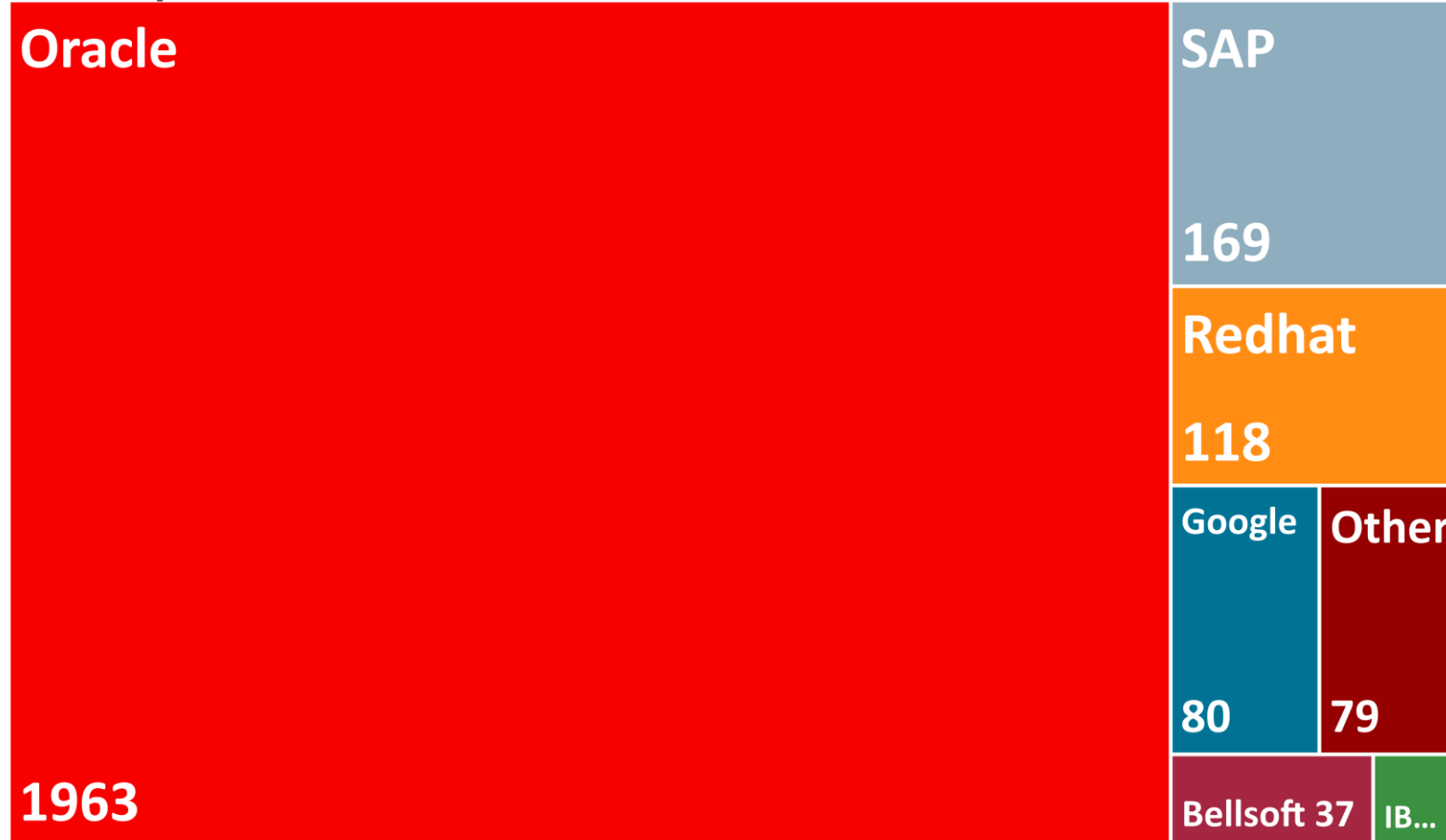
Oracle's **investment** for **Java** customers

- Oracle has one of the largest support organizations in the World
 - Available 24 hours a day and 365 days a year for our customers
 - Worldwide thousands of customers rely on Oracle Support
- Oracle provides the overwhelming majority of Java bug fix contributions
 - E.g. more than 5.000 issues/fixes for Java 7
 - **Oracle contributes at least 80% to OpenJDK development, plus all the infrastructure/process costs**
- Very often Oracle knows first about a Java issue (bug or security issue) and very often provides fixes for them as first
 - Important because of today's zero-day attacks
 - Important: Oracle collaborates with other vendors on security issues.
The security of the Java platform is important for the whole community.
- Oracle rigidly tests the Java runtime before releasing any update
 - Reducing operational efforts and risk for our customers
- Oracle Java SE users benefit from the network effect of a large user community
- Oracle customers know that Oracle can deliver!

Oracle's **investment** for **Java** customers

Best in Class Java expertise – highest contributions, largest resource pool

Development Issues Fixed in JDK 11: 2458



- Deepest pool of expertise
- Most exposure to code
- Strongest capability to fix
- Earliest updates

Source: Oracle Java Blog - <https://blogs.oracle.com/java-platform-group/building-jdk-11-together>

Oracle's Stewardship of Java Technology and Ecosystem

Leading Author of Java Technology

OpenJDK

- Develop latest Java reference implementations
- Oracle has been the largest contributor
 - Over 80% of features and fixes
 - New offerings to protect customer investment in Java
- Broad industry support



- Provides specification artifacts for broad industry support
- Covers technology beyond Java SE

Leading Sponsor of Java Ecosystem



- 250,000+ subscribers
- Read by 75-80% monthly
- Free



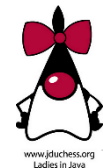
- Java Foundations
- Java Fundamentals
- Java Programming



- over 350 Java user groups
- Around the world



- 150 members
- Connect, learn from each other



www.jduchess.org
Ladies in Java

- For women in Java
- 550 members in 60 countries

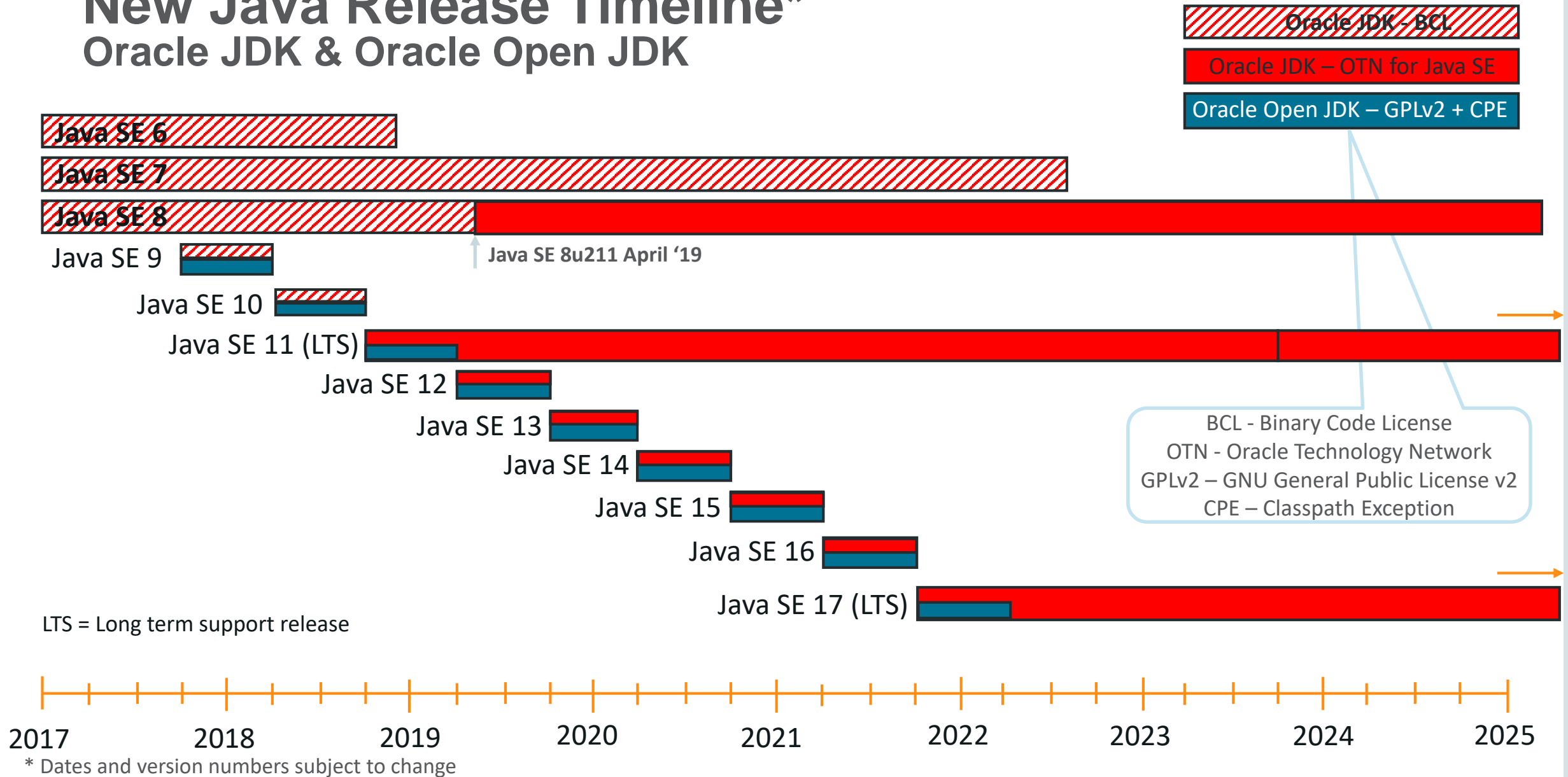
Three Key Changes Affect How You Can Deploy Java SE in Your Enterprise:

- 1) Java SE 8: “End of Public Updates” for commercial use since January 15, 2019.
Java SE 8: final Java SE release with 32 bit Support and Web Start support
- 2) As of March 2018, Java SE has a new six month cadence to deliver innovations and enhancements to developers on a faster and more predictable schedule.
- 3) Java Users must either
 - 1) update to a free current OpenJDK release, or
 - 2) invest in an Oracle Java SE Subscription to receive patches also for old releases (7, 8, LTS 11).
- **Call to Action:** Take control over when and how your production applications will take advantage of these key changes.

**Java SE Subscription provides Java SE licensing,
long term support (LTS) and control for enterprises of any size.**

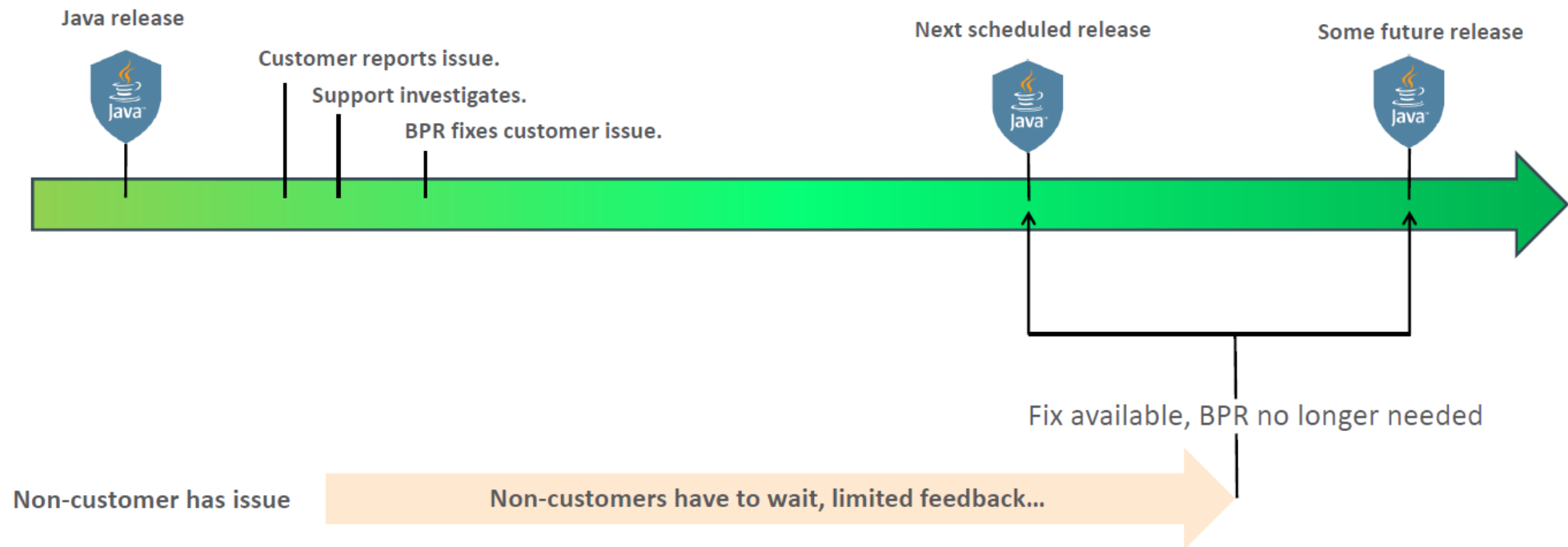
New Java Release Timeline*

Oracle JDK & Oracle Open JDK



Critical Patch Updates, Security Alerts and Bulletins

- **Bundled Patch Release (BPR):** full JDK, JRE and Server JRE deliverable built on the most recent PSU/CPU released, plus fix(es) requested by supported customer(s) or Oracle internal product group(s); build numbers start at b31 and increment upwards (b31, b32, etc.)
- CPU (Security Update) releases follow a quarterly schedule and they will be released on the Tuesday closest to the 17th day of Jan, Apr, July, and Oct.



<https://www.oracle.com/technetwork/topics/security/alerts-086861.html>

Oracle Java SE Support Roadmap

Oracle Java SE Support Roadmap

(Updated November 18, 2018)

Oracle provides this Oracle Java SE Support Roadmap, to help understand maintenance and support options and related timelines. If you are looking for the latest free JDK releases and updates from Oracle under an open source license, please see jdk.java.net. We recommend you take some time to understand the [new Java SE release cadence](#) and [OpenJDK builds from Oracle](#) so that you can make the best decisions for your corporate and personal use.

The guidance below applies to three types of Java users:

Oracle Customers. Oracle Customers are those Oracle customers with an active (1) [Java SE Subscription](#) and/or [Java SE Desktop Subscription](#), (2) support contract for Oracle Java SE Advanced, Oracle Java SE Advanced Desktop, Oracle Java SE Suite, and/or Java SE Support, or (3) Java SE support entitlement for use of Java SE solely with another Oracle product (Visit [My Oracle Support Note 1439822.1 - All Java SE Downloads on MOS](#) – Requires Support Login).

Commercial Users. Commercial Users are entities other than Oracle Customers that use Java SE for free for business, commercial or production purposes as part of a Java application delivered by a third party or developed internally.

Personal Users. Personal Users are individuals who use Java SE for free on personal desktops or laptops. Personal users include individuals using Oracle Java SE to develop applications for hobby or educational purposes, play games or run consumer productivity applications.

<https://www.oracle.com/technetwork/java/java-se-support-roadmap.html>

- Java SE as Part of Another Oracle Product
- Other ISV applications



Java as Part of Another Oracle product

- Bundled with Tech/Apps Products (eBS, WebLogic, ODI, Oracle DB, ...)
- <https://docs.oracle.com/en/middleware/lifecycle/12.2.1.3/fmwlc/>
- [Support Entitlement for Java SE When Used As Part of Another Oracle Product \(Doc ID 1557737.1\)](#)
 - *The license and resulting support associated with Oracle WebLogic Server SE and EE has always employed a 'restricted use' Oracle Java SE license which simply means that the customer has the appropriate license and support for Oracle Java SE for the sole purpose of running the Oracle WebLogic Server product.*
 - Only those Weblogic clients are sufficiently supported, which are based on Weblogic specific Client-Technologies, like i.e. T3, JAX-RS, Forms and Reports

MOS Documentation:

This MOS document applies to WLS as well as other Oracle Products. Customers who have licensed an Oracle Product with support, which also requires Java SE, are licensed to use the Oracle Java SE run time for the sole purpose of running the Oracle Web Logic Server product.

[Support Entitlement for Java SE When Used As Part of Another Oracle Product \(Doc ID 1557737.1\)](#)

Java SE Subscription FAQ:

<https://www.oracle.com/technetwork/java/javaseproducts/overview/javasesubscriptionfaq-4891443.html>

Other ISV applications

- Oracle Java provides solutions to address both requirements:
 1. Enterprises which can maintain/patch their Java applications by themselves via Oracle Java SE Subscription
 2. ISVs can sign a separat, different agreement (BLRA) which entitles the ISV to distribute Java and Java patches to their end customers, bundled with their application.
- 3rd Party Hosting rights are excluded from both models and all agreements

A man with glasses and a denim shirt is gesturing while talking to a woman in a yellow top. They are sitting at a desk with various documents, charts, and a coffee cup. The background is a blurred office environment.

Java SE Subscription provides business continuity through reduced risk of business downtime

Access to My Oracle Support,
Performance, Stability &
Security Updates

Oracle Java SE Licensing FAQ

Important changes April 16, 2019

Note: In the event of a discrepancy between any part of this FAQ and the license under which you receive Oracle software, the latter shall be considered correct. This FAQ pertains to Oracle Java SE releases starting April 16, 2019.

Oracle Java SE Licensing FAQ

What does the licensing change mean for me?

The previous Oracle Java SE license model had several options – some free under the [Binary Code License \(“BCL”\)](#) and some paid under Oracle commercial terms. To simplify and provide full licensing transparency and clarity, Oracle as of Java 9 provides two distinct Java releases:

- Oracle OpenJDK releases under the open source [GNU General Public License v2, with the Classpath Exception \(GPLv2+CPE\)](#) (since Java 9), and
- Oracle Java SE product releases, which includes the Oracle JDK for Java 8 and later, and Oracle JRE with Java Web Start in Java 8, under the [OTN License Agreement for Java SE](#). This license permits personal use, development, testing, prototyping, demonstrating and some other uses at no cost.

Different builds are provided for each Java release, but these builds are functionally identical aside from some cosmetic and packaging differences. More details are provided in our [Roadmap document](#) and summarized in this [blog](#).

- <https://www.oracle.com/technetwork/java/javase/overview/oracle-jdk-faqs.html>

Java SE Subscription – Licensing- & Business Model

Annual Subscription Model (minimum term 12 months)

- Java SE Desktop Subscription

- NUPs metric

AND (not or !!)

- Java SE Subscription (for Server)

Oracle Processor metric

Oracle Partitioning Policy:

<https://www.oracle.com/assets/partitioning-070609.pdf>

Java licensing for Virtual Desktop Infrastructure

- You license where Java runs, and in virtualized desktops, it's running on the server.

Java SE Subscription - Licensing - 2

Definitions

Definitions

Named User Plus: is defined as an individual authorized by you to use the programs which are installed on a single server or multiple servers regardless of whether the individual is actively using the programs at any given time. A non human operated device will be counted as a named user plus in addition to all individuals authorized to use the programs, if such devices can access the programs. If multiplexing hardware or software (e.g., a TP monitor or a web server product) is used, this number must be measured at the multiplexing front end. Automated batching of data from computer to computer is permitted. You are responsible for ensuring that the named user plus per processor minimums are maintained for the programs contained in the user minimum table in the licensing rules section; the minimums table provides for the minimum number of named users plus required and all actual users must be licensed.

For the purposes of the following Program: Java SE Desktop Subscription, the term "server" refers to a desktop computer.

Processor: shall be defined as all processors where the Oracle programs are installed and/or running. Programs licensed on a processor basis may be accessed by your internal users (including agents and contractors) and by your third party users. The number of required licenses shall be determined by multiplying the total number of cores of the processor by a core processor licensing factor specified on the Oracle Processor Core Factor Table which can be accessed at <http://oracle.com/contracts>. All cores on all multicore chips for each licensed program are to be aggregated before multiplying by the appropriate core processor licensing factor and all fractions of a number are to be rounded up to the next whole number. When licensing Oracle programs with Standard Edition One, Standard Edition 2 or Standard Edition in the product name (with the exception of WebCenter Enterprise Capture Standard Edition, Java SE Subscription, Java SE Support, Java SE Advanced, and Java SE Suite), a processor is counted equivalent to an occupied socket; however, in the case of multi-chip modules, each chip in the multi-chip module is counted as one occupied socket.

For example, a multicore chip based server with an Oracle Processor Core Factor of 0.25 installed and/or running the program (other than Standard Edition One programs or Standard Edition programs) on 6 cores would require 2 processor licenses (6 multiplied by a core processor licensing factor of .25 equals 1.50, which is then rounded up to the next whole number, which is 2). As another example, a multicore server for a hardware platform not specified in the Oracle Processor Core Factor Table installed and/or running the program on 10 cores would require 10 processor licenses (10 multiplied by a core processor licensing factor of 1.0 for 'All other multicore chips' equals 10).

- **Processor core factor** for common Intel Xeon of Core-I processors is 0.5
<http://www.oracle.com/us/corporate/contracts/processor-core-factor-table-070634.pdf>

Monthly Pricing Proposal - Euro



Oracle Java SE Subscription Global Price List Jänner 1, 2019

Java SE Platform Products		Monthly Subscription Price	Subscription Metric	Volume	Pricing Notes
Java SE Desktop Subscription		2,1705	Named User Plus	1-999	1,2
		1,7364	Named User Plus	1,000-2,999	1,2
		1,5194	Named User Plus	3,000-9,999	1,2
		1,3023	Named User Plus	10,000-19,999	1,2
		1,0853	Named User Plus	20,000-49,999	1,2
			Contact for Details	50,000+	
Java SE Subscription		21,7050	Processor	1-99	1,2
		20,6198	Processor	100-249	1,2
		19,5345	Processor	250-499	1,2
		17,3640	Processor	500-999	1,2
		15,1935	Processor	1,000-2,999	1,2
		13,0230	Processor	3,000-9,999	1,2
		10,8525	Processor	10,000-19,999	1,2
			Contact for Details	20,000+	

General Notes

Oracle Java SE Subscription and Oracle Java SE Desktop Subscription: are defined as the right to use the specified Oracle Java SE Subscription Program(s) in accordance with the applicable metric and to receive Oracle Software Update License & Support (limited to the specified Oracle Java SE Subscription Program(s), for the term specified on the ordering document. Your right to use the specified Oracle Java SE Subscription Program(s) for Your internal business operations includes using the Oracle Java SE Subscription Program(s) to run Your Java applications as a cloud service, subject to the terms of the Master Agreement. For the avoidance of doubt, You shall not make the Oracle Java SE Subscription Program(s) themselves available as a cloud service. The subscription term is effective upon the effective date of the subscription ordering document, unless otherwise stated in Your ordering document. If Your order was placed through the Oracle Store, then the effective date is the date Your order was accepted by Oracle. Oracle Software Update License & Support is provided under the Oracle Software Technical Support Policies in effect at the time the services are provided. At the end of the specified subscription term, You may renew Your subscription, if available, at the then current fees for the applicable subscription. If You choose not to renew Your subscription, Your right to use the specified Oracle Java SE Subscription Program(s) will terminate and You must de-install the specified Oracle Java SE Subscription Program(s).

Pricing Notes

¹The E-Business Discount Schedule does not apply.

²Java SE Desktop Subscription and Java SE Subscription are available only for full use. They are not eligible for Application Specific Full Use (ASFU) licensing or Embedded Software Licensing (ESL).

Deployment Technologies

Java 9++

(jlink Option)



Web Deployment Technology and JavaFX

- **Web Deployment Technology and JavaFX**
- The Web Deployment Technology bundled with the JRE, consisting of the Java Plugin and Java Web Start has a shorter support lifecycle: only five years of Premier Support. The deployment stack was marked as deprecated and flagged for removal in Java SE 9 and Java SE 10. **Oracle Java SE 11 and later versions will not include the Deployment Stack.** As Java SE 8 will be the sunset release for the Deployment Stack (given that Java SE 9 and Java SE 10 are non-LTS releases) Oracle extended support of **Java Web Start on Java SE 8 until the end of Java SE 8 Extended Support (March 2025).** Support for the Java Plugin (Java Applets) remains available until March 2019.

Java SE 8 is the recommended and only supported version of the deployment stack, since versions earlier than Java SE 8 no longer include the deployment stack, while Java SE 9 has reached end of extended support, and Java SE 10 will reach end of extended support in September 2018. The Java SE 8 deployment stack may be used to run Java SE 6, or Java SE 7 applications on Windows platforms. The Java deployment technology will not be supported beyond Java SE 8. See the [Oracle Lifetime Support Policy](#) for details.

JavaFX has been [Open Sourced](#) and redesigned to be available as a stand-alone library rather than being included with the JDK. Starting with Java SE 11 (18.9 LTS), [JavaFX will not be included in the Oracle JDK](#). Support for JavaFX on Java SE 8 will continue through the Premier Support term (until March 2022).

<https://www.oracle.com/technetwork/java/javase/eol-135779.html>

JDK 9+: jlink Tool (incl. example for Windows)

- Generates a self-contained application bundle in a single folder of user's hard drive that includes:
 - Application code + Embedded JRE + Native launcher (batch file)
- Bundles a stripped-down JRE incl. only those modules required by application

```
jlink [options] --module-path <modulepath> --add-modules <mods> --launcher <launcher_name>=  
<root_module> --output <path>
```

- module-path* – defines where to look for compiled module binaries (e.g. jar, jmod)
- add-modules* – names of modules (incl. its transitive dependencies) to add to the application bundle
- output* - specifies name of subdirectory in which to place the resulting bundle
- launcher* – name of launcher executable (if main class exists)

Further flags for binary optimizations:


--strip-debug, --compress 2, --no-header-files, --no-man-pages

```
jlink --module-path "jmods;%JAVA_HOME%/jmods" --add-modules org.app.test  
--launcher runapp=org.app.test --output dist
```



JDK 9+ Platform (Creating a custom Java VM binary)

```
$ jlink --module-path <Java_Home>/jmods --add-modules java.base  
--output <dir>
```

```
$ cd my_jre/bin  
$ java --list-modules  
→ java.base@9.0.1
```



List all found
modules



A minimal JRE with just base module is
15 MB large instead of
165 MB of a full-size binary

Please contact me for further information



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