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Java Roadmap,Announcements, Release Cadence, Versioning, and Oracle OpenJDK Builds

June 2018

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Java SE Roadmap Changes

1. Oracle Introduces OpenJDK Builds
2. Changes to the Java Feature Release Model
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Oracle Introduces OpenJDK Builds

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New Oracle Introduces OpenJDK Builds

- Oracle will now produce OpenJDK builds. This has been desired by the community and is a monumental change for Java SE
- The new OpenJDK builds will be licensed using the GNU General Public License Version 2 with Class Path Exception (GPL 2 with CPE)
- Previous to this announcement, Oracle only made the OpenJDK source code available to the public

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Changes to the Java Feature Release Model

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Changes to the Java Feature Release Model

- Java feature release versions will now be released on a predictable 6 month calendar schedule
- This new calendar schedule replaces the dated feature complete schedule currently used
- The result of this change allows features that are complete to be released sooner as opposed to waiting for an unrelated feature to complete development and test

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Changes to the Java Feature Release Model

- New features that do not make the cutoff for the current feature release will be delivered in a subsequent release when they are complete
- This paradigm shift was necessary to keep Java relevant:
  - Allows Java to live in a continuous integration development world
  - Allows Java to better compete in the modern application development landscape.

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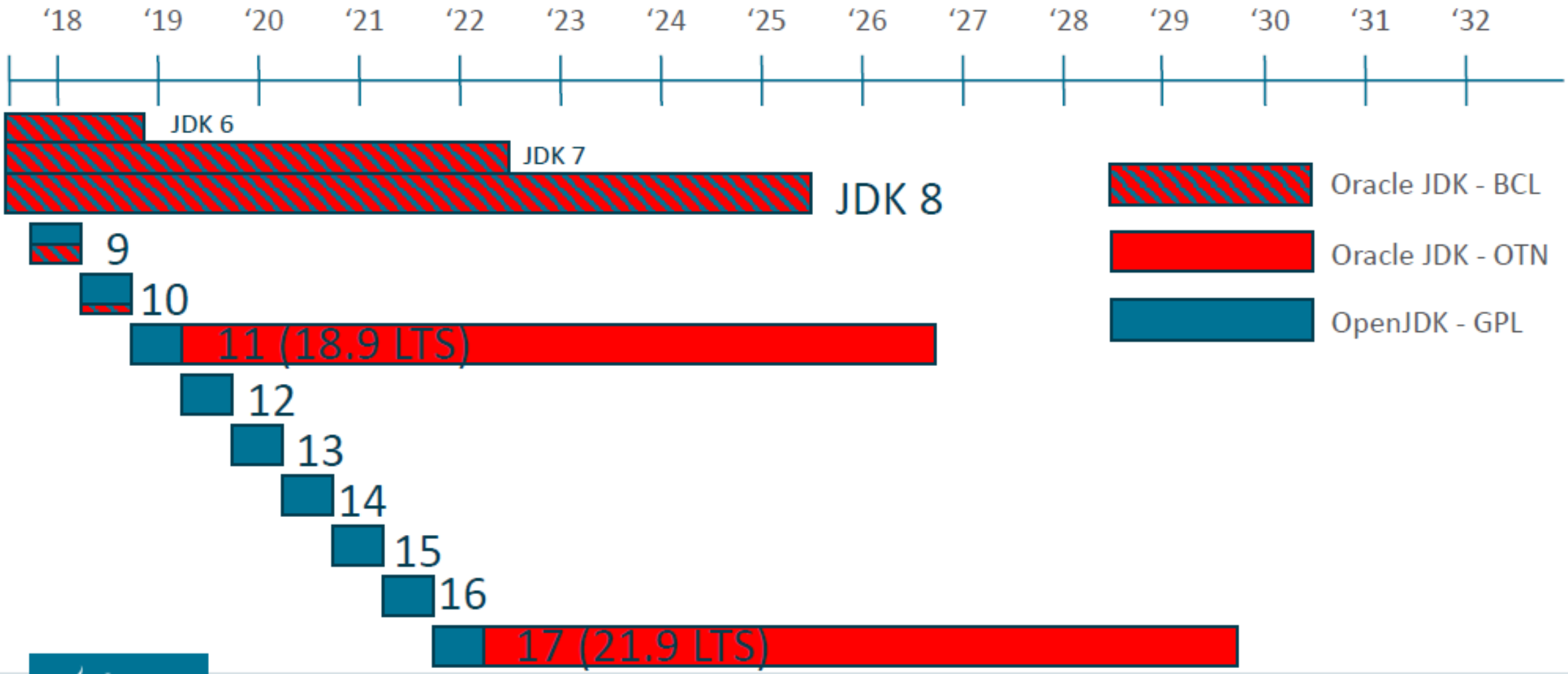
Oracle JDK & OpenJDK



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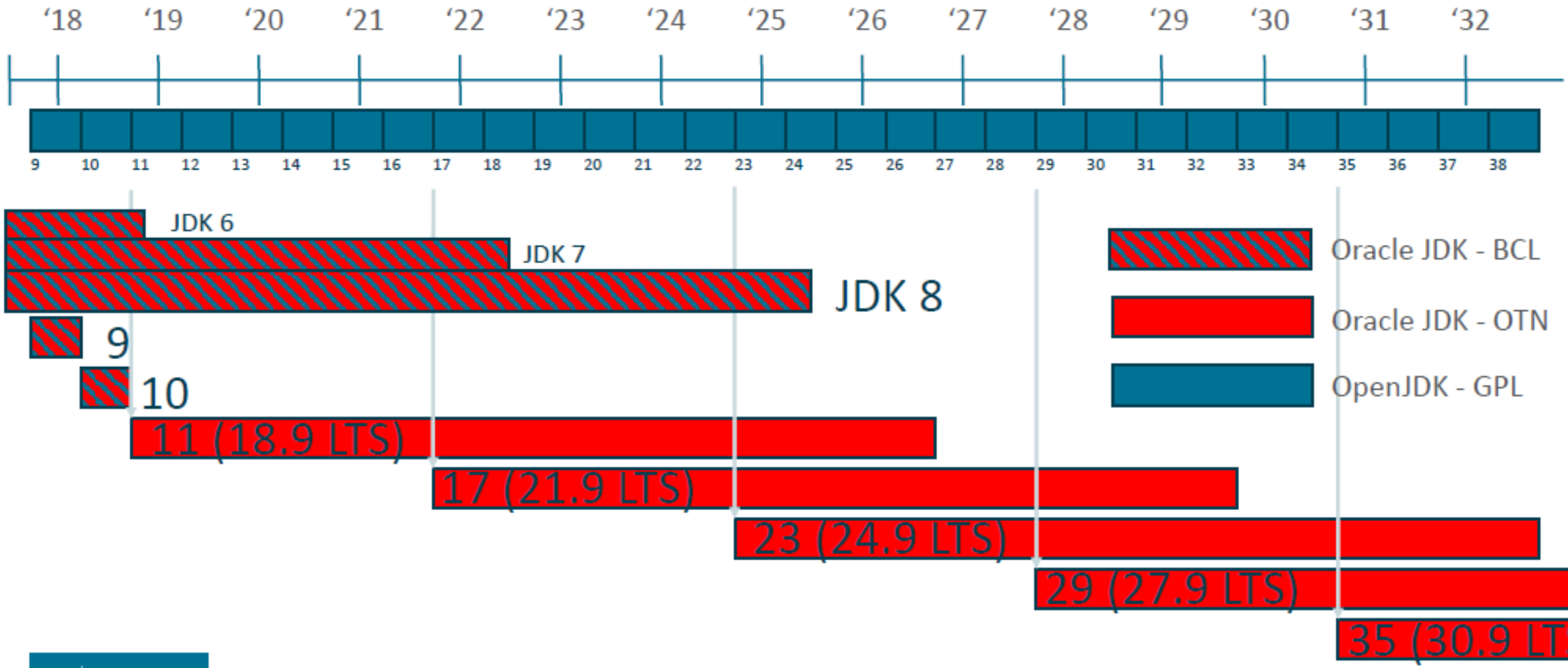
New JDK Release model



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Change to Java Versioning

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Proposed Change to Java Versioning

- New Java Version Numbering System
- Releases subsequent to Java 9 will use a Year.Month nomenclature rather than the traditional Major Version Update Release Number.
- The next major version following Java 9 will be released in March 2018 and will be labeled Java 18.3
- The subsequent release, Java 18.9 will occur 6 months afterwards. This cadence will continue.

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Proposed Change to Java Versioning (Update)

- New Java Version Numbering System v2
- The proposed system has reverted back to major version numbers of 10,11,12 …. for OpenJDK.
- The next major version following Java 9 will be released in March 2018 and will be labeled Java 10
- The subsequent release, Java 11 will occur 6 months afterwards. This cadence will continue.
- Oracle JDK releases will use the year.month nomenclature e.g. 18.9.

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Long Term Support Version

- As previously mentioned Oracle will now produce a new feature Java release every 6 months
- For Java enterprise customers, Oracle will make available an Oracle Long Term Support (LTS) release
- The LTS version will offer a similar cadence to the current Java release cycle (targeting every 3 years)

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Oracle JDK Support

- Non-Long Term Support Oracle builds will be maintained for six months (security updates)
- Oracle then recommends immediate transition to subsequent builds, i.e. Java 9 -> Java 10 - > Java 11
- OpenJDK Builds are community supported only
- Java LTS releases (i.e. 11/18.9)) will have Oracle Premiere Support available for a minimum of 5 years
  - Provides stability, performance, and security updates

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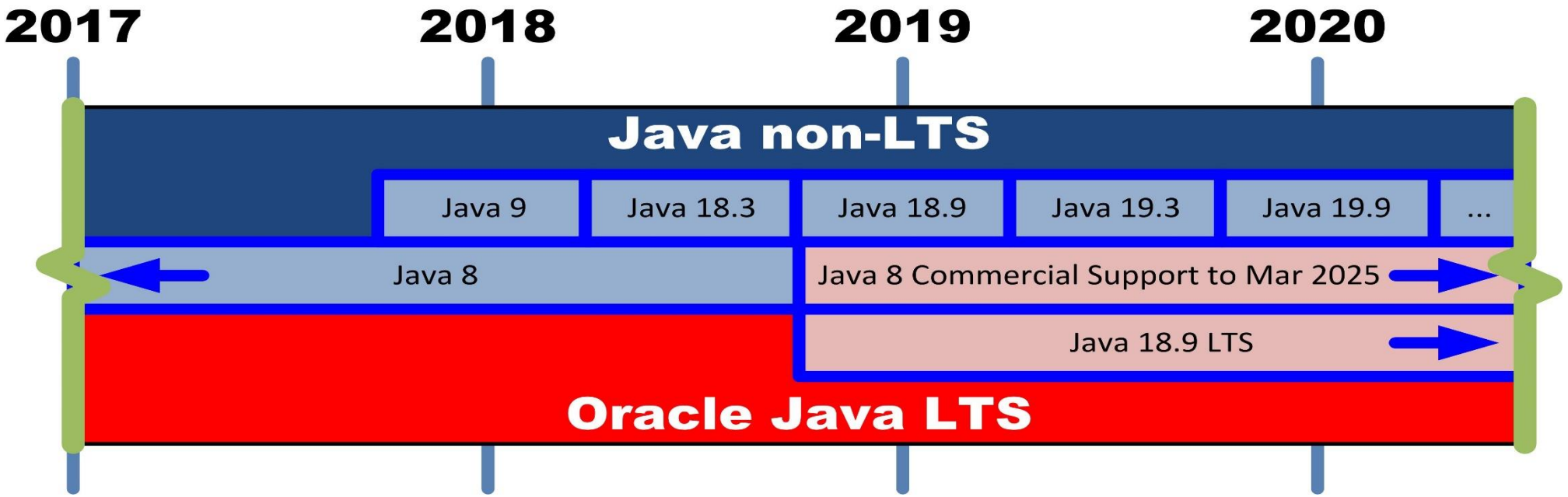
Java Version Long Term Support (LTS) and Non-LTS Versioning



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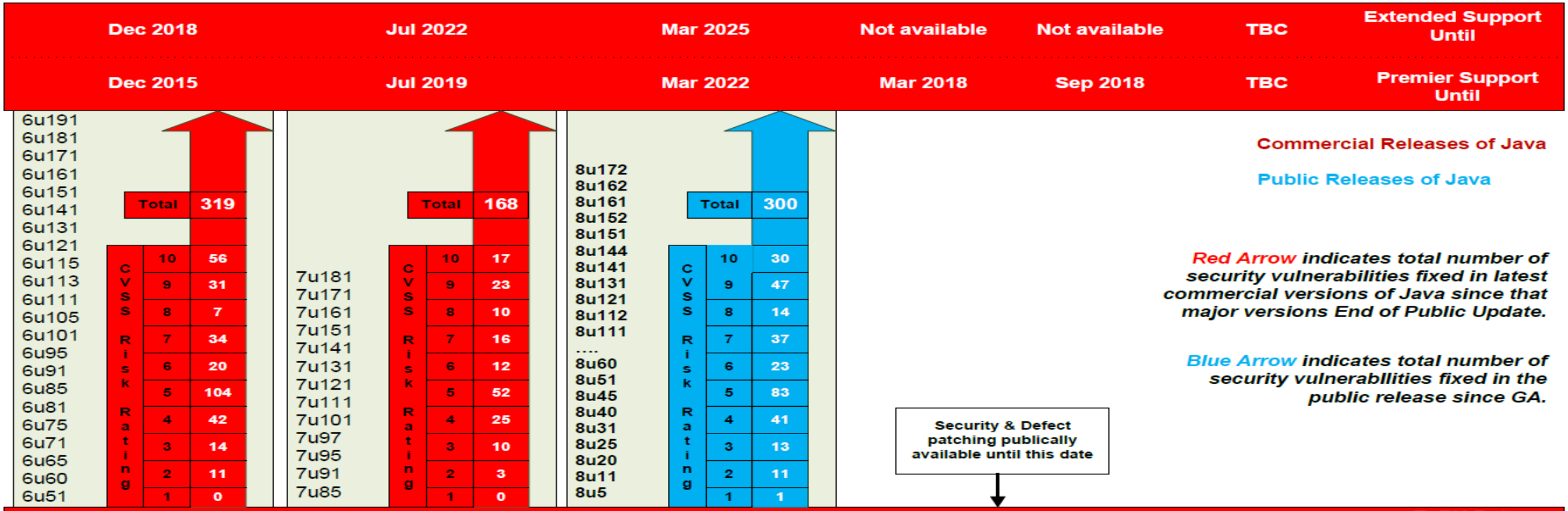
Java Releases

Last Update April 2018



All information contained in this document was generated from the following public facing documentation which are living documents and are subject to change, please refer to the following documents for any updates:

-Oracle Lifetime Support Policies - http://www.oracle.com/us/support/library/lifetime-support-middleware-069163.pdf

-Oracle Critical Patch Updates - http://www.oracle.com/technetwork/topics/security/alerts-086861.html

-Java SE Deployment Technologies operate on a shorter support timeframe and can be referenced on my oracle support, DOC ID # 1640397.1

Release and Support Similarities

- The new Java Long Term Support and Non-Long Term Support model is synonymous to that of other open source projects
- One similar delivery/support model:
  - Java LTS ≈ RedHat Enterprise Linux
  - Java Non-LTS ≈ RedHat Fedora

New Java Deployment Model

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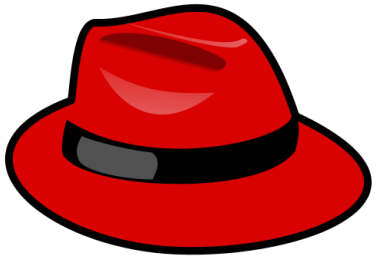

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Open source commercial features

What is being open-sourced in Java

- Java Mission Control
  - Monitor and manage Java applications with minimal performance overhead
- Java Flight Recorder
  - Collects diagnostic and profiling data about a running Java application
- Application Class Data Sharing
  - Enables you to place classes from the standard extensions directories and the application class path in the shared archive
- Java Usage Tracker
  - Tracks how the JRE‘s are being used in your systems

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Audio Engine
Build Infrastructure
Caciocavallo
Closures
Code Tools
Coin

JDK 10

JDK 10 is the open-source reference implementation of the Java SE 10 Platform as defined by JSR 383 in the Java Community Process.

JDK 10 reached General Availability on 20 March 2018. Production-ready binaries under the GPL are available from Oracle; binaries from other vendors will follow shortly.

The features and schedule of this release were proposed and tracked via the JEP Process, as amended by the JEP 2.0 proposal.

Features

286: Local-Variable Type Inference
296: Consolidate the JDK Forest into a Single Repository
304: Garbage-Collector Interface
307: Parallel Full GC for G1
310: Application Class-Data Sharing
312: Thread-Local Handshakes
313: Remove the Native-Header Generation Tool (javah)
314: Additional Unicode Language-Tag Extensions
316: Heap Allocation on Alternative Memory Devices
317: Experimental Java-Based JIT Compiler
319: Root Certificates
322: Time-Based Release Versioning

Schedule

2017/12/14	Rampdown Phase One
2018/01/11	All Tests Run
2018/01/18	Rampdown Phase Two
2018/02/08	Initial Release Candidate
2018/02/22	Final Release Candidate
2018/03/20	General Availability

Phases

We stabilized the release in an increasingly-rigorous sequence of phases, listed here for the record:

- Rampdown Phase One

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JDK 11

This release will be the Reference Implementation of a future version of the Java SE Platform, as specified by JSR 384 in the Java Community Process.

Status

The development repositories are open for bug fixes, small enhancements, and JEPs as proposed and tracked via the JEP Process.

Schedule

2018/06/28	Rampdown Phase One (fork from main line)
2018/07/19	All Tests Run
2018/07/26	Rampdown Phase Two
2018/08/16	Initial Release Candidate
2018/08/30	Final Release Candidate
2018/09/25	General Availability

Features

JEPs proposed to target JDK 11

	review ends
181: Nest-Based Access Control	2018/06/06
333: ZGC: A Scalable Low-Latency Garbage Collector (Experimental)	2018/06/06

JEPs targeted to JDK 11, so far

309: Dynamic Class-File Constants
315: Improve Aarch64 Intrinsics
318: Epsilon: A No-Op Garbage Collector
320: Remove the Java EE and CORBA Modules
321: HTTP Client (Standard)
323: Local-Variable Syntax for Lambda Parameters
324: Key Agreement with Curve25519 and Curve448
327: Unicode 10
328: Flight Recorder
329: ChaCha20 and Poly1305 Cryptographic Algorithms
330: Launch Single-File Source-Code Programs

Java Client Roadmap Update (1)

Java Web Start and Pre-Installed Java Runtime Environments

- Java Web Start has been included in the Oracle Java Runtime Environment (JRE) since 2001. It is launched automatically when a Java application using Java Web Start technology is downloaded for the first time. Desktop shortcuts can also launch the application, providing the user with a similar experience to that of a native application.
- Java Web Start has become a migration path for developers as browser vendors continued to restrict plugin support over the past several years.
- Since it is predominantly a desktop technology, Web Start has some limitations. In particular, it requires a standalone JRE to be installed and maintained on the user's desktop.
- However, over the past decade, vendors of the most popular desktop operating systems have emphatically pushed for applications on their platforms to be delivered bundled with integrated, sandboxed runtimes. Increasingly they require desktop applications to be distributed through their own private "app stores."
- The notion of an application being distributed separately from a standalone JRE is, therefore, quickly fading.

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Java Client Roadmap Update (2)

Java Web Start and Pre-Installed Java Runtime Environments - Consequently

- Oracle will extend support for Web Start in Java SE 8 from March, 2019, through at least March 2025.
- **Oracle products that have dependencies on Web Start will remain on Java SE 8 and continue with the support timelines as indicated by those products.**
- Oracle will not include Java Web Start in Java SE 11 (18.9 LTS) and later.
- Oracle will begin encouraging application developers and users to transition away from Java Web Start and encourage non-commercial consumers to remove any unused or non-supported Oracle JRE installations from their desktops.
- Developers who deploy desktop applications to individual consumers (eg, games, personal banking, or other B2C applications) will need to transition to other deployment technologies such as the jlink and/or third party packaging and deployment solutions before the end of 2020.
- Application developers who target applications for internal data processing, business, commercial, or production purposes, will either need to seek commercial license with Oracle, or transition to other deployment technologies by January 2019.

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References:

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Java Product Development Blogs:
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https://mreinhold.org/blog/forward-faster
http://mail.openjdk.java.net/pipermail/discuss/2017-September/004281.html
https://blogs.oracle.com/java-platform-group/update-and-faq-on-the-java-se-release-cadence

Java Client Roadmap
www.oracle.com/technetwork/java/javase/javaclientroadmapupdate2018mar-4414431.pdf

Support Roadmap
http://www.oracle.com/technetwork/java/eol-135779.html

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