

Changes in Java release process

- releases history
- planned release schema
- Fedora/RHEL distribution alignment
- AdoptOpenJDK

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<https://jvanek.fedorapeople.org/devconf/2018/changesInjavaReleaseProcess.pdf#lastSlide>

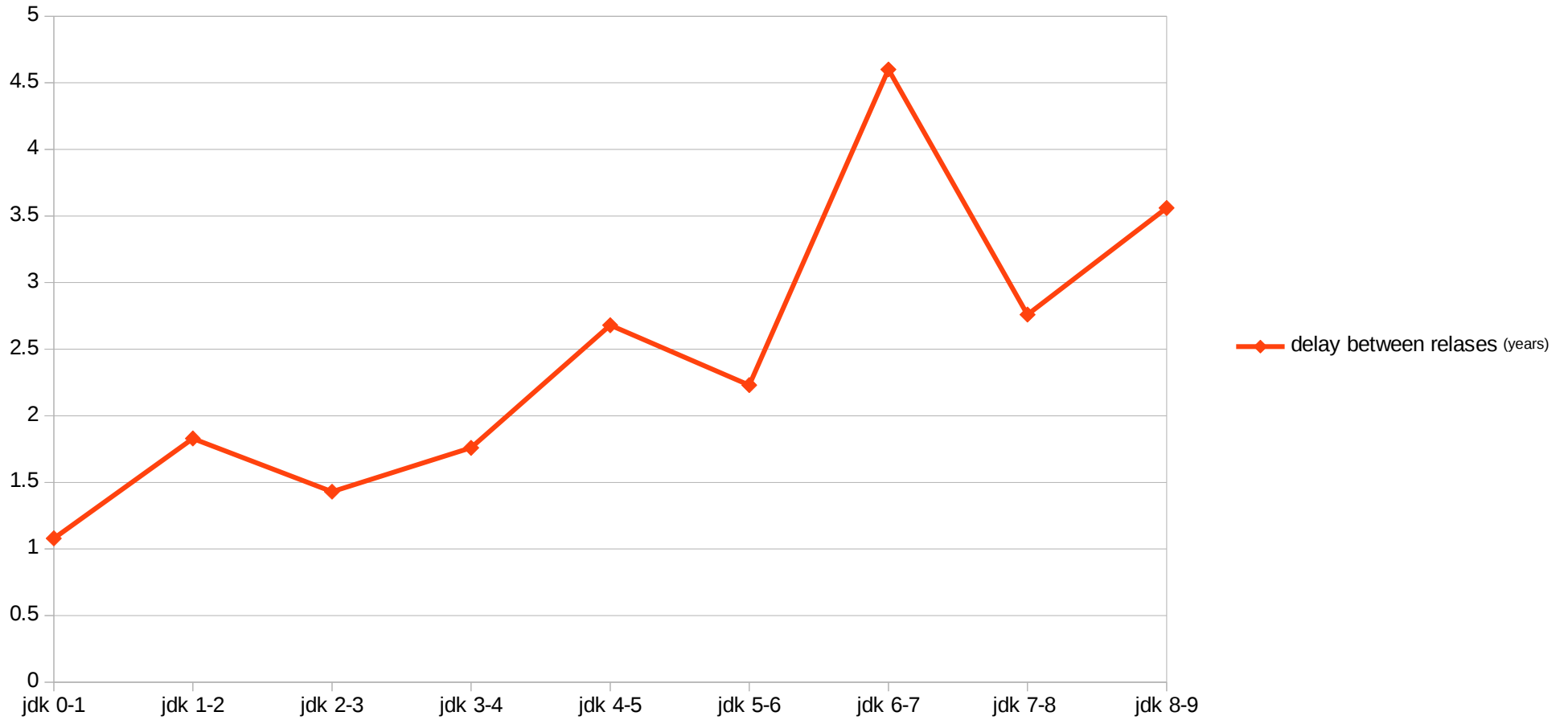
Changes in Java release process

- Shorter presentation
 - Need feedback for distribution alignment at the end
- Os
 - Win?
 - Fedora?
 - RHEL?
 - Other
- Java for development
 - 7? 8? 9?

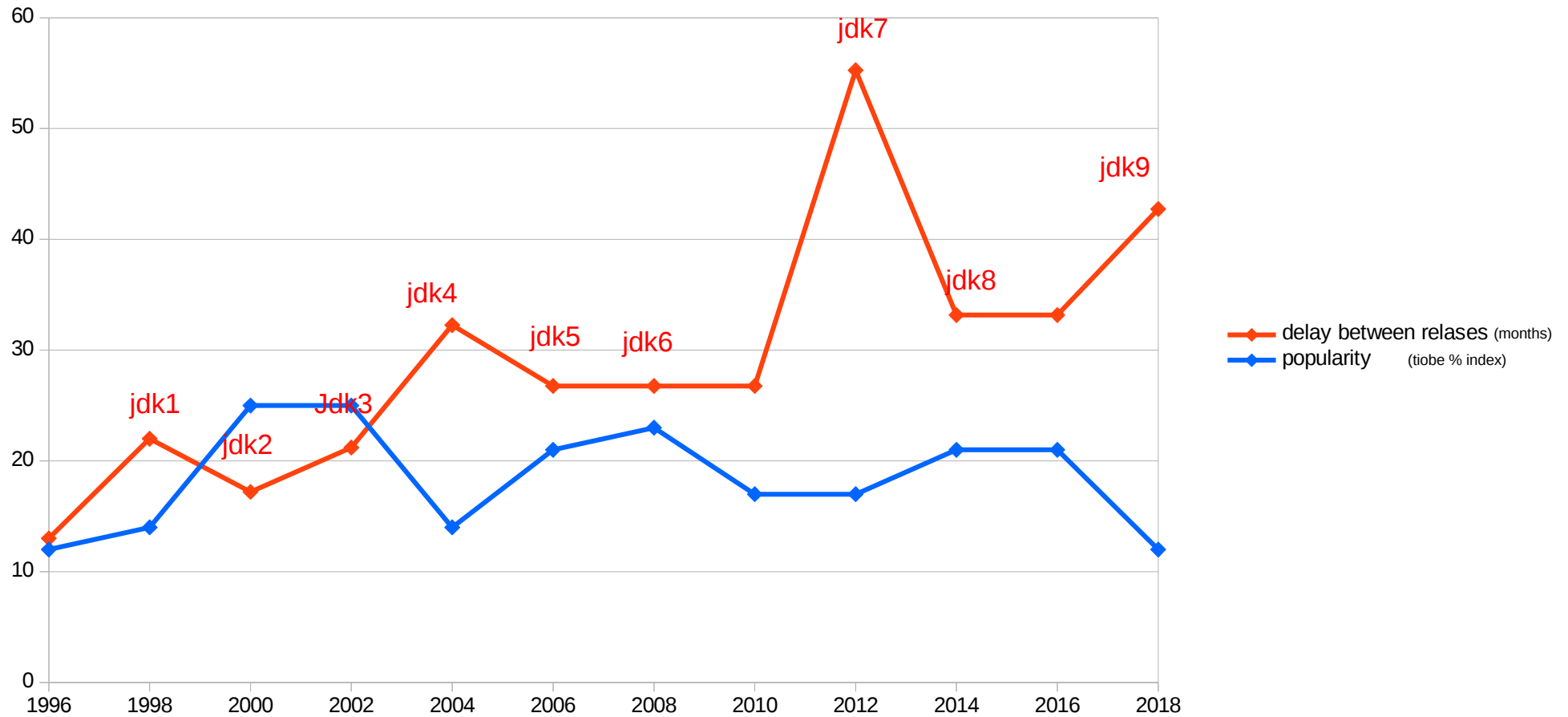
Releases history

- JDK 1.0 (January 23, 1996)
- JDK 1.1 (February 19, 1997)
- 2SE 1.2 (December 8, 1998)
- J2SE 1.3 (May 8, 2000)
- J2SE 1.4 (February 6, 2002)
- J2SE 5.0 (September 30, 2004)
- Java SE 6 (December 11, 2006)
 - 2010 - Oracle acquired Sun
- Java SE 7 (July 28, 2011)
- Java SE 8 (March 18, 2014)
- Java SE 9 (September 21, 2017)
 - All were feature-driven

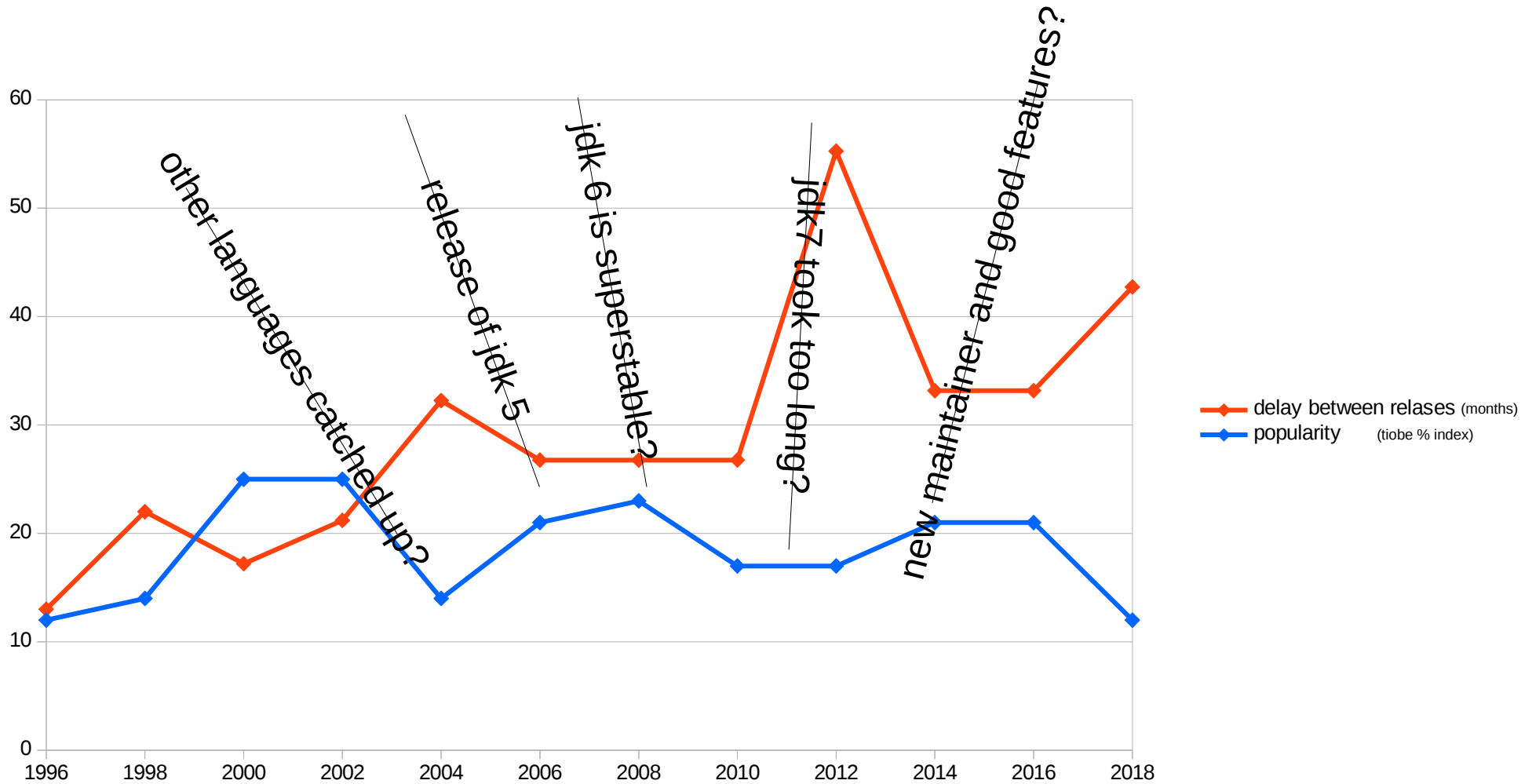
Releases history



Releases history



Releases history



Oracle faded release plan

- Java SE 7 (July 28, 2011)
 - 2 years are too short for business, but ok for new features
 - 3 years + LTS should be ok for business
 - big new features in separate repos
 - merging into main forest when “ok”
- Java 8 (March 18, 2014)
 - took 2.5 years
 - already too long for nice features
- Java 9 (September 21, 2017)
 - took 3.5 years
 - really too much for new features
 - testing of new features is clumsy

One more look into recent history

- Java SE 6 (12.11, 2006)
 - 2010 - Oracle acquired Sun
 - Java SE 7 (7.28, 2011)
 - Java 8 (3.18, 2014)
 - Java 9 (9.21, 2017)
 - can be considered (imho) modular JDK public beta 1
 - jdk10 - 3/2018 public beta 2
 - jdk11 - 9/2018 true modular jdk?
- 2008 started Project Jigsaw
 - pretty soon abandoned for JDK7
 - 7/2012 even discarded out of JDK8
 - 3/2014 merged into main forest
 - 7/2017 claimed to be completed

...however...

I know how it looks, but now it is done.
Good or bad, it was necessary step

New release plan

- Issues in previous lifecycle which would not be repeated
 - forest merged with feature in semi completed state
 - JDK9 was delayed several times because of (merged) Jigsaw
 - main release waiting for project
 - projects are hard to test
 - isolation of projects not exactly healthy
 - developers need much faster cycles
 - business need much longer (even independent) cycles

New release plan

- no more feature driven development
- new release every 6 months
- new LTS (Oracle's) every two years
 - Anybody can proclaim anything as LTS and support it
 - Depending on usage, Red Hat may choose to take over an LTS release after Oracle publicly EOLs it
- projects merged when done
 - like really done
- projects still in separate forests
 - the only hope here lies in AdoptOpenJDK
 - So the issue with merged buggy finished project remains. (?)
- after JDK 11 (first LTS, September 2018), Oracle will opensource the remaining (possible) parts of “Oracle JDK” and will start to ship OpenJDK
 - they may ship it as OracleJDK with some support condi
 - all burden goes to OpenJDK and AdoptOpenJDK
- date based version given up for continuous line
 - ufff
 - Date version (eg. 18.3) kept internally

```
$ java -version
openjdk version "10-internal" 2018-03-20
OpenJDK Runtime Environment (build 10-internal+0-host)
OpenJDK 64-Bit Zero VM (build 10-internal+0-host, interpreted mode)
```

Short-Term-Support updates

- Rare
 - It is easy to push change to future jdk
 - But to backport to STS...
- <http://hg.openjdk.java.net/jdk-updates>
 - Project for STS updates (currently jdk9)
- Hopefully backports to LTS will go better
 - But experience says otherwise
- A lot of work for distributions
 - Or AdoptOpenJDK for users of static builds

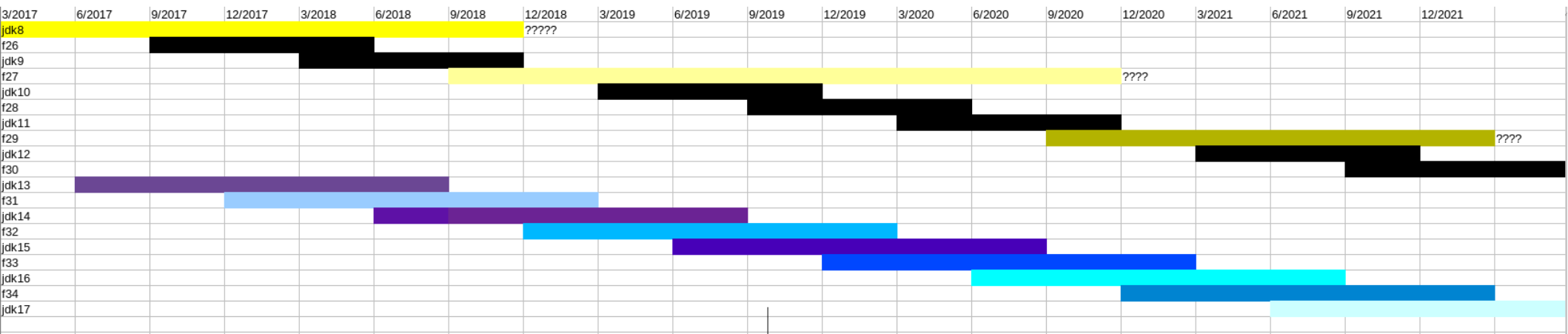
Fedora downstream – work in progress!

- Fedora claims to be the newest technologies distro
- Fedora have approx 6 months, time driven release cycle
- No intersection with planned 6 months STS and occasional LTS
 - Each LTS will be shipped
- To pass fedora review for each new jdk would be overkill
 - Most (we hope all) STS will be shipped
 - Will keep java-openjdk as rolling release for STS
 - Will pack new java-X-openjdk for each LTS
 - Occasional retirement of java-openjdk to allow major changes
 - Change main JDK (used in buildroot) will be system-wide change and will be aligned with Fedora release cycle
 - If it will ever be STS one is to be decided (if so, how?)
 - Partially different integration
 - How to proceed with updates STS jdk → STS jdk in Lifetime of fedora?
 - **Bytecode compatibility** (will change at STS?)

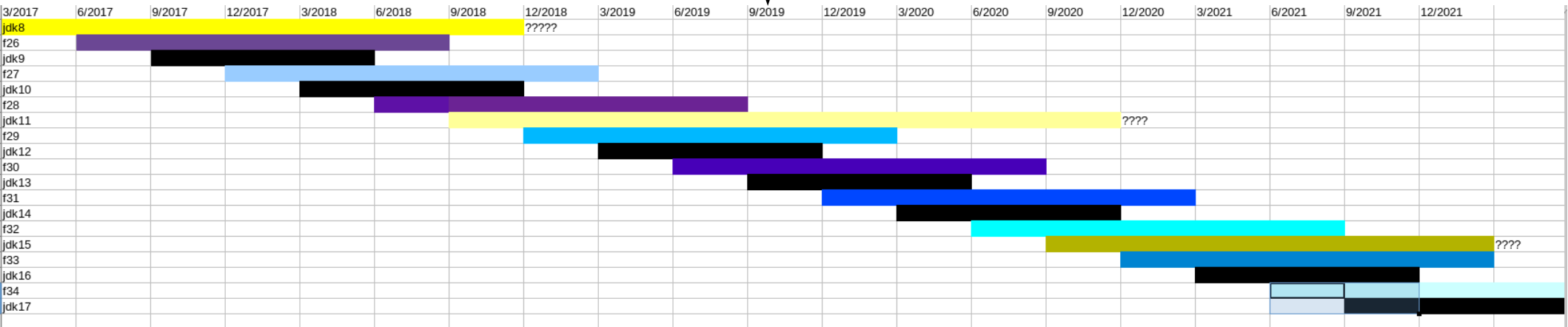
Fedora downstream – work in progress!

- F8...F15...F17...
...
 - F21 12/2014
...
 - F26 06/2017
 - F27 12/2017
 - F28 06/2018
- JDK6 → 7 as techpreview → 7 → ...
 - JDK8 release 3/2014
 - F19+20 techpreview
 - Java-1.8.0-openjdk package
 - Made main JDK in F21
 - JDK9 released 9/2017 (changed to STS soon after release)
 - As tech preview in copr
 - Since F26 as official tech-preview
 - Although providing java, still tech-preview
 - JDK10 planned 3/2018 STS
 - Will remain techpreview (public beta?-)
 - JDK11 planned 9/2018 LTS
 - ?

Fedora downstream – work in progress!

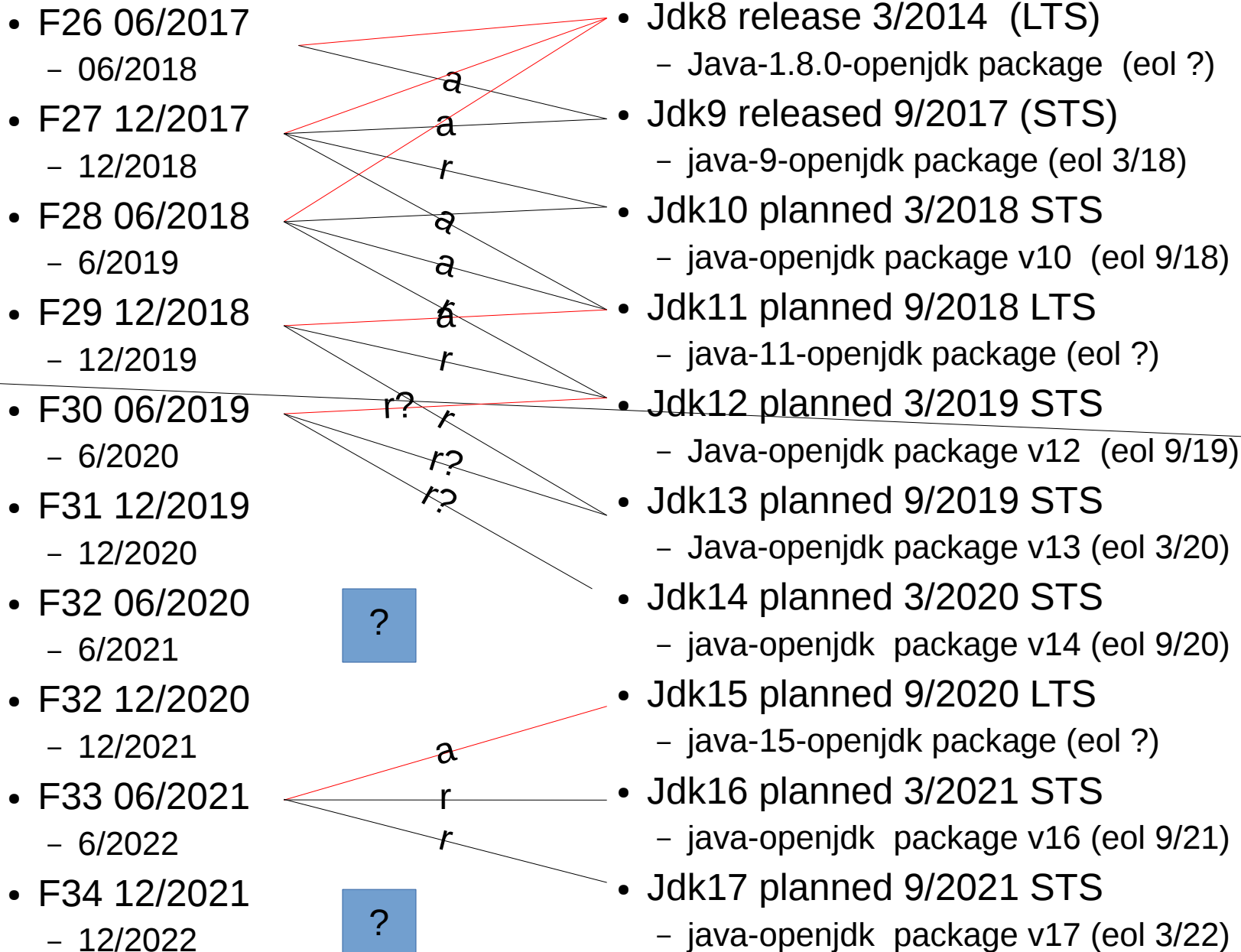


Sort ↓



Fedora downstream – work in progress!

main jdk and tech preview, Adding or Replacing

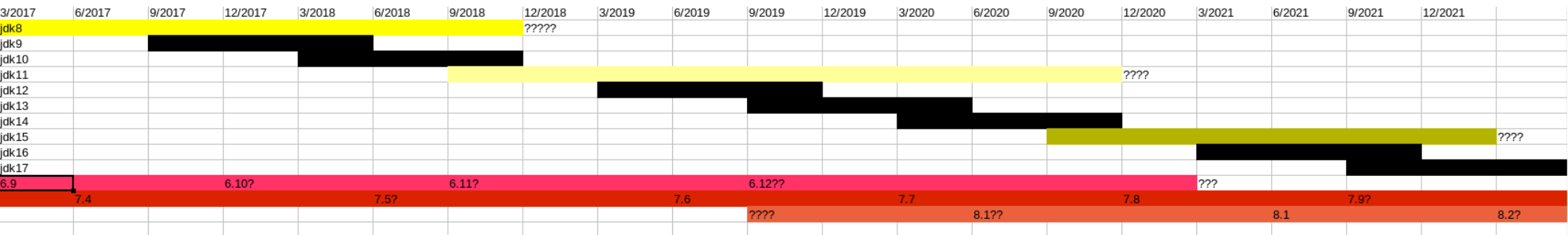


Another jigsaw is probably not possible

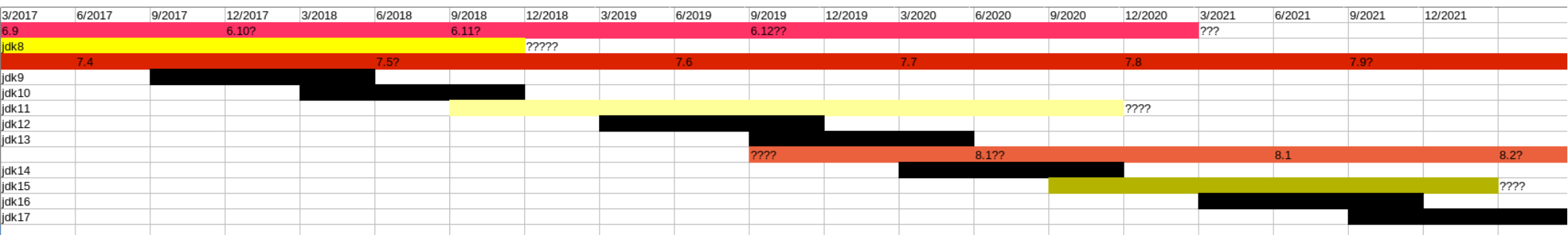
Fedora downstream – work in progress!

- Having rolling release of java-openjdk with occasionally added java-X-openjdk in the given timeframe have several issues:
 - Rolling release will probably enforce removal of similar-parallel JDKs
 - If so, STSs will not be allowed to install in parallel
 - As each STS will replace previous one in java-openjdk, STS will not be able to coexists
 - Occasional retirement of java-openjdk to adapt most recent changes of java-x-openjdk integration maybe necessary
 - Using STS as main JDK for fedora maybe necessary, should be possible, but hard to judge all consequences
 - LTSs overlap, and will be able to coexist, but Fedora lifetime is too short to use it
 - Hints and ideas welcome
 - IRC: Freenode/#fedora-java
 - IRC: OFTC/#openjdk
 - Email: distro-pkg-dev@openjdk.java.net

RHEL downstream – work in progress!



Sort ↓



* "RHEL 6.10 and higher, 7.5 and higher and RHEL 8 release dates are written only for orientation and are not based on any real data.

RHEL downstream – work in progress!

- RHEL is stable distribution
 - Still is trying to get new packages in
- 10+ years lifecycle is longer than any regular OpenJDK
- Bytecode compatibility will be held
 - Even if build JDK is EOLed, it will get javac/javadoc security fixes
 - Main JDK can upgrade to a higher version if necessary
- More fun is with Y updates
- It is not exactly easy to put new package to RHEL
 - Each LTS will be attempted to be shipped

RHEL downstream – work in progress!

- RHEL6
 - Build JDK remains OpenJDK6
 - Main JDK is JDK7
 - Replaced JDK6 in 6.5
 - JDK8 available
- RHEL7
 - Build JDK remains OpenJDK7
 - JDK7 and 8 are now equal
 - JDK9 not available, JDK10 probably same
 - JDK11 should be available
 - Decision is still pending
- RHEL8
 - Guessing!
 - "Main JDK will either be 8 or 11
 - All LTS-es will likely be available

AdoptOpenJDK

- Public infrastructure to provide builds of OpenJDK
 - Currently terribly non-deterministic
 - portable* build from f27 will not work on RHEL6
 - And there is not guaranteed host right now
 - However support for all possible architectures
 - Hope to support all project forests
 - Can make future features accessible like a charm

* portable build is as “static” build of JDK as possible. Such build must be done against oldest possible libraries, and then it works fine on same or newer.

AdoptOpenJDK

- Many big players (Amazon, Alibaba...)
 - Have patched JDKs
 - But nothing back to upstream
 - Oracle is unhappy about that
- Maintaining both oracle JDK and OpenJDK is costly
 - Opening Oracle JDK and start to deliver OpenJDK is logical step
 - Drop custom build infrastructure and use AdoptOpenJDK may be another one

Questions, Feedback, Ideas....

- Announcement of new JDK release process
 - <http://mail.openjdk.java.net/pipermail/discuss/2017-September/004281.html>
- Blog-post about the new release process
 - <https://mreinhold.org/blog/forward-faster>
- History of project jigsaw
 - <http://openjdk.java.net/projects/jigsaw/>
- Announcement of delay of jigsaw to JDK9
 - <https://mreinhold.org/blog/late-for-the-train>
- Latest versioning (accepted) proposal
 - <http://openjdk.java.net/jeps/322>
- Tiobe java popularity
 - <https://www.tiobe.com/tiobe-index/java/>
- Fedora X (7,15,22,26...) changes and schedule
 - <https://fedoraproject.org/wiki/Releases/X/Schedule>
 - <https://fedoraproject.org/wiki/Releases/X/ChangeSet>
- History of JDK
 - https://en.wikipedia.org/wiki/Java_%28programming_language%29#Versions