



The Java delusion: Oracle's rights to license fees for Java



Is Java free? Well, yes, but increasingly, no. It's true that the flagship Java platform has propelled innovation over the last 25 years through open source. However, as connected devices proliferate and internal company usage expands more imaginatively, license fees – chargeable by Oracle - may well be triggered. Corporates can therefore now expect their license audits to cover not just their database technology and eBusiness suite applications but also any use of Java outside some fairly limited license wording.

First developed between 1990 and 1994 within Sun Microsystems, the Java platform and language were to provide an alternative to the C++/C programming languages. Although there was some acknowledged free use of Sun Java, it was not until 2006 that the core Java platform and language was formerly released as open source.

In doing so, Sun declared that *"The open sourcing of this really means more: more richness of offerings, more capability, more applications that consumers will get to use,"* and that *"The platform itself will become a place for innovation."*

The language itself has migrated from being a general-purpose computing language to one that, with its extensive libraries and constant open source refinement and contributions, is now central to the internet of things, big data and the cloud.

The latest version, Java Standard Edition 8 (Java SE8) contains useful development components, Java Development Kit (JDK) which includes Java Software Development Kit (SDK) as well as Java Runtime Environment (JRE) and Java FX Runtime.

These are all free for use by developers and certainly the liberal approach over the last two decades has enabled substantial innovation. However it is a dangerous delusion that every use of Java is free: the rights are still controlled by Java's current owners, Oracle, and substantial license fees are payable for certain uses.

In the past, Java's licensing was classic open source: via the liberal and widely-understood GNU General Public License. However after Oracle acquired Sun Microsystems in January

2010, it formalised the licensing by requiring acceptance of its own Oracle form license ("[Oracle Binary Code License Agreement for the Java SE platform products and Java FX](#)").

Like a number of Oracle license agreements, it gives and takes away at the same time. It is also opaque and confusing.

A free license is given for development and testing (similar to under Oracle's Technology Network – OTN) and also for internal use.

However, production use is only free if any developed application is restricted for "*general-purpose*" computing as opposed to using "*commercial features*".

What is free?

Internal use

As mentioned above, testing and development is generally permitted without charge.

For production uses, the free license is for the use of the chosen Java software downloaded for internal use "*complete and unmodified for the sole purpose of running Programs*" that here covers:

- a) Java technology applets and applications intended to run on the Java platform, standard edition platform on Java-enabled general-purpose desktop computers and servers; and
- b) Java FX technology applications intended to run on the Java FX run time on Java FX enabled general-purpose desktop computers and servers.

In each case, critically, the limitation is for use on "*general-purpose desktop computers and servers*".

External use

In addition, the software can be bundled and delivered with your own developed application provided:

- it is complete and unmodified and only bundled as part of, and for the sole purpose of running, your programs, and
- your programs add significant and primary functionality to the Software.

What does general-purpose mean?

The license agreement says that this means use "*for general computing functions under end-user control (such as but not specifically limited to email, general-purpose Internet browsing and office suite productivity tools)*".

However, systems and solutions that provide "*dedicated functionality*" or use embedded or function-specific software applications e.g. industrial control systems, mobile phones, handhelds, telematics and storage management systems are excluded from the definition: they are not licensed under the agreement. License fees are payable.

Exclusion for 'Commercial Features'

Additionally, the licensable footprint is enlarged where there is any production use of any of Java SE's "*Commercial Features*".

These features in Java SE are specifically listed in a table to the agreement and include:

- Java Flight Recorder;
- Java Mission Control;
- Java Advanced Management Console;
- MSI Enterprise JRE Installer;
- JRockit Flight Recorder;
- JRockit Mission Control Console observability;
- JRockit Mission Control memory leak detector observability.
- JRE Usage Tracking; and
- JRockit real-time deterministic GC.

Other issues

- There is a specific permission to re-distribute JDK (Java™ SE Development Kit Software) alongside printed books and magazines.
- Related patches, bug fixes and updates which might have been obtained by you through Oracle Premier Support cannot be redistributed or be transferred under the terms of the license.
- The license does recognise that there are auto-update processes embedded within the Java software and these automatically transmit certain data back certain to Oracle about the processes "*to help Oracle understand and optimise them*".

Oracle says that this does not associate the data with personal personally identifiable information but it is not clear whether the transmission of that data could identify corporate use as opposed to information about individuals.

- Use of Microsoft Windows Installer Enterprise JRE Installer requires a license.

Included licenses

Many Oracle and PeopleSoft middleware programs automatically include full or restricted use of Java SE as part of the license. Examples include Oracle WebLogic Server and Internet Application Server Enterprise Edition.

The Internet of Things - what is the cost for connected devices?

Apart from using software internally, or developing and then licensing to others, businesses also manufacture and sell physical product. Where products have an embedded processor then Oracle uses a core factor table with the core factor dependent on both the number and type of chips. Fees are payable by the manufacturer and are also dependent on whether reporting to Oracle is pay-as-you-go or pre-paid.

Examples given by Oracle indicate that usage of a 4-core ARM Cortex-A9 chip within a product would trigger US\$7-65 with support fees @19% pa.

Samsung's Galaxy A7 uses an Octa-core 1.9 GHz Cortex-A53 indicating substantially higher licensing costs.

If the device has the significantly more powerful PowerPC e500x chip, the cost can increase to US\$255 per product shipped, with ongoing support also at 19%. Prices are after a 15% discount.

A major issue therefore is the falling price for retail devices with chips embedded, such as bandages, labelling or food items - increasingly these are throw-away and sold at little cost. But the license fees for the embedded chips are fixed. The risk then is that the required license fee just for the chip becomes the dominant cost element, significantly altering the intended price point for the product - unless of course Oracle chooses to reduce its applicable license fees for Java usage rather than increasing them.

Oracle v Google

A significant reminder of the vigilance of Oracle in respect of its Java intellectual property has been the continuing litigation with Google. A series of court cases have been held in the US after proceedings were issued in 2010 by Oracle in respect of Java usage in Android phone technology.

The Federal Court of Appeals [held](#) in 2014 that the "*structure, sequence and organization*" of an application program interface (API) is subject to copyright protection, giving support for Oracle's claims for US\$8.8bn in damages.

However, on remitting the matter back to the District Court, it was [held](#) that, despite this, Google's use in Android devices of the API structure was '*fair use*' and therefore lawful under the US Copyright Act.

This decision is being [appealed](#).

The practical traps

One of the deep concerns regarding Oracle's software delivery is its insistence on delivering packages with all features – free and licensable – without the user having the opportunity to restrict the download to the free-only functions.

As with the options for Oracle database technology, the danger is that, inadvertently, the licensable options can be switched on by an administrator or unsophisticated user. And then, some years down the line in an audit situation, Oracle points to usage across the organisation of the full licensable package and requires license fees and back support for all such use.

Oracle's definition of use covers installation or running; even therefore if an individual has no use for the program, but it has installed automatically on their desktop or servers, a licence fee is payable. Installation is equated to usage.

More broadly, 'Java' has historically been seen as open source; as a result, developers and users have been liberal in their use of Java software and have generally neglected to supervise the use in the same way as programs which are obviously proprietary.

The situation has been compounded by Oracle's decision, in the past, not to examine such usage and, it seems, not to pursue claims in this area. This has reportedly now changed and 2017 can expect to see more cases where corporates will be caught out by any use of Java software which Oracle does not classify as "*general purpose*" or where products are sold with embedded Java.

As ever, with Oracle, corporate users are strongly advised to carry out their own internal and private audits with experienced licensing consultants in order to identify possible usage and, ideally, to remediate.

If licences are needed then it is far cheaper (and certainly less stressful) to deal with this issue in advance on a consensual basis with Oracle. Failing this, Oracle license audits can expect to result in the unexpected imposition of an "*executable quote*" for high license fees with a minimum discount level and a negligible time to investigate the issue.

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