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Open Source Software in Business

21st May, 2012

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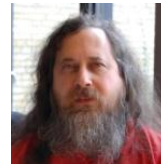
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The Open Source Phenomenon

- Almost unique to software
 - Motivations
 - Low barrier to entry
 - Lends itself to large, distributed teams
 - Malleable
 - Actually costly to implement
- Free software
 - “Free as in free speech, not as in free beer”
 - Lack of constraint ("libre") rather than a lack of cost ("gratis")
 - “Free software” is a matter of liberty, not price.
- Open Source
 - Code is provided

Birth of Open Source

- Unix – 1969
 - Copies of BSD into universities at very low cost
 - Long road to really becoming free
- Richard Stallman
 - Emacs (1975-)
 - GNU + GCC (mid '80s).
 - Free Software Foundation (est 1985)
- Linus Torvalds
 - Linux (1991)



The Open Source Movement

- The Cathedral and the Bazaar
 - Eric Raymond, 1997
 - Cathedral builders
 - Bazaar sellers



Bazaar

- Every good work of software starts by scratching a developer's personal itch.
- Good programmers know what to write. Great ones know what to rewrite (and reuse)
- ``Plan to throw one away; you will, anyhow."
(Fred Brooks, *The Mythical Man-Month*, Chapter 11)
- Constructive laziness

Bazaar

- Treat your users as co-developers
- When you lose interest in a program, your last duty to it is to hand it off to a competent successor.

Cathedral Fightback

- FUD
 - Fear
 - Uncertainty
 - Doubt

Open Source Licenses

A legal agreement you accept if you use the code. Many and varied; tend to cover these areas:

- Copyrights
- Disclaimers
- Obligations
- Freedoms
- Patents

Open Source Licenses

- BSD, MIT – simple, permissive licenses.
 - Prevent misrepresentation of authorship
 - Disclaim responsibility/warranty.
- Apache – permissive.
 - Adds requirement for preserving copyright/patent/trademark notices, and adding notices describing your changes in any modified files.
- Mozilla – semi-copyleft.
 - Patent grants. Permits a larger work to be redistributed under another license, but you must offer the portion which is covered by the MPL (including modifications) under the MPL terms.
- FSF licenses (GPL, LGPL, Affero) and other “copyleft” licenses
 - “Virally” spreads to derived works
 - Patent grants
- Comedy licenses (Beer-ware, cat-ware)

Free Software Foundation

- The FSF is a non-profit company with a worldwide mission to promote computer user freedom and to defend the rights of all free software users.
- Sponsors the GNU Project
 - to develop the GNU operating system, a complete Unix-like operating system
- The FSF holds copyright on a large amount of software, registered by individual contributors



FSF – Software Freedoms

0) The freedom to run the program, for any purpose.

1) The freedom to study how the program works, and change it to make it do what you wish.

Access to the source code is a precondition for this.

2) The freedom to redistribute copies so you can help your neighbour.

3) The freedom to distribute copies of your modified versions to others. By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.



GPL



- The GNU General Public License is a free, **copyleft** license for software and other kinds of works.
- Designed to ensure that
 - you have the freedom to distribute copies of free software (and charge for them if you wish)
 - that you receive source code or can get it if you want it
 - you can change the software or use pieces of it in new free programs
 - you know you can do these things.

GPL – Derived Work

- Copyleft licenses like GPL are “viral”
- Attempt to apply themselves to code that incorporates, modifies or borrows from the original program, or part thereof
- Exactly what does and does not constitute a derivative work is debatable
- Risk for commercial users is that you could be compelled to open up your codebase

GPL – Linkage

- Cut-and-paste or #include
- Static linking
- Dynamic linking
- Linkage is irrelevant...?



LGPL



- GNU Lesser General Public License
- Incorporates GPLv3
- Enables distribution of combined works under alternative terms
- Restricts scope of copyleft.
 - If you merely link with the covered work, then you are not subject to copyleft
 - But modifications to the library itself are

Corporate Response

- Ban it
- Ignore it
- Tread carefully
- Adopt it

Case History: SCO vs IBM



- 2003: SCO filed a \$1 billion (later \$5 billion) lawsuit in the US against IBM for allegedly “devaluing” its version of the UNIX operating system
 - Claim was IBM contributed SCO’s intellectual property to the Linux code base
- IBM + RedHat sues SCO, SCO sues Novell and Chrysler. All Linux users threatened with need to buy a licence from SCO
- Judge in *SCO v. Novell* case, ruled that Novell, not the SCO Group, is the rightful owner of the copyrights covering Unix. Judgement reversed, and then reaffirmed in 2010.

Case History: BusyBox vs various defendants

- 2007-2009: SFLC sued about 20 makers of embedded Linux devices which were using BusyBox
 - Failure to distribute source for modified BusyBox
 - The action was on behalf of some of the authors
 - Previous attempts to ask makers to comply had failed
- Most settled out of court
 - Undisclosed sum
 - License compliance
 - Open Source directors/officers

Case History: FSF vs Cisco



- 2003: FSF Requests conditions of GPL are honoured in Linksys routers
- 2008: FSF Files copyright infringement suit against CISCO
 - All profits that CISCO received “from its unlawful acts”
 - GCC, binutils, GNU C Library.
- May 2009 case settled.
 - Director of OS, undisclosed sum

Patents

- Protection of Intellectual Property
- GPL and re-distribution
 - Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

Case Story: Qualcomm and OS

- CISCO/LinkSys and FSF galvanized fear of litigation
- Use of Open Source proved very difficult to get adopted. Re-distribution was difficult
- Android
 - Qualcomm Innovation Center
- Open Source sniffers: Black Duck, Bespoke scripts



Export Compliance

- Not an OS issue, but another legal minefield
- Affects:
 - Encryption
- Committing to source code control outside UK is an 'export'

Your Future Responsibility

- Understand the licenses – take care with click-through agreements too
- Take seriously the potential business risks of copyleft
- Engage early with lawyers about Open Source that is being used.
- Patience

Your own Open Source Project

- Stake your claim
 - Do something new or better
Not just different
- Choosing your license
 - Resist the urge to create your own
 - Apache, BSD, Mozilla
 - GPL, LGPL
 - Beer-ware, Cat-ware

Thank you.

Questions?