Free Software Licenses

Ziliogic Systems

1. Copyrights and Software Patents

- Copyright is a set of exclusive rights granted to the author or creator of an original work, including the right to copy, distribute and adapt the work.
- Originally applied only to books.
- Originally restrictions on the publisher by the author.
- While copyrights apply to works, patents apply to ideas.
- Once a software patent is granted in a given country, no person can use the idea in that country without the permission of the patent holder.

2. Permissive Licenses

- Free software licenses.
- MIT - Only requirement is that the copyright notice be preserved.
- Original BSD - In addition to MIT's requirement, specifies the following restrictions:
  1. All advertising material should display the acknowledgement: "This product includes software developed by the <organization>".
  2. The name of the organization and name of the contributors should not be used to promote the products derived from this software.
- Modified BSD - Removes the advertising clause.
- Programs using the permissive licenses - PUTTY, Mono, Lua, Ruby on Rails, X Window System ...
- Cons: The derivates of the software can become non-free. This happened with X Window System, and the BSD. For example Juniper's non-free JunOS and Mac OS X are modified BSD based systems.
- So the original software is free software but when the software reaches the final user of the system it is non-fre.

3. Protecting User's Freedom

- Stallman came with the GNU GPL license to overcome this problem.
- A software distributed under the GPL, if modified must be distributed under the GPL.
- The copyright laws were designed to deny users freedom. But by a clever license design Stallman used the copyright laws to ensure the users freedom.
- This way of ensuring user's freedom is called Copyleft!

3.1. Libraries

- The GPL says that any software derived from a GPLed software should be under the GPL.
- Directly modifing the software is obviously a derivative of the original software.
- Linking to a GPLed software is also considered a derivative.
- So if a library is under the GPL, then any application that links to the library should also be under the GPL.

- Sometimes releasing a library under the GPL might not make much sense. For example, if the standard C library is released under the GPL, then the application developers will simply choose one of the available non-GPL C libraries and would use it.
- The LGPL was was designed to be used in such situations. The LGPL is similar to the GPL, but allows non-free programs to link with it.

4. Liberty or Death

- If somebody has restrictions imposed that prevent him or her from distributing GPL-covered software in a way that respects other users' freedom (for example, if a legal ruling states that he or she can only distribute the software in binary form), he or she cannot distribute it at all. The hope is, that this will make it less tempting for companies to use patent threats to require a fee from the free software users.
- In 2008, FireStar filed a lawsuit against Redhat for violating its patent on ORM, which Redhat uses in its JBoss platform. Redhat negotiated with FireStar and obtained a patent license in a way that extended the patent protection to the entire free software community. This in an implication of the GPL's "Liberty or Death" clause.

5. GPLv3

- The GPLv3 improves the GPL with the following:
  - Preventing tivoisation
  - Improving license compatibility
  - Defending against patents

5.1. Preventing Tivoisation

- TiVo is a digital video recorder developed by TiVo Inc. TiVo uses GNU/Linux. The product complies with the GPL, and provides the necessary source code for the software in the product.
- It also allows the users the modify the software, and install the new software in the product.
- But when the user installs the new software, the product will stop functioning!
- The hardware is designed so that it won't run the modified versions.
- This process of using hardware restrictions to prevent the user from using modified versions of the software is called Tivoisation.
- The reason this is done in TiVo is because
  1. The software spies on the user and reports what the user watches.
  2. The software also restricts the user from copying TV programs out of the TiVo. A form of DRM.
- The GPLv3 is designed to prohibit Tivoisation. The GPLv3 says that the distributor must provide whatever is required to run your own version of the program.

5.2. License Compatibility

- Consider two programs each with its own free software license, that we would like to link together, to product a derivative work.
- Each license might impose a restriction on the derivative work. If restrictions of each license can be simultaneously satisfied, then the licenses are compatible.
- An example of incompatible license is the Tex License, which is incompatible with itself.
- The Tex license requires that a modified version should be distributed as the original source plus a patch file.

- If two Tex programs A and B are to merged together, then A's license requires that the derivative be distributed as A plus a patch, but B's license requires that the derivative be distributes as B plus a patch. It can't be both simultaneously.
- Two different copyleft licenses are generally incompatible.
- A copyleft license A requires that the derivative should be under the license A. Another copyleft license B requires that the derivate should be under the license B. So if two programs under A and B, are merged, the derivative if released under A, will violate B, and vice versa.

5.3. GPL Compatibility

- The GPL says that the derivative should not have any additional restrictions other that the ones imposed by the GPL itself.
- The GPL is compatible with the permissive licenses like the MIT license and the modified BSD license. Becuase these do not impose any additional restrictions.
- The GPL is not compatible with the Apache license, since the license imposes strong restrictions on the use of the name Apache in the derived products.
- The GPL is not compatible with the original BSD license, since the license imposes additional restrictions through the advertising clause.
- The GPL is not compatible with the FreeType license, since the license requires that a particular form of attribution is required in the derivative work.
- In the GPLv3, is compatible with more licenses, since it allows certain additional restrictions to be placed on the derivative work. This list of additional restrictions is mentioned in the license. This makes it compatible with the Apache License and the FreeType License.

5.4. Patent Defense

- When a company distributes a program under the GPLv3 and has a patent that applies to some algorithm in the program.
- The company cannot enforce a restriction using the patent, because the GPLv3 has a explicit patent license grant.

6. Case: Non-Free Kernel Modules

- The Linux kernel developers have explicitly stated that non-free kernel modules are illegal.
- The Linux kernel developers actively discourage non-free kernel modules through GPL only symbols, and the tainted flag.
- Nvidia distributes non-free kernel modules. They do this by distributing it separately from the kernel. It is the user that ultimately links it to the kernel.
- But Nvidia still links with the some GPLed header files and stubs, and though legal action can be taken, against Nvidia, no-one has done that so far, probably because we might lose Linux drivers produced by Nvidia. And something is better than nothing.