Software Patents and Open Source Software:

An Overview of Patent Provisions in the First Draft of GPLv3

by

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I. Overview.

Software patents and the impact they have on the development and use of software, both proprietary and open source, have been the subject of much debate and attention this past year. It is a debate in which stakeholders have voiced a variety of concerns covering a wide spectrum – from questioning the advisability of allowing computer software inventions to be patented at all, to the difficulty of navigating the growing number of software patents that do issue, to casting doubt on their quality, to evaluating the costs and risks they pose for innovation and businesses. It is a debate in which different stakeholders have pointed fingers at different culprits and have offered varying, sometimes dramatically different, solutions to the complex and perplexing problem posed.

This paper explores one approach for managing software patents in the open source software context, as proposed by the Free Software Foundation (the "FSF") in its revisions to the GNU General Public License ("GPL"). This approach could have far reaching impact if the new version, GPLv3, meets with the same degree of success as the current version, GPLv2. An overview of the process through which the FSF plans to develop and publish a new version of GPL is provided below, followed by a discussion of provisions in the first discussion draft relating to software patents.[1]

II. The Reversioning Environment.

First published in 1989 and updated just a few years later in 1991,[2] the GPL has grown in popularity and use among open source software developers at a remarkable rate.[3] The GPL has become the software license of choice not only for FSF and the GNU Projects, but for many other widely adopted and important projects such as the Linux® kernel[4] and Samba[5].

Since its last revision in 1991, however, the legal and technological environment in which the GPL has operated has evolved in some fundamental and fairly dramatically ways not anticipated by the authors of the license or by the companies and individuals using GPL software. Among those changes is an explosion in the number of software patents issuing from the USPTO and its sister organizations abroad, as well as a

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[1] The first draft of GPLv3 contains many changes worth consideration but which are beyond the scope of this paper. For additional information about the process, proposed revisions, and comments, visit the official GPLv3 website, http://gplv3.fsf.org. A redline showing changes proposed in the first discussion draft by the FSF is attached as Appendix A to this paper for ease of reference.

[2] The text of the original GPLv1, published by the FSF in 1989, may be found on the GNU Project website, http://www.gnu.org/copyleft/copying-1.0.html

[3] As of March 1, 2006, 68% of all projects licensed under an OSI-approved license on www.sf.net were licensed under the GPL, as were 66.9% of projects registered on www.freshmeat.net.

[4] The Linux kernel is currently distributed under GPLv2 only; it does not allow redistribution under other versions of GPL.

[5] On Sourceforge.net alone, more than 51,000 projects are identified as being licensed under the GPL.

proliferation in the number of different licenses created and used by developers of open source software.[6]

In late 2005, the FSF announced formally the beginning of a process to revise the GPL and address those changes in landscape.[7] The process is expected to span the better part of 2006 and several continents, and will involve publication of at least two iterations of the proposed license. According to the FSF, the process has been crafted to allow all stakeholders an opportunity to provide input on revisions, thereby helping to minimize unintended consequences.[8]

FSF unveiled the first discussion draft of GPLv3 on January 16th, along with a rationale document describing its reasoning for the changes.[9] Throughout the first half of 2006, the FSF intends to accept comments from the public and the committees it established to review and shape recommendations and changes. A further revised draft of GPLv3 is expected late Spring or early Summer 2006.

III. The First Draft: What Changed and What Didn't.

In the years leading up to the current revision process, the FSF consistently messaged that any future version of GPL would preserve the basic freedoms on which the GPL and the free software movement are predicated; specifically, the freedoms to run, study, copy, modify and distribute modified versions of software licensed under the GPL. As promised, that message has been echoed clearly in the Process Document and the Rationale Document published by the FSF,[10] and is reflected in the terms of the current draft of GPLv3. Those freedoms, in the FSF's view, are not open to compromise.

That said, the first draft of GPLv3 reflects some notable shifts in how the FSF believes those freedoms should best be preserved given the legal and technological world in which GPLv3 will presumably operate. The first draft of GPLv3 treats software patents more comprehensively and explicitly than GPLv2, and contains the following provisions which are described in more detail in the sections that follow:

(1) An express patent license (Section 11);

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[6] In October 1999, the Open Source Initiative ("OSI") listed about a dozen licenses on its website as being OSI compliant. That number tripled within three years, to approximately 35 by the Fall of 2002. As of March 1, 2006, OSI listed 58 such licenses on its website, www.opensource.org.

[7] The FSF has published details about the process in the "GPL Process Definition," last updated on January 15, 2006 (the "Process Document"). The Process Document can be found on the FSF's website, http://gplv3.fsf.org.

[8] The GPLv3 First Discussion Draft Rationale document (the "Rationale Document") can be found on the FSF's website here, http://gplv3.fsf.org. The Rationale Document contains a section-by-section discussion of the changes contained in the first draft. Additional insight on reasons underlying the proposed changes can be found in published minutes of meetings held by the various committees organized by FSF to formally vet comments. See http://gplv3.fsf.org/discussion-committees. Note that you must register with the FSF in order to access the committee meeting minutes, though without further obligation.

[9] See Appendix A.

[10] See footnotes 7 and 8, above.

(2) Termination of the license in retaliation for bringing a patent infringement lawsuit against others for works based on a GPLv3 program (Section 2);

(3) Permission for licensors to broaden the patent retaliation clause contained in Section 2 (Section 7);

(4) A requirement that distributors "shield" downstream licensees from patent claims from which the distributor is protected by a patent license and on which the distributor knowingly relies (Section 11); and

(5) Prohibition on distribution if a distributor is subject to conditions (such as a patent license or court order) that contradict the GPL and the distributor cannot comply with both (the "Liberty or Death" clause).

A. **Internationalization: Express Patent License.**

A dominant theme underlying many of the changes proposed in GPLv3 is that of internationalization – how to best ensure that GPLv3 is understood and enforceable on the global stage. The FSF attempts to accomplish that goal in a couple of ways. First, FSF eliminates geographic-specific terms and concepts, and incorporates geographic-neutral terms and concepts instead. For example, the current draft of GPLv3 replaces the term "distribute" throughout most (but not all) of the license with the term "propagate."[11]

Second, the license drafters have made explicit certain permissions and requirements that are implied in GPLv2 to ensure their recognition and enforcement internationally. This includes specifying the duration of the license and the terms under which it may be revoked[12].

It also includes replacing the implied patent license on which GPLv2 relies (but which is not recognized in some countries), with an express patent license grant. The express patent license is contained in a new Section 11, and provides that with every distribution of a covered work,[13] the distributor is granting a royalty-free, worldwide patent license covering all patent claims the distributor controls or has the right to sublicense, at the time of distribution or in the future, that "would be infringed or violated by the covered work or any reasonably contemplated use of the covered work." The FSF has indicated that the phrase "reasonably contemplated use" is not intended to extend to anything beyond the claim practiced by the work as originally distributed.[14]

[11] "Propagate" is defined in Section 0 to mean doing anything with a work that requires permission under applicable copyright law, with a few exceptions.

[12] The first sentence of Section 2 provides that the license grant is for the term of copyright under applicable law, subject to revocation only if the conditions of the license are not met.

[13] "Covered work" is defined as any program or work distributed under GPLv3 or any work based on that program or work. See Section 2 of GPLv3.

[14] See the public minutes from a meeting of committee b, published on the FSF website, www.gplv3.fsf.org/discussion-committees/B/Minutes/GPLv3Bconfcall_2_16feb2006/view. Whether clarifying language will be added when the draft is next revised is unknown.

B. Limiting Users' Rights to Run a Privately Modified Program: Software Patent Retaliation.

The first draft of GPLv3 contains language that increases the reach of GPL to limit a licensee's right to use GPL code that the licensee privately modified but has not distributed. Specifically, under Section 2 a user has the right to privately modify and run a GPLv3 program but only so long as the user does not bring a lawsuit for patent infringement against others who are making using or distributing their own derivative works. If such a lawsuit is brought, the user's right to privately modify and run the program is terminated.[15]

This new provision is tantamount to a covenant not to sue under any circumstances, even as a defensive measure in litigation brought against the user. In that respect, it is more limiting than other conditions that may be attached to a patent retaliation provision under the new Section 7, discussed below.[16]

This expansion of the GPL's reach to control private behavior represents a significant change from GPLv2, which does not contain limitations or conditions for private use of modified GPL code in the absence of a distribution.[17] According to the FSF, the new restriction is, among other things, "intended to discourage a GPL licensee from securing a patent directed to unreleased modifications of GPL'd code and then suing the original developers or others for making their own equivalent modifications."[18]

C. Additional Permissions and Requirements: Broader Patent Retaliation Permitted.

GPLv2 restricts the ability of licensors or licensees to vary its terms through the addition of other restrictions or requirements, except in very limited ways.[19] Section 6 of

[15] Section 2 does not provide details for how and when termination takes place. The termination provision contained in Section 8 appears to apply only to the acts of propagation, modification, and sublicensing of the Program, not use of a derivative work without more.

[16] That the new provision appears to preclude asserting a software patent as a defensive measure runs counter to the underlying rationale provided by the FSF for allowing patent retaliation under Section 7. In Section 2.8 of the Rationale Document, the FSF states that "a patent retaliation provision ought not to punish those who have brought a patent infringement claim in defense against an act of patent aggression."

[17] The preamble of GPLv2 states that the restrictions contained in the license "translate to certain responsibilities for you if you distribute copies of the software, or if you modify it." Yet the text of the license itself does not contain any requirements or limitations on the use of private modifications to GPL code that is *not* distributed: Section 1 of GPLv2 governs copying and distribution of verbatim copies of the program's source code; Section 2 sets forth conditions for distributing modified copies of the Program ("the intent is to exercise the right to control the *distribution* of derivative or collective works…" (emphasis added)); and Section 3 applies to copying and distribution of the Program or a derivative work in object code or executable form.

[18] Section 2.3 of the Rationale Document.

[19] GPLv2 has been interpreted in practice by FSF and others to allow distributors to supplement its terms with additional permissions, provided those additions do not conflict with or limit the permissions contained within GPLv2. By way of contrast, only a handful of additional restrictions or requirements are allowed under GPLv2. For example, Section 11 of GPLv2 allows copyright holders and others to provide a written warranty, and Section 12 contemplates allowing distributees to pursue remedies such as damages. In addition, Section 8 of GPLv2 allows copyright holders to add an explicit geographical distribution limitation excluding countries where distribution and/or use of the licensed program is restricted by patents or copyrighted interfaces.

GPLv2 says it quite succinctly: "You may not impose any further restrictions on the recipients' exercise of the rights granted herein." This "monolithic-ness" provides a surety of sorts: distributees of GPLv2 code know what the terms and conditions are that govern use and modification of the code – there is generally no need to identify and track compliance with exceptions or varied terms. Unfortunately, this same characteristic hinders the adoption and development of open source software since it limits the combining of GPLv2 code with other code licensed under non GPL-compliant licenses.[20]

If adopted in the form currently presented, GPLv3 will not retain this attribute. A new Section 7 in the first draft of GPLv3 allows for the addition of other permissions and requirements.[21] Additional permissions[22] may be granted in writing by the copyright holder for parts she adds or has the right to license. Those additional permissions cannot restrict the permissions granted by GPLv3, and downstream distributors can remove the additional permissions and redistribute under GPLv3. This is consistent with practice under GPLv2, and according to the FSF, this portion of Section 7 codifies what is understood and allowed under GPLv2.[23]

Section 7 of GPLv3 also allows for additional restrictions, in order to extend "the range of licensing terms with which the GPL is compatible."[24] The list of additional restrictions is limited to those outlined in the text of GPLv3 itself. Among others, Section 7(e) allows distributors to include a software patent retaliation clause covering the distributor's parts, and allows for termination of a user's rights to use those parts in a limited set of circumstances only: (1) when a software patent lawsuit is brought by the user or someone closely related to the user without justification (i.e., aggressively, not defensively); or (2) lawsuits targeting GPLv3 code or the added parts.[25] According to the FSF, additional requirements such as an expanded software patent retaliation clause cannot be removed downstream.

Allowing additional requirements is beneficial from a code re-use perspective because it means developers can combine code under licenses previously deemed

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[20] A current list of GPLv2-compatible free software licenses can be found on the FSF website, www.fsf.org.

[21] What constitutes an additional "permission" as opposed to a "requirement" is not entirely clear, nor is it clear whether an additional permission could "undue" a requirement contained in GPLv3. The latter may be possible. In published minutes from a meeting of Committee b held on February 16, 2006, for example, Prof Moglen, outside legal counsel to the FSF, agreed that the additional permission language could be used by a copyright holder to distribute code under GPLv3 that allows users to play DRM-protected content using that holder's GPLv3 code. Arguably, adding this additional permission defeats at least in part the new Section 3 relating to digital rights management (or, in the language of the FSF, digital restrictions management). Those minutes are published on the FSF website, www.gplv3.fsf.org/discussion-committees/B/Minutes/GPLv3Bconfcall_2_ 16feb2006/view.

[22] GPLv2 also allows additional permissions – Section 6 only prohibits additional restrictions. This allows GPLv2 code to be combined with code licensed under compatible licenses such as the modified BSD license.

[23] See Section 2.8 of the Rationale Document.

[24] Ibid.

[25] Ibid.

incompatible.[26] Yet problems remain that deserve attention. First, it is conceivable that incompatible versions of GPLv3 will be created, thereby precluding combinations of software licensed under the different versions. That outcome would defeat the very laudable goal sought to be achieved by allowing additional requirements to increase developers' ability to combine different code bases. Second, distributees of GPLv3 code will need to identify, track compliance with, and pass along any additional requirements. This increases license administration costs and risks.[27]

Assuming Section 7 remains unchanged in the final version of GPLv3, ideally a standardized and limited set of permitted requirements and permissions will then be developed and used to reduce the added burden and risks, avoid an unwieldy proliferation of GPLv3-type licenses, and increase compatibility.

D. Protecting Downstream Users.

In addition to the express patent license, GPLv3 supplements the existing Section 7 (the "Liberty or Death" provision) with a second restriction covering distribution of software encumbered by software patents. The new provision is contained in Section 11 of GPLv3 and requires any distributor of a covered work who knowingly relies on a patent license to protect itself from liability in connection with the distribution, to "act to shield downstream users" from that same liability.[28] If a distributor has in place a sublicense agreement and the distributor knows that it covers a particular patent and but for that license it could be subject to a claim of patent infringement for distributing GPLv3 software, then the distributor must shield or protect its distributees similarly, presumably through the grant of a sublicense (if permitted by the cross-license), indemnification, or similar mechanism.

This new requirement is arguably duplicative with the existing "Liberty or Death" clause, which is largely unchanged and remains in the current draft of GPLv3. That clause prohibits distribution of GPL software if conditions are imposed on a licensee contradicting the conditions of the GPL and the distributor cannot comply with both the conditions and the GPL. Conditions include, in the FSF's view, cross-license agreements, settlement agreements, and other arrangements or agreements that contradict the terms of GPL.

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[26] At a public meeting on January 16, 2006, the FSF indicated that in its view this Section 7 would allow code licensed under the Eclipse Public License and the Mozilla Public License to be combined with GPLv3 code.

[27] The first draft of GPLv3 requires a downstream user to preserve additional requirements as long as the user's version contains any substantial portion of those parts. Section 7 also requires that all additional permissions and requirements be listed in a central location for ease of reference by users.

[28] While key terms in this paragraph are not defined in the draft, such as "knowingly" and "act to shield", the FSF has indicated that companies with blanket cross-license agreements, which are not uncommon, would not be expected to know if a particular patent license not identified in such an agreement was relied upon. See Section 2.12 of the Rationale Document. At a talk given on February 25, 2006, Richard Stallman provided a further example regarding the FSF's intent. He indicated that the FSF does not "want to impose a requirement on, say, IBM, to do something for other people when IBM doesn't even know that it has a patent license for a certain patent." See the Transcript of Richard Stallman from a talk given on February 25, 2006 in Brussels, Belgium, http://www.ifso.ie/documents/rms-gpl3-2006-02-25.html.

IV. The Potential Result.

Taken together, the patent-related provisions in the first draft of GPLv3 provide a comprehensive, if not controversial, design for managing the software patents in the open source context.[29] Among the more significant results:

- Private users and modifiers of GPLv3 software will not be able bring a patent infringement lawsuit against other users or distributors of the GPLv3 software, even as a defensive measure in response to a claim of infringement, and still expect to run the software privately;

- Distributors who are aware or who have been made aware of a claim that a patent license protects them from liability for patent infringement for GPLv3 software they distribute or use cannot distribute unless they are able to find a way to protect downstream users from that same liability; and

- Distributors and users alike will need to monitor and track compliance with a potentially broader and more diverse set of patent retaliation clauses.

If adopted in its current form, GPLv3 will place the responsibility and potential risk squarely on the shoulders of those who patent, or obtain patent licenses, for software. The challenge for the FSF and those patentees and licensees will be striking a fair balance between offensive and defensive use of patents, and providing clarity and definition around the new provisions so that informed decisions can be made that have predictable outcomes and consequences.

V. A Final Note.

The GPL reversioning process is scheduled to continue through 2006, possibly into early 2007. The FSF has established four committees whose responsibilities include reviewing comments and formulating recommendations on further revisions for the FSF's consideration. Committee progress can be monitored through the FSF website and through regular review of committee minutes, where planned revisions to the license are documented and drafter intent occasionally clarified.

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[29] Since unveiling the first draft of GPLv3 on January 16th, the FSF has clarified language and intent in various postings and newsletters, through its committees, and in public statements. Assuming this continues, we are likely to see additional statements clarifying aspects of the first draft, including the patent provisions described in this paper.