free SOFTWARE FOUNDATION

GPL COMPLIANCE CASE STUDIES

Stanford University, Stanford, CA, USA
Wednesday, 25 August 2004

Bradley M. Kuhn
Executive Director
Free Software Foundation

Daniel Ravicher
Senior Counsel
Free Software Foundation
President and Executive Director
Public Patent Foundation

GPL Compliance Case Studies

Stanford University, Stanford, CA 25 August 2004

12:20 - 12:30   Q & A

12:30 - 14:00   Lunch and Lecture "GPL 3: Prospects and Process"
                Prof. Eben Moglen

14:00 - 15:40   Ethical Considerations and Legal Practices
                Daniel Ravicher

15:40 - 15:50   Q & A

15:50 - 16:00   Break

16:00 - 17:30   Current Issues in Free Software
                Prof. Eben Moglen

17:30 - 18:00   Q & A

Preface

This one-day course presents the details of five different GPL compliance cases handled by FSF's GPL Compliance Laboratory. Each case offers unique insights into problems that can arise when the terms of GPL are not properly followed, and how diplomatic negotiation between the violator and the copyright holder can yield positive results for both parties.

Attendees should have successfully completely the course, a "Detailed Study and Analysis of the GPL and LGPL," as the material from that course forms the building blocks for this material.

This course is of most interest to lawyers who have clients or employers that deal with Free Software on a regular basis. However, technical managers and executives whose businesses use or distribute Free Software will also find the course very helpful.

These course materials are merely a summary of the highlights of the course presented. Please be aware that during the actual GPL course, class discussion supplements this printed curriculum. Simply reading it is not equivalent to attending the course.

Contents

Chapter 1

Overview of FSF's GPL Compliance Lab

The GPL is a Free Software license with legal teeth. Unlike licenses like the X11-style or various BSD licenses, GPL (and by extension, the LGPL) is designed to defend as well as grant freedom. We saw in the last course that GPL uses copyright law as a mechanism to grant all the key freedoms essential in Free Software, but also to ensure that those freedoms propagate throughout the distribution chain of the software.

1.1 Termination Begins Enforcement

As we have learned, the assurance that Free Software under GPL remains Free Software is accomplished through various terms of GPL: §3 ensures that binaries are always accompanied with source; §2 ensures that the sources are adequate, complete and usable; §6 and §7 ensure that the license of the software is always GPL for everyone, and that no other legal agreements or licenses trump GPL. It is §4, however, that ensures that the GPL can be enforced.

Thus, §4 is where we begin our discussion of GPL enforcement. This clause is where the legal teeth of the license are rooted. As a copyright license, GPL governs only the activities governed by copyright law — copying, modifying and redistributing computer software. Unlike most copyright licenses, GPL gives wide grants of permission for engaging with these activities. Such permissions continue, and all parties may exercise them until such time as one party violates the terms of GPL. At the moment of such a violation (i.e., the engaging of copying, modifying or redistributing in ways

1

not permitted by GPL) §4 is invoked. While other parties may continue to operate under GPL, the violating party loses their rights.

Specifically, §4 terminates the violators' rights to continue engaging in the permissions that are otherwise granted by GPL. Effectively, their rights revert to the copyright defaults — no permission is granted to copy, modify, nor redistribute the work. Meanwhile, §5 points out that if the violator has no rights under GPL, they are prohibited by copyright law from engaging in the activities of copying, modifying and distributing. They have lost these rights because they have violated the GPL, and no other license gives them permission to engage in these activities governed by copyright law.

1.2   Ongoing Violations

In conjunction with §4's termination of violators' rights, there is one final industry fact added to the mix: rarely, does one engage in a single, solitary act of copying, distributing or modifying software. Almost always, a violator will have legitimately acquired a copy of a GPL'd program, either making modifications or not, and then begun distributing that work. For example, the violator may have put the software in boxes and sold them at stores. Or perhaps the software was put up for download on the Internet. Regardless of the delivery mechanism, violators almost always are engaged in *ongoing* violation of GPL.

In fact, when we discover a GPL violation that occurred only once — for example, a user group who distributed copies of a GNU/Linux system without source at one meeting — we rarely pursue it with a high degree of tenacity. In our minds, such a violation is an educational problem, and unless the user group becomes a repeat offender (as it turns out, they never do), we simply forward along a FAQ entry that best explains how user groups can most easily comply with GPL, and send them on their merry way.

It is only the cases of *ongoing* GPL violation that warrant our active attention. We vehemently pursue those cases where dozens, hundreds or thousands of customers are receiving software that is out of compliance, and where the company continually offers for sale (or distributes gratis as a demo) software distributions that include GPL'd components out of compliance. Our goal is to maximize the impact of enforcement and educate industries who are making such a mistake on a large scale.

In addition, such ongoing violation shows that a particular company is committed to a GPL'd product line. We are thrilled to learn that someone is benefiting from Free Software, and we understand that sometimes they

2

become confused about the rules of the road. Rather than merely giving us a post mortem to perform on a past mistake, an ongoing violation gives us an active opportunity to educate a new contributor to the GPL'd commons about proper procedures to contribute to the community.

Our central goal is not, in fact, to merely clear up a particular violation. In fact, over time, we hope that our compliance lab will be out of business. We seek to educate the businesses that engage in commerce related to GPL'd software to obey the rules of the road and allow them to operate freely under them. Just as a traffic officer would not revel in reminding people which side of the road to drive on, so we do not revel in violations. By contrast, we revel in the successes of educating an ongoing violator about GPL so that GPL compliance becomes a second-nature matter, allowing that company to join the GPL ecosystem as a contributor.

1.3   How are Violations Discovered?

Our enforcement of GPL is not a fund-raising effort; in fact, FSF's GPL Compliance Lab runs at a loss (in other words, it is subsided by our donors). Our violation reports come from volunteers, who have encountered, in their business or personal life, a device or software product that appears to contain GPL'd software. These reports are almost always sent via email to <license-violation@fsf.org>.

Our first order of business, upon receiving such a report, is to seek independent confirmation. When possible, we get a copy of the software product. For example, if it is an offering that is downloadable from a Web site, we download it and investigate ourselves. When it is not possible for us to actually get a copy of the software, we ask the reporter to go through the same process we would use in examining the software.

By rough estimation, about 95% of violations at this stage can be confirmed by simple commands. Almost all violators have merely made an error and have no nefarious intentions. They have made no attempt to remove our copyright notices from the software. Thus, given the third-party binary, `tpb`, usually, a simple command (on a GNU/Linux system) such as the following will find a Free Software copyright notice and GPL reference:

```
strings tpb | grep Copyright
```

In other words, it is usually more than trivial to confirm that GPL'd software is included.

Once we have confirmed that a violation has indeed occurred, we must then determine whose copyright has been violated. Contrary to popular

belief, FSF does not have the power to enforce GPL in all cases. Since GPL operates under copyright law, the powers of enforcement — to seek redress once §4 has been invoked — lie with the copyright holder of the software. FSF is one of the largest copyright holders in the world of GPL'd software, but we are by no means the only one. Thus, we sometimes discover that while GPL'd code is present in the software, there is no software copyrighted by FSF present.

In cases where FSF does not hold copyright interest in the software, but we have confirmed a violation, we contact the copyright holders of the software, and encourage them to enforce GPL. We offer our good offices to help negotiate compliance on their behalf, and many times, we help as a third party to settle such GPL violations. However, what we will describe primarily in this course is FSF's first-hand experience enforcing its own copyrights and GPL.

1.4   First Contact

The Free Software community is built on a structure of voluntary cooperation and mutual help. Our community has learned that cooperation works best when you assume the best of others, and only change policy, procedures and attitudes when some specific event or occurrence indicates that a change is necessary. We treat the process of GPL enforcement in the same way. Our goal is to encourage violators to join the cooperative community of software sharing, so we want to open our hand in friendship.

Therefore, once we have confirmed a violation, our first assumption is that the violation is an oversight or otherwise a mistake due to confusion about the terms of the license. We reach out to the violator and ask them to work with us in a collaborative way to bring the product into compliance. We have received the gamut of possible reactions to such requests, and in this course, we examine four specific examples of such compliance work.

Chapter 2

Davrik: Modified GCC SDK

In our first case study, we will consider Davrik, a company that produces software and hardware toolkits to assist OEM vendors, makers of consumer electronic devices.

2.1 Facts

One of Davrik's key products is a Software Development Kit ("SDK") designed to assist developers building software for a specific class of consumer electronics devices.

FSF received a report that the SDK may be based on the GNU Compiler Collection (which is an FSF-copyrighted collection of tools for software development in C, C++ and other popular languages). FSF investigated the claim, but was unable to confirm the violation. The violation reporter was unresponsive to follow-up requests for more information.

Since FSF was unable to confirm the violation, we did not pursue it any further. Bogus reports do happen, and we do not want to burden companies with specious GPL violation complaints. FSF shelved the matter until more evidence was discovered.

FSF was later able to confirm the violation when two additional reports surfaced from other violation reporters, both of whom had used the SDK professionally and noticed clear similarities to FSF's GNU GCC. FSF's Compliance Engineer asked the reporters to run standard tests to confirm the violation, and it was confirmed that Davrik's SDK was indeed a derivative work of GCC. Davrik had ported to Windows and added a number of features, including support for a specific consumer device chipset and additional features to aid in the linking process ("LP") for those specific de-

vices. FSF explained the rights that the GPL afforded these customers and pointed out, for example, that Davrik only needed to provide source to those in possession of the binaries, and that the users may need to request that source (if §3(b) was exercised). The violators confirmed that such requests were not answered.

FSF brought the matter to the attention of Davrik, who immediately escalated the matter to their attorneys. After a long negotiation, Davrik acknowledged that their SDK was indeed a derivative work of GCC. Davrik released most of the source, but some disagreement occurred over whether LP was a derivate work of GCC. After repeated FSF inquiries, Davrik reaudited the source to discover that FSF's analysis was correct. Davrik determined that LP included a number of source files copied from the GCC code-base.

Once the full software release was made available, FSF asked the violation reporters if it addressed the problem. Reports came back that the source did not properly build. FSF asked Davrik to provide better build instructions with the software, and such build instructions were incorporated into the next software release.

At FSF's request as well, Davrik informed customers who had previously purchased the product that the source was now available by announcing the availablity on its Web site and via a customer newsletter.

Davrik did have some concerns regarding patents. They wished to include a statement with the software release that made sure they were not granting any patent permission other than what was absolutely required by GPL. They understood that their patent assertions could not trump any rights granted by GPL. The following language was negotiated into the release:

> Subject to the qualifications stated below, Davrik, on behalf of itself and its Subsidiaries, agrees not to assert the Claims against you for your making, use, offer for sale, sale, or importation of the Davrik's GNU Utilities or derivative works of the Davrik's GNU Utilities ("Derivatives"), but only to the extent that any such Derivatives are licensed by you under the terms of the GNU General Public License. The Claims are the claims of patents that Davrik or its Subsidiaries have standing to enforce that are directly infringed by the making, use, or sale of an Davrik Distributed GNU Utilities in the form it was distributed by Davrik and that do not include any limitation that reads on hardware; the Claims do not include any additional patent

6

claims held by Davrik that cover any modifications of, derivative works based on or combinations with the Davrik's GNU Utilities, even if such a claim is disclosed in the same patent as a Claim. Subsidiaries are entities that are wholly owned by Davrik.

This statement does not negate, limit or restrict any rights you already have under the GNU General Public License version 2.

This quelled Davrik's concerns about other patent licensing they sought to do outside of the GPL'd software, and satisfied FSF's concerns that Davrik give proper permissions to exercise teachings of patents that were exercised in their GPL'd software release.

Finally, a GPL Compliance Officer inside Davrik was appointed to take responsibility for all matters of GPL compliance inside the company. Darvik is responsible for informing FSF if the position is given to someone else inside the company, and making sure that FSF has direct contact with Darvik's Compliance Officer.

2.2 Lessons

This case introduces a number of concepts regarding GPL enforcement.

1. **Enforcement should not begin until the evidence is confirmed.** Most companies who distribute GPL'd software do so in compliance, and at times, violation reports are mistaken. Even with extensive efforts in GPL education, many users do not fully understand their rights and the obligations that companies have. By working through the investigation with reporters, the violation can be properly confirmed, and **the user of the software can be educated about what to expect with GPL'd software**. When users and customers of GPL'd products know their rights, what to expect, and how to properly exercise their rights (particularly under §3(b)), it reduces the chances for user frustration and inappropriate community outcry about an alleged GPL violation.

2. **GPL compliance requires friendly negotiation and cooperation.** Often, attorneys and managers are legitimately surprised to find out GPL'd software is included in their company's products. Engineers sometimes include GPL'd software without understanding the requirements. This does not excuse companies from their obligations

under the license, but it does mean that care and patience are essential for reaching GPL compliance. We want companies to understand that participating and benefiting from a collaborative Free Software community is not a burden, so we strive to make the process of coming into compliance as smooth as possible.

3. **Confirming compliance is a community effort.** The whole point of making sure that software distributors respect the terms of GPL is to allow a thriving software sharing community to benefit and improve the work. FSF is not the expert on how a compiler for consumer electronic devices should work. We therefore inform the community who originally brought the violation to our attention and ask them to assist in evaluation and confirmation of the product's compliance. Of course, FSF coordinates and oversees the process, but we do not want compliance for compliance's sake; rather, we wish to foster a cooperating community of development around the Free Software in question, and encourage the once-violator to begin participating in that community.

4. **Informing the harmed community is part of compliance.** FSF asks violators to make some attempt — such as via newsletters and the company's Web site — to inform those who already have the products as to their rights under GPL. One of the key thrusts of GPL's §1 and §3 is to *make sure the user knows she has these rights*. If a product was received out of compliance by a customer, she may never actually discover that she has such rights. Informing customers, in a way that is not burdensome but has a high probability of successfully reaching those who would seek to exercise their freedoms, is essential to properly remedy the mistake.

5. **Lines between various copyright, patent, and other legal mechanisms must be precisely defined and considered.** The most difficult negotiation point of the Davrik case was drafting language that simultaneously protected Davrik's patent rights outside of the GPL'd source, but was consistent with the implicit patent grant in GPL. As we discussed in the first course of this series, there is indeed an implicit patent grant with GPL, thanks to §6 and §7. However, many companies become nervous and wish to make the grant explicit to assure themselves that the grant is sufficiently narrow for their needs. We understand that there is no reasonable way to determine what patent claims read on a company's GPL holdings and which do not, so we

do not object to general language that explicitly narrows the patent grant to only those patents that were, in fact, exercised by the GPL'd software as released by the company.

Chapter 3

Bracken: a Minor Violation in a GNU/Linux Distribution

In this case study, we consider a minor violation made by a company whose knowledge of the Free Software community and its functions is deep.

3.1 The Facts

Bracken produces a GNU/Linux operating system product that is sold primarily to OEM vendors to be placed in appliance devices used for a single purpose, such as an Internet-browsing-only device. The product is almost 100% Free Software, mostly licensed under GPL and related Free Software licenses.

FSF found out about this violation through a report first posted on a Slashdot[1] comment, and then it was brought to our attention again by another Free Software copyright holder who had discovered the same violation.

Bracken's GNU/Linux product is delivered directly from their Web site. This allowed FSF engineers to directly download and confirm the violation quickly. Two primary problems were discovered with the online distribution:

- No source code nor offer for source code was provided for a number of components for the distributed GNU/Linux system; only binaries were available

---

[1]Slashdot is a popular news and discussion site for technical readers.

- An End User License Agreement ("EULA") was included that contradicted the permissions granted by GPL

FSF contacted Bracken and gave them the details of the violation. Bracken immediately ceased distribution of the product temporarily and set forth a plan to bring themselves back into compliance. This plan included the following steps:

- Bracken attorneys would rewrite the EULA to comply with GPL and would vet the new EULA through FSF before use

- Bracken engineers would provide source side-by-side with the binaries for the GNU/Linux distribution on the site (and on CD's, if ever they distributed that way)

- Bracken attorneys would run an internal seminar for its engineers regarding proper GPL compliance to help ensure that such oversights regarding source releases would not occur in the future

- Bracken would resume distribution of the product only after FSF formally restored Bracken's distribution rights

This case was completed in about a month. FSF approved the new EULA text. The key portion in the EULA relating to GPL read as follows:

> Many of the Software Programs included in Bracken Software are distributed under the terms of agreements with Third Parties ("Third Party Agreements") which may expand or limit the Licensee's rights to use certain Software Programs as set forth in [this EULA]. Certain Software Programs may be licensed (or sublicensed) to Licensee under the GNU General Public License and other similar license agreements listed in part in this section which, among other rights, permit the Licensee to copy, modify and redistribute certain Software Programs, or portions thereof, and have access to the source code of certain Software Programs, or portions thereof. In addition, certain Software Programs, or portions thereof, may be licensed (or sublicensed) to Licensee under terms stricter than those set forth in [this EULA]. The Licensee must review the electronic documentation that accompanies certain Software Programs, or portions thereof, for the applicable Third Party Agreements. To the extent any Third Party Agreements require that Bracken provide rights to use,

copy or modify a Software Program that are broader than the rights granted to the Licensee in [this EULA], then such rights shall take precedence over the rights and restrictions granted in this Agreement solely for such Software Programs.

FSF restored Bracken's distribution rights shortly after the work was completed as described.

3.2   Lessons Learned

This case was probably the most quickly and easily resolved of all GPL violations in the history of FSF's Compliance Lab. The ease with which the problem was resolved shows a number of cultural factors that play a role in GPL compliance.

1. **Companies that understand Free Software culture better have an easier time with compliance.** Bracken's products were designed and built around the GNU/Linux system and Free Software components. Their engineers were deeply familiar with the Free Software ecosystem, and their lawyers had seen and reviewed GPL before. The violation was completely an honest mistake. Since the culture inside the company had already adapted to the cooperative style of resolution in the Free Software world, there was very little work for either party to bring the product into compliance.

2. **When people in key positions understand the Free Software nature of their software products, compliance concerns are as mundane as minor software bugs.** Even the most functional system or structure has its problems, and successful business often depends on agile response to the problems that do come up; avoiding problems altogether is a pipe dream. Minor GPL violations can and do happen even with well-informed redistributors. However, resolution is reached quickly when the company — and in particular, the lawyers, managers, and engineers working on the Free Software product lines — have adapted to Free Software culture that the lower-level engineer already understood

3. **Legally, distribution must stop when a violation is identified.** In our opinion, Bracken went above and beyond the call of duty by ceasing distribution while the violation was being resolved. Under

13

GPL §4, the redistributor loses the right to distribute the software, and thus they are in ongoing violation of copyright law if they distribute before rights are restored. It is FSF's policy to temporarily allow distribution while compliance negotiations are ongoing and only in the most extreme cases (where the other party appears to be negotiating in bad faith) does FSF even threaten an injunction on copyright grounds. However, Bracken — as a good Free Software citizen — chose to be on the safe side and do the legally correct thing while the violation case was pending. From start to finish, it took less than a month to resolve. This lapse in distribution did not, to FSF's knowledge, impact Bracken's business in any way.

4. **EULAs are a common area for GPL problems.** Often, EULAs are drafted from boilerplate text that a company uses for all its products. Even the most diligent attorneys forget or simply do not know that a product contains software licensed under GPL and other Free Software licenses. Drafting a EULA that accounts for such licenses is straightforward; the text quoted above works just fine. The EULA must be designed so that it does not trump rights and permissions already granted by GPL. The EULA must clearly state that if there is a conflict between it and GPL, with regard to GPL'd code, the GPL is the overriding license.

5. **Compliance Officers are rarely necessary when companies are educated about GPL compliance.** As we saw in the Davrik case, FSF asks that a formal "GPL Compliance Officer" be appointed inside a previously violating organization to shepherd the organization to a cooperative approach to GPL compliance. However, when FSF sees that an organization already has such an approach, there is no need to request that such an officer be appointed.

Chapter 4

Vigorien: Security, Export Controls, and GPL Compliance

This case study introduces how concerns of "security through obscurity" and regulatory problems can impact GPL compliance matters.

4.1 The Facts

Vigorien distributes a back-up solution product that allows system administrators to create encrypted backups of file-systems on Unix-like computers. The product is based on GNU tar, a backup utility that replaces the standard Unix utility simply called tar, but has additional features.

Vigorien's backup solution added cryptographic features to GNU tar, and included a suite of utilities and graphical user interfaces surrounding GNU tar to make backups convenient.

FSF discovered the violation from a user report, and determined that the cryptographic features were the only part of the product that constituted a derivative work of GNU tar; the extraneous utilities merely made shell calls out to GNU tar. FSF requested that Vigorien come into compliance with GPL by releasing the source of GNU tar, with the cryptographic modifications, to its customers.

Vigorien released the original GNU tar sources, but kept the cryptographic modifications proprietary. They argued that the security of their system depending on keeping the software proprietary and that regardless, USA export restrictions on cryptographic software prohibited such a release.

FSF disputed the first claim, pointing out that Vigorien had only one option if they did not want to release the source: they would have to remove GNU tar from the software and not distribute it further. Vigorien rejected this suggestion, since GNU tar was an integral part of the product, and the security changes were useless without GNU tar.

Regarding the export control claims, FSF proposed a number of options, including release of the source from one of Vigorien's divisions overseas where no such restrictions occurred, but Vigorien argued that the problem was insoluble because they operated primarily in the USA.

The deadlock on the second issue was resolved when those cryptographic export restrictions were lifted shortly thereafter, and FSF again raised the matter with Vigorien. At that point, they dropped the first claim and agreed to release the remaining source module to their customers. They did so, and the violation was resolved.

4.2   Lessons Learned

1. **Removing the GPL'd portion of the product is always an option.** Many violators' first response is to simply refuse to release the source code as GPL requires. FSF offers the option to simply remove the GPL'd portions from the product and continue along without them. Every case where this has been suggested has led to the same conclusion. Like Vigorien, the violator argues that the product cannot function without the GPL'd components, and they cannot effectively replace them.

   Such an outcome is simply further evidence that the combined work in question is indeed a derivative work of the original GPL'd component. If the other components cannot stand on their own and be useful without the GPL'd portions, then one cannot effectively argue that the work as a whole is not a derivative of the GPL'd portions.

2. **The whole product is not always covered.** In this case, Vigorien had additional works aggregated. The backup system was a suite of utilities, some of which were GPL and some of which were not. While the cryptographic routines were tightly coupled with GNU tar and clearly derivative works, the various GUI utilities were separate and independent works merely aggregated with the distribution of the GNU-tar-based product.

3. **"Security" concerns do not exonerate a distributor from GPL**

16

obligations, and "security through obscurity" does not work anyway. The argument that "this is security software, so it cannot be released in source form" is not a valid defense for explaining why the terms of the GPL are ignored. If companies do not want to release source code for some reason, then they should not base the work on GPL'd software. No external argument for noncompliance can hold weight if the work as whole is indeed a derivative work of a GPL'd program.

The "security concerns" argument is often floated as a reason to keep software proprietary, but the computer security community has on numerous occasions confirmed that such arguments are entirely specious. Security experts have found — since the beginnings of the field of cryptography in the ancient world — that sharing results about systems and having such systems withstand peer review and scrutiny builds the most secure systems. While full disclosure may help some who wish to compromise security, it helps those who want to fix problems even more by identifying them early.

4. **External regulatory problems can be difficult to resolve.** GPL, though grounded in copyright law, does not have the power to trump regulations like export controls. While Vigorien's "security concerns" were specious, their export control concerns were not. It is indeed a difficult problem that FSF acknowledges. We want compliance with GPL and respect for users' freedoms, but we certainly do not expect companies to commit criminal offenses for the sake of compliance. We will see more about this issue in our next case study.

Chapter 5

Haxil, Polgara, and Thesulac: Mergers, Upstream Providers and Radio Devices

This case study considers an ongoing (at the time of writing) violation that has occurred. By the end of the investigation period, three companies were involved and many complex issues arose.

5.1 The Facts

Haxil produced a consumer electronics device which included a mini GNU/Linux distribution to control the device. The device was of interest to many technically-minded consumers, who purchased the device and very quickly discovered that Free Software was included without source. Mailing lists throughout the Free Software community erupted with complaints about the problem, and FSF quickly investigated.

FSF confirmed that FSF-copyrighted GPL'd software was included. In addition, the whole distribution included GPL'd works from hundreds of individual copyright holders, many of whom were, at this point, up in arms about the violation.

Meanwhile, Haxil was in the midst of being acquired by Polgara. Polgara was as surprised as everyone else to discover the product was based on GPL'd software; this fact had not been part of the disclosures made during acquisition. FSF contacted Haxil, Polgara, and the product managers who had transitioned into the "Haxil division" of the newly-merged Polgara company. Polgara's General Counsel's office worked with FSF on the

matter.

FSF formed a coalition with the other primary copyright holders to pursue the enforcement effort on their behalf. FSF communicated directly with Polgara's representatives to begin working through the issues on behalf of itself and the Free Software community at large.

Polgara pointed out that the software distribution they used was mostly contributed by an upstream provider, Thesulac, and Haxil's changes to that code base were minimal. Polgara negotiated with Thesulac to obtain the source, although the issue moved very slowly in the channels between Polgara and Thesulac.

FSF encouraged a round-table meeting so that high bandwidth communication could occur between FSF, Polgara and Thesulac. Polgara and Thesulac agreed, and that discussion began. Thesulac provided nearly complete sources to Polgara, and Polgara made a full software release on their Web site. At the time of writing, that software still has some build problems (similar to those that occurred with Davrik, as described in Section 2.1). FSF continues to negotiate with Polgara and Thesulac to resolve these problems, which have a clear path to a solution and are expected to resolve.

Similar to the Vigorien case, Thesulac has regulatory concerns. In this case, it is not export controls — an issue that has since been resolved — but radio spectrum regulation. Since this consumer electronic device contains a software-programmable radio transmitter, regulations in (at least) the USA and Japan prohibit release of those portions of the code that operate the device. Since this is a low-level programming issue, the changes to operate the device are a derivative work of the kernel named Linux. This situation remains unresolved at the time of writing, although FSF continues to negotiation with Thesulac and the Linux community regarding the problem.

5.2   Lessons Learned

1. **Community outrage, while justified, can often make negotiation more difficult.** FSF has a strong policy never to publicize names of GPL violators if they are negotiating in a friendly way and operating in good faith toward compliance. Most violations are honest mistakes, and FSF sees no reason to publicly admonish violators who genuinely want to come into compliance with GPL and to work hard staying in compliance.

   This case was so public in the Free Software community that both Haxil's and Polgara's representatives were nearly shell-shocked by the

time FSF began negotiations. There was much work required to diffuse the situation. We empathize with our community and their outrage about GPL violations, but we also want to follow a path that leads expediently to compliance. In our experience, public outcry works best as a last resort, not the first.

2. **For software companies, GPL compliance belongs on a corporate acquisition checklist.** Polgara was truly amazed that Haxil had used GPL'd software in a major new product line but never informed Polgara during the acquisition process. While GPL compliance is not a particularly difficult matter, it is an additional obligation that comes along with the product line. When planning mergers and joint ventures, one should include lists of GPL'd components contained in the products discussed.

3. **Compliance problems of upstream providers do not excuse a violation for the downstream distributor.** To paraphrase §6, upstream providers are not responsible for enforcing compliance of their downstream, nor are downstream distributors responsible for compliance problems of upstream providers. However, engaging in distribution of GPL'd works out of compliance is still just that: a compliance problem. When FSF carries out enforcement, we are patient and sympathetic when the problem appears to be upstream. In fact, we urge the violator to point us to the upstream provider so we may talk to them directly. In this case, we were happy to begin negotiations with Thesulac. However, Polgara still has an obligation to bring their product into compliance, regardless of Thesulac's response.

4. **It behooves upstream providers to advise downstream distributors about compliance matters.** FSF has encouraged Thesulac to distribute a "good practices for GPL compliance" document with their product. Polgara added various software components to Thesulac's product, and it is conceivable that such additions can introduce compliance. In FSF's opinion, Thesulac is in no way legally responsible for such a violation introduced by their customer, but it behooves them from a marketing standpoint to educate their customers about using the product. We can argue whether or not it is your coffee vendor's fault if you burn yourself with their product, but (likely) no one on either side would dispute the prudence of placing a "caution: hot" label on the cup.

5. **FSF enforcement often avoids redundant enforcement cases from many parties.** Most Free Software systems have hundreds of copyright holders. Some have thousands. FSF is in a unique position as one of the largest single copyright holders on GPL'd software and as a respected umpire in the community, neutrally enforcing the rules of the GPL road. FSF works hard in the community to convince copyright holders that consolidating GPL claims through FSF is better for them, and more likely to yield positive compliance results.

   A few copyright holders engage in the "proprietary relicensing" business, so they use GPL enforcement as a sales channel for that business. FSF, as a community-oriented, not-for-profit organization, seeks only to preserve the freedom of Free Software in its enforcement efforts. As it turns out, most of the community of copyright holders of Free Software want the same thing. Share and share alike is a simple rule to follow, and following that rule to FSF's satisfaction usually means you are following it to the satisfaction of the entire Free Software community.

Chapter 6

Good Practices for Compliance

Generally, from the experience of GPL enforcement, we glean the following general practices that can help in GPL compliance for organizations that distribute products based on GPL'd software:

- Talk to your software engineers and ask them where they got the components they use in the products they build. Find out if GPL'd components are present.

- Teach your engineering staff to pay attention to license documents. Give them easy-to-follow policies to get approval for using a Free Software component.

- Build a "Free Software Licensing" committee that handles requests and questions about GPL and other Free Software licenses.

- Add "What parts of your products are under GPL or other Free Software licenses?" to your checklist of questions to ask when you consider mergers, acquisitions, or joint ventures.

- Encourage your engineers to participate collaboratively with GPL'd software development. The more knowledge about the Free Software world your organization has, the better equipped it is to deal with this rapidly changing field.

- When someone points out a potential GPL violation in one of your products, do not assume the product line is doomed. GPL is not a

virus; merely having GPL'd code in one part of a product does not necessarily mean that every related product must also be GPL'd. And, even if some software needs to be released that was not before, the product will surely survive. In FSF's enforcement efforts, we have not yet seen a product line die because source was released to customers in compliance with GPL.

The GNU General Public License

Preamble

The licenses for most software are designed to take away your freedom
to share and change it. By contrast, the GNU General Public License is
intended to guarantee your freedom to share and change Free Software—to
make sure the software is free for all its users. This General Public License
applies to most of the Free Software Foundation's software and to any other
program whose authors commit to using it. (Some other Free Software
Foundation software is covered by the GNU Library General Public License
instead.) You can apply it to your programs, too.

When we speak of Free Software, we are referring to freedom, not price.
Our General Public Licenses are designed to make sure that you have the
freedom to distribute copies of Free Software (and charge for this service if
you wish), that you receive source code or can get it if you want it, that you
can change the software or use pieces of it in new Free programs; and that
you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to
deny you these rights or to ask you to surrender the rights. These restrictions
translate to certain responsibilities for you if you distribute copies of the
software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this Free Software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any Free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a Free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

Terms and Conditions For Copying, Distribution and Modification

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program," below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification.") Each licensee is addressed as "you."

   Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

   You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

   (a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

   (b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

   (c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

   These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this

License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

    (a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

    (b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

    (c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on

which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who

receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the Free Software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version," you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author

to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our Free Software and of promoting the sharing and reuse of software generally.

No Warranty

11. Because the program is licensed free of charge, there is no warranty for the program, to the extent permitted by applicable law. Except when otherwise stated in writing the copyright holders and/or other parties provide the program "as is" without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the quality and performance of the program is with you. Should the program prove defective, you assume the cost of all necessary servicing, repair or correction.

12. In no event unless required by applicable law or agreed to in writing will any copyright holder, or any other party who may modify and/or redistribute the program as permitted above, be liable to you for damages, including any general, special, incidental or consequential damages arising out of the use or inability to use the program (including but not limited to loss of data or data being rendered inaccurate or losses sustained by you or third parties or a failure of the program to operate with any other programs), even if such holder or other party has been advised of the possibility of such damages.

End of Terms and Conditions

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it Free Software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

> one line to give the program's name and a brief idea of what it does.
> Copyright (C) yyyy name of author
>
> This program is Free Software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.
>
> This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.
>
> You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

> Gnomovision version 69, Copyright (C) yyyy name of author
> Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.
> This is Free Software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands `show w` and `show c` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w` and `show c`; they could even be mouse-clicks or menu items—whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

> Yoyodyne, Inc., hereby disclaims all copyright interest in the program
> 'Gnomovision' (which makes passes at compilers) written by James Hacker.
>
> signature of Ty Coon, 1 April 1989
> Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

The GNU Lesser General Public License

[This is the first released version of the Lesser GPL. It also counts as the
successor of the GNU Library Public License version 2, hence the version
number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom
to share and change it. By contrast, the GNU General Public Licenses are
intended to guarantee your freedom to share and change Free Software—to
make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some spe-
cially designated software packages—typically libraries—of the Free Soft-
ware Foundation and other authors who decide to use it. You can use it
too, but we suggest you first think carefully about whether this license or
the ordinary General Public License is the better strategy to use in any
particular case, based on the explanations below.

When we speak of Free Software, we are referring to freedom of use, not
price. Our General Public Licenses are designed to make sure that you have
the freedom to distribute copies of Free Software (and charge for this service
if you wish); that you receive source code or can get it if you want it; that

you can change the software and use pieces of it in new Free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the Free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any Free program. We wish to make sure that a company cannot effectively restrict the users of a Free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-Free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License.

It also provides other Free Software developers Less of an advantage over competing non-Free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-Free programs must be allowed to use the library. A more frequent case is that a Free library does the same job as widely used non-Free libraries. In this case, there is little to gain by limiting the Free library to Free Software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-Free programs enables a greater number of people to use a large body of Free software. For example, permission to use the GNU C Library in non-Free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the library has the freedom and the wherewithal to run that program using a modified version of the library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library." The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU Lesser General Public License
Terms and Conditions For Copying,
Distribution and Modification

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you."

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "library," below, refers to any such software library or work which has been distributed under these terms. A "work based on the library"

37

means either the library or any derivative work under copyright law: that is to say, a work containing the library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification.")

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the library is not restricted, and output from such a program is covered only if its contents constitute a work based on the library (independent of the use of the library in a tool for writing it). Whether that is true depends on what the library does and what the program that uses the library does.

1. You may copy and distribute verbatim copies of the library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the library.

   You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the library or any portion of it, thus forming a work based on the library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

   (a) The modified work must itself be a software library.

   (b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

   (c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

(d) If a facility in the modified library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the library.

In addition, mere aggregation of another work not based on the library with the library (or with a work based on the library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the library into a program that is not a library.

4. You may copy and distribute the library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

   If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the library, but is designed to work with the library by being compiled or linked with it, is called a "work that uses the library." Such a work, in isolation, is not a derivative work of the library, and therefore falls outside the scope of this License.

   However, linking a "work that uses the library" with the library creates an executable that is a derivative of the library (because it contains portions of the library), rather than a "work that uses the library." The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

   When a "work that uses the library" uses material from a header file that is part of the library, the object code for the work may be a derivative work of the library even though the source code is not. Whether this is true is especially significant if the work can be linked without the library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

   If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables

containing this object code plus portions of the library will still fall under Section 6.)

Otherwise, if the work is a derivative of the library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the library" with the library to produce a work containing portions of the library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

   You must give prominent notice with each copy of the work that the library is used in it and that the library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

   (a) Accompany the work with the complete corresponding machine-readable source code for the library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the library, with the complete machine-readable "work that uses the library," as object code and/or source code, so that the user can modify the library and then relink to produce a modified executable containing the modified library. (It is understood that the user who changes the contents of definitions files in the library will not necessarily be able to recompile the application to use the modified definitions.)

   (b) Use a suitable shared library mechanism for linking with the library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

(c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

(d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

(e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the library together in an executable that you distribute.

7. You may place library facilities that are a work based on the library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the library and of the other library facilities is otherwise permitted, and provided that you do these two things:

(a) Accompany the combined library with a copy of the same work based on the library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

(b) Give prominent notice with the combined library of the fact that part of it is a work based on the library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the library is void, and will automatically terminate your rights under this

License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the library (or any work based on the library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the library or works based on it.

10. Each time you redistribute the library (or any work based on the library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the library at all. For example, if a patent license would not permit royalty-free redistribution of the library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the library.

    If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

    It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the Free Software distribution system which is implemented by public

43

license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the library specifies a version number of this License which applies to it and "any later version," you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the library into other Free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the Free status of all derivatives of our Free software and of promoting the sharing and reuse of software generally.

No Warranty

15. Because the library is licensed free of charge, there is no warranty for the library, to the extent permitted by

APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it Free Software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

> one line to give the library's name and a brief idea of what it does.
> Copyright (C) year name of author

> This library is Free Software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

> This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

> You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

> Yoyodyne, Inc., hereby disclaims all copyright interest in the program
> 'Gnomovision' (which makes passes at compilers) written by

James Hacker.

signature of Ty Coon, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!