

GPLv3 & LGPLv3: “Installation Information” Requirement

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Disclaimer

- **GPLv3 & LGPLv3 are legal documents**
 - **But we are not your lawyers**
 - **For GPL/LGPL v3 questions, ask your own lawyer**
 - **This presentation **not** legal advice to you by us**
 - **Some of the analysis is simplified for ease of understanding**
- **This presentation is a general survey of the GPL/LGPLv3 Installation Information requirement**
 - **To allow for discussion**
 - **Contains input from several different entities**
 - ****Not** the opinions of Intel, FSF or FSFE**

Installation Information Requirement: Why?

- **Digital Millennium Copyright Act (DMCA) & Digital Rights Management (DRM) considered to be “anti-freedom”**
 - **Strip users' “right to fair use” in copyrighted materials**
- **Device hardware, firmware, & software locks deny users' “freedoms” to modify software installed on the hardware**
- **FSF felt GPL & LGPL modification right *should* include right to execute modified software on the device on which the software is used**
- **Impediments against modification generally referred to as “TiVOization”**

Installation Information Requirement: Why?

- **TiVO DVR device**
 - **Used GPLv2 code (Linux kernel)**
 - **Hardware/firmware checksum prevented any modified GPLv2 binaries from being installed on the device**
 - **Done to stop installation of free software (“FreeVO”) providing show schedules gratis**
- **Not all saw TiVOization as a problem needing a solution**
 - **Linus: “I think there are many quite valid reasons to sign ... your [GPL] kernel images, and while some of the uses of signing are odious, I don't see any sane way to distinguish between 'good' signers and 'bad' signers.”**

GPLv3 & LGPLv3: Anti-“Anti-Circumvention”

- **USA's “Digital Millenium Copyright Act (DMCA)” (or any international equivalent) can't be used as a mechanism to prevent licensees from exercising all rights granted under GPLv3/LGPLv3**
 - **No known examples of this being done with GPLv2/LGPLv2**
 - **Designed to get ahead of potential future attempts to use DMCA to limit GPL rights**
 - **If that is even possible**

GPLv3 & LGPLv3: Anti-Software Lockdown

- **User must be allowed to reinstall GPLv3/LGPLv3 software (including modifications) on any device on which GPLv3/LGPLv3 is already installed, or for which GPLv3/LGPLv3 software is provided to be installed**
 - ***If* device is a "User Product"**
 - "User Product" essentially a "Consumer Product" under USA's Magnuson-Moss Warranty Act (15 USC 2301 et seq.), and perhaps non-USA consumer protection law equivalents
 - ***If* device is distributed through a sale or long-term lease**
 - ***Unless* no one (including device manufacturer) has ability to reinstall modified GPLv3/LGPLv3 binaries on the device**
 - **Note: If user installs GPLv3/LGPLv3 modifications, device maker *may* void any warranty or service contract**
 - **But *may not* void contract for network services (cable, Wi-Fi, cellular) unless the modifications will damage network or violate network protocols**

GPLv3 & LGPLv3: Compliance Rules

- **Compliance Made Easy ("Rule 1")**
 - **If you distribute a product or device that uses GPLv3 or LGPLv3 code, make sure anyone getting that device is enabled to modify the GPLv3 or LGPLv3 source code and install it on the device**
- **Other Compliance Rules**
 - **If you don't want to follow Rule 1, then:**
 - **Don't let the device leave your hands (i.e., demonstrate it, but don't give it over to anyone else) or execute the GPLv3/LGPLv3 code on a remote server and don't convey that code to the device user ("Rule 2")**
 - **If you don't want to follow Rule 2, then:**
 - **Give up your own ability to modify and install the GPLv3 or LGPLv3 code on the device once the device leaves your hands ("Rule 3")**

GPLv3 & LGPLv3: Compliance Rules

- **Other Compliance Rules (continued)**
 - **If you don't want to follow Rule 3, then:**
 - **Stay out of the business of “Consumer Products” (“Rule 4”)**
 - **If you don't want to follow Rule 4, then:**
 - **Police GPLv3 & LGPLv3 user modifications only through voiding warranty or service contracts, or cutting off access to your network (“Rule 5”)**
 - **But using the latter (cut off network) only when user modifications interfere with network operation**
 - **If you don't want to follow Rule 5, then:**
 - **Don't put GPLv3 or LGPLv3 software on your device (“Rule 6”)**

Compliance In The Marketplace

- **GPLv3 & LGPLv3 after 4 years**
 - **Projects have converted to GPLv3 and LGPLv3**
 - **But still a fraction of all FLOSS projects**
 - **GPLv3 + LGPLv3 = 7%**
 - **GPLv2 + LGPLv2.1 = 54%**
 - **Source: Black Duck**
 - **<http://www.blackducksoftware.com/oss/licenses>**
- **Current trend seems to be to follow Rule 6 at least in some “Consumer Device” classes such as mobile phones**
 - **“Don't use GPLv3 or LGPLv3 on your device”**

Compliance In The Marketplace

- **Rule 6 avoids issue of compliance with Installation Information requirement but causes other complications**
- **Lose access to community of developers who decide to release their project v3**
- **May require private maintenance of v3-free forks**
 - **Or creation of non-v3 alternatives**
 - **As uptake of v3 licenses increases, benefits of using free software evaporate**
 - **If most of your GPL & LGPL code must now come from a private fork or self-created alternative, you are now just acting like another “walled garden” software vendor**

Where May the Marketplace Move?

- **At some point, marketplace will face a crossroads:**
 - **Option 1: Abandon most use of GPL & LGPL code on “Consumer Devices” altogether**
 - In view of a rising tide of projects converting to v3
 - **Option 2: Be prepared to operate within one of Rules 1 to 5**
 - Depending on a relative comfort level with end user-controlled software modifications on your device
- **Companies don't want to get to the crossroads without thinking through – long beforehand – what option they would ultimately choose**
 - **Example: If you don't have a full stack of non-GPLv3/LGPLv3 code ready for when you reach the crossroad, your only choice may be Option 2**
 - Full stack of non-GPLv3/LGPLv3 code increases your bill of materials costs in ways you have not accounted for when using GPL/LGPL
 - Following one of Rules 1 to 5 might in the end be much lower overall cost and not significantly impede your business or function of your products

Making the Crossroads Decision Easier

- **Free Software Advocates**

- Consider whether it is true that “all lockdowns are bad”
- Understand that certain project maintainers want to prevent device manufacturers from shying away from using their code
- Publish clear and easy compliance guidelines that shows both how to use GPLv3/LGPLv3 correctly and still secure some parts of your device
 - Assuming you don't find Rules 1-6 clear enough....

- **Project Maintainers**

- If considering switch to, or launch using, GPLv3/LGPLv3
 - Make use of a “Additional Permission” exempting compliance with “Installation Information” requirement
 - Like Canola project
 - Either permanent, or temporary
 - Give notice of transition period before code is released under these licenses
 - Consider LGPLv3 for your project so Installation Information requirement doesn't impact other parts of the software stack on a device

Making the Crossroads Decision Easier

- **Device Manufacturers**

- **Begin getting comfortable with Rules 1 to 5**
 - **Do you really need to try to control modifications?**
 - **Do you really need to retain your own ability to modify?**
 - **Is voiding of warranty or service contract enough of a disincentive for most modders?**
 - **Or at least the modders you worry about**
 - **Outreach by FLOSS community to show manufacturers that these are commercially viable options might help**
- **Start thinking costs vs. benefit of abandoning use of free software**
 - **Does losing community cost more than benefit of ability to lockdown?**
- **Think through what device software features need lockdown, and how to engineer those outside of the free software parts of your stack**
 - **In hardware?**
 - **Burned into ROM?**
 - **In firmware outside of the free software stack?**
 - **Executing on your own back-end?**

Background

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Background: DMCA

- **DMCA (17 USC 1201):**
 - “No person shall circumvent a technological measure that effectively controls access to a work protected under this title [i.e., U.S. Copyright Law].”
 - “As used in this subsection—
 - (A) to ‘circumvent a technological measure’ means to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner; and
 - (B) a technological measure ‘effectively controls access to a work’ if the measure, in the ordinary course of its operation, requires the application of information, or a process or a treatment, with the authority of the copyright owner, to gain access to the work.”
- **WIPO Copyright Treaty, Art. 11:**
 - “Contracting Parties shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law.”

GPLv3 & LGPLv3: DMCA provision

- GPLv3, Section 3:
 - “No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.”
 - **“When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.”**

GPLv3 & LGPLv3: “Installation Information”

- GPL v 3, Section 6:
 - “If you convey an object code work under this section **in, or with, or specifically for use in, a User Product**, and the conveying occurs as part of a transaction in which the **right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term** (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section **must be accompanied by the Installation Information**. But this requirement **does not apply if neither you nor any third party retains the ability to install modified object code on the User Product** (for example, the work has been installed in ROM).”
 - “A ‘**User Product**’ is either (1) a ‘consumer product’, which means **any tangible personal property which is normally used for personal, family, or household purposes**, or (2) anything designed or sold **for incorporation into a dwelling**. In determining whether a product is a consumer product, **doubtful cases shall be resolved in favor of coverage**. For a particular product received by a particular user, ‘**normally used**’ refers to a **typical or common use of that class of product**, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product **regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use** of the product.”

GPL v 3 & LGPL v 3: “Installation Information”

- GPL v 3, Section 6:
 - “**Installation Information**’ for a User Product means any methods, procedures, authorization keys, or other **information required to install and execute modified versions of a covered work in that User Product** from a modified version of its Corresponding Source. The information must suffice to ensure that the **continued functioning of the modified object code** is in no case **prevented or interfered with solely because modification has been made.**”
 - “The requirement to provide Installation Information **does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified** or installed by the recipient, or for the User Product in which it has been modified or installed.”
 - “**Access to a network may be denied** when the **modification itself materially and adversely affects the operation of the network** or **violates the rules and protocols for communication across the network.**”