Compliance 101 for Developers

or

why should I care, and what’s the minimum I need to do?

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Outline

● Why bother with copyrights & licenses in code?
● Licenses:
  ○ overview of license types encountered in open source
  ○ license compatibility & interactions
  ○ how to write up the license so its unambiguous and machine detectable
● Copyrights:
  ○ overview copyright law & international aspects.
  ○ what does a proper copyright statement look like?
  ○ how to write up a copyright statement so its unambiguous and machine detectable
● Preconditions for contributions:
  ○ permissions secured for contributing to community projects
● Summary
IANL... ymmv

The following are some recommended best practices, but you should always consult with your own legal counsel.
Why bother with a copyright?

source: HTTP://XKCD.COM/14/ PROVIDED UNDER (CC BY-NC 2.5)
Why bother with a copyright?

Copyrights are a way to make it clear you want a say on how the code you’ve created is to be used.
Why bother choosing a license?

source: HTTP://XKCD.COM/225/ LICENSED UNDER (CC BY-NC 2.5)
Why bother with a license?

It lets people know how your code can be used, and how it can be combined with other software.

You need to read the license and be comfortable with its terms.

What are your goals from releasing this code?
License Types

● Proprietary:
  ○ Specific to a company or a project

● Open Source:
  ○ Open Source Definition is followed
  ○ Generally grouped as:
    ■ Permissive vs. Copyleft
    ■ Patent Grant vs. No Patent Grant
  ○ see: http://opensource.org/licenses/alphabetical
Open Source Definition

● Free Redistribution
● Source Code
● Derived Works
● Integrity of The Author’s Source Code
● No Discrimination Against Persons or Groups

● No Discrimination Against Fields of Endeavor
● Distribution of License
● License Must Not Be Specific to a Product
● License Must Not Restrict Other Software
● License Must be Technology-Neutral
Permissive or Copyleft License?

Permissive

A permissive free software licence is a class of free software licence with minimal requirements about how the software can be redistributed. [1]

Examples:
- BSD-2-Clause & BSD-3-Clause
- MIT
- Apache-2.0

Copyleft

Copyleft is the practice of offering people the right to freely distribute copies and modified versions of a work with the stipulation that the same rights be preserved in derivative works down the line [2]

Examples:
- Strong Copyleft:
  - GPL-2.0 & GPL-3.0
  - AGPL-3.0
- Weak Copyleft:
  - LGPL-2.0, LGPL-2.1 & LGPL-3.0
  - MPL-1.0, MPL-1.1 & MPL-2.0
  - EPL-1.0
  - CDDL-1.0

Express Patent Grant with License?

Does the license provides an express grant of patent rights from contributors to users?

No
- BSD-2-Clause & BSD-3-Clause
- MIT
- GPL-2.0 & LGPL-2.1

Yes
- Apache-2.0
- GPL-3.0 & LGPL-3.0
- AGPL-3.0
- MPL-1.0, MPL-1.1 & MPL-2.0
- EPL-1.0
- CDDL-1.0
Which License to Choose?

● For most cases, use license of **existing project**.

● If new project, understand what are properties that you:
  ○ are **required** (or must) do.
  ○ are **permitted** (or can) do.
  ○ are **forbidden** (or cannot) do.

● Common properties to consider:
  ○ Publish License, Copyright notices, Change summaries?
  ○ Disclose Source? Distribution of Modified work?
  ○ Sublicensing? Private or Commercial Use?
  ○ Patent Grant?
  ○ Able to use Trademarks?
  ○ Can code be warranted? Able to hold liable for damages?
  ○ Scope of license: work as a whole or only specific file?
Is there help figuring out which?

- **Source Code:**
  - [opensource.org](https://opensource.org): approved open source licenses.
  - [choosealicense.com](https://choosealicense.com): sponsored by github, walks through the properties to help decide what license makes sense.
  - [tldrlegal.com](https://tldrlegal.com): tags software licenses with key properties to help navigate and understand
  - [gnu.org](https://gnu.org): description of copyleft licenses and comments about them.

- **Other Creative Work:**
  - [creativecommons.org](https://creativecommons.org): understand license options for images and documentation
Example: choosealicense.com

Choosing an OSS license doesn’t need to be scary

Which of the following best describes your situation?

I want it simple and permissive.

The MIT License is a permissive license that is short and to the point. It lets people do anything they want with your code as long as they provide attribution back to you and don’t hold you liable. jQuery and Rails use the MIT License.

I’m concerned about patents.

The Apache License is a permissive license similar to the MIT License, but also provides an express grant of patent rights from contributors to users. Apache, SVN, and NuGet use the Apache License.

I care about sharing improvements.

The GPL (V2 or V3) is a copyleft license that requires anyone who distributes your code or a derivative work to make the source available under the same terms. V3 is similar to V2, but further restricts use in hardware that forbids software alterations. Linux, Git, and WordPress use the GPL.

source: http://choosealicense.com/
Example: [tldrlegal.com](https://tldrlegal.com/licenses/browse)
moused over Mozilla Public License entry
Mix & Match Licenses?

Depending on the type of license, you may or may not be able to use it with other licensed software.

Guidelines for what can be used and combined are available for some projects:

- http://www.gnu.org/licenses/license-list.html
- https://fedoraproject.org/wiki/Licensing
- https://wiki.debian.org/DFSGLicenses
- https://source.android.com/source/licenses.html

Check with your legal counsel before contributing to a project under a different license than the project uses.
So - what should a license reference actually look like in a file?

As a comment in the file with the code include:

- standard header for license (if it exists)
- an unambiguous reference to the license intended.

Possible mechanisms to make unambiguous references:

- Full license text
- **SPDX-license-identifier**: `<license-identifier from SPDX list of licenses>`
- URL to neutral/refereed site with curated list of licenses (like OSI or SPDX)
- URL to license definition page (if known)
Examples: Identify “GPL-2.0”

- **Standard Header:**
  
  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; version 2.

  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., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

- **SPDX-license-identifier statement:**
  
  SPDX-license-identifier: GPL-2.0

- **URL to neutral/refereed site with curated list of licenses (like OSI or SPDX)**
  
  http://opensource.org/licenses/GPL-2.0

- **URL to license definition page (if known)**
  
  http://www.gnu.org/licenses/old-licenses/gpl-2.0.en.html
What about Copyrights?

Why assert a copyright?

- copyright holders are the “go to” people who can determine terms of use (which license, relicense)

Who can be a copyright holder?

- Person, Company, any legally recognized entity.
- Is not always the author (work for hire, assignment of rights, etc.)
What is a Copyright?

Wikipedia [1]:

- Copyright may apply to a wide range of creative, intellectual, or artistic forms, or "works". Specifics vary by jurisdiction and can include software.
- Copyright does not cover ideas and information themselves, only the form or manner in which they are expressed.
- Typically, a work must meet minimal standards of originality in order to qualify for copyright, and the copyright expires after a set period of time (some jurisdictions may allow this to be extended).
- Different countries impose different tests, although generally the requirements are low; in the United Kingdom there has to be some "skill, labour, and judgment" that has gone into it.
- Copyright laws are standardized somewhat through international conventions such as the Berne Convention and Universal Copyright Convention.

US Definition of Copyright [2]: A form of protection provided by the laws of the United States for "original works of authorship", including literary, dramatic, musical, architectural, cartographic, choreographic, pantomimic, pictorial, graphic, sculptural, and audiovisual creations. "Copyright" literally means the right to copy but has come to mean that body of exclusive rights granted by law to copyright owners for protection of their work. Copyright protection does not extend to any idea, procedure, process, system, title, principle, or discovery. Similarly, names, titles, short phrases, slogans, familiar symbols, mere variations of typographic ornamentation, lettering, coloring, and listings of contents or ingredients are not subject to copyright.

International Copyright:

Summarized from Wikipedia [1]:

- Copyright laws are standardized somewhat through international conventions such as the [Berne Convention](https://en.wikipedia.org/wiki/Copyright) and [Universal Copyright Convention](https://en.wikipedia.org/wiki/Copyright).
- Under [Berne Convention](https://en.wikipedia.org/wiki/Copyright), copyright is automatic, and need not be obtained through official registration with any government office.
- While registration isn't needed to exercise copyright, in jurisdictions where the laws provide for registration, it serves as *prima facie* evidence of a valid copyright and enables the copyright holder to seek [statutory damages](https://en.wikipedia.org/wiki/Copyright) and attorney's fees.

Who is Copyright holder?

- Author(s) of the work

- Employer of the Author [*]
  - The original holder of the copyright may be the employer of the author rather than the author himself, if the work is a "work for hire".
  - For example, in English law the Copyright, Designs and Patents Act 1988 provides that if a copyrighted work is made by an employee in the course of that employment, the copyright is automatically owned by the employer which would be a "Work for Hire."

- Organization or Individual that the original holder has assigned the work to

[*] source: https://en.wikipedia.org/wiki/Copyright
How to assert copyright?

In the body of the work (usually at the file level), insert a copyright notice.

A copyright notice is formed by putting the following elements together (ideally on the same line).

- **the copyright symbol** (©, the letter C inside a circle), the abbreviation "Copr.", or the word "Copyright",
- **the year** of the first publication of the work. Several years may be noted if the work has gone through substantial revisions.
  - use ",” if multiple non contiguous years
  - use “-” to represent a range of contiguous years
- **the name of the copyright holder.** Multiple copyright holders are possible.

Generally understood examples:

Copyright YYYY, copyright holder.

© YYYY, YYYY copyright holder.

Copr. YYYY-YYYY, YYYY copyright holder 1, copyright holder 2.
Add Copyright Notices or not?

Use of a copyright notices was a mandatory part of US law prior to 1989 as was registering them. In 1989, the US enacted the Berne Convention Implementation Act, amending the 1976 Copyright Act to conform to most of the provisions of the Berne Convention. As the Berne Convention makes copyright automatic, the use of copyright notices has become optional to claim copyright. Establishing copyright though still needs to be able to be factually established.

Lack of notice of copyright using these marks may have consequences in terms of reduced damages in an infringement lawsuit.*

Recommendation:

- Add a copyright notice for new files, and update when significant change.

[*] source: https://en.wikipedia.org/wiki/Copyright
Valid File Notices

- has copyright holder(s) identified via notice
- has license the file is governed under clearly identified

**GOAL:** clear and machine detectable
Example: Open Data Plane

source: [lng/odp.git]/example/ipsec/odp_ipsec.c

1 /* Copyright (c) 2013, Linaro Limited
2  * All rights reserved.
3  *
4  * SPDX-License-Identifier: BSD-3-Clause
5  */
Example: OP-TEE

source: https://github.com/OP-TEE/optee_os/blob/master/core/tee/abi.c

/*
 * Copyright (c) 2015, Linaro Limited
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions are met:
 * 1. Redistributions of source code must retain the above copyright notice,
 *    this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright notice,
 *    this list of conditions and the following disclaimer in the documentation
 *    and/or other materials provided with the distribution.
 * THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
 * AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
 * LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
 * CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
 * SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
 * INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
 * CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
 * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
 * POSSIBILITY OF SUCH DAMAGE.
 */

This is a **BSD-2-Clause** also known as BSD “simplified” license
Example: Linux

source: http://git.kernel.org/cgit/linux/kernel/git/torvalds/linux.git/tree/arch/arm64/kernel/acpi.c

/*
 * ARM64 Specific Low-Level ACPI Boot Support
 *
 * Copyright (C) 2013-2014, Linaro Ltd.
 * Author: Al Stone <al.stone@linaro.org>
 * Author: Graeme Gregory <graeme.gregory@linaro.org>
 * Author: Hanjun Guo <hanjun.guo@linaro.org>
 * Author: Tomasz Nowicki <tomasz.nowicki@linaro.org>
 * Author: Naresh Bhat <naresh.bhat@linaro.org>
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 */
Example: gcc

source: https://github.com/gcc-mirror/gcc/blob/master/gcc/common/config/aarch64/aarch64-common.c

/* Common hooks for AArch64.
   Copyright (C) 2012-2015 Free Software Foundation, Inc.
   Contributed by ARM Ltd.

   This file is part of GCC.

   GCC 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 3, or (at your option) any later version.

   GCC 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 GCC; see the file COPYING3. If not see <http://www.gnu.org/licenses/>.
*/
Next Steps… submit to upstream

To preserve a project’s goals, the project may require some paperwork before it can accept changes from you.

Determine if a project needs:

- Copyright Assignment
  - GNU toolchain
- Contributors Agreement (also known as Contributor License Agreements)
  - OpenDataPlane, Google, Apache, ...
- Developer’s Certificate of Origin
  - Linux, (and soon to be...OP-TEE! )
Copyright Assignment

“In order to make sure that all of our copyrights can meet the recordkeeping and other requirements of registration, and in order to be able to enforce the GPL most effectively, FSF requires that each author of code incorporated in FSF projects provide a copyright assignment, and, where appropriate, a disclaimer of any work-for-hire ownership claims by the programmer's employer. That way we can be sure that all the code in FSF projects is free code, whose freedom we can most effectively protect, and therefore on which other developers can completely rely.” [1]

Contributor Agreement (CA’s)

Also known as: Contributor License Agreements (CLAs)

Purpose: clarifies that the contributor grants certain rights to the project (copyright, ability to change license, patents, etc.)

Types:
- corporate - need the company you work for to sign
- individual - if you’re contributing as an individual, and not part of your day job.
Developer’s Certificate of Origin 1.1

By making a contribution to this project, I certify that:

(a) The contribution was created in whole or in part by me and I have the right to submit it under the open source license indicated in the file; or

(b) The contribution is based upon previous work that, to the best of my knowledge, is covered under an appropriate open source license and I have the right under that license to submit that work with modifications, whether created in whole or in part by me, under the same open source license (unless I am permitted to submit under a different license), as indicated in the file; or

(c) The contribution was provided directly to me by some other person who certified (a), (b) or (c) and I have not modified it.

(d) I understand and agree that this project and the contribution are public and that a record of the contribution (including all personal information I submit with it, including my sign-off) is maintained indefinitely and may be redistributed consistent with this project or the open source license(s) involved.
Summary

Clear unambiguous copyrights and licensing in the code avoids problems with its adoption.

● for new files: add a copyright notice and indicate the license the file is governed by.

● for significant changes in existing files: update copyright and if any other licenses may be relevant.

● secure necessary permissions before mailing changes to upstream projects
Questions?