

## Open Source Licensing

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## Licenses

- A license is a permission to do something:
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  - You may cross my property during the week, not on weekends
- Licenses can slice, dice, and repackage the rights:
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- Open Source Licenses
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BSD License	13,608	7
GNU General Public License version 3.0 (GPLV3)	10,082	5
Public Domain	6,900	3
Apache License V2.0	6,406	3
MIT License	5,520	3
Academic Free License (AFL)	3,634	2
Other License	3,297	2
Artistic License	2,026	1
Mozilla Public License 1.1 (MPL 1.1)	1,715	1
GNU Library or "Lesser" General Public License	1,669	1
Apache Software License	1,535	1
Common Public License 1.0	1,528	1
Open Software License 3.0 (OSL3.0)	1,424	1

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## License Utilization

- According to Black Duck Software:

Rank	License	%
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- BSD and MIT licenses are very simple, of the two, the MIT license may be preferred
- The Apache License (2.0) may be the most robust of the bunch

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## The GNU GPL

- The most widely used OS license
- Various handles:
  - “Copyleft”
  - Reciprocal
  - Viral
- Key provision:
  - If you make a derivative work, AND distribute the derivative work -> you must license the derivative work under the GPL and provide source

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## The GNU GPL v2

- Long and complicated, but here is the “engine”:
- 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 ... 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.
- In short, if you (1) distribute (2) a derivative work, you must also provide the source.

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## The GNU GPL v3

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- Slightly different wording:

You may convey a covered work [includes the Program and works based on the Program] in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License

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## Derivative Works Under the GPL

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- Example scenarios addressed by the article
  - 1.0: modifying a source file
  - 1.1: modifying source file plus distribution
  - 2.0: adding a file plus distribution of resulting binary
  - 2.1: carving out the added file
  - 3.0: static v. dynamic linking
  - 4.0: plug-ins
  - 5.0: OO systems
  - 6.0: networked systems

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## The GNU LGPL

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- The Lesser (Library) GPL
  - Originally designed to encourage adoption of libraries, to enable development of “closed” programs that linked against the library, while keeping the library “open”
- Example: GNU C library is licensed under LGPL
  - Modifying library = derivative work, must license under LGPL
  - A work that “uses” (links against) the library is not subject to the LGPL

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## The Affero GPL

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- Attempts to address the “network loophole” in the GPL
- Adds the following provision to the GPL:
  - If you modify the Program, your modified version must prominently offer all users interacting with it remotely through a computer network (if your version supports such interaction) an opportunity to receive the Corresponding Source of your version

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## Organizational Risks

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- For “closed source” shops:
  - License “infection”
  - Lack of warranty or indemnification
  - Patent risks
- For open source projects:
  - Ownership of contributions
    - Enforcement
    - How do you know that your contributor has title?
  - Patent risks

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## Open Source & Patents

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- Patent risks: because OS licenses disclaim all liability, an organization may be exposed to unknowable and unmanageable patent risks
- Example, Bedrock v. Softlayer
  - Bedrock alleged infringement by Linux
  - Google lost a \$5M judgment at trial

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## Patent Risks

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- Does size matter? Maybe not ...
  - Lock in problems
- Is it possible to choose a non-infringing (or less-infringing) system? Not really ...
- Is commercial software really less prone to patent risks?
  - Code audits of proprietary systems?
  - Easier to detect infringement in open systems
  - Community response to address infringement (also shared by many large organizations)

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## Apache Patent Terms

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- You are licensed other's patents, but if you assert patents, those licenses terminate:
  - Each Contributor grants You a patent license that applies only to those patent claims licensable by the Contributor that are necessarily infringed by their Contribution (alone or together with the Work)
  - If You institute patent litigation against any entity, alleging that the Work (or some Contribution) infringes a patent, then any patent license granted under this License shall terminate.

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## GPL v 3.0 Patent Terms

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- Terms are similar to those in Apache License:
  - Each contributor grants you a ... patent license under the contributor's essential patent claims [*all patent claims owned or controlled by the contributor ... that would be infringed by some manner ... of making, using, or selling its contributor version*], to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.
  - You may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it

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## Ownership Issues

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- In a typical project, many contributors
  - Distribution often follows a "90/10" (80/20?) rule
- Who has the power to enforce the open source license?
- Some projects require contributor assignments or licenses

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## Licensing Approaches

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- Keep code free (as in beer and in freedom), make money off the services
- Dual licensing
  - Facilitate incorporation of code into proprietary systems
  - Can also make \$ off of services in this model
  - Leverage community contributions
  - Make sure you own the contributions!

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## Example Fact Patterns

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- Using an open source compiler
- Linking against an open source library
- Including an open source header file in a project
- Including an open source DB in your project
- Modifying the open source DB in your project

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