

University of Berne
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Open Source Licenses – an introduction

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Content Overview

- 1. What is Open Source Software?**
2. The legal nature of OSS licenses
3. Open source business models
4. Copyright vs. Copyleft
5. OSS Compliance

What is Open Source Software?

Computer programs are usually developed as source codes in a specific programming language.

Example of a subroutine (in programming language 'C'): c is calculated as the sum of $a=2$ and $b=3$:

```
int main()  
{ int a = 2; int b = 3; int c = a + b; return c; }
```

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What is Open Source Software?

Then the source code is converted by a compiler to object code. It is usually shipped, installed and executed in this form.

Example of the same subroutine as object code:

```
55 48 89 E5 C7 45 FC 02 C7 45 F8 03 8B 45 F8  
8B 55 FC 01 D0 89 45 F4 8B 45 F4 5D C3
```

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What is Open Source Software?

For analyzing a software and any **further development** of it, the source code is required.

The source code contains a lot of **know how**.

It is therefore not included in proprietary software products.

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What is Open Source Software?

There are different alternatives to proprietary software:

- **Public Domain:** renunciation of copyright, sometimes limited to object code
- **Freeware/Shareware:** free copying and distribution, no modifications
- **Open Source Software (OSS):** inclusion of source codes, free copying, distribution and modification

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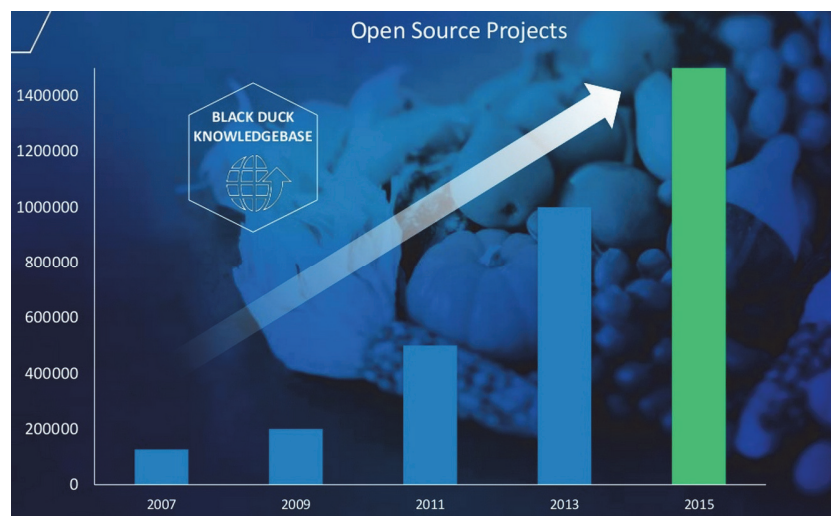
What is Open Source Software?

Open Source Definition of the OSI (overview):

- **Free use and distribution**
- **Disclosure of source codes**
- **Modifications are allowed** when they are clearly marked
- **No discrimination** of any users or types of usage
- **License and disclaimer of liability** have to be included if software is conveyed to third parties

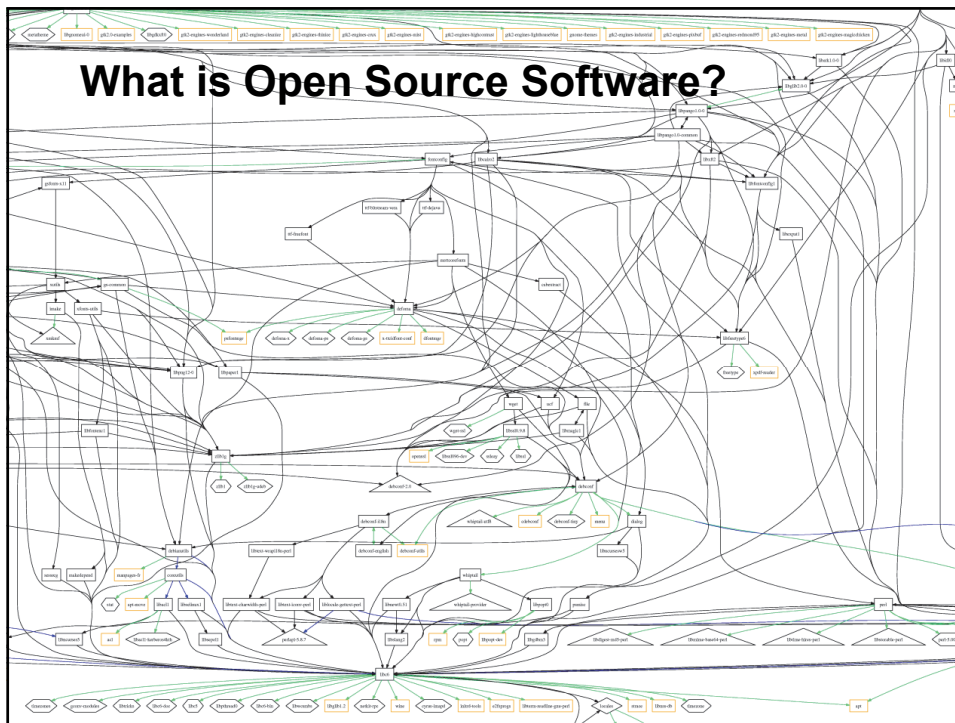
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What is Open Source Software?



Source: <https://www.blackducksoftware.com/resources/webinar/2015-future-open-source-survey-results>

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What is Open Source Software?

Modularity

- OSS uses modular structures
- **Reuse** of accomplished software components **accelerates development**
- e.g. Linux-Distribution Debian/GNU Linux comprises more than 48'582 software packs
- There is often **competition** between different Open Source components

How to find appropriate OSS support?

OSS Directory for finding

- OSS solutions
- OSS providers
- OSS references
- OSS users

In DE and FR on

www.ossdirectory.com



How to find appropriate OSS support?

Einleitung

Was ist OSS Directory?

OSS Directory ist ein Portal, welches sowohl Anbieter wie auch Nutzer von Open Source Produkten zusammenbringt. Unternehmen, welche Dienstleistungen und Produkte bezüglich der Integration von Open-Source-Software zur Verfügung stellen und Unternehmen, welche diese Dienste in Anspruch nehmen, können einbezogen. Informationen bezüglich der OSS-Referenzen auf OSS Directory werden, sobald Anbieter die OSS-Verzeichnisse auf Antrag des OSS-Portals, welche die OSS-Referenzen auf OSS Directory eintragen, in Zusammenarbeit mit unserem Anbieter (OSS-Referenzen) erstellt. Die OSS-Referenzen werden erstellt. Durchsuchbar für Benutzer, die durch das Portal suchen, ist OSS Directory sowohl in der DE als auch in der FR. OSS Directory ist ein Open Source Projekt, das von Open Source Firmen und Nutzern entwickelt und betrieben wird. OSS Directory ist ein Open Source Projekt, das von Open Source Firmen und Nutzern entwickelt und betrieben wird.

Wichtigste Begriffe

OSS Produkte

OSS Produkte sind definiert als Software-Lösungen, Frameworks oder Plattformen, welche unter einer von der Open Source Initiative anerkannten Lizenz veröffentlicht werden. Dienstleistungen wie Beratung oder Wartung gelten nicht als OSS-Produkte.

OSS Firmen

Das OSS-Firmen sind Anbieter von Dienstleistungen in Bezug auf Open Source Software (OSS-Produkte). Diese Dienstleistungen können von der Integration, Installation, Integration über die Wartung bis hin zu Schulungen und der Weiterentwicklung des Produktes reichen.

OSS Nutzer

Es gibt verschiedene Arten von OSS-Nutzern. Das können öffentliche Institutionen, Schulen, Unternehmen aus der Privatwirtschaft oder NGOs sein, welche eigenständig oder mit Hilfe einer OSS-Firma OSS-Produkte verwenden. Im OSS-Nutzerprofil sind die wichtigsten Informationen über den Nutzer, wie eine kurze Beschreibung der Geschäftstätigkeit enthalten. Verfügbar sind OSS-Nutzer über mehrere Referenzen werden diese nach den angegebenen OSS-Produkten auf dieser Plattform gelistet.

OSS Referenzen

Das OSS-Referenz ist ein Dokument, das die Nutzung einer bestimmten Open Source Software (OSS-Produkt) durch ein Unternehmen, eine öffentliche Institution, eine Schule, ein Unternehmen aus der Privatwirtschaft oder eine NGO beschreibt, welche sich an den Open Source Software-Anbieter wendet. Das ist die Beschreibung und Empfehlung, welche die Vorteile der Open Source Software hervorhebt. Das ist die Beschreibung und Empfehlung, welche die Vorteile der Open Source Software hervorhebt. Das ist die Beschreibung und Empfehlung, welche die Vorteile der Open Source Software hervorhebt.

OSS Knowhow

Das OSS-Knowhow ist eine Sammlung von Beiträgen, White Papers, Forschungsarbeiten, Präsentationsmaterialien, Forenbeiträgen, Fachartikeln, Weblogs etc., welche sich mit dem Thema Open Source Software auseinandersetzen. Das ist die Beschreibung und Empfehlung, welche die Vorteile der Open Source Software hervorhebt. Das ist die Beschreibung und Empfehlung, welche die Vorteile der Open Source Software hervorhebt. Das ist die Beschreibung und Empfehlung, welche die Vorteile der Open Source Software hervorhebt.

Source: <http://www.ossdirectory.com/fr/top-news-oss/single/article/manual-oss-directory-2015/>

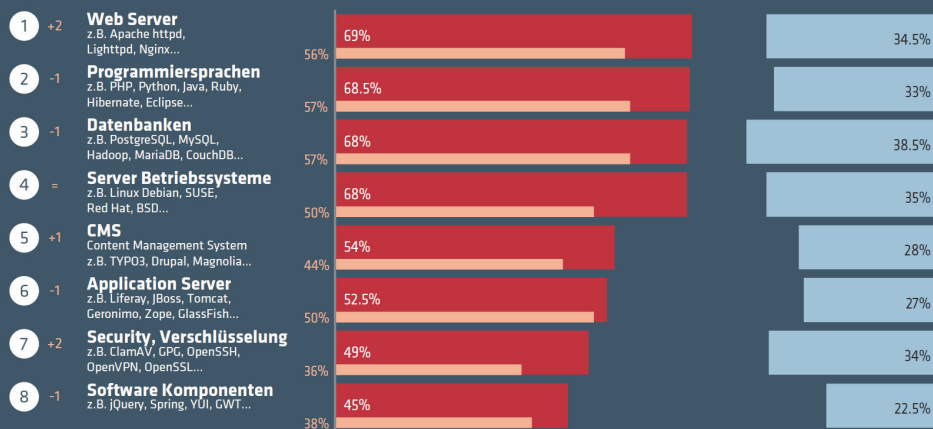
Open Source Study Switzerland 2015

- **Conducted** by Research Center for Digital Sustainability
- Supported by Federal Administration, Canton of Bern and educa.ch
- **Download** at <http://www.swissict.ch/publikationen/studien/open-source/>



Where is Open Source being used

Fig. 4 – Anwendungsgebiete und Bedarf an Dienstleistungen
von Open Source Software in Schweizer Organisationen (N=200)



Source: Open Source Studie Schweiz 2015, Matthias Stürmer and Marcus Dapp, swissICT and /ch/open

Procurement of Open Source Software

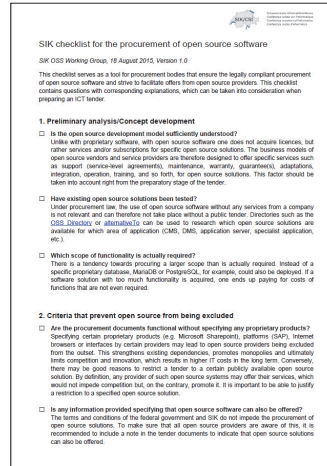
Checklist by **SIK/CSI** regarding procurement of OSS

Version 1.0 from August 2015

Input from OSS experts, procurement specialists and lawyers

Available in **German, French, and English** on

www.opensource.ch/sikchecklist



SIK checklist for the procurement of open source software

SIK OSS Working Group, 16 August 2015, Version 1.0

This checklist serves as a tool for procurement bodies that ensure the legally compliant procurement of open source software and strive to facilitate offers from open source providers. This checklist contains questions with corresponding explanations, which can be taken into consideration when preparing an ICT tender.

1. Preliminary analysis/Concept development

- Is the open source development model sufficiently understood?
Unlike with proprietary software, with open source software one does not acquire licenses, but rather services and/or subscriptions for specific open source solutions. The business models of open source vendors and service providers are therefore designed to offer specific services such as support, training-level agreements, maintenance, warranties, guarantees, adaptations, integration, operation, training, and so forth, for open source solutions. This factor should be taken into account right from the preparatory stage of the tender.
- Have existing open source solutions been tested?
Under procurement law, the use of open source software without any services from a company is not required and can therefore not take place without a public tender. Directories such as the [OSS Directory](#) or [AlternativeTo](#) can be used to research which open source solutions are available for which areas of application (CRM, ERP, application server, specialist applications, etc.).
- Which scope of functionality is actually required?
There is a tendency towards procuring a larger scope than is actually required. Instead of a specific proprietary database, MariaDB or PostgreSQL, for example, could also be deployed. If a software solution with too much functionality is acquired, one ends up paying for costs of functions that are not even required.

2. Criteria that prevent open source from being excluded

- Are the procurement documents functional without specifying any proprietary products?
Specifying certain proprietary products (e.g. Microsoft SharePoint, platforms (SAP), Internet browsers or firewalls) by certain providers may lead to open source providers being excluded from the outset. This strengthens existing dependencies, promotes monopolies and ultimately limits competition and innovation, which results in higher IT costs in the long term. Conversely, there may be good reasons to restrict a tender to a certain publicly available open source solution. In addition, any provider of such open source systems may offer their services, which would not impede competition but, on the contrary, promote it. It is important to be able to justify a restriction to a specified open source solution.
- Is any information provided specifying that open source software can also be offered?
The terms and conditions of the federal government and SIK do not impede the procurement of open source solutions. To make sure that all open source providers are aware of this, it is recommended to include a note in the tender documents to indicate that open source solutions can also be offered.

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Procurement of Open Source Software

1. Is the OSS development model sufficiently understood?

- Business model of OSS providers is different
- Differences of OSS licenses

2. Have existing OSS solutions been tested?

- Using OSS without commercial services does not need any public tender
- List of solutions: OSS Directory or AlternativeTo

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Procurement of Open Source Software

3. Are the procurement documents functional without specifying any proprietary products?

- No brands (e.g. Microsoft, SAP etc.) in specs
- OSS solutions can be demanded

4. Is the provision of the software under an open source licence predetermined in the technical specifications (TS) or is open source assessed as an award criterion (AC)?

- Benefits of OSS solutions should be evaluated

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The legal nature of OSS licenses

- **Any kind of software** may be published under OSS licenses (even software that is not developed in source code form, e.g. JAVA).
- **Other works of authorship** (e.g. documentations) may as well be published under OSS licenses, but more specific **Free Licenses** should be considered (e.g. GNU Free Documentation License, Creative Commons License).

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The legal nature of OSS licenses

OSS Licenses are a kind of **General Terms and Conditions**.

They may be combined with **additional contractual elements** (e.g. contract for work or contract for services).

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The legal nature of OSS licenses

The **right to use** is based on art. 12 paragraph 2 of the Swiss Copyright Act (URG).

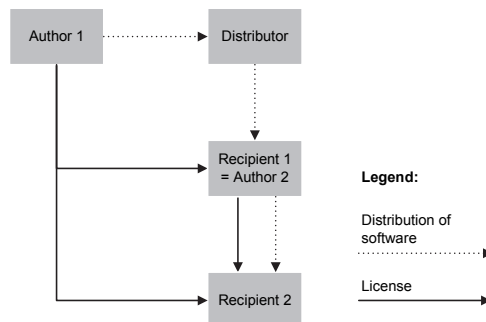
The **right to modify** is based on the OSS license.

Many OSS licenses contain **resolving conditions in case of license violations**.

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The legal nature of OSS licenses

Direct legal relationships to all authors prevent a loss of license in case the rights of an intermediary get void.



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Open source business models

Why do individuals develop OSS?

- | | |
|---------------|----------------|
| 1. Ideology | 6. Reciprocity |
| 2. Altruism | 7. Learning |
| 3. Kinship | 8. Own-use |
| 4. Fun | 9. Career |
| 5. Reputation | 10. Pay |

Source: Georg von Krogh, Stefan Haefliger, Sebastian Spaeth, and Martin W. Wallin "Carrots and Rainbows: Motivation and Social Practice in Open Source Software Development" MIS Quarterly 2012, Vol 36 Issue 2, pp. 649-676

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Open source business models

Why do companies develop OSS? (I/II)

- Development of OSS within a **contract of work or service** with remuneration
- Offering **support and maintenance** services
- Offering **additional services**
- OSS **complementing other products**

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Open source business models

Why do companies develop OSS?(II/II)

- Use of OSS for **Software as a Service**
- Offering of **distribution packs**
- Offering of **warranties**
- **Multiple licensing**: offering of additional rights of use (e.g. waiver of copyleft clause) against payment
- **Marketing purposes**

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Open source business models

OSS Challenges (I/V)

- **Warranties/maintenance:** additional services with Service Level Agreement (SLA)
- **Support:** Finding a suited provider

See OSS Directory (www.ossdirectory.ch) or contact an OSS organization (e.g. /ch/open or OSB Alliance)

Source: Open Source Studie Schweiz 2012, SwissICT und Swiss Open Systems User Group /ch/open
<http://www.swissict.ch/publikationen/studien/>

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Open source business models

OSS Challenges (II/V)

- **User acceptance:** training, motivation, focusing on power users
- **Internal know how:** develop an OSS strategy, create a point of contact/competence center, start pilot projects

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Open source business models

OSS Challenges (III/V)

- **Lacking features:** do it yourself, get in touch with the developer community, find a provider
- **Licensing questions:** read licenses carefully, consult literature (see *www.opensource.ch*), go to OSS licensing seminars, contact the issuer of the license or an expert, establish an OSS development policy

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Open source business models

OSS Challenges (IV/V)

- **Migration problems:** engage external support, contact core developers, carry out a pilot project
- **Lack of human resources:** publish job offers in OSS communities, train your own staff, engage OSS providers

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Open source business models

OSS Challenges (V/V)

- **Training:** see OSS courses at www.opensource.ch or contact OSS organization
- **Security issues:** in many cases OSS offer better and more transparent solutions

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Copyright vs. Copyleft

Copyright: acts of use falling under copyright laws (e.g. copying, modification) require consent of the copyright holder.

Copyleft: modifications have to be published under the same license (e.g. GNU GPL).

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Copyright vs. Copyleft

OSS licenses do not comprise a renunciation of copyright

License infringements may constitute a violation of copyright laws → enforcement of licenses with copyright claims

Claims may be assigned to an institution

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Copyright vs. Copyleft

Licenses with strong copyleft effect

- **GNU GPL, SIK GPL**

Licenses with attenuated copyleft effect

- **GNU LGPL, Mozilla, OSL**

Licenses without copyleft effect

- **BSD, Apache, Academic Free License**

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Copyright vs. Copyleft

License incompatibility problems:

- As GPLv3 includes additional restrictions and options, not provided in GPLv2, in principle the two versions are not compatible.
- This, however, is only an issue if the licensors of the software to be combined have explicitly prescribed the specific versions of the GPL.

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Copyright vs. Copyleft

The **Free Software Foundation** (www.fsf.org) has published a list of OSS licenses compatible with GNU GPL

Compatibility of licenses may also be verified by **Black Duck** (www.blackducksoftware.com)

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Copyright vs. Copyleft

The **copyleft effect** may be triggered in the following cases:

- OSS is **modified**
- Copyrighted elements of OSS are **copied** into other software
- OSS is **combined** in certain ways with other software
- Other software is distributed in certain ways together with **OSS**

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Copyright vs. Copyleft

The copyleft effect is only triggered when modified software is **distributed** beyond the own organization (**conveyed** to third parties).

Usage of OSS within an IT outsourcing is not considered as conveying.

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Copyright vs. Copyleft

- The wording of the license agreements is protected by copyright law as well.
- Many licenses **interdict modifications** of their wording.
- Additional **agreements** can, however, be concluded *inter partes*.
- Moreover, it is possible to apply for **individual exceptions** at the issuer of the license agreement.

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Copyright vs. Copyleft

Choice of a suitable **open source licensing model**

- Is the license **compatible with other licenses** (e.g. licenses for third party software)?
- Is it widely **accepted within the developers'** community?
- How complex is **compliance** with the license?
- Is there an **institution for the enforcement** of the license?

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Copyright vs. Copyleft

Copyleft avoidance strategies

- **Get parallel licenses from all copyright holders** (caution: developers may have transferred their copyright!). Impracticable in case of many contributors!
- **Let recipient modify the software.** Only provide instructions how software can be modified by users.

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Open Source Compliance

There is **no** such thing as a *bona fide acquisition of copyrights!*

Any use not permitted by the OSS license may constitute a copyright infringement.

The copyleft effect may also occur when copyrighted elements of OSS are used unknowingly.

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Open Source Compliance

- **Inventory:** What software is used? What building instructions, installation scripts, compilers etc. are used?
- **Release Management: documentation** of all versions of the used OSS

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Open Source Compliance

- **Which licenses** are applicable to the software components used?
- Are they all **compatible**?
- How can compatibility problems be avoided?

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Open Source Compliance

- In which form is OSS **combined** to own software or third party products and how is it **distributed**?
- For what software components a **copyleft effect** has been triggered?

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Open Source Compliance

- **Publish source codes correctly**
- **Ensure availability of all software versions** (including building instructions etc.) during required period
- **Show endeavor for compliance** and collaborate in case of an alleged infringement

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Further Links

- www.fsf.org
- www.opensource.org
- www.opensource.ch
- www.blackducksoftware.com
- www.ch-open.ch

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Questions, remarks, ideas?

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