What are the Benefits of Open Source Software

Ahmed Shuaib - F2022-084

January 5th, 2023

What is open-source software? (The Open Source Definition)

Open source software is computer software that is released under a license that allows the users to study, modify, and redistribute the source code and software.

The source code is the set of instructions for the computer to execute, usually in the form of the syntax for a human-readable programming language like C, C++, or Java.

Licenses

There are many variants of the open-source license.

- Apache License

- GPL, GNU GPL

- MIT

- BSD, FreeBSD

- MPL

They all comply with the open source definition and are accepted by many organizations including:

- Open Source Initiative

- Free Software Foundation

- Mozilla Foundation

- Linux Foundation

Types of licenses

Premissive:

Contain very few restrictions as to how software can be used, modified, and redistributed. Licenses include:

- MIT

- BSD, FreeBSD

- Apache licenses

Copyleft:

Restrictive, the software can be modified and redistributed as long as the redistributed software is free and open source (FOSS) and under the same license. Licenses include:

- GPL, GNU GPL

- AGPL, LGPL

Proprietary:

Most restrictive, usually used for commercial or proprietary software. The software cannot be modified, or redistributed, such software is not open source. Many popular software companies use such licenses:

- Adobe
- Microsoft
- Google

Public domain:

If license is not specified or the rights to the software have expired, the default public domain license is used, and such software can be used and modified by anyone.

A good example of such software is the World Wide Web.

What are the benefits of open-source?

Open-source software encourages collaboration and better organization.

Developers are more likely to:

- Add and improve ideas and features in an application.
- Develop modular applications that support plugins, scripts, etc.

As anyone is allowed to view and manipulate the code of an application:

- Bugs and exploits are found much faster and tend to be patched much faster.
- Users can help find bugs and increase the accessibility of an application.

git:

- Centralized version control
- Manage branches and forks
- Merge developed features into main branch

Consumer benefits:

- Up-to-date and latest features
- Secure
- Transparency

I can go to Linus Torvalds Linux kernel repo and see what changes have been made today, what changes were made 2 months ago, who made them and why. Here

Now imagine that this is the same base kernel that has been forked many times and is now running:

- Android phones
- TV's
- Routers/modems
- Home security systems

That is the benefit of open source.

Discussions

After talking to a few individuals about their thoughts on open-source software, It was quite evident that most people don't care much about the rules and restrictions that open-source software licenses have.

- Most people just care about the end-user experience.

Some people I talked with were interested in the benefits for consumers.

One of the students I talked to at the university cares a lot about data privacy.

I explained to him how developers can study the source code and look for any bugs, or vulnerabilities that can result in a data breach.

He mentioned to me how data privacy is important for him, as he does not want his data and credentials to ever be compromised.

He also believes our data should not be used in data algorithms to recommend us content and push advertisements at us.

I mentioned to him that open-source platforms like Mastodon follow a different approach compared to social media platforms like Twitter and Facebook, these social media platforms are self-hosted and decentralized from a single entity.

Operating systems like Ubuntu and Debian don't collect data from our computers, as we use them. Instead, these open-source operating systems rely on the developers and users to work as a community to improve the software.

Another individual I talked to wanted software to screen record tutorials for his clients.

Most of the software in this category is either paid or freeware software that has watermarks or locked features.

I recommended him OBS (Open Broadcaster Software) an open-source broadcasting software used by many content creators around the world.

He was happy to learn that the software is completely free and regularly gets updates that add new features and patches.

Later on, he mentioned to me that he found the user interface for OBS to be powerful but quite complex for his needs, he was looking for something more simple to use.

I introduced him to a fork of OBS known as Streamlabs OBS. Streamlabs has a much sleeker user interface and is a lot more simple to set up and get up and running while still using the powerful backend OBS provides.

Conclusion

Many people I talked to expressed their familiarity with using paid software like Windows, Photoshop, and Acrobat Reader. It is always nice to know that open-source software is there to fill in the gaps. Give open source software a try, you might find it a lot better.

Thank You!