What’s Up With Open Source

With Special Guest Elly

Intro

Chromium is a massive open source project. What does that mean? Is Chrome the same as Chromium? How is it different from other open source projects? Today’s special guest telling us all about it is Elly. She currently works on the Chrome Content team, which is focused on making the web more fun and interesting to use. Previously she's worked all over Chrome and Chrome OS. She's passionate about accessibility, the open web, and free and open-source software.

Open source vs Free software

Open source means that the source code for a program is available to be read by others. Chromium is both open source and free software, which means that it can be modified to make derivative versions. Open source and free software are often used interchangeably but there is a distinction between them, since a free software is not necessarily open source and likewise. The license for Chromium allows for everyone to read and look at the code, as well as make their own versions of it.

Chromium vs Chrome

Chromium is an open-source and free software web browser made by the Chromium Foundation. In contrast, Chrome is a Google-branded web browser that is built by taking Chromium and adding Google's proprietary integrations and media codes to it. Chrome is a more polished product than Chromium and is marketed as a separate web browser. The Google Chrome team is the largest contributor to the Chromium open-source project.

Content episode

Content episode is a good resource for learning about building things on top of Chromium. Content shell, in the Chromium Source tree, is a minimal demonstration browser that uses the rendering engine from Chromium wrapped in the least amount of

browser possible. It's used for testing and is a good starting point for anyone who wants to learn how to build a Chromium derivative browser.

Why is Chromium open source ?

The reason why Chromium is open source is because it benefits the web when users have better browsers. If the Chromium project comes up with some clever way of doing something, it's better for everyone if those improvements are adopted by others and ultimately even better for Google as a business. Additionally, being open source makes it easier for people outside the project to spot bugs and security flaws. Other large corporations have also released open source projects for similar reasons. Google has other open source projects such as Android and Go. Chromium offers some high quality code that can be used even outside of the browser. The Chromium Base Library is regularly used in other projects because it provides a high-quality implementation of basic things needed to be done. This has done more good in the world than it would have done if it was just part of an excellent browser. Anything in the base of Chromium is likely to get run anytime the internet is running.

What is not open source in Chrome browser?

Chrome has agreements with some companies to license and embed certain video codecs, but these cannot be extended to other Chromium-based browsers. This results in a closed source component being included in Chrome, which is not included in Chromium. Additionally, Chrome has more Google integrations and features compared to Chromium, some of which are closed source and cannot be included in Chromium. However, it is possible for Chromium-based browsers to allow users to sign in, but they need to get an API key from the sign-in team.

Open source dev vs closed source dev

The technology stack used for Google's internal projects is custom-built and tailored to meet the specific needs of Google, while Chromium uses off-the-shelf open source tools like git, GN, and ninja. The reason for this is to make Chromium accessible to contributors outside of Google and to maintain its status as an open source project. Using open source tools has other benefits, such as making it easier for new team members to get started as they are already familiar with these tools.

Open source projects may use different software that users may not be familiar with, whereas closed-source projects typically have an ecosystem of discussion and culture that is contained within the company. Culturally, open source projects like Chromium tend to have more external perspectives in the room, leading to more collaboration and discussion about changes. Additionally, because anyone can download the source repository and make changes, development in open source projects like Chromium happens on individual computers or servers, whereas development in closed-source projects like Google Search is done entirely in the cloud. Another unique aspect of Chromium is that their main git repository is public, which means that anyone on the internet can see what they are working on live. This can lead to unexpected consequences, such as news stories about experimental features that were not intended for public consumption.

Chromium email account and Slack

Many developers have chromium.org emails, which are available to members of the Chromium project, not just Googlers. These emails can signal that a person is acting as a member of the open-source project and not just as a Google employee. Some people prefer to use their chromium.org email because they support free software and open source, and it allows them to contribute as a member of the project. Using chromium.org emails can also act as a layer of insulation, providing some anonymity when making changes that might be unpopular. Also use a chromium.org email if you have one when speaking in public e.g. when you join Slack channels to discuss Chromium-related topics.

Committer and Readability

In software projects, anyone can upload code changes, but they must be reviewed by the directory owners before being committed. However, some files have "owners equal star" and can be edited freely, with a comment to ask for approval for significant changes. To prevent unreviewed changes, there is a committer system where people must submit a few CLs to show they are legitimate contributors. Once they become a committer, they can commit changes without further review. Being a committer is a sign of trust from the project members, and becoming one is a significant milestone. To become a committer, one must land enough convincing CLs, and a current committer must nominate them. There is a comment period during which people can endorse or raise objections. If there are no objections, the nominee becomes a committer. Readability at Google is a way to vouch for someone's coding skills in a particular

language. Many open source projects have similar notions of membership, such as being a committer or a code owner, and that some projects have a two-tiered model with domain experts and a steering committee. For smaller projects, there may be only one to five people with commit access to the git repo, but for larger projects, governance becomes a concern. Having barriers to entry can help prevent spam in the community.

How can people outside Google contribute?

If someone is an engineer and wants to contribute, they can find an area they are passionate about and get in touch with the team that works on that area to ask about good places to contribute. If someone is not an engineer, they can contribute by writing technical or UX documentation, contributing design work, translating documentation or user-facing interface stuff, and by testing early releases and filing bug reports. Also definitely check out Chromium Dev mailing list; it is a great resource for new developers.