

# Open Source in Real Life

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Kenneth Geisshirt



kneht



geisshirt@gmail.com



kgeisshirt

# Agenda

- About me 🕶️
- What is open source?
- How to contribute
- Distributed teams

# About me

- 25+ years as open source user, advocate and contributor
- Former co-author of *Linux - friheden til at vælge*
- Current maintainer of SegFault Handler (small node.js package)
- Casually contributing to JavaScript projects
- Paid developer working on open source MongoDB/Realm SDKs (but also closed source products)



# What is open source?

## Four basic freedoms

- You can redistribute the software and its source code
- You can redistribute modifications and derived work
- Anybody can use the software
- You can use the software for any purpose

The license has to be compliant with Open Source Definition<sup>1</sup>

Emphasis is on programmers' freedom



<sup>1</sup> <https://opensource.org/osd>

# Why open source?

- Learn a new skill (programming language, framework, ...)
- Solve a problem and share the solution
- Supporter of software freedom
- Build up a portfolio
  - Useful for students
  - And when applying for a new job



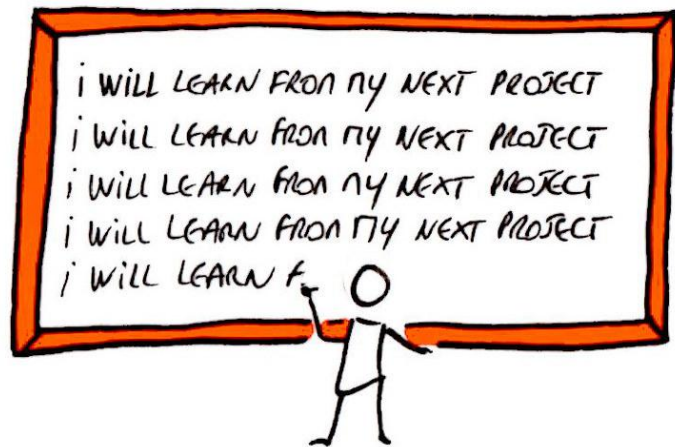
# **How to contribute**

# Pure projects

- Typically founded by an individual or small group with a goal
- Successful projects form *foundations*
- They have core team (or committers)
  - Companies hire core member to work on projects
- Often seen as a meritocracy

Examples:

- The Linux kernel (1991)
- Apache (1995)
- Postgres (1996)
- Node.js (2009)



# Casual contributions

Many contributors only submit a small patch once

Typical workflow:

- You are using an open source project
- You find a bug, and it is easy to fix
- You create a patch/pull request with the fix
- Your patch is accepted

Fixing link to Android build guide. #19450 Edit

🔒 Closed kneth wants to merge 1 commit into facebook:master from kneth:kneth/fix-link-to-building-android 🔗

Conversation 3 | Commits 1 | Checks 0 | Files changed 1 +1 -1

Changes from all commits | File filter... | Jump to... | 0 / 1 files viewed | Review changes

```
ReactAndroid/README.md
... .. @@ -1,6 +1,6 @@
1 1 # Building React Native for Android
2 2
3 3 - See the [docs on the website](https://facebook.github.io/react-native/docs/android-building-from-source.html).
4 4 + See the [docs on the website](https://facebook.github.io/react-native/docs/building-from-source.html#android).
5 5 # Running tests
6 6
```

Works with clang Apple LLVM version 10.0.0 (Xcode 10) #34 Edit

🔒 Merged jduncanator merged 1 commit into jduncanator:master from kneth:build-with-xcode-10 on 19 Nov 2018

Conversation 2 | Commits 1 | Checks 0 | Files changed 1 +2 -1

Changes from all commits | File filter... | Jump to... | 0 / 1 files viewed | Review changes

```
bindings.gyr
36 36   }],
37 37   [{"OS=="mac"}, {
38 38     'xcode_settings': {
39 39 -     'GCC_ENABLE_CPP_EXCEPTIONS': 'YES',
40 40 +     'GCC_ENABLE_CPP_EXCEPTIONS': 'YES',
41 41 +     'CLANG_CXX_LIBRARY': 'libc++'
42 42   }
43 43   }]
```



# Take over maintainership

A project become stalled when maintainer

- Lost interest in the project
- Has no time to work on the project
- Don't need the project anymore

No formal procedure for taking over

- Maintainer can ask for help
- You can gently suggest that you want to take over



Marco Verch, <https://bit.ly/2MU8APr>

# Company projects

Many reason for companies to sponsor projects:

- Drive adoption of main product
- Software is not the core product
  - Hardware
  - Services
  - Part of the infrastructure

Examples:

- React and React Native (Facebook)
- Retrofit, okhttp, etc. (Square)
- CUPS (Apple)



Brick Broadcasting, <https://bit.ly/32rmg19>

# Not only code

You can contribute to open source in other ways:

- Learn a piece of software well and answer questions (Github, Stack Overflow, etc.)
- Help a non-technical friend
- Make a video
- Write documentation
- Organize meetups
- Speak at conferences



# Licenses

Open source is all about the license

- Permissive: does not describe how to distribute
- Copyleft: requires that source code is distributed



Keith Robinson, <https://bit.ly/2J2zfZ4>

Examples:

- MIT: Permissive license with clause about retaining license
- Apache v2: Permissive license with clause about patents and trademarks
- GPL v2: Copyleft license with rights to run, study and modify
- GPL v3: Like GPL v2 with restrictive patent rights

# The dark side

Open source contributors are mostly well-educated, white males

- Bad behavior, sexism, homophobia, and racism contradict the advocated freedom rights
- Linus Torvalds took time off in 2018
- Richard Stallman forced to step down

Cloud providers and websites

- Sell software-as-a-service
- But don't contribute or sponsor



**Distributed  
teams**

# Time zones and culture

My co-workers are in Copenhagen, Sofia, Bucharest, Aarhus, Dublin, London, New York and San Francisco

People's values are the same but with subtle differences

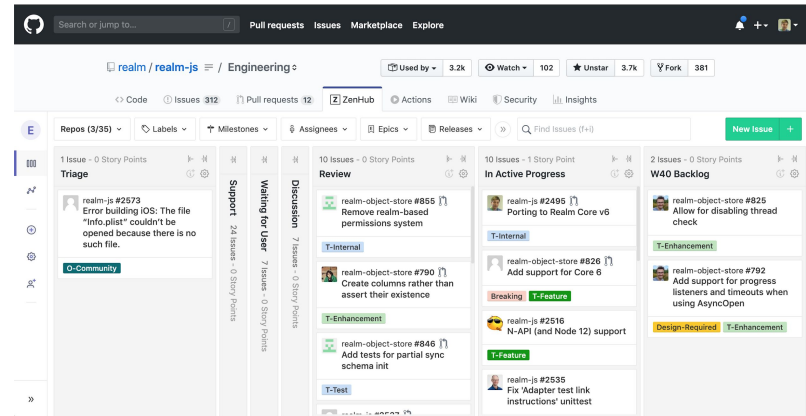
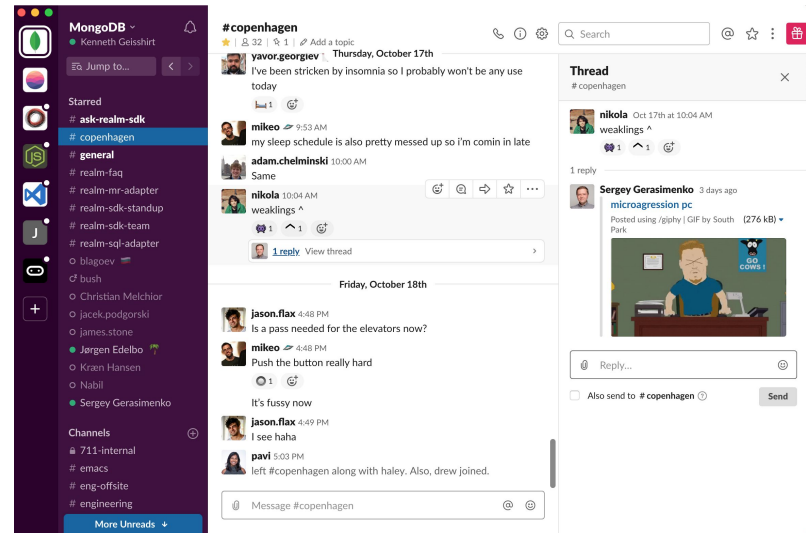
Meet regularly at the same physical location

Cake and humor are good ice-breakers



# Tools

- Version control
  - Currently git is the most popular
  - Github, Gitlab, Bitbucket or self-hosted
  - Public and private repositories
- Issue tracking and project management
  - Github issues, Jira
  - Github extensions (Zenhub, ...)
- Real-time chat
  - Slack, IRC
- Document sharing
  - Google Docs, plan text files in git
- Email is still useful
- CI to automate testing!





# Code reviews

Code reviews don't find mistakes or error

Use code reviews to get a updated view of the code base



Ed Schipul, <https://bit.ly/2o0STNq>

Tips for reviewers:

- Assume that your coworkers are smart and have good intentions
- Don't correct people but give suggestions
- Review soon so you don't block your coworkers

# Open Source is not a spectator sport



J. Albert Bowden II, <https://bit.ly/2qt0cPh>

# Learn more

- Open Source Initiative - <https://opensource.org/>
- *The Cathedral and the Bazaar*. E.S. Raymond. O'Reilly Media, 1999.
  - <http://www.catb.org/~esr/writings/cathedral-bazaar/>
- *Når nørder bliver filosofiske*. K. Geisshirt. Alt om DATA, 4/2001.
- *Hvad er fri software?* K. Geisshirt. Alt om DATA, 12/2019.
- *Open Sources: Voices from the Open Source Revolution*. O'Reilly Media, 1999.
  - <https://www.oreilly.com/openbook/opensources/book/>
- How to choose a license: <https://choosealicense.com/>