

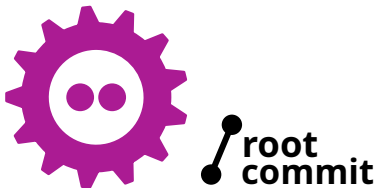
BoF — FOSS Applications for Android

FOSDEM 2025

Michael Opdenacker

Root Commit

Feb. 2, 2025



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Embedded Linux consultant and trainer

- Former founder of Bootlin
- New founder of Root Commit
- Offering embedded Linux training courses with a focus on practical activities, interactivity and learning techniques.
- Free Software enthusiast

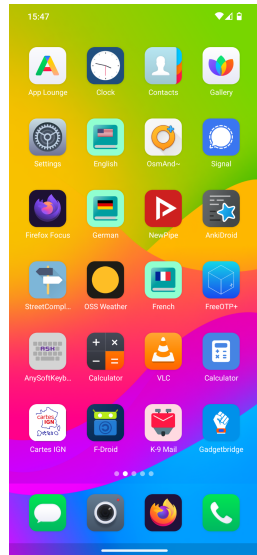


Introduction

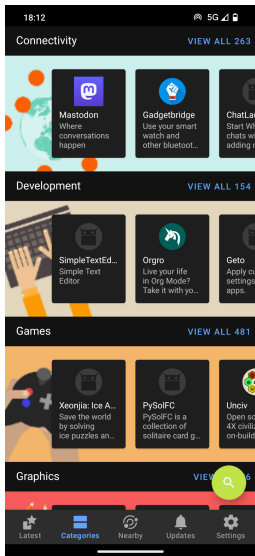
- Google play doesn't help finding such Free Software applications
- Though Android is based on Free Software components
- Google's interests are elsewhere...
- Also an opportunity to do some research, improve and rethink my own **digital hygiene**.
- Share my experience and promote

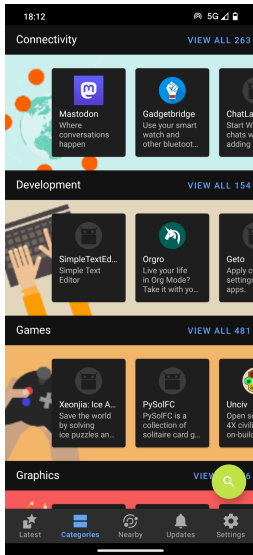
The first steps I took

- Bought a Fairphone 5, 5 years of warranty, 8 years of software updates!
- Installed Murena's /e/OS on it (also available pre-installed).
 - Google-free phone. Forces you to do without the main Google apps (Maps, etc).
 - Murena offers its own Cloud services instead of Google's.
 - You can use your own too (such as Nextcloud), as in stock Android.
 - Primary focus on privacy: block trackers, fake geolocation, fake IP (TOR)...
 - Second focus on Free Software: most apps are FOSS.

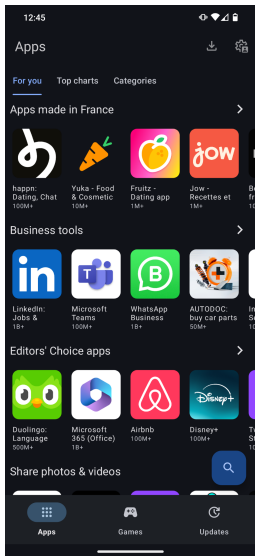


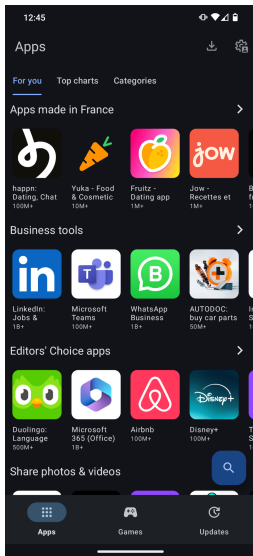
Freedom friendly application stores



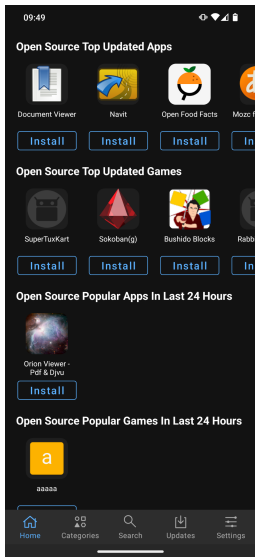


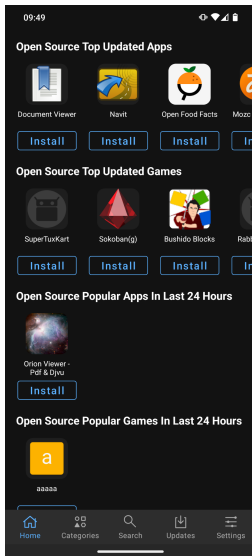
- The best catalog of FOSS applications, a great way to discover new ones.
Not available in Google Play: need to download and install it as an APK file.
- Gives you access to more apps not found on Google Play.
- Store: APK file to download and install
- <https://f-droid.org/>





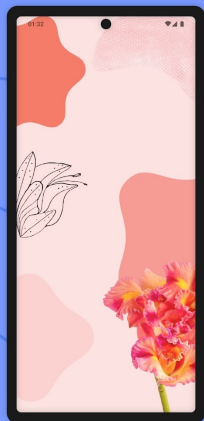
- An alternative to Google Play, working even if you don't have Google services.
- Particularly useful in a Google free phone (LineageOS...) to get some proprietary apps you can't do without (bank, etc.)
- Unlike in Google Play, downloads applications anonymously.
- Stores: F-Droid or APK file
- <https://aurorastore.org/>



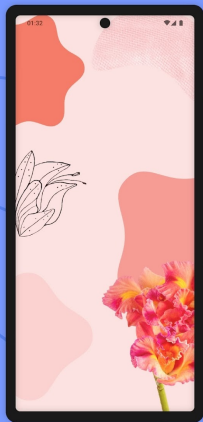


- The application store from /e/OS.
- Provides anonymous access to applications in Google Play (anonymously) and F-Droid.
- Unlike Google Play, advertises the FOSS apps
- Also shows a privacy score based on trackers.
- More convenient to update applications than in Google Play and F-Droid
- Intermittent performance or networking issues though
- Store: preinstalled on /e/OS
- https://doc.e.foundation/support-topics/app_lounge

Interface applications



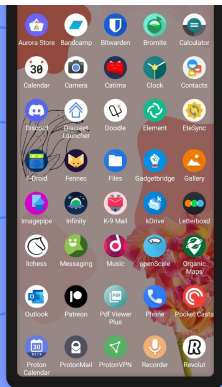
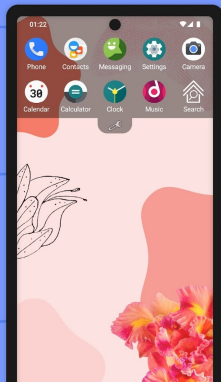
Enjoy a clean home screen,
while accessing everything in an instant!



Enjoy a clean home screen,
while accessing everything in an instant!

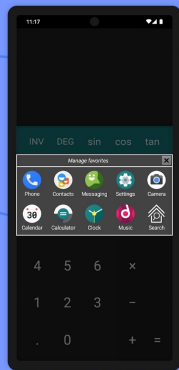
- Improvement on the standard Android Launcher
- Adds several convenient features (search, app settings, favorites...)
- Cleaner home screen
- Stores: F-Droid, Google Play
- <https://vincent-falzon.com/>

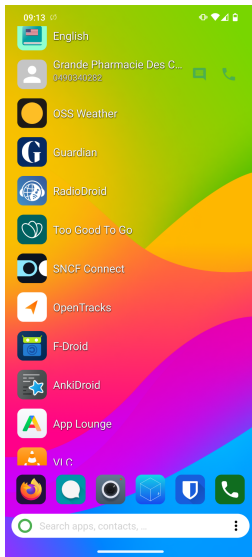
Quick access to your favorite applications...
(swipe down)



...or to any other application!
(swipe up)

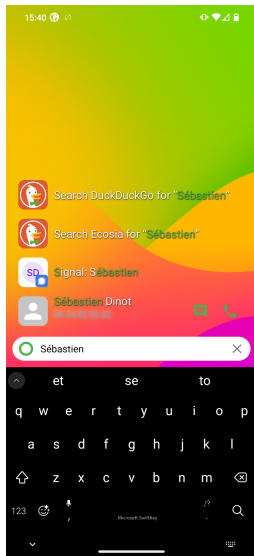
Access favorites from anywhere,
thanks to the notification!



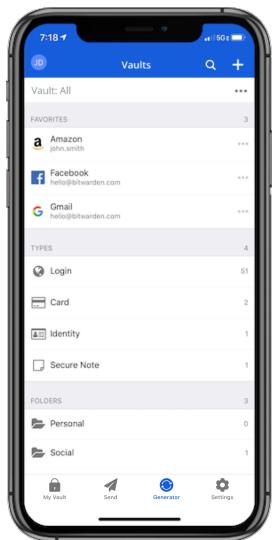


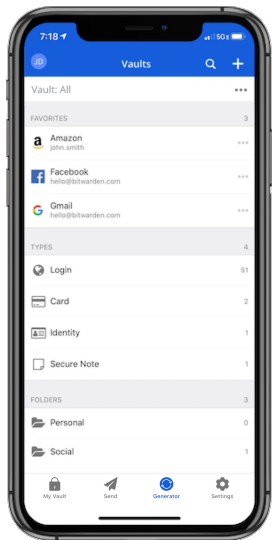


- My new Android launcher, adopted very quickly
- Unclogs your screen, shows most recent applications and actions (calls...)
- Much faster to look for applications (need to remember their names) and contacts
- Manually set favorites bar
- Stores: F-Droid, Google Play
- <https://kisslauncher.com/>

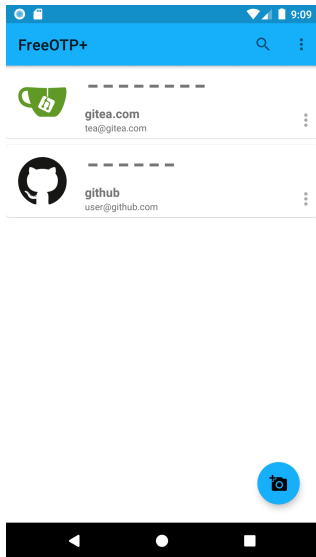


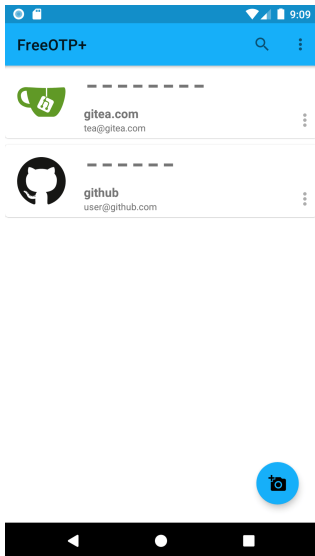
Security





- Password manager application
- Allows to have stronger passwords, and never show them on screen
- Synchronized between phone, desktop and browser extension.
- Unlock it by passphrase or fingerprint scanner.
- Can use Bitwarden's (FOSS) server for free or deploy your own.
- Encrypted data cannot be decrypted by the server.
- Additional features if a subscriber: authenticator app, attach files (10 USD/year)
- Caution: make sure you configure it to clear the clipboard quickly (10 seconds?).
Set it on the desktop app too.
- Make the password manager the "Autofill" app. More secure.
- Store: Google Play
- <https://bitwarden.com/>

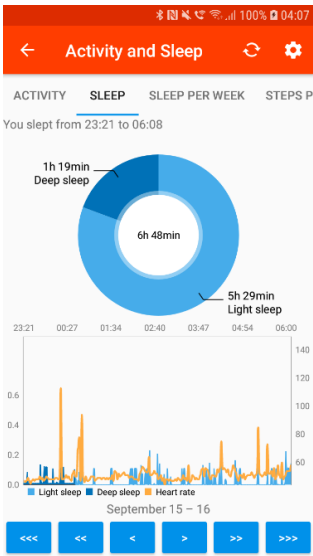




- FOSS authenticator app (Two Factor Authentication)
- Always worked as a replacement for Google's or Microsoft's.
- Must have for security (SMS vulnerable to SIM card attacks)
- Stores: F-Droid, Google Play
- <https://f-droid.org/en/packages/org.liberty.android.freeotpplus/>

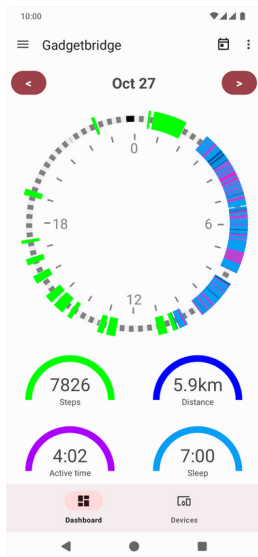
- PrivacyIDEA
 - Can be used with the PrivacyIDEA server (also FOSS) to deploy company/organization wide 2FA authentication.
 - <https://www.privacyidea.org/>
- Yubico Authenticator
 - Generate OATH codes with YubiKey NEO over NFC
 - <https://developers.yubico.com/yubioath-flutter/>

Fitness





- FOSS application to pair and manage smart watches, bands and headphones without needing the vendor application (and cloud!).
- Much better for privacy!
- Nov 2024: 150 gadgets are already well supported
- The project can help you to add support for your gadget.
- Store: F-Droid
- <https://gadgetbridge.org/>







- *Sport tracking application that completely respects your privacy*
- Can replace applications storing activity data on the cloud (Strava, Garmin...)
- Can work bluetooth sensors (heart rate...)
- Allows to make interesting places (photos, markers) while tracking
- Can be used fully off-line
- Store: F-Droid (caution: different app on Google Play)
- <https://opentracksapp.com/>



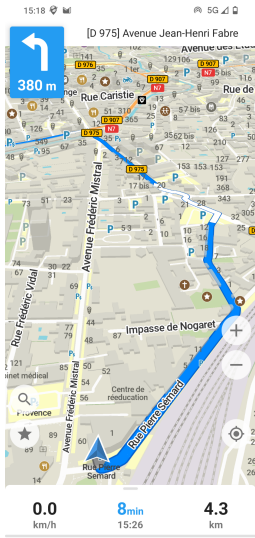
- OpenStreetMap display of your OpenTracks activities
- Works offline too (predownloaded maps)
- Tip: can't use it standalone. Call it from OpenTracks (press the map button in an activity)
- Store: F-Droid
- <https://f-droid.org/packages/de.storichp.opentracks.osmplugin/>

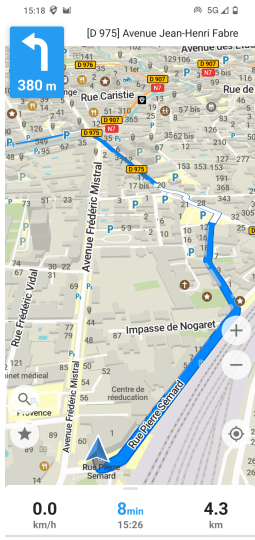
Navigation



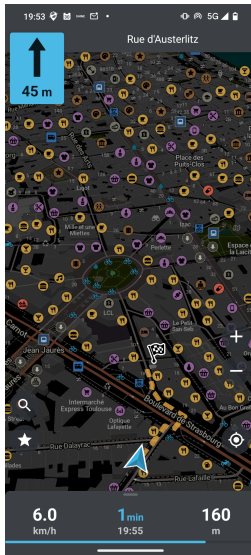
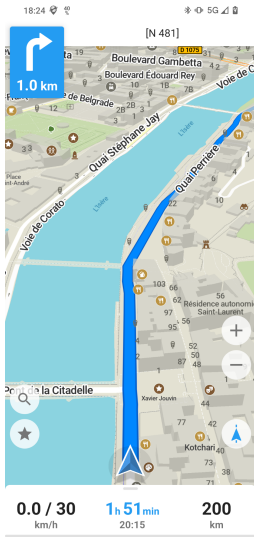


- *Offline maps and navigation*
- Used it for 4 weeks in the USA for 99% of my navigation needs (car and pedestrian)
- Offline functionality was also critical to find some trails and stay on them
- At the beginning, was overwhelmed by the amount of information on the screen. Useful to tweak settings to hide some map elements.
- Main drawback: missing live traffic information
- Several flavors:
 - OsmAnd (Google Play): free but limited to 7 map downloads
 - OsmAnd+ / Map+ (Google Play): one time purchase (39.99 EUR/USD)
 - OsmAnd~ (F-Droid): unlimited maps, F-Droid recompilation





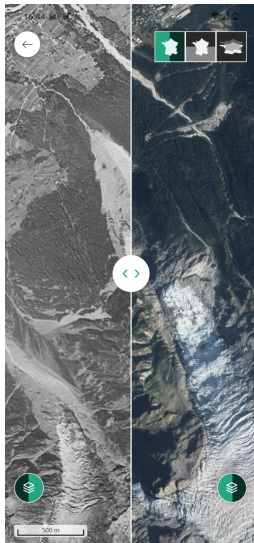
- *Offline Hike, Bike, Trails and Navigation*
- Also based on OpenStreetMap
- Found it after taking the OsmAnd learning curve.
More user friendly. Better to get started with this app.
- Also missing live traffic information
- Stores: F-Droid, Google Play
- <https://organicmaps.app/>

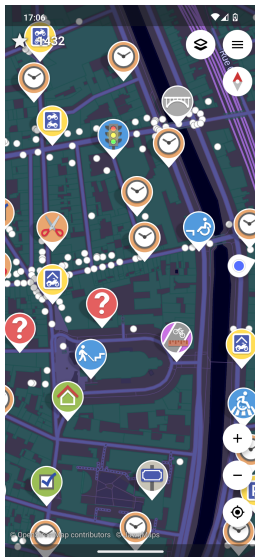


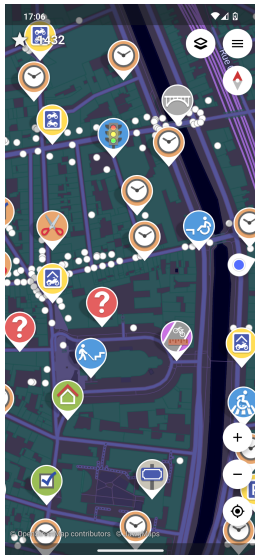




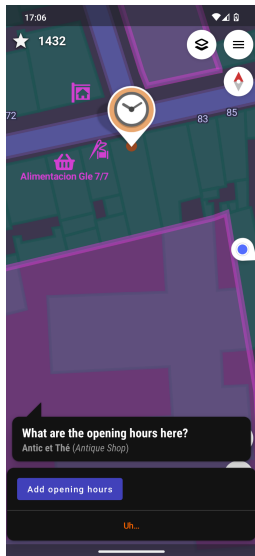
- Recently open-sourced (GPLv3), from the French Institut Géographique National
- Covers only France
- Several features: navigation, map data analysis, comparison with historic data
- Depends on non-free servers, but data are open
- Stores: F-Droid, Google Play
- <https://www.ign.fr/telechargez-application-cartographique->





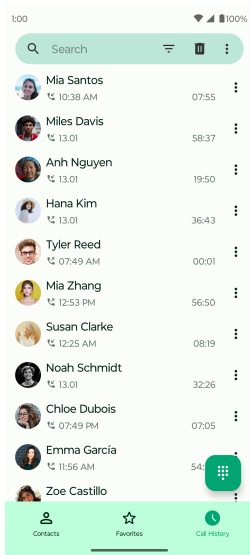


- Complete and update OpenStreetMap data around you
- Very fun to do, and even addictive
- Stores: F-Droid, Google Play
- <https://streetcomplete.app/>

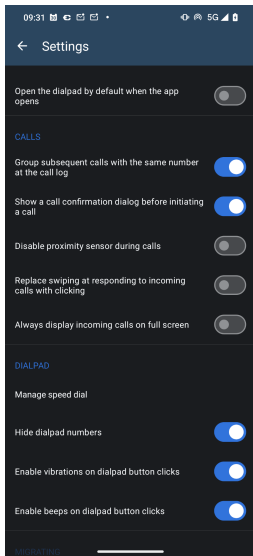


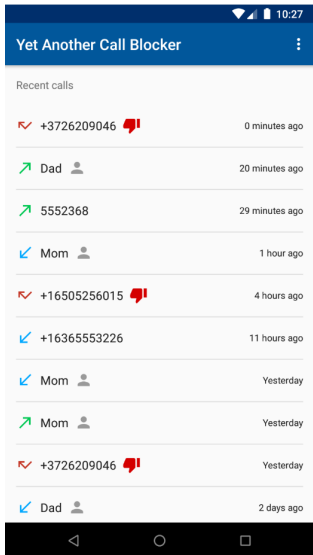
- Sometimes navigation fails to start (both OsmAnd and Organic Maps).
You have to navigate by yourself (reading the map)
- Navigating with public transportation doesn't look easy. I struggled in Vienna find a streetcar on the map! And I can't have Google Maps (degooglized phone).
- Your experience?

Communication

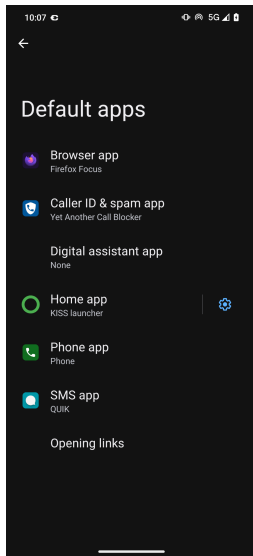
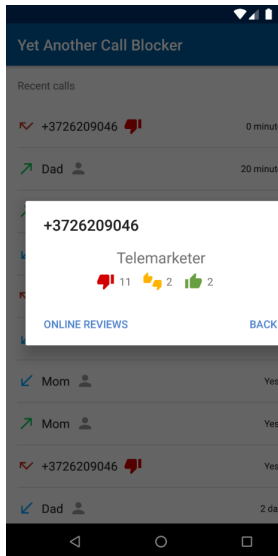


- Replacement for the stock Android app
- Offers more settings, like confirming before making a call
- Supposed to focus on privacy
- Stores: F-Droid, Google Play
- <https://www.fossify.org/>



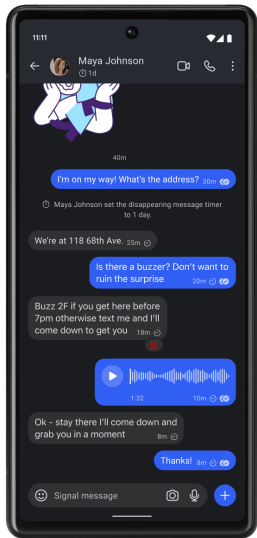


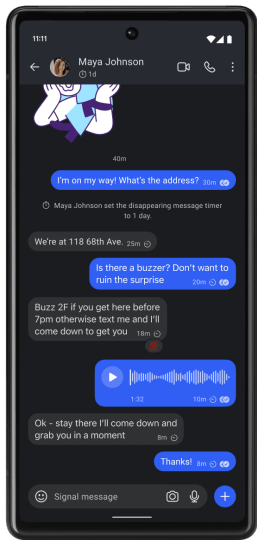
- Helps to block unwanted calls
- However, depends on a proprietary database fetched from a Gitlab repository (last updated 3 years ago!)
- Also manages local block lists
- But better than letting a proprietary app access your calls and contacts.
- Make sure you set it as default "Caller ID and spam app"
- Didn't seem to work properly the only time I got an unwanted call.
- Any better solution?
- Stores: F-Droid
- <https://gitlab.com/xynngh/YetAnotherCallBlocker>





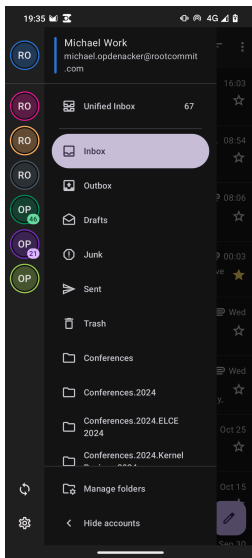
- A fork of the stock Android app? Very similar settings and features
- Adds more color to your phone though.
- Stores: F-Droid, Google Play
- <https://github.com/octoshrimpy/quik>

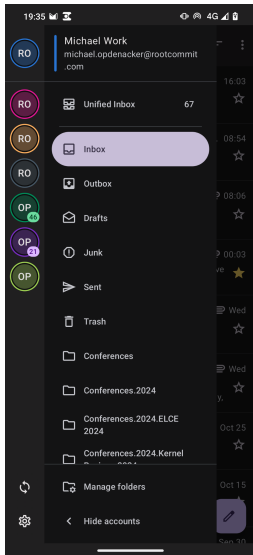




- Very well known now
- Privacy protecting and FOSS alternative to WhatsApp
- Unlike on WhatsApp, the server cannot decrypt the messages
- Unlike Telegram, both the server and clients are FOSS
- Has all the features you need: messages, calls, video
- No need to share your phone number any more
- Downside: maybe FOSS, but its owners only allow their own clients on their network. You can't run a modified version.
- Store: Google Play (only)
- <https://signal.org/>

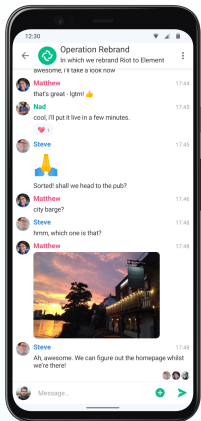




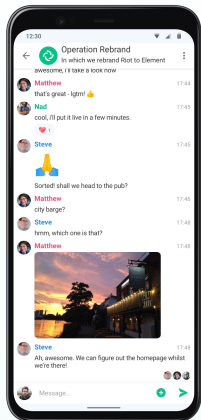


- Most popular FOSS e-mail app on Android
- Supports multiple accounts and most useful features
- Now being developed together with the new Thunderbird for mobile.
- Stores: Google Play
- <https://k9mail.app/>

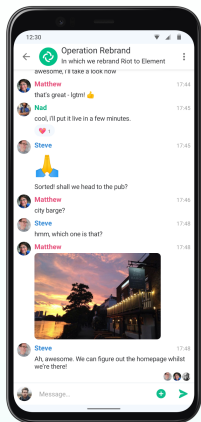
Get stuff done.
Securely.



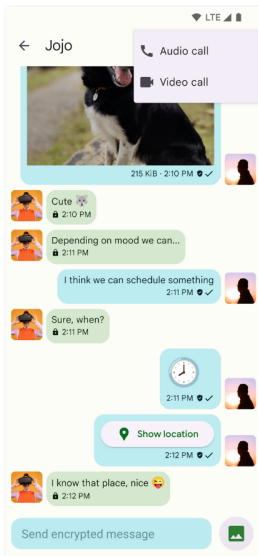
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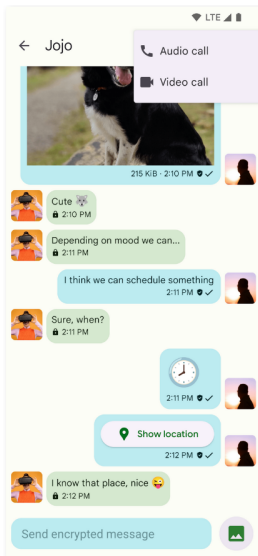


Get stuff done.
Securely.



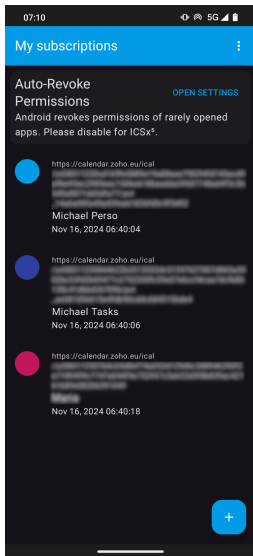
- Client for a Matrix server, primarily for messaging, but also for video calls
- Used it for 3 years without any major issue.
- Stores: F-Droid and Google Play
- <https://element.io/>



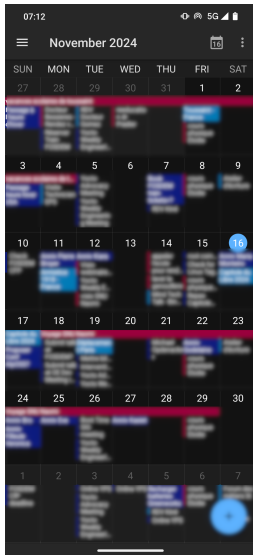


- Encrypted, easy-to-use XMPP instant messenger for your mobile device
- Relying on existing, well established protocols
- Also support audio and video calls
- Servers are interconnected. You can use the server of your choice, and no phone number is necessary.
- Claims it has a very low impact on battery life.
- Good desktop client if you are addicted: Gajim
- <https://conversations.im/>

Time management



- Application to fetch remote iCal calendars
- Store: F-Droid
- <https://f-droid.org/en/packages/at.bitfire.icsdroid/>



- You can then see the calendars in Android's stock calendar app

Web browsing

19:54 5G



promouvoir et défendre le logiciel libre

Username:

Password:

[Log in](#)

Request new password

L'association | Ressources | Nos positions | Activités | Thèmes

Wiki | Boutique | Nous aider

Promouvoir et défendre le logiciel libre

Depuis 1996, l'April est animée par une conviction : « **logiciel libre, société libre** ». Prenez le contrôle de vos libertés informatiques et suivez l'actualité du logiciel libre. Découvrez les enjeux, des outils et des moyens d'actions.

Pionnière du **logiciel libre** en France, l'April, constituée de 2629 membres (2356 personnes physiques, 273 entreprises, associations et collectivités), est depuis 1996 un acteur majeur de la **démocratisation** et de la **diffusion** du logiciel libre et des **standards ouverts** auprès du grand public, des professionnels et des institutions dans l'espace francophone. [En savoir plus....](#)



Le Lama déchaîné
L'hebdomadaire de l'April
campagne de soutien financier

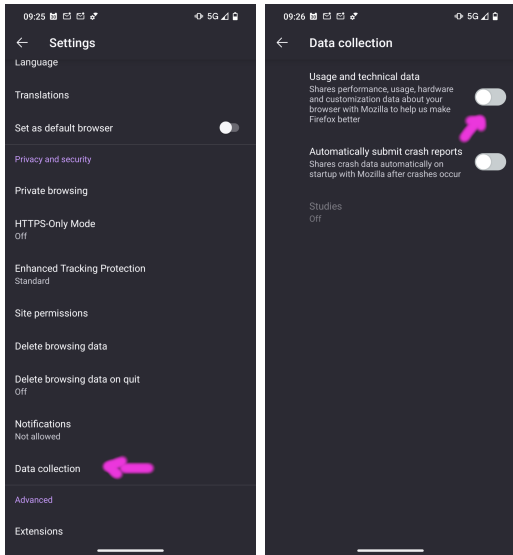
Dernières actualités

- Publication du numéro 4 du Lama Déchaîné - La gazette pour la campagne de soutien financier à l'April | 13 nov. 2024
- [Revue de presse de l'April pour la semaine 45 de](#)

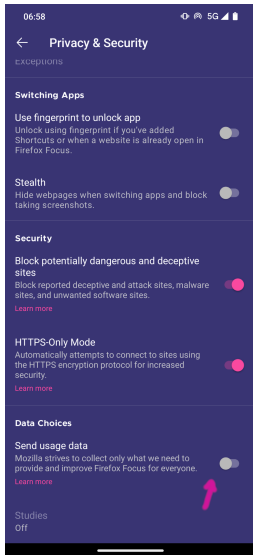
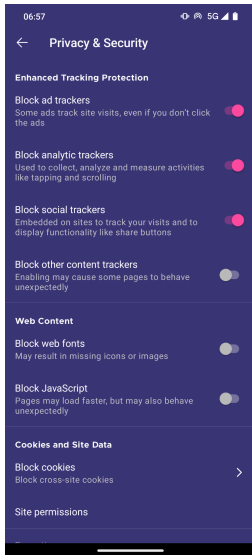
Home | april.org | 14



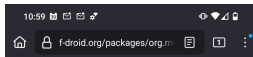
- The well known browser from Mozilla, focusing on privacy protection
- Better than Google Chrome, which also protects your data from attackers, but not from Google.
- For example, Chrome doesn't disable third party cookies (thanks Benjamin Bellamy!)
- However, Firefox contains a few proprietary bits (mostly connecting to Mozilla)
- /e/OS privacy rating: 6/10
- Store: Google Play
- `https://www.mozilla.org/en-US/firefox/`



- The main reason why Firefox is not in F-Droid (replaced by Fennec)
- By default, Firefox tracks how you use this browser, to "help improve performance and stability"
- You can disable this telemetry though.
- <https://support.mozilla.org/en-US/kb/telemetry-clientid>



- Firefox tuned for privacy control
- More tunables are also available
- You can disable telemetry too ("Send usage data")
- /e/OS privacy rating: 6/10
- Store: Google Play
- <https://www.mozilla.org/en-US/firefox/browsers/mobile/focus/>



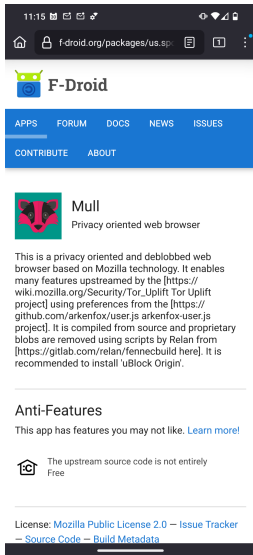
Fennec F-Droid

Browse the web

- Wide collection of addons, including ad blockers.
- Improved tracking protection.
- Private mode available in a single tap.
- Customizable start screen layout and navigation bar position (top or bottom).
- Dark theme.
- Collections of tabs.
- Synchronization of tabs, bookmarks, passwords, etc. across multiple devices via Firefox Sync.
- Picture-in-picture mode.

Fennec F-Droid is based on the latest Mozilla Firefox release. It has proprietary bits and telemetry removed, but still connects to various Mozilla services that can track users.

- F-Droid rebuild of Firefox, but with telemetry and proprietary bits removed
- But still connects to various Mozilla services that can track users
- /e/OS privacy rating: 7/10
- Store: F-Droid
- `https://f-droid.org/packages/org.mozilla.fennec_fdroid/`




11:15 f-droid.org/packages/us.sp...

F-Droid

APPS FORUM DOCS NEWS ISSUES

CONTRIBUTE ABOUT




Mull

Privacy oriented web browser

This is a privacy oriented and deobfuscated web browser based on Mozilla technology. It enables many features upstreamed by the [https://wiki.mozilla.org/Security/Tor_Uplift Tor Uplift project] using preferences from the [https://github.com/arkenfox/user.js arkenfox-user.js project]. It is compiled from source and proprietary blobs are removed using scripts by Relan from [https://gitlab.com/relan/fennecbuild here]. It is recommended to install 'uBlock Origin'.

Anti-Features

This app has features you may not like. [Learn more!](#)

 The upstream source code is not entirely Free

License: [Mozilla Public License 2.0](#) – [Issue Tracker](#) – [Source Code](#) – [Build Metadata](#)

- Another F-Droid rebuild of Firefox, with telemetry and proprietary bits removed
- Supposed to be configured with stricter privacy settings
- Can be seen as a "Focus" equivalent to Fennec.
- /e/OS privacy rating: 7/10
- Store: F-Droid
- https://f-droid.org/packages/org.mozilla.fennec_fdroid/

Multimedia

15:19

5G

steve rostedt kr2024 faster

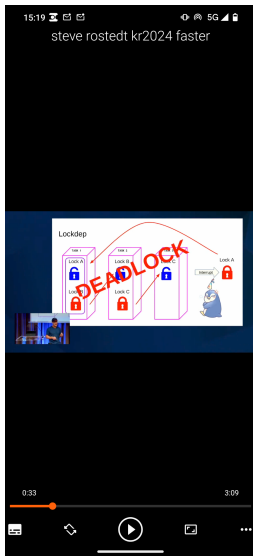
Lockdep



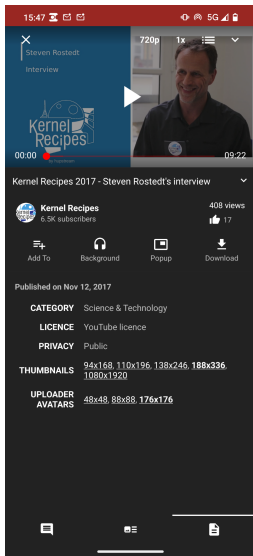
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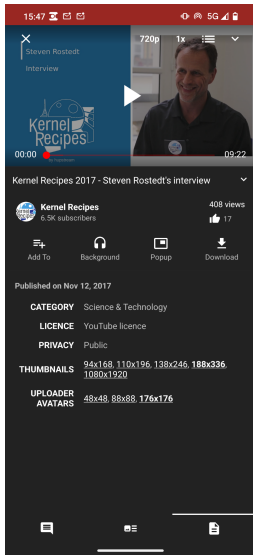
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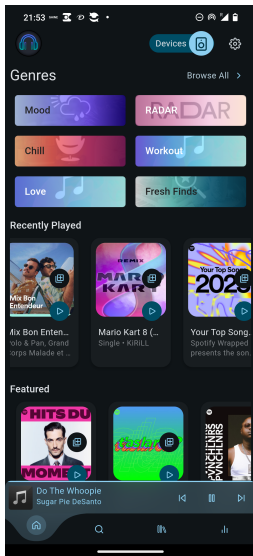


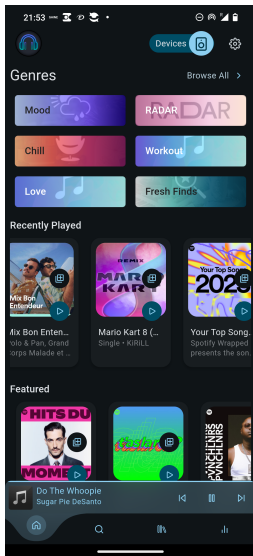
- Best known video player, supporting most codecs
- Stores: F-Droid, Google Play
- <https://www.videolan.org/vlc/download-android.html>



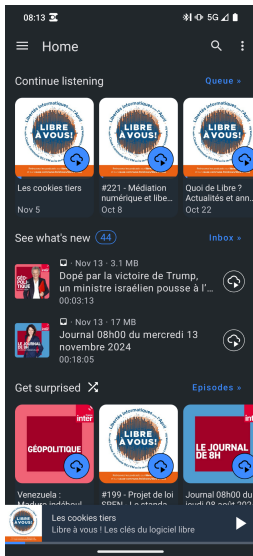


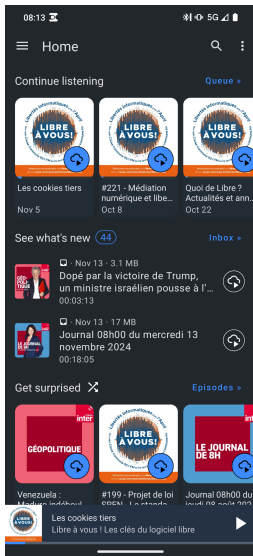
- Watch YouTube videos with an intuitive, feature-rich and privacy friendly app
- Can download videos offline, and "watch" them with the screen off
- No ads, anonymous usage of YouTube (not feeding Google's algorithm)
- Supports other platforms: PeerTube, Soundcloud, Bandcamp, media.cc.de
- Store: F-Droid (not Google Play! 📱)
- <https://newpipe.net/>



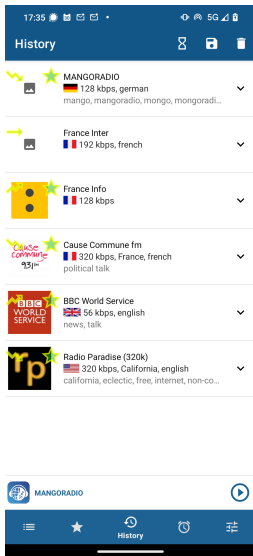


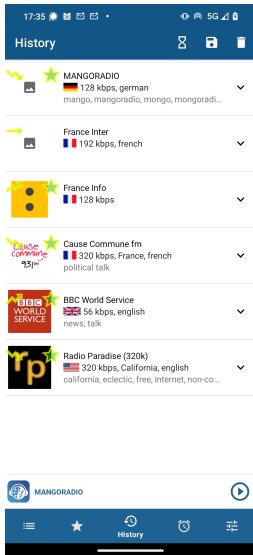
- *An Open Source Spotify client for every platform*
- Sleek interface, as pleasant as the regular proprietary client.
- If you are a Spotify subscriber like me, you still have access to your playlists and favorites.
- Also supposed to work without a Spotify Premium subscription, using Spotify's public APIs for data, and Youtube Music for audio.
- How long will it last?
- Stores: F-Droid Google Play (and also Windows, Linux, MacOS)
- <https://spotube.krtirtho.dev/>





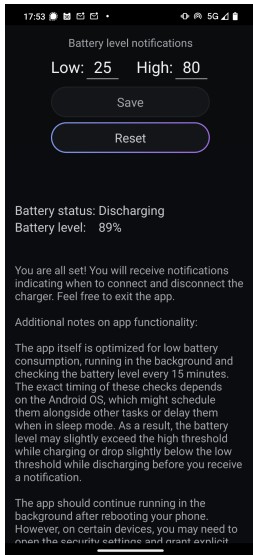
- FOSS Podcast player
- Created by volunteers without commercial interests
- Stores: F-Droid, Google Play
- <https://antennapod.org/>





- Great to listen to radios available online, and discover new ones
- Radios can also be used as an alarm
- Project making it easy to add more radios to the database
- Stores: F-Droid
- <https://f-droid.org/packages/net.programmierecke.radiodroid2/>

Device Management



- Helps to keep your battery with an optimum charge level
- In theory, better to keep Li-ion batteries between 20% and 80% charge levels
- You get a notification when you get out of the range.
- Store: F-Droid
- <https://f-droid.org/packages/biz.binarysolutions.healthybatterycharging/>

Learning



Ploutocratie

(politique) État d'une société dans laquelle les plus riches exercent plus ou moins directement le pouvoir politique ou jouissent d'une influence prépondérante.



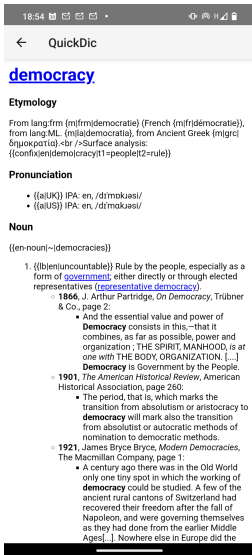
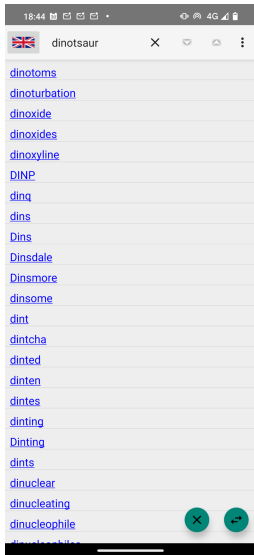


Ploutocratie

(politique) État d'une société dans laquelle les plus riches exercent plus ou moins directement le pouvoir politique ou jouissent d'une influence prépondérante.

- Flash card software using spaced repetition to remember what you learn.
- I have about 6,700 cards on all types of topics
- See my dedicated presentation.
- Loved by students and lifelong learners
- Using it both on the smartphone and desktop
- Ankiweb hosts your card decks for free (support them!)
- Stores: F-Droid, Google Play
- <https://apps.ankiweb.net/>





- Single language and bilingual dictionary from Wiktionary data
- Offline support: makes it easy to download the language packs of your choice.
- Formatting issues though. The free but proprietary dictionaries from "Livio" are much better. Their wiki to HTML engine is Apache 2 licensed though, and could be used in FOSS apps:
<https://github.com/javalc6/wikiparser-java>.
- Fortunately, provides links to Wiktionary pages (when online)
- An application needing contributors to fix issues.
- Store: F-Droid
- <https://github.com/rdoeffinger/Dictionary>

Closing thoughts

- Now using a password manager (Bitwarden) and stronger passwords. No longer typing passwords.
- Now using the KISS launcher. I can't get back!
- Podcasts: replacing Spotify by AntennaPod
- E-mail and calendar: replaced Zoho Mail by K-9 Mail and ICSx5
- Navigation: moved from Waze to OsmAnd and then Organic Maps
- Removed the Radio France app (worst number of privacy leaks). Using RadioDroid instead.
- Replaced Orange Phone app by Yet Another Call Blocker and Fossify Phone.
- Removed Garmin Connect. Now using OpenTracks, though I'm missing all the health data for the moment.
- Keeping a closer look at my battery status (trying to keep it between 20 and 80%)

- Good, usable, multilingual, predictive keyboard, that allows to leave Microsoft SwiftKey
- Reliable navigation through public transportation.
- Gadgetbridge support for my Garmin watch.
- Good application to take notes, either from Android or from the desktop (or a web app).
Currently using SimpleNote from Automattic (GPLv2 client but proprietary server).
- Good FOSS offline dictionaries based on Wiktionary
- Should elaborate on servers (like Nextcloud) for self-hosting one's data.

- To people who answered my questions and shared their favorites: Leszek Grzanska, Werner Fischer, Yann B., Sébastien Dinot, Philip-Dylan Gleonec, Jean-Martin Haran, Benoît Taine, Luca Ceresoli, Mikkel Kirkgaard Nielsen, Cornelius Kölbl, Christophe Blaess, Julien Stephan.
- To the maintainers of F-Droid and its contributors.

- mo@rootcommit.com
 - XMPP: omichael@conversations.im
 - Signal: rootcommit.01
-
- Slides available under the CC-By-SA 4.0 license
<https://rootcommit.com/pub/conferences/2025/fosdem/foss-apps-android/>
 - Sources (\LaTeX):
<https://gitlab.com/rootcommit/foss-apps-android/>