A strongly consistent index for email using git and MirageOS

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Background

UNIX Mail storage

- mbox
- maildir

What is Git?

- CAS
- Porcelain
- Plumbing

What has been built?

- *gitmaildir* — A library
- *gitmaildir_cli* — A command line client
- *gitmaildir_daemon* — A daemon

Everything built in OCaml. This is because MirageOS has some very useful libraries for what is being done:

- ocaml-git
- MrMime

Uses OCaml functors — Easy to swap out backend

Used Lwt everywhere — Useful for concurrency

What's left?

The core features are all complete, now time for testing:

- Timings of different operations
- Timings of different concurrency implementations

And time for extensions:

- Separate branches for mobile clients that strip data-heavy content and attachments from emails
- Branches per reply thread for a better insight and cleaner overview of long-running email threads
- Intelligent rollback in case of accidental deletion or modification