

# Rescuing E-mail from the Cloud

Bjarni Rúnar Einarsson  
[www.mailpile.is](http://www.mailpile.is)



# Hello, my name is Bjarni

- Bee Yarn Knee :-)
- Full time Free Software developer since 2010
  - Previously worked at Google SRE
  - Before that, Frisk Software fighting spam
- B.Sc. Comp. Sci. from Uni. Iceland, 2000
- F/LOSS advocate since Linux 1.2
- 1st time at OHM, loving it



mailpile

E-mail... a solved problem, right?



mailpile

# Not really!

- Increasingly centralized: GMail, Hotmail (Microsoft Live.com), Yahoo, ...
  - Very good, cheap service
  - Comes with spying!
- Spam filters suck
- Little innovation in the FOSS world
- Mass encryption is still a distant dream



mailpile

# Cloudy e-mail is scary

- Edward Snowden says so
- Even more proprietary lock-in than traditional closed source
- Lock-in and natural monopolies abound
- Risk of “embrace-extend-extinguish”
- Spam filters are censorship tools in disguise
- Incompatible with encryption



mailpile

What can we do about it?



# Rescuing e-mail ...

- Make decentralization easy
  - Including an easy migration path
- Make good software people want to use
- Make software FOSS folks enjoy hacking on
- Make e-mail encryption understandable
- Find business models for e-mail that don't rely on ads and data mining



mailpile

What am I doing about it?

**mailpile !**



mailpile



# What is **mailpile**?

- Free-as-in-Freedom Software
- Personal web-mail
- Built around searching/tagging, not IMAP
- A user-friendly interface to OpenPGP
- Python + HTML/CSS + Javascript
- An API to your e-mail: REST / Python / ...



# Roots: Searching

- Pondering how to make a fast search engine
- Realized that all the meta-data fits in RAM
  - Email used to be big, is now small
- So, any simple query could be answered by reading a single file: 200ms or less!
- If search is fast, everything else is easy



mailpile

# Tags, Filters

- Tags read/write search terms  
New, Inbox, Starred, Spam, ...
- Filters are stored searches that add and remove tags:  
search from:ohm2013  
filter add +Community/Ohm2013 OHM mail



# Contacts, Groups

- Custom settings for outgoing mail, depending on who the recipient is
  - Do they want to receive encrypted mail?
  - Signed?
  - Which from-address should I be using?
- Group messages together by sender
  - Family, Friends, Work, OHM, ...



mailpile

# Where is the mail?

- Wherever!  
mbox, gmvault, Maildir, IMAP, ...
- Search index & settings in `~/mailpile`
- Settings can be GPG encrypted  
(soon: also encrypt drafts / entire mailboxes)
- Search index can be one-way hashed



# Making OpenPGP easy

- OpenPGP built in from day one (via. gpg)
- Use visual cues in the UI to illustrate
  - Is a message signed? Encrypted? Trusted?
  - When forward/reply would leak encrypted content as plain-text
  - Which parts are encrypted: not the Subject!
- Be “as secure as possible” by default
- Integrate best-practice key mgmt.



# Putting it all together

- Ship sensible default tags and filters
  - New (unread) is a tag and two filters
  - Similar for Inbox, Spam, Notifications, ...
- Ship helpful default groups
  - Known senders like Paypal, banks, Twitter...?
- Friendly installation process
  - Find your mail and index it
  - Import settings, contacts from other mail clients



# Putting it all together

- Generate or detect GPG keys
- Train the spam filter
- Make an installer for Windows and Mac

Iterate until awesome!





# FAQs

- Why Python? Why not notmuch? Lucene?
  - Writing a search engine was fun
  - Minimal dependencies: easy packaging
  - Python is nice and accessible!
- Why a web-mail?
  - Massive community of talent in web UI design
  - Making e-mail part of the web is neat!



Demo... ?



mailpile

# Rescuing e-mail ?

- Make decentralization easy
  - Including an easy migration path
- Make good software people want to use
- Make software FOSS folks enjoy hacking on
- Make e-mail encryption understandable
- Find business models for e-mail that don't rely on ads and data mining



mailpile

# Business Plan 1.0

- Assemble a team - *done!*
- Fund the project using Indiegogo
  - Raise awareness
  - Build a community
  - Validate the idea
- Community members “subscribe”
  - Support the project annually with donations
  - Get a say in how the project develops



mailpile

[www.mailpile.is](http://www.mailpile.is)

<http://igg.me/at/mailpile>



mailpile