Matrix and ActivityPub for Everything

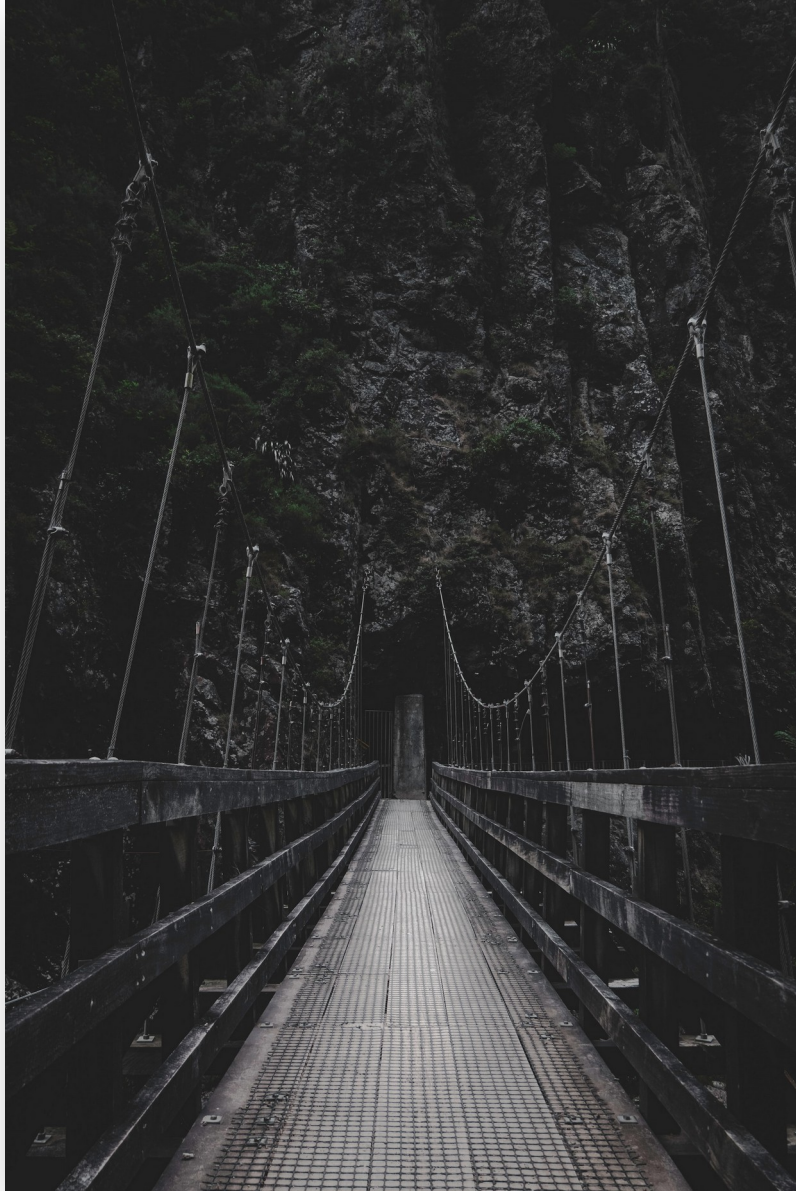
How to Konquer the world using decentralization

Carl Schwan and Tobias Fella

Matrix & ActivityPub

Decentralize, you must.

- Yoda, probably



Decentralization

What? Everyone can use any server, while also interacting with anybody on another server

Why? See Twitter & Reddit

How? ~~DIY!~~ Use Matrix or ActivityPub

Matrix & ActivityPub

Matrix

An open network for secure, decentralised communication.

End-to-end encrypted

For one-to-one and group conversations

Federated

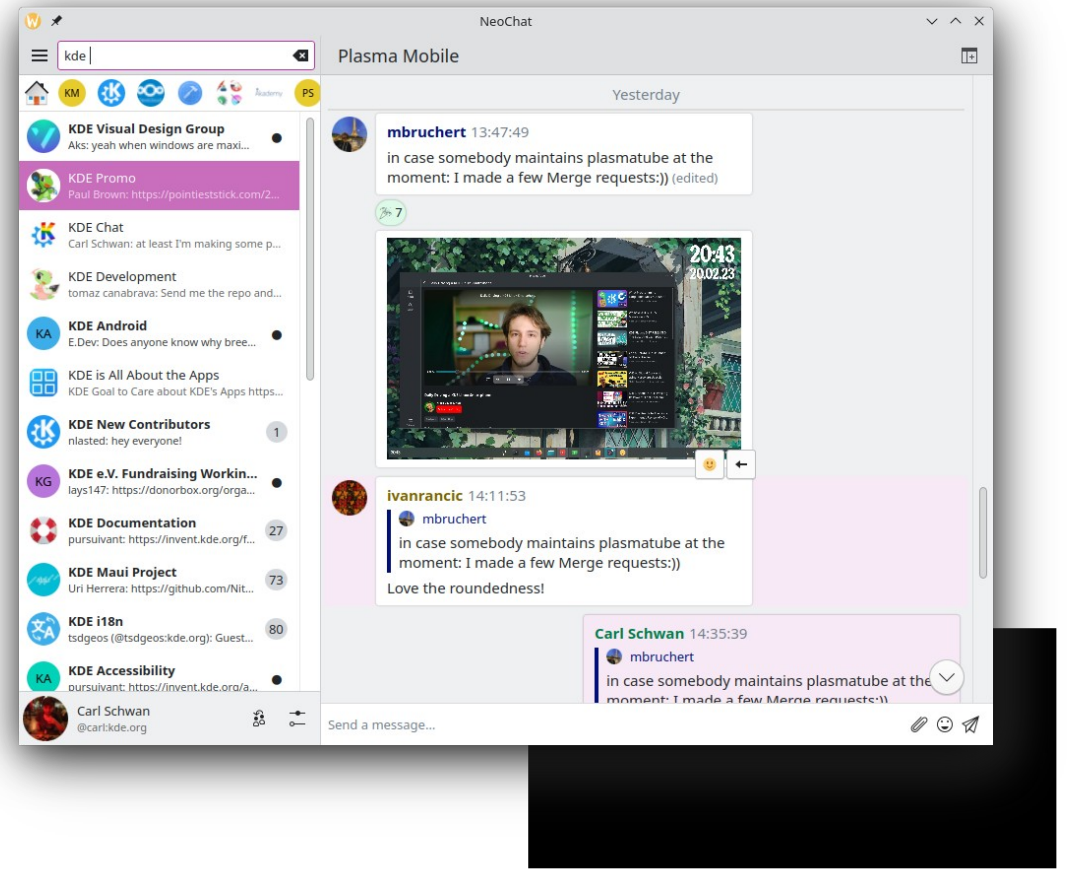
Not one server, but many communicating between each other via the Matrix protocol

Open

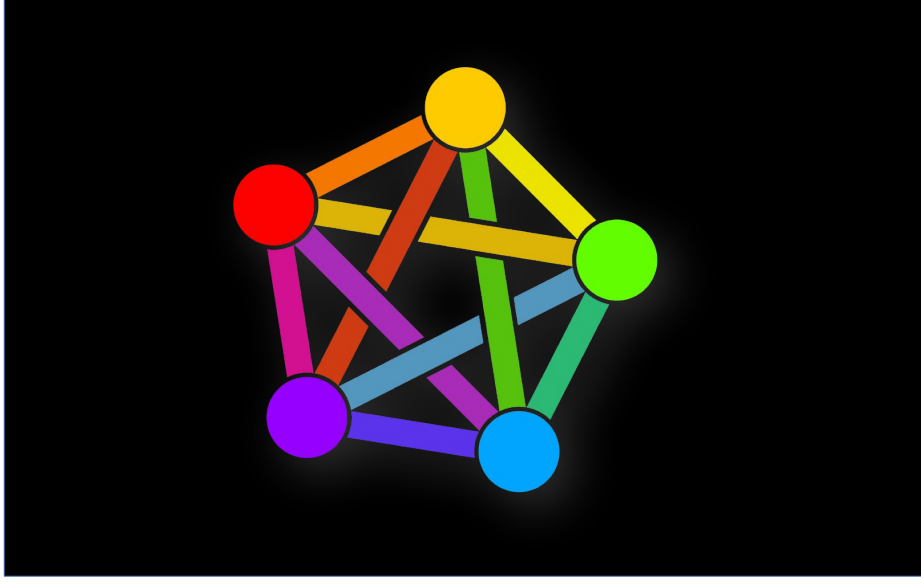
The specification is open and everyone can contribute to it

What makes Matrix interesting for us?

- KDE has:
  - a server: kde.org
  - a chat client: NeoChat
  - Matrix integration in Itinerary
- KDE contributes actively to libQuotient (Qt library for Matrix)
- Generic communication protocol with possibility to extend it with custom events. It's just JSON!
- Matches our values (privacy, Open Source, ...)



ActivityPub / Fediverse?



“The fediverse is a collection of community-owned, ad-free, decentralised, and privacy-centric social networks.”

End to end encrypted

For both one to one and group conversation

Federated

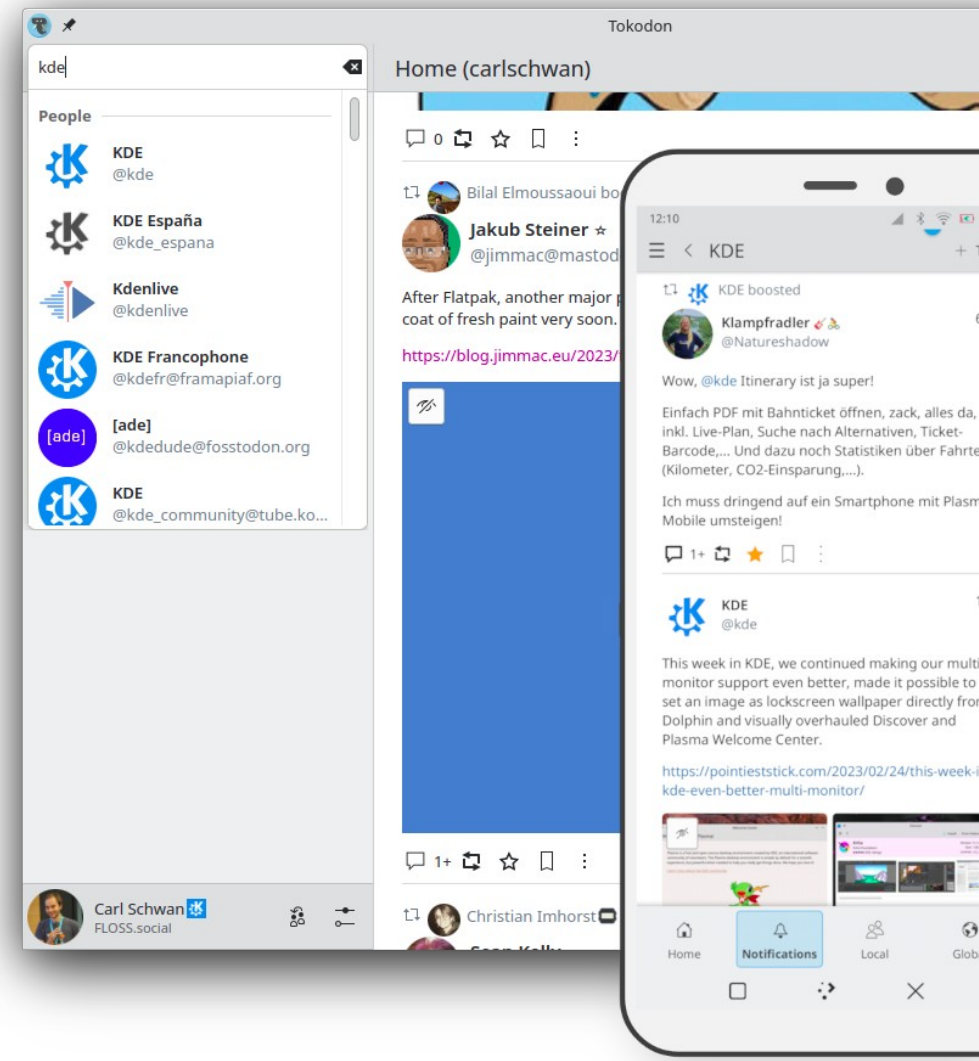
Not one server, but many communicating between each others with many implementations

Open

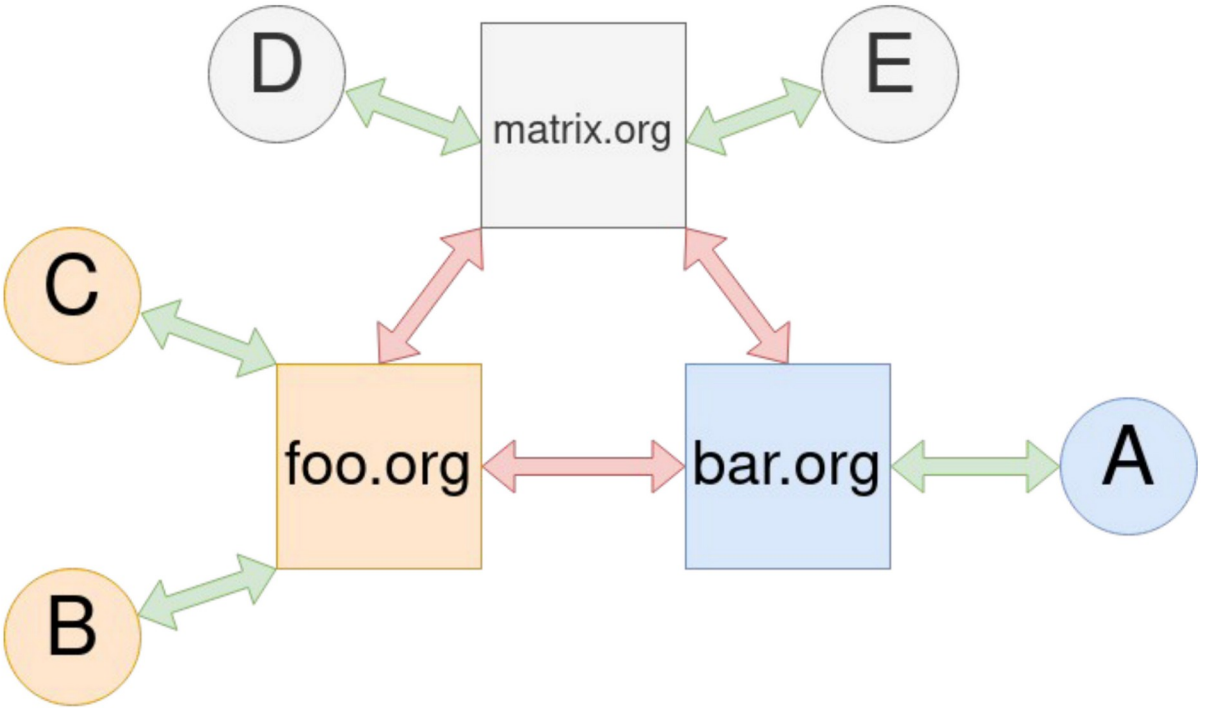
The specification is open and is called ActivityPub. It is a W3C standard

What about Mastodon and the Fediverse?

- KDE has:
  - an (unofficial) instance: kde.social
  - Two clients: Tokodon and Choqok
- Lots of different usage: Mastodon, Lemmy, Pixelfed, Funkwhale, BookWyrm, Nextcloud Social, Mobilizon, Peertube, ...
- Also matches our values (privacy, Open Source, ...)



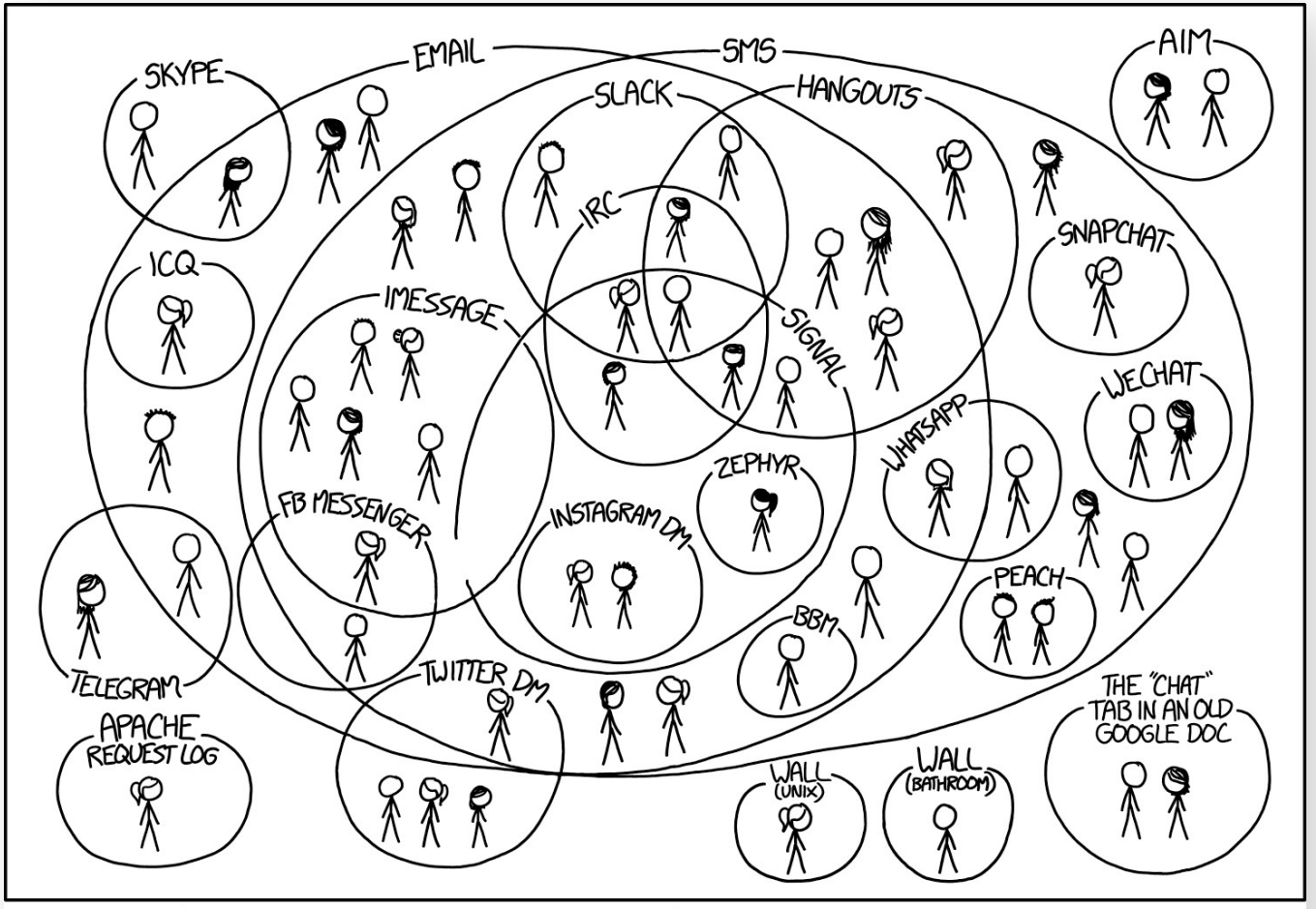
Federation - Matrix



Encryption

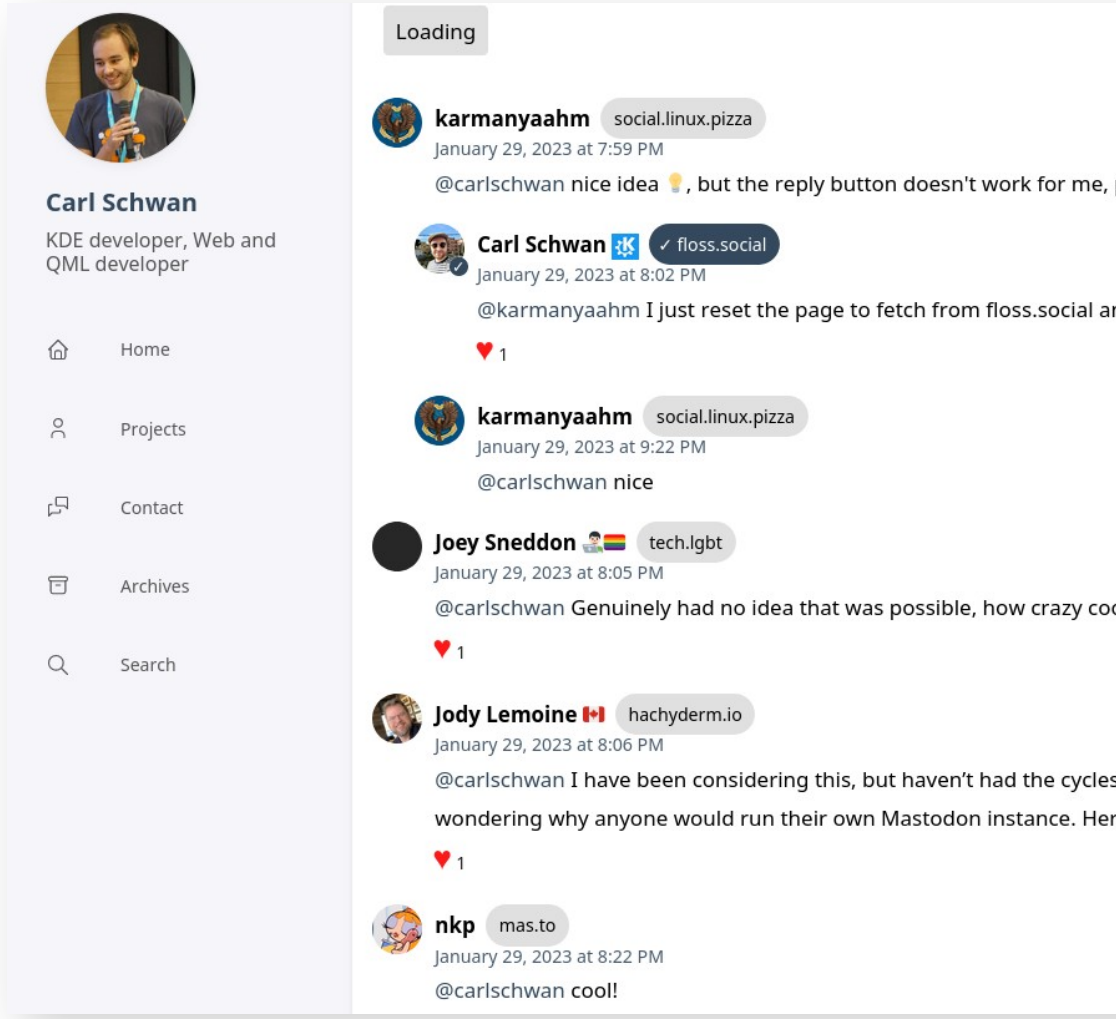
- End-to-End Encryption
- Server shouldn’t be able to read messages
- In Matrix: Olm and MegOlm, based on Double Ratchet algorithm from Signal
- In ActivityPub: Nothing*

Bridges


SKYPE
EMAIL
SMS
AIM
SLACK
HANGOUTS
IRC
SNAPCHAT
ICQ
IMESSAGE
SIGNAL
WECHAT
WHATSAPP
ZEPHYR
FB MESSENGER
INSTAGRAM DM
PEACH
BBM
TELEGRAM
TWITTER DM
THE "CHAT" TAB IN AN OLD GOOGLE DOC
APACHE REQUEST LOG
WALL (UNIX)
WALL (BATHROOM)
I HAVE A HARD TIME KEEPING TRACK OF WHICH CONTACTS USE WHICH CHAT SYSTEMS.

Existing use case

Use Mastodon as a comment platforms

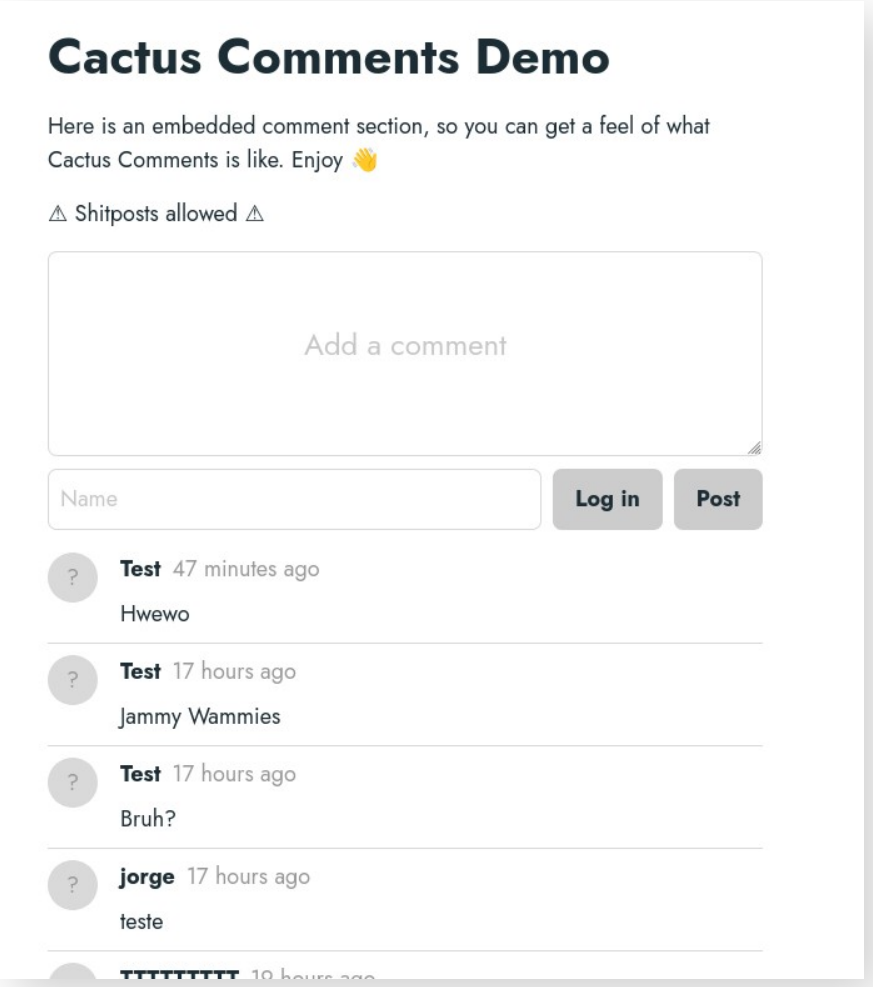


https://carlschwan.eu/2020/12/29/adding-comments-to-your-static-blog-with-mastodon/

Existing use case

Use Matrix as a comment platforms

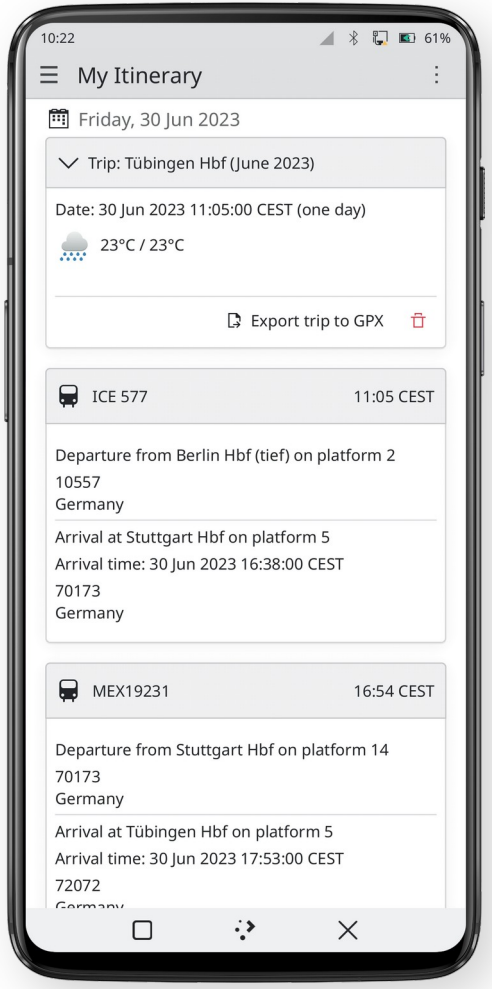
https://cactus.chat



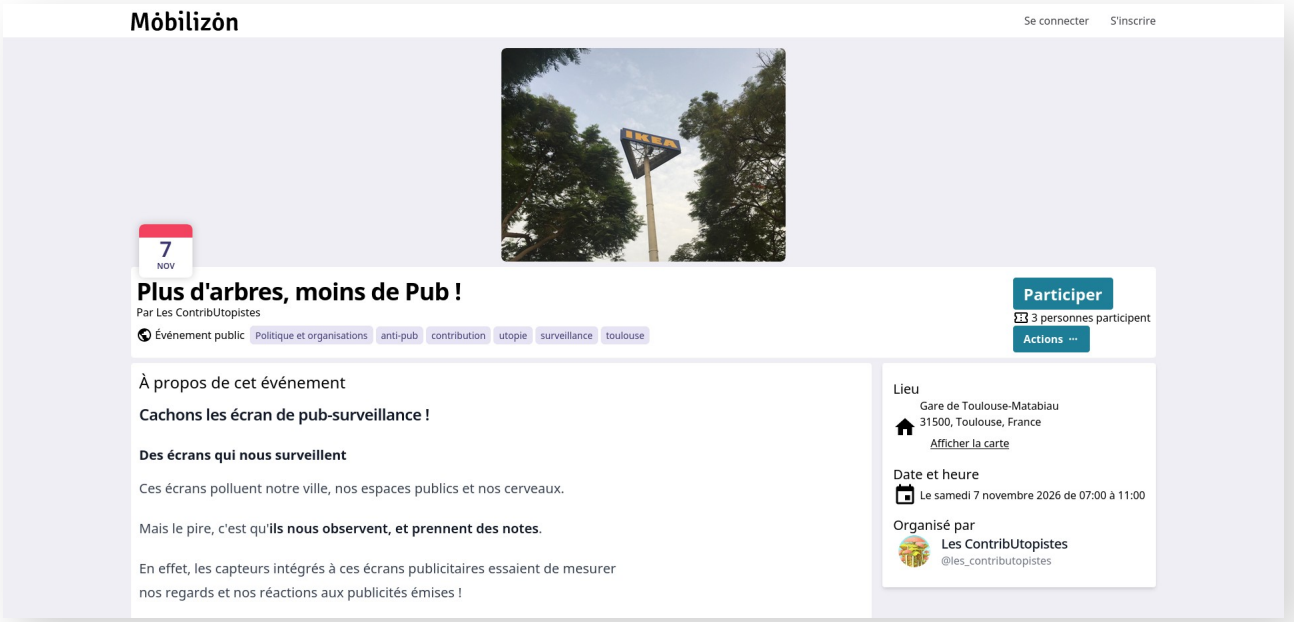
What is Itinerary?

KDE Itinerary is a digital travel assistant that protects your privacy. It makes collecting all the information about your travel inside a single application easy and straightforward.

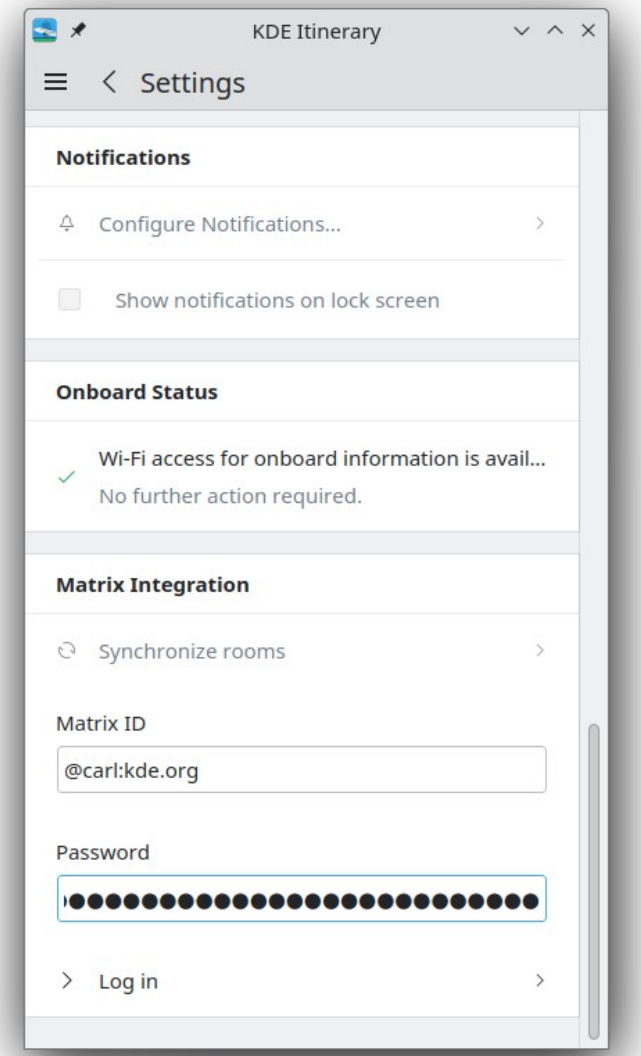
https://kde.org/for/travelers/



Import Mobilizon events in Itinerary

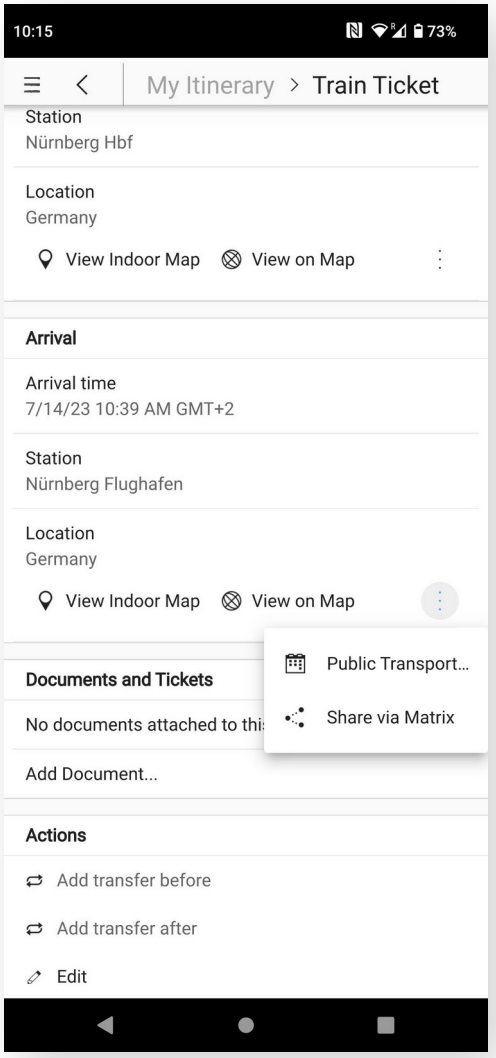


Matrix and Itinerary?!

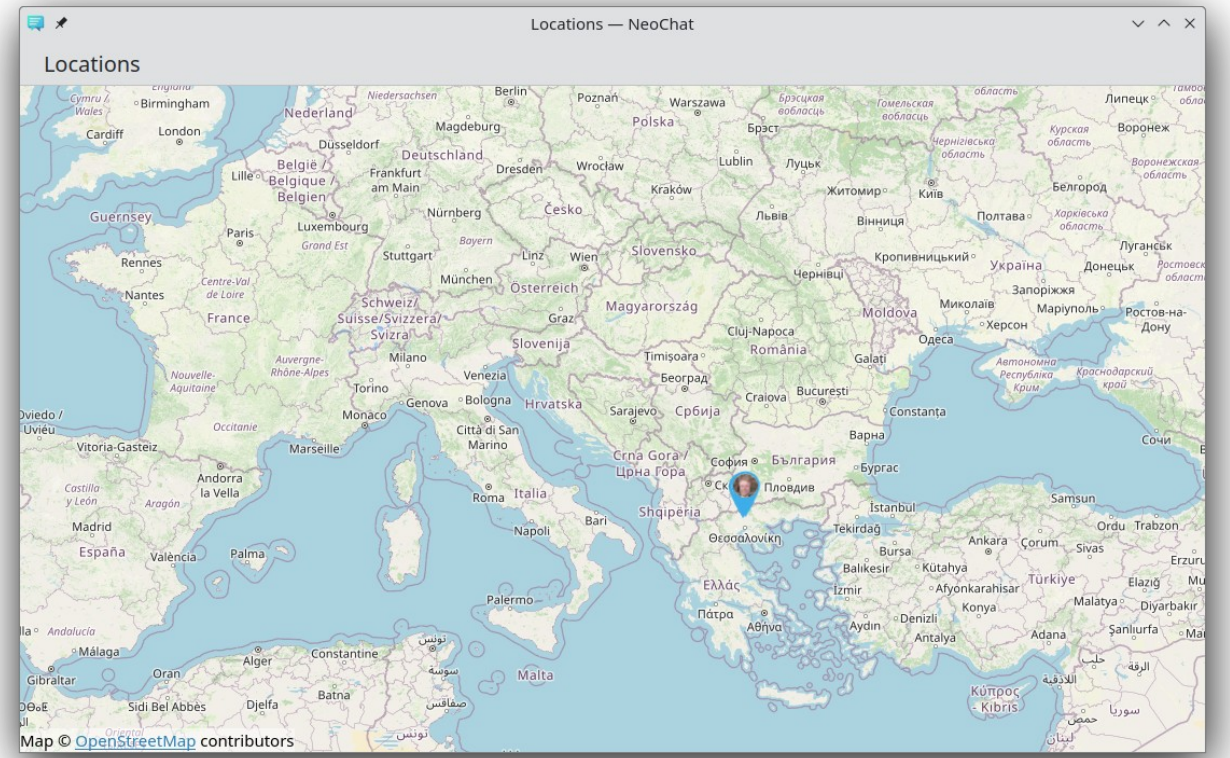


Matrix in Itinerary

Location sharing with Matrix and Itinerary



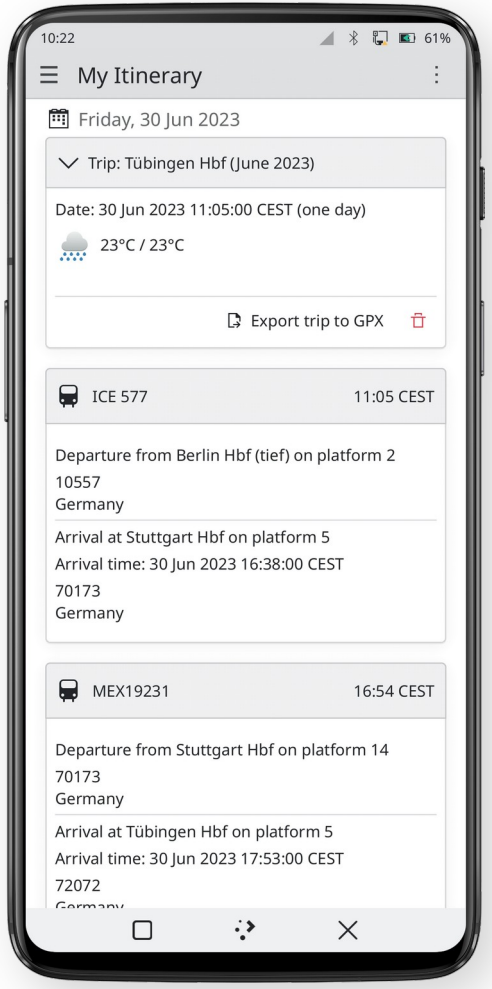
Location sharing with Matrix and Itinerary... And NeoChat



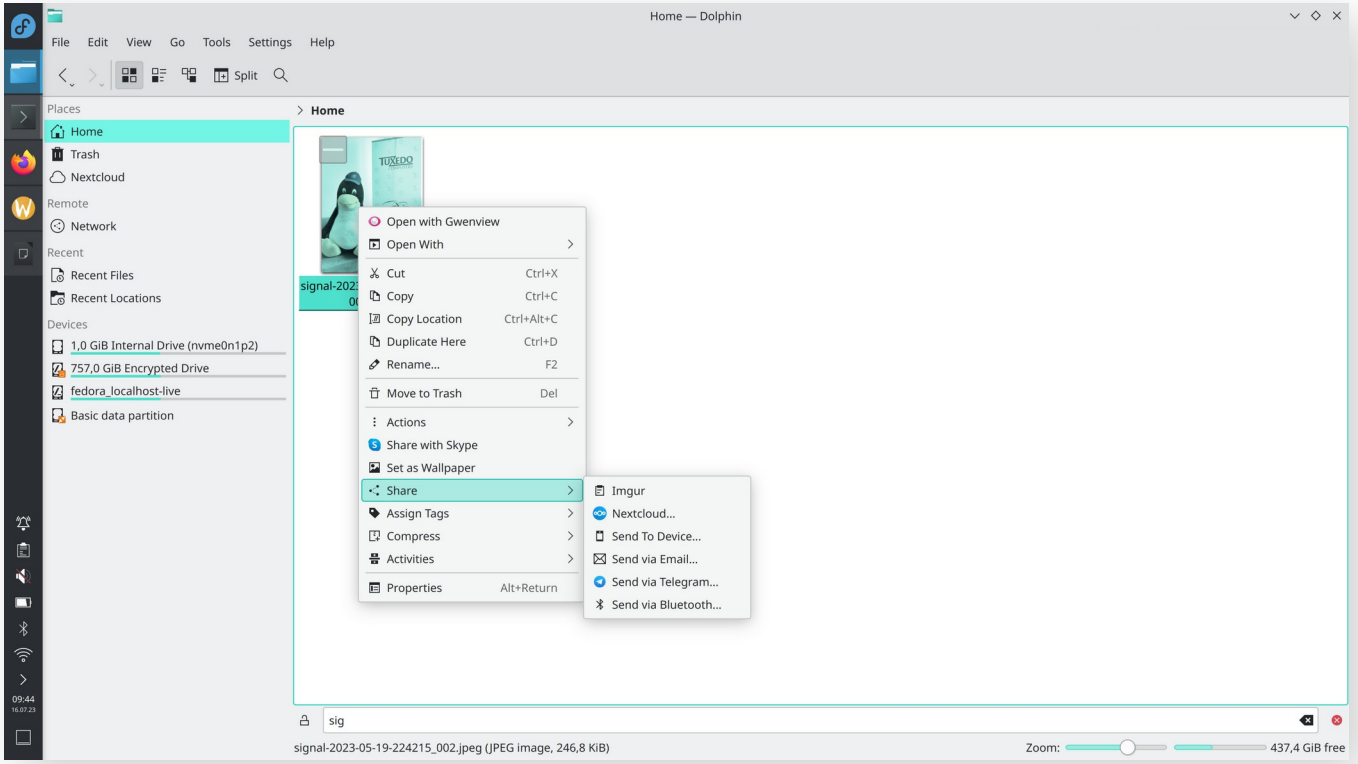
Synchronizing Itinerary data on Matrix

Wanted:

- Synchronizing (JSON) Data
- Synchronizing Files
- Across devices in different networks
- Secure

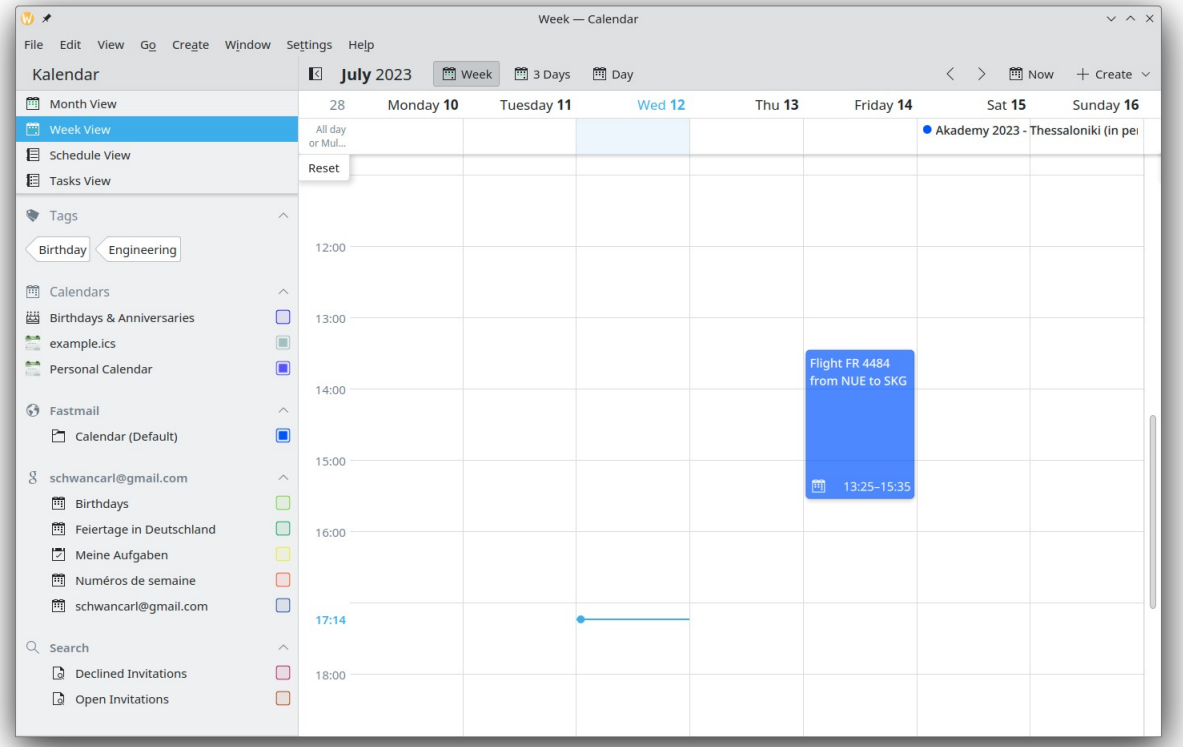


Endless Possibilities



Use Matrix as iTiP handler

iCalendar Transport-Independent Interoperability Protocol is the standard (RFC 5546) to send email invitations



Import Mobilizon events in Kalendar/KOrganizer

Similar to importing the events in Itinerary

How?

Matrix: LibQuotient, developed by Alexey, Carl, and Tobias

ActivityPub: Nothing yet, come talk to us

QUESTION TIME