

CONVERSATIONS

THE MAKING OF A NEW FEATURE

Daniel Gultsch

November 14th, 2018 @ XMPP Meetup Berlin




C mit Telefonnummer ist das letzte auf das die Welt wartet.

16:30 · 4223

09:55

Quicksy



Have some Quick Conversations

Quicksy is a spin off of the popular Jabber/XMPP client
Conversations with automatic contact discovery.

You sign up with your phone number and Quicksy will
automatically—based on the phone numbers in your address
book—suggest possible contacts to you.

By signing up you agree to our [privacy policy](#).

0:00 AGREE & CONTINUE

COPYING WHATSAPP THE RIGHT WAY

THE WALLED GARDEN WITH UNLOCKED GATES

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INTRODUCING QUICKSY

- Free as in beer
- Compatible with Jabber
- Quicksy users can discover regular Jabber users
- Jabber users can add Quicksy users

+15554435222@quicksy.im

- Regular XMPP client under the hood
 - Limited to one Quicksy account
 - Can add regular Jabber contacts

OK. BUT WHY?

TOP FIVE REASONS FOR QUICKSY

- Low barrier entry
- Nothing changes for existing Jabber users
- Not cannibalizing on Conversations and c.im revenue
- Gateway drug to Conversations
- Business model

THE QUICKSY DIRECTORY

- Quicksy users discover regular Jabber users that are listed in the Quicksy Directory
- Verify phone number and Jabber ID
- Entry fee
- Unfair but:
 - de facto standard when users pay for their friends
 - I don't have billionaire friends

SUMMARY

- Conversations is what you use; Quicksy is what you give to your friends
- Get listed on the Quicksy directory with voucher code **Datengarten**

LET'S GET TECHNICAL

GRADLE BUILD FLAVOR

```
.
├── src
│   ├── conversations
│   │   └── java
│   │       └── WelcomeActivity.java
│   ├── main
│   │   └── java
│   │       ├── ConversationsActivity.java
│   │       └── StartConversationsActivity.java
│   └── quicksy
│       └── java
│           ├── PhoneNumberActivity.java
│           └── VerificationActivity.java
```

HTTP API FOR SIGN UP

- Request SMS verification token
 - GET `/authentication/+phoneNumber`
 - Change password / create account
- POST `/password/`
- Authenticate with phone number and SMS token

HTTP API FOR SIGN UP (2)

- HTTP Error codes and HTTP Headers
- Robust and future-proof (hopefully)
- version check
- communicate system language to SMS provider
- communicate retry interval
- conflict when still logged in

XMPP API FOR SYNC

```
<iq type="get" to="api.quicksy.im">
  <phone-book ver="ZkGaTLM5frg00H+LESQYJUZXK1FA="
    xmlns="im.quicksy.synchronization:0">
    <entry number="+442079460100"/>
    <entry number="+442079460200"/>
    <entry number="+442079460300"/>
    <entry number="+442079460500"/>
    <entry number="+4915146788794"/>
  </phone-book>
</iq>
```

XMPP API FOR SYNC (2)

```
<iq type="result" from="api.quicksy.im" to="...">
  <phone-book xmlns="im.quicksy.synchronization:0">
    <entry number="+442079460100">
      <jid>+442079460100@quicksy.im</jid>
    </entry>
    <entry number="+442079460200">
      <jid>+442079460200@quicksy.im</jid>
    </entry>
    <entry number="+4915146788794">
      <jid>+4915146788794@quicksy.im</jid>
      <jid>derdaniel@xmpp.zone</jid>
    </entry>
  </phone-book>
</iq>
```

XMPP API FOR SYNC (3)

```
<!--no changes determined by hash in ver='' attribute -->  
<iq type="result" from="api.quicksy.im" />
```

TO ROSTER OR NOT TO ROSTER

BENEFITS OF NOT USING ROSTER

- Less meta data
- Easier sync; delete from phone book and contact is gone
- Avoid the rabbit hole of mutual presence subscription
- Unnecessary to a certain degree

BUT IT IS NOT COMPLETE UNNECESSARY...

- Avatar, OMEMO
- 'Trusted' (automatically accept file transfers, send read markers)

OR IS IT?

- Trust can be mapped to 'is in Android Address book'
- PEP nodes can be made public and subscribed to
- **BUT:** reliably (un)subscribe to *people I'm in conversation with* is hard
 - Open / closed can happen when offline
 - No way to get current subscriptions
 - Multi clients a mess

THE INBOX XEP™

- Synchronize list of open conversations
- May or may not cover group chats

THE ~~INBOX~~ OPEN CONVERSATIONS ON STEROIDS XEP™

- Server will automatically
- subscribe your full jid to the PEP nodes of the entities in your open conversations list
- unsubscribe you when your full jid goes offline
- Based on the nodes you are interested in (caps hash)
- Minus contacts with mutual presence sub

OPEN QUESTIONS REGARDING THE » LIST OF OPEN CONVERSATIONS ON STEROIDS XEP™ «

- Requires server support
- Yeah, but everything does, get over it
- Only on the user's server
- How to deal with MUC members?
 - Invisible entries?
 - Not at all? MIX to the rescue

THE QUICK(SY) SOLUTION

- Ask for presence subs when sending the first message
- At least we have not all meta (full android address book) data on the server
- Receiver gets the 'add back' snackbar

FAQ

WHY NOT HASH THE PHONE NUMBERS?

- Hashes don't work; limited number of valid phone numbers
- Makes adding a Quicksy user hard

WHY NOT MAINTAIN A PUBLIC LIST OF PHONE NUMBERS?

- Users don't want the look up to be reversible
- Hashes don't work
- A central entity needs to do the SMS verification

WHY NOT MAKE IT PUBLICLY SEARCHABLE?

- Only Quicksy users can discover contacts
- We don't want anyone to scrape the entire list
- Verified Quicksy users can be rate limited

WHY ISN'T ENTERING YOUR PHONE NUMBER FREE

- Because SMS verification is surprisingly expensive
- Cross financing the server

IS IT OPEN SOURCE?

- The client is open source (obviously)
- The server is not
- Conversations suffers from frequent GPL violations
- Having access to the Quicksy server is the missing piece they need
- Potential revenue stream (sustainability) from selling the Quicksy Server
- Didn't work with the Conversations App Server

QUESTIONS?

<https://quicksy.im>

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