

Making Custom Profiles in Matrix More Useful

Andrew Morgan (Senior Backend Engineer, SCT member)

Aaron Thornburgh (Principal Product Designer)

@Element

Custom Profiles?

Extra user-scoped information.

- Examples: user timezone, user status, job title, ...
- Typically presented when you click on a user's profile
- Part of the Matrix spec (introduced in MSC4133, v1.16)

< Profile ×



Half-Shot

 Building neat little magic tricks ←

Offline

13:39 GMT+1 ←

@Half-Shot:half-shot.uk 

[Verify User](#)

 Send message

 Jump to read receipt

 Share profile

 Mention

× Remove messages

⊘ Ignore

Extra user-scoped information.

- Examples: user timezone, user status, job title, ...
- Typically presented when you click on a user's profile
- Part of the Matrix spec (introduced in MSC4133, v1.16)

But this feature had a big limitation...

< Profile ×



Half-Shot

 Building neat little magic tricks ←

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13:39 GMT+1

@Half-Shot:half-shot.uk 

[Verify User](#)

 Send message

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 Share profile

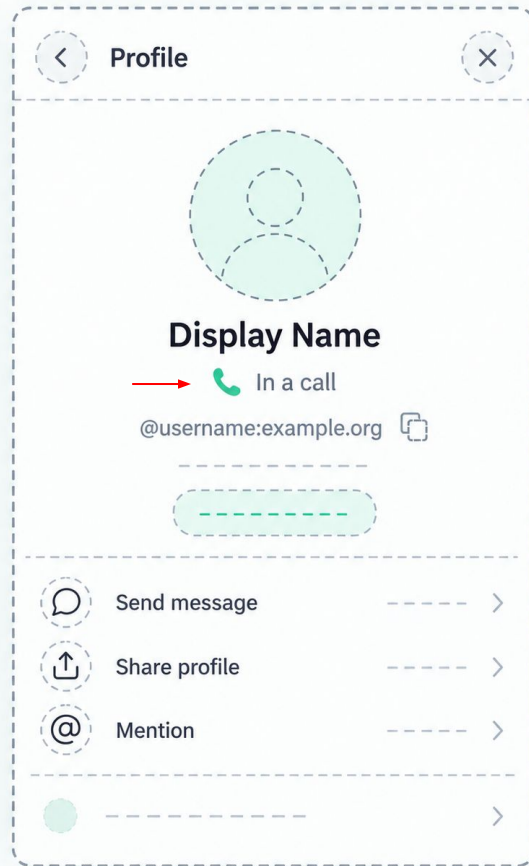
 Mention

 Remove messages

 Ignore

History.

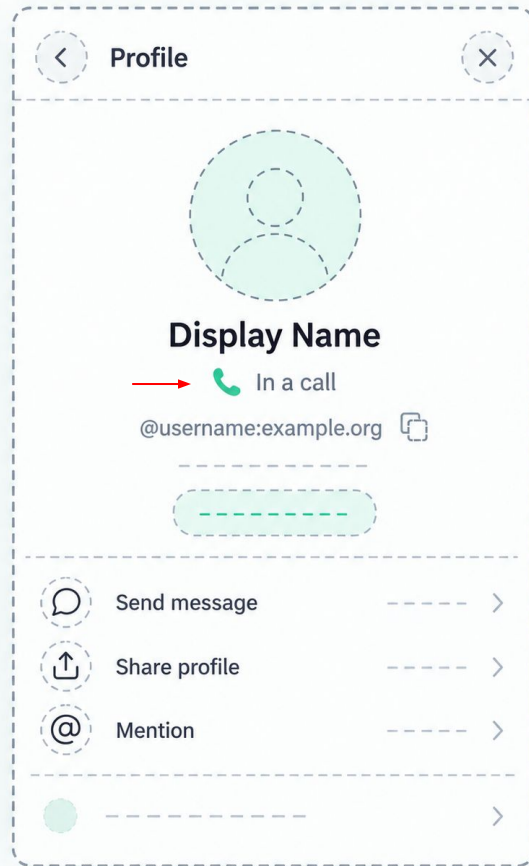
- BWI approached us in early 2025 and offered to fund a “user status” feature in Synapse and Element clients.
- Show a user’s status next to their avatar/display name in the timeline, members list, and elsewhere.
- Should include some text and an emoji, with presets.
- Automatically update when joining and leaving a call.



History.

Goal:

*know whether a person is available or not
before messaging or calling them*



What are we trying to build?

- *Not a user bio.*

What are we trying to build?

- *Not* a user bio.
- But an indicator of whether someone is available.

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- *Not* a live status of whether they're currently moving their mouse or not.

What are we trying to build?

- *Not* a user bio.
- But an indicator of whether someone is available.
- *Not* a live status of whether they're currently moving their mouse or not.
- *Not* a live status of whether their computer is on or not.

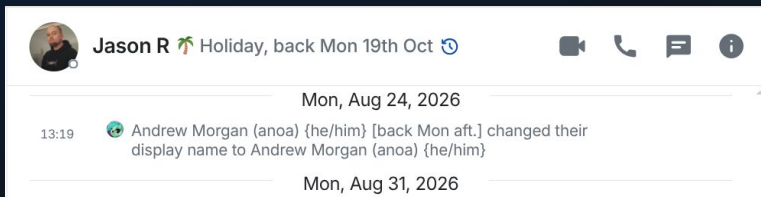
What are we trying to build?

A user-controlled signpost where you can purposefully signal your availability to others.



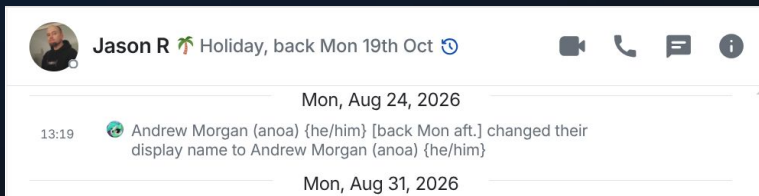
When is user status useful?

Just *before* calling someone

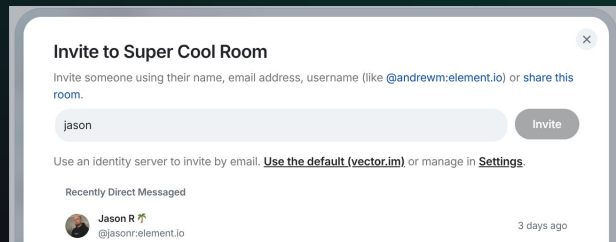


When is user status useful?

Just *before* calling someone

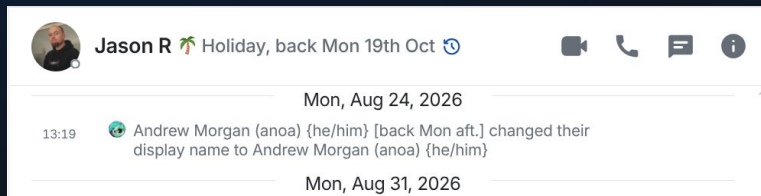


Just *before* inviting someone

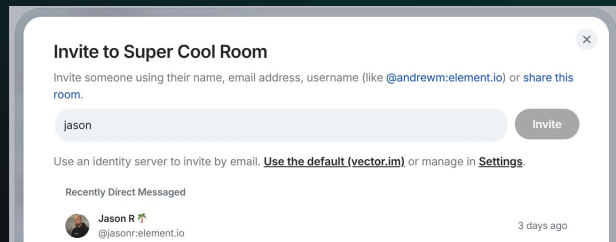


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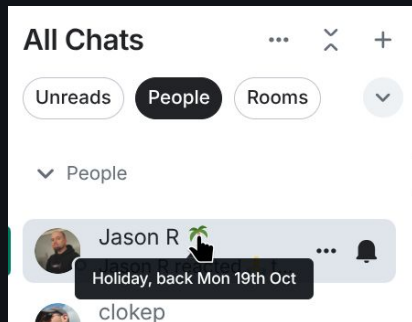
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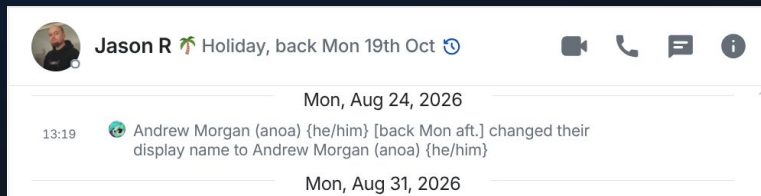


Just *before* DM'ing someone

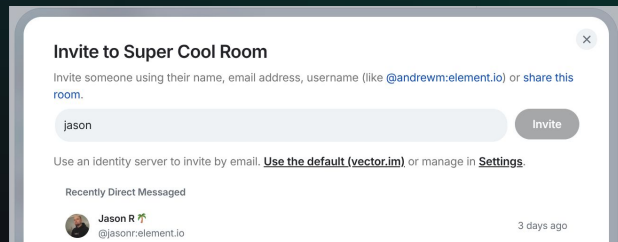


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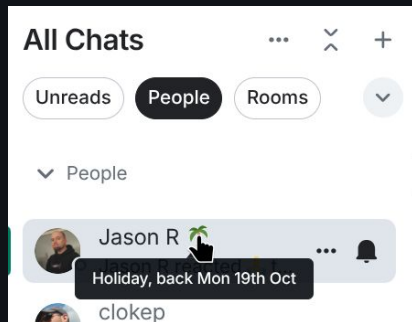
Just *before* calling someone



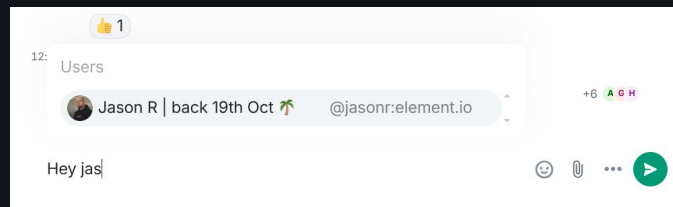
Just *before* inviting someone



Just *before* DM'ing someone

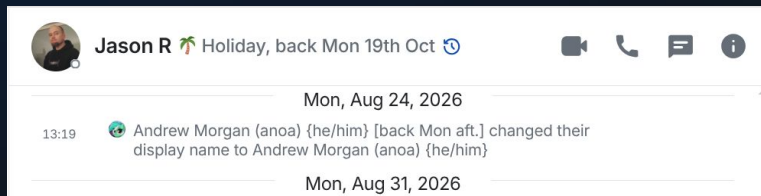


Just *before* pinging someone

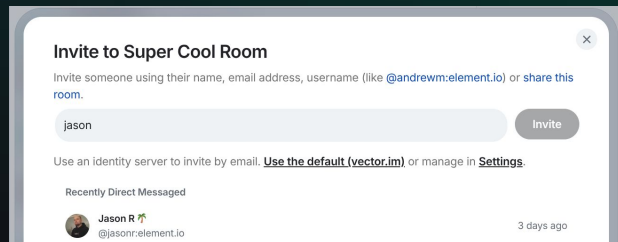


When is user status useful?

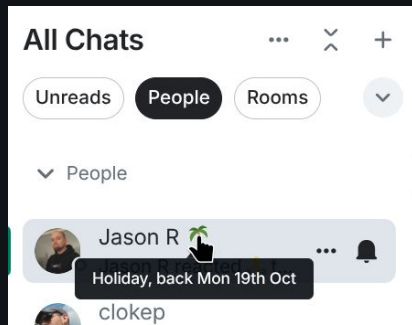
Just *before* calling someone



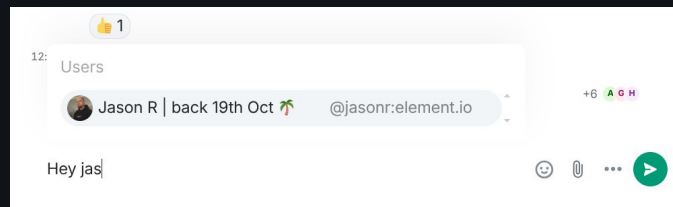
Just *before* inviting someone



Just *before* DM'ing someone



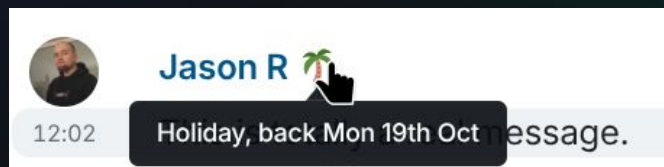
Just *before* pinging someone



Likewise to show it in the timeline



Likewise to show it in the timeline



We need a real-time system...

What about presence?

What about presence?

```
{  
  "presence": "online",  
  "status_msg": "Eating lunch."  
}
```

What about presence?

```
{  
  "presence": "online",  
  "status_msg": "Eating lunch.",  
  "status_emoji": "🍜"  
}
```

Slow...

What about presence?

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Lots of work! 🛠️

Slow...

Useful primitive?

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Lots of work! 🛠️

Useful primitive?

Slow...

Shout out to the Presence v2 folks!

What about presence?

<https://ispresencefixedyet.com>

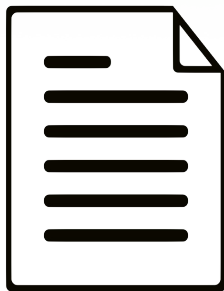
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{  
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}
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Lots of work! 🛠️

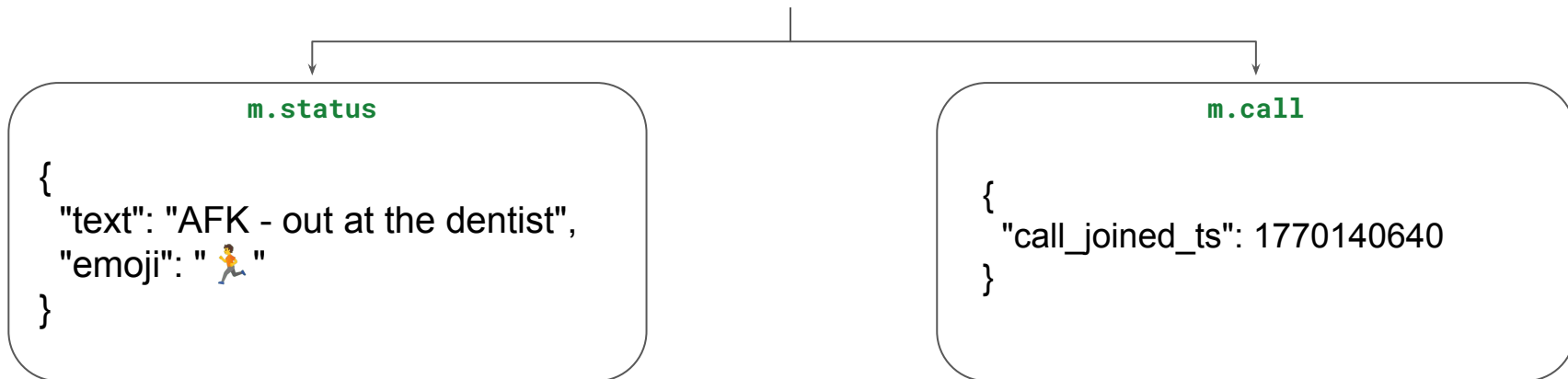
Custom User Profiles?

- Has everything we need already (custom fields, arbitrary types).
- Already in the spec since v1.16.
- Just missing “live updates”.
- Live updates would help enhance other user profile-based features too!

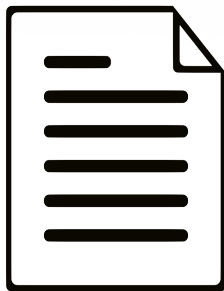
Technical design!



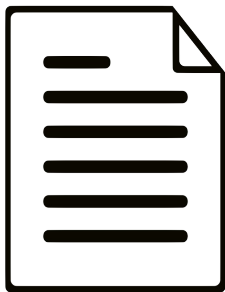
MSC4426: User Status Profile Fields



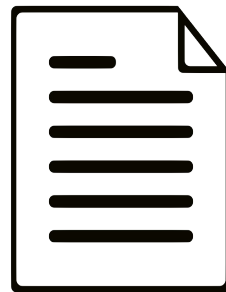
Technical design!



MSC4426: User Status Profile Fields

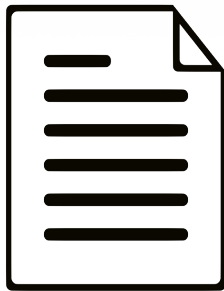


MSC4429: Profile Updates for Legacy Sync

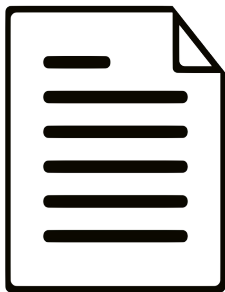


MSC4262: Sliding Sync Extension: Profile Updates

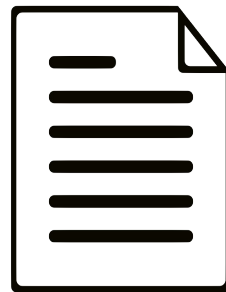
Technical design!



MSC4426: User Status Profile Fields



MSC4429: Profile Updates for Legacy Sync



MSC4262: Sliding Sync Extension: Profile Updates

Technical design!

filter

```
{
  "profile_fields": {
    "ids": ["m.status", "displayname", "avatar_url"]
  }
}
```

/sync

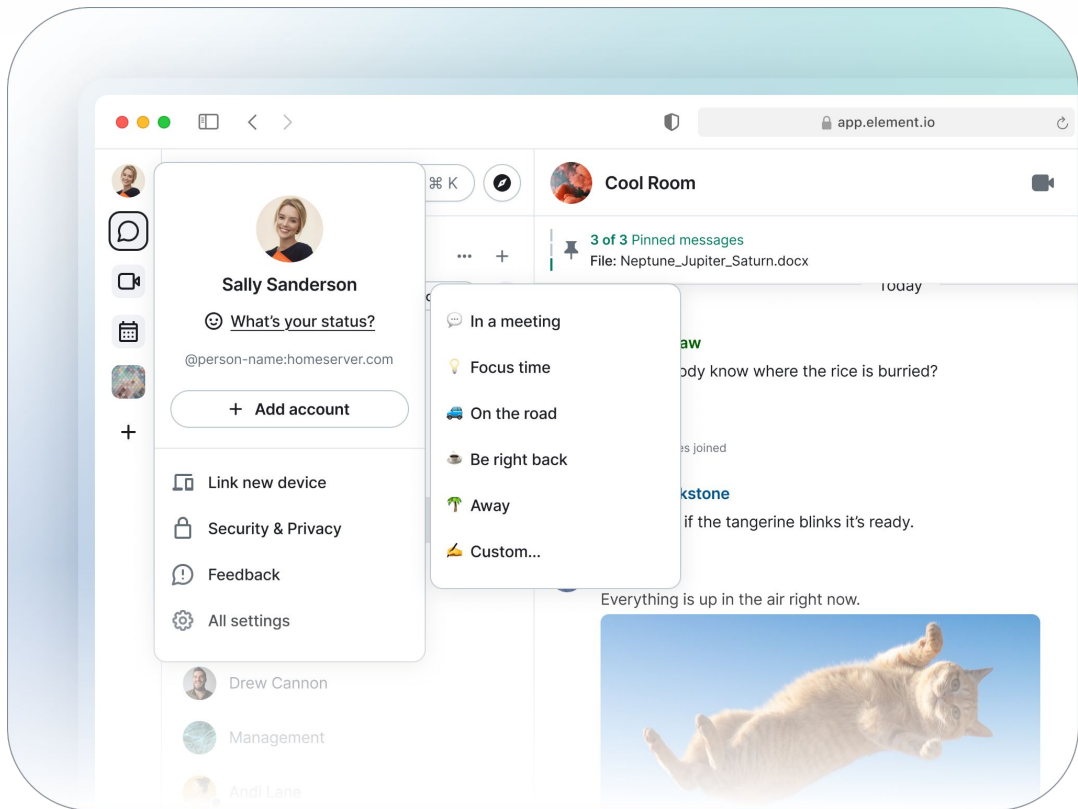
```
{
  "users": {
    "@user:example.org": {
      "profile_updates": {
        "m.status": {
          "text": "Swimming in the Great Lakes!",
          "emoji": "🏊"
        },
      },
    },
  },
}
```

What about the user experience?

Setting a status

On web...

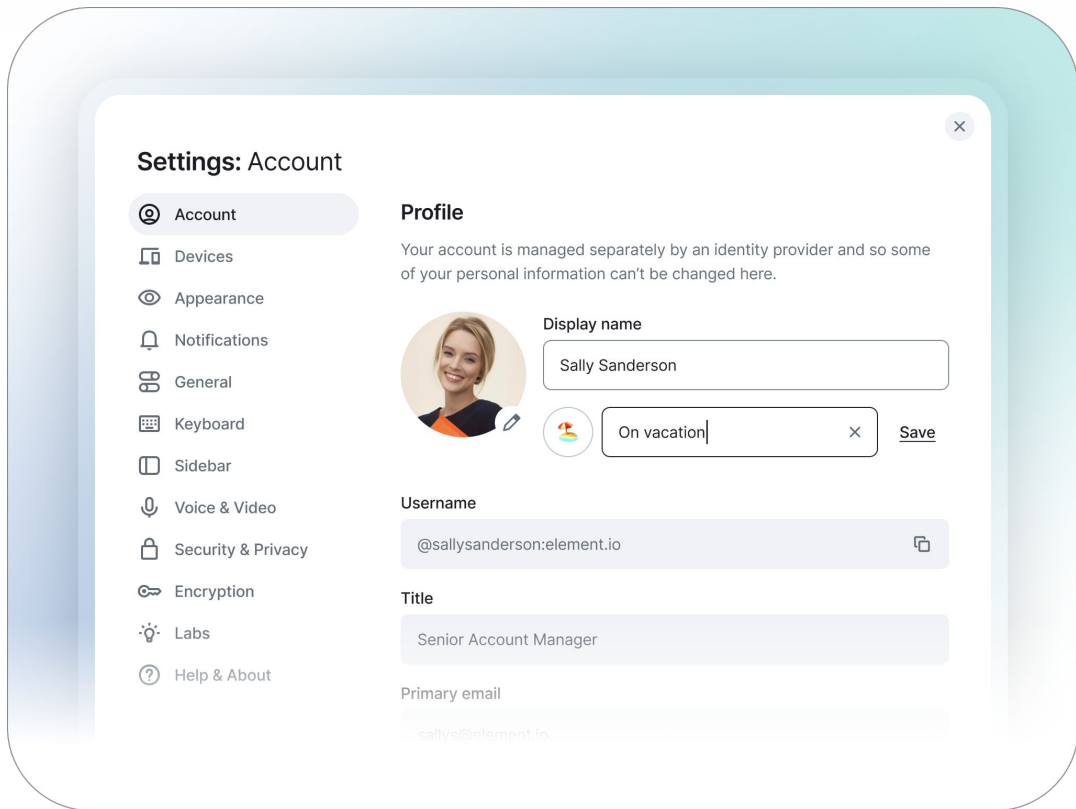
- **Click your avatar** to open the user menu
- Click "What's your status?"
- Choose a status from the context menu



Setting a status

On web...

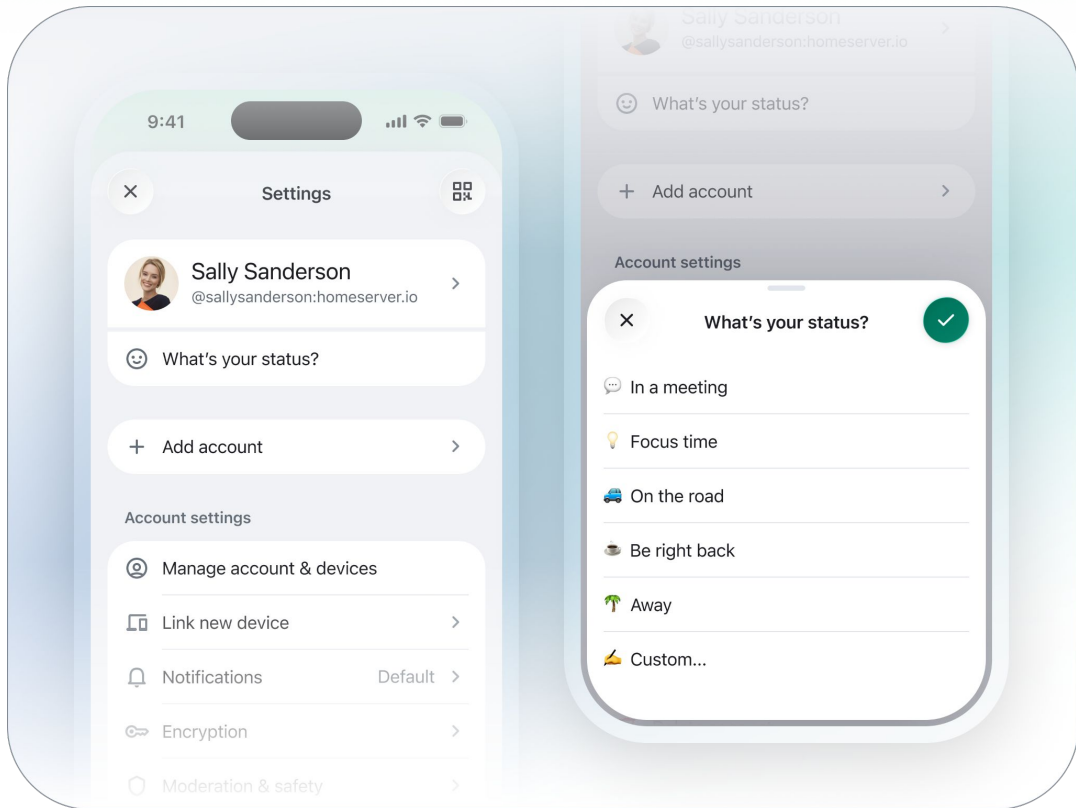
- Or go to **Settings > Profile**
- Choose a status from the context menu
- This is also where you go to enter a custom status



Setting a status

On mobile...

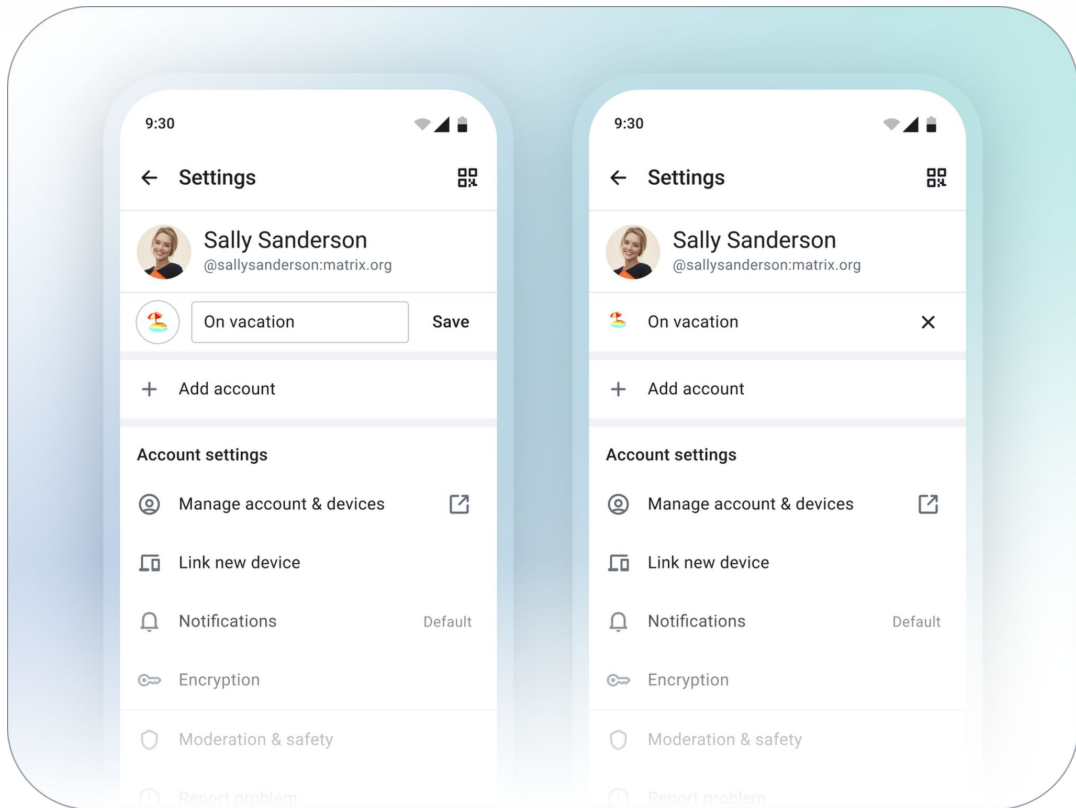
- **Go to Settings**
- Tap "What's your status?"
- Choose a status from the bottom sheet
- Or select "Custom" and enter a unique emoji and status message



Clearing a status

After setting a status...

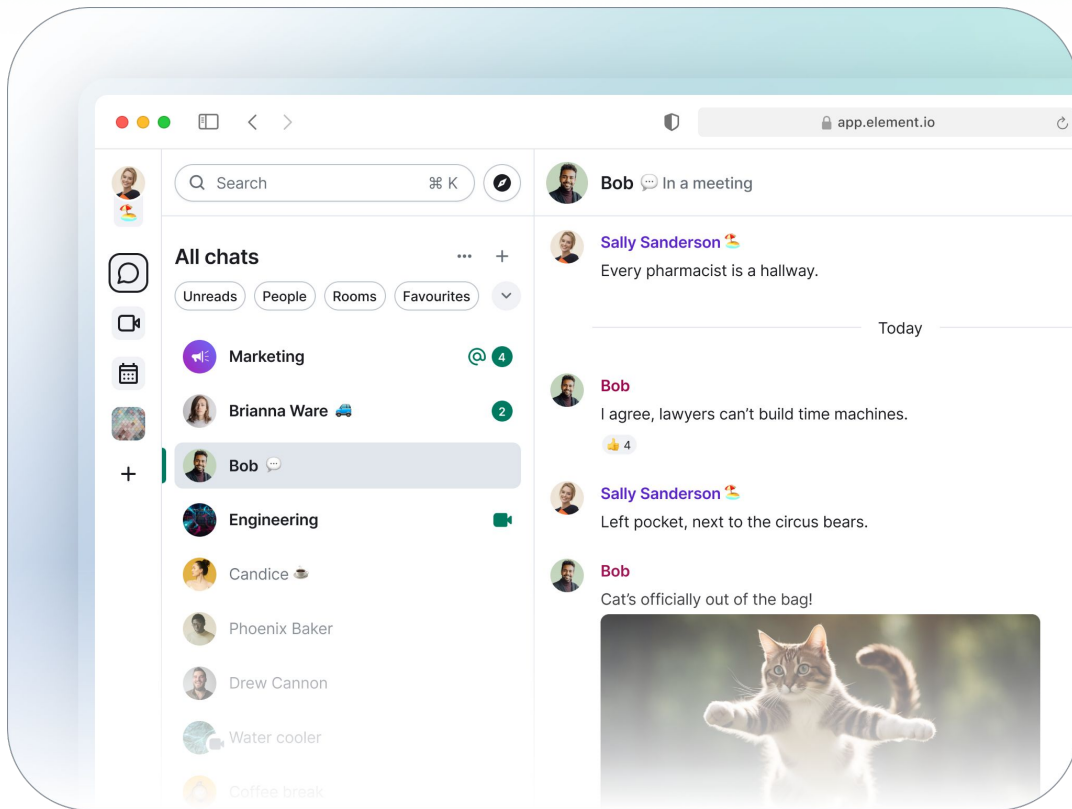
...just select the X button
to clear it.



Where status appears

Anywhere an avatar or display name is shown...

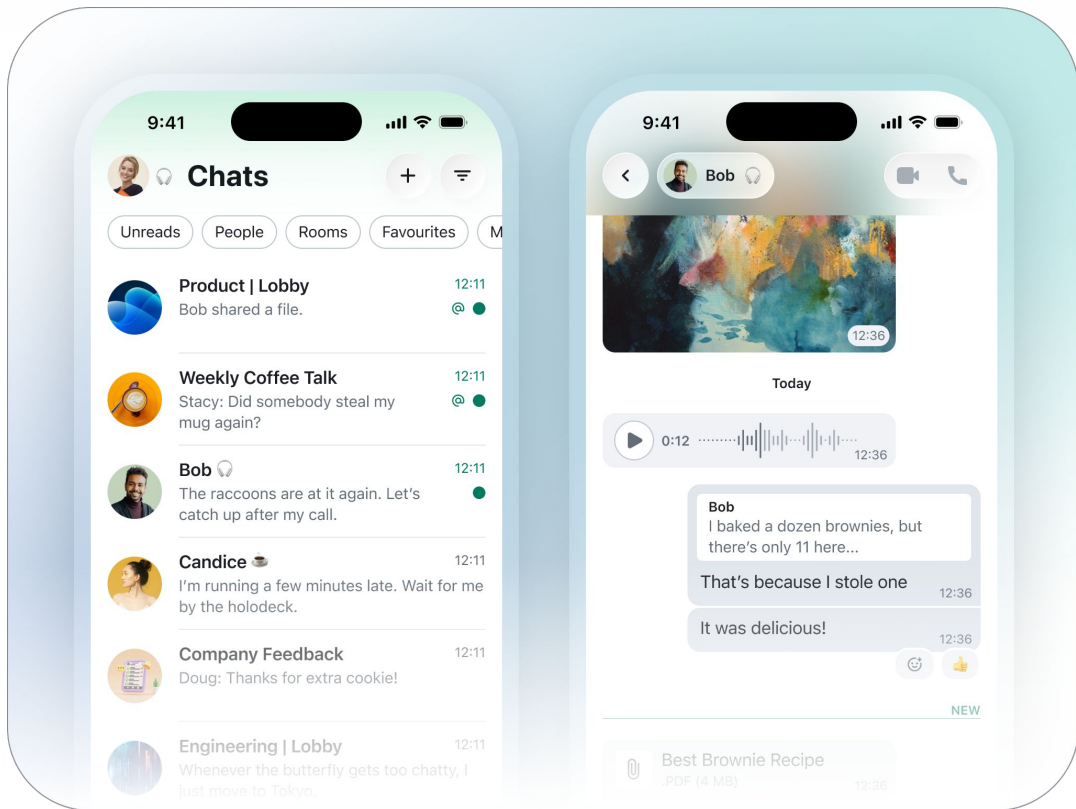
- Below/next to your avatar
- In the Chats list
- In the timeline
- In the header of a DM
- In the People list
- On a profile
- Etc...



On a call?

You don't need to do anything...

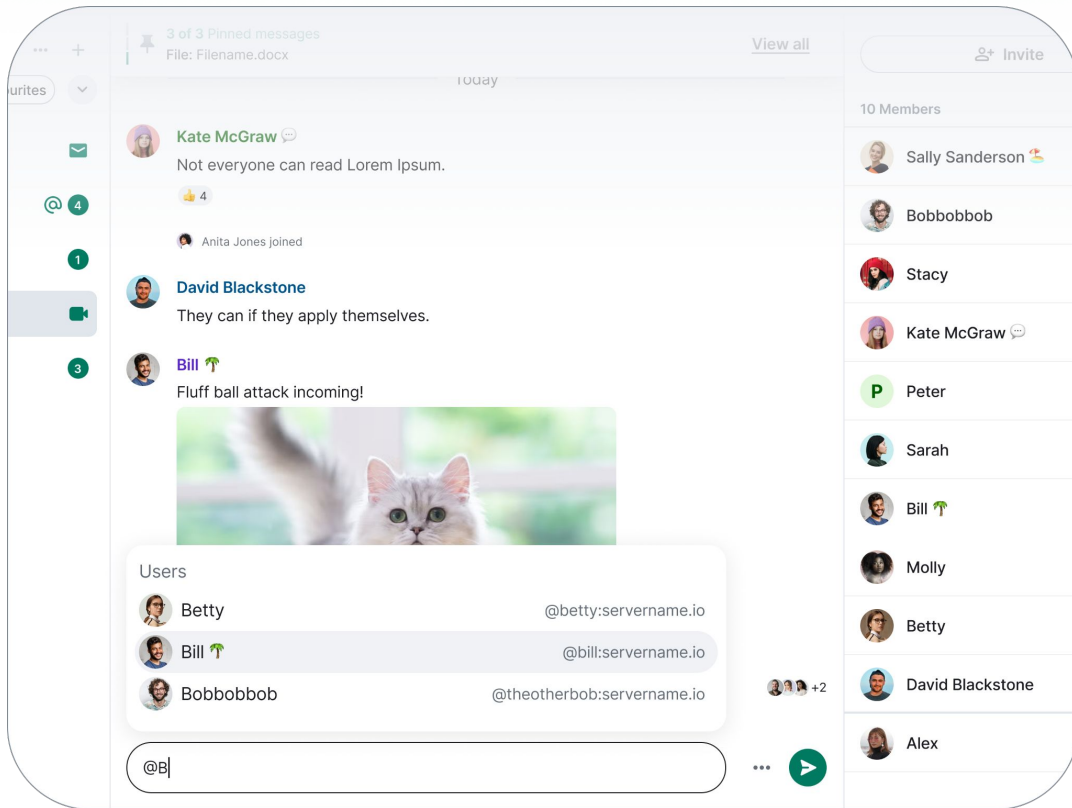
- Whenever you're on a call, the status is automatically set for you
- If the other person is on a call, the calling buttons are disabled



Mentioning another user?

You can see any user's status in the composer

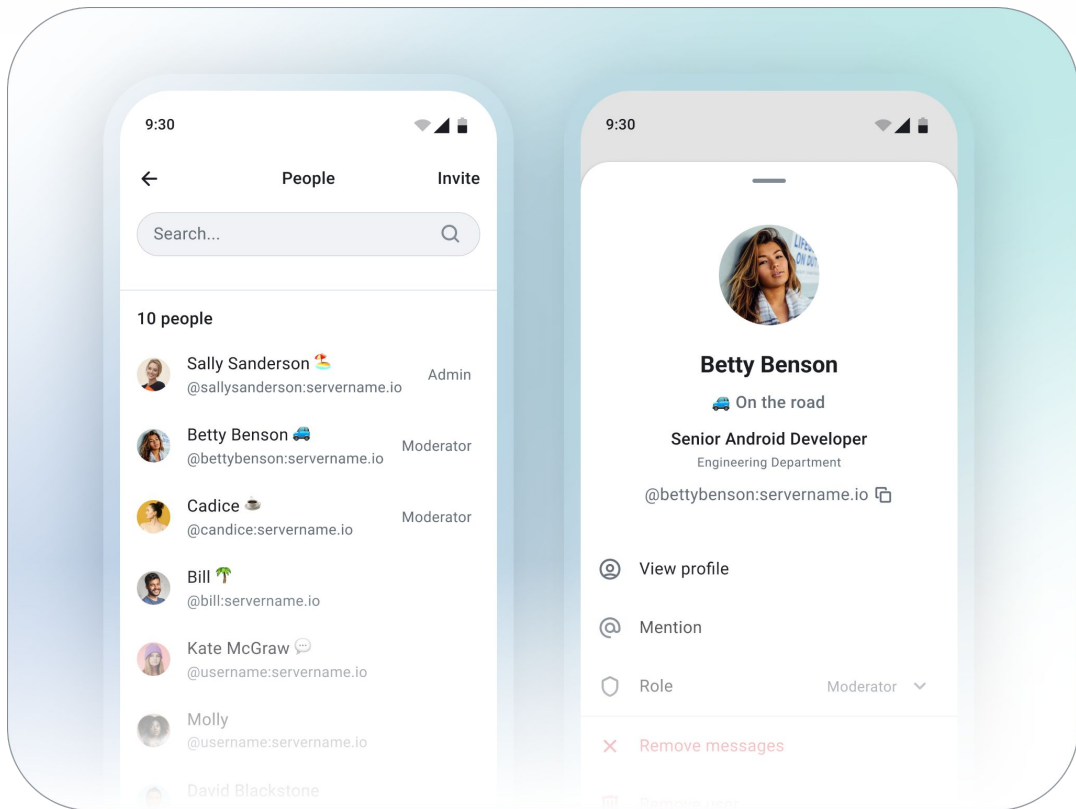
- Start typing their name and the suggested results will show any statuses



People lists & profiles

See other people's status at a glance

- View the People list in a room to see anyone who's set a status
- Status is also shown on a user's profile





Andrew Morgan
(anoa) {he/him}

☾ Sleeping... ✕

@andrewm:element.io

📱 Link new device

🔒 Security & Privacy

💬 Feedback

⚙️ All settings

It exists!



Watercooler Element Internal 🕒



86

17:09

👤 Shay (Off, back Oct 5th) changed their display name to Shay

Wed, Oct 7, 2026

13:51

👤 Carolina - Away, back on 07/10 changed their display name to Carolina

Thu, Oct 8, 2026



andybalaam

09:40

<https://www.abandonedamerica.us/the-president-heads>



3 replies



Robin Hankins is rumored to be rather aggr...



Andrew Morgan (anoa) {he/him} ☾

12:45

https://100r.ca/site/rabbit_waves.html



Fri, Oct 9, 2026



Nada and 4 others changed their name

[expand](#)

Monday

19:21

👤 Carolina - Away, back on Tuesday changed their display name to Carolina

Tuesday

09:15

👤 benp | back 12th changed their display name to benp



Matthew

14:20

has anyone else noticed Google failing to "File: Make a Copy" correctly?

14:20

it's driving me nuts



Kegan

14:36

it's *drive*-ing you nuts?



1 reply



@stefan.ceriu:matrix.org Image: getmecoat....

Send a message...



People



Search room members



86 Members



Ivan 🦀



Jason R 🌴



Jim



J Johanna



Jordan C



Jorge 🌴



J Juho 🚗



Kegan



Kenny 📅



kieranml



lewis



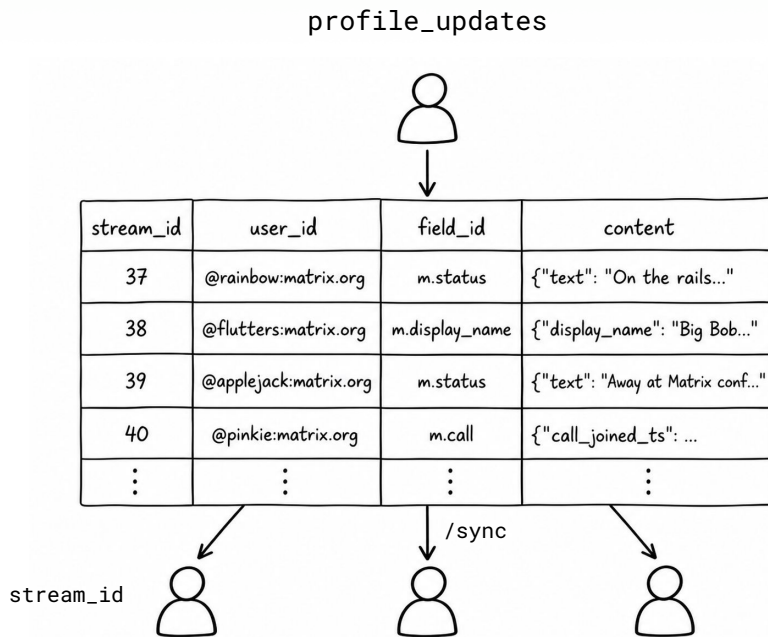
@lewiss:element.io ⚠️

What was built is really useful

- New stream of *any* profile data to clients.
- Clients can request specific field IDs to be streamed.
- Clients no longer need to fetch and wait for profile info on-demand; it can be asynchronously streamed.
- Better offline support for profile information.

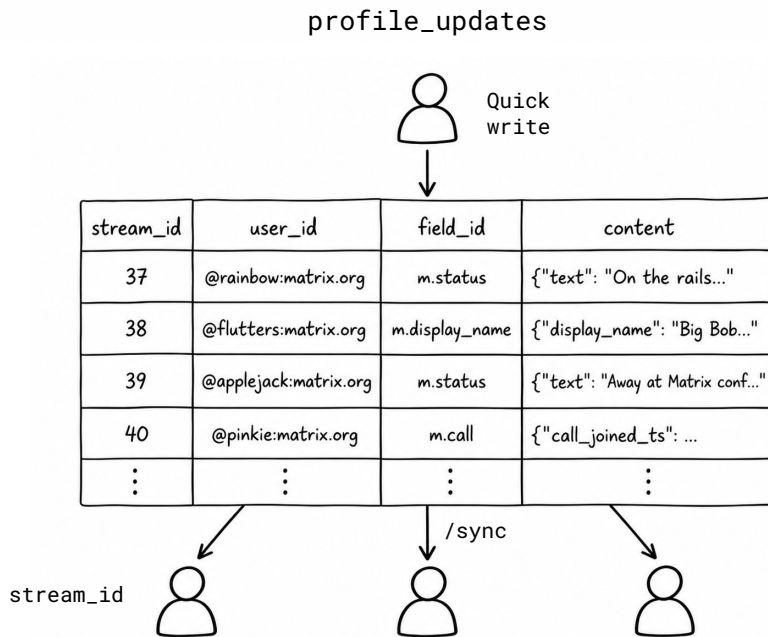
Technical challenges

- Data model in Synapse.
- Database table representing a single stream that every user reads off of.



Technical challenges

- Data model in Synapse.
- Database table representing a single stream that every user reads off of.



- Check for new updates
- Check whether you cared about an update

Technical challenges

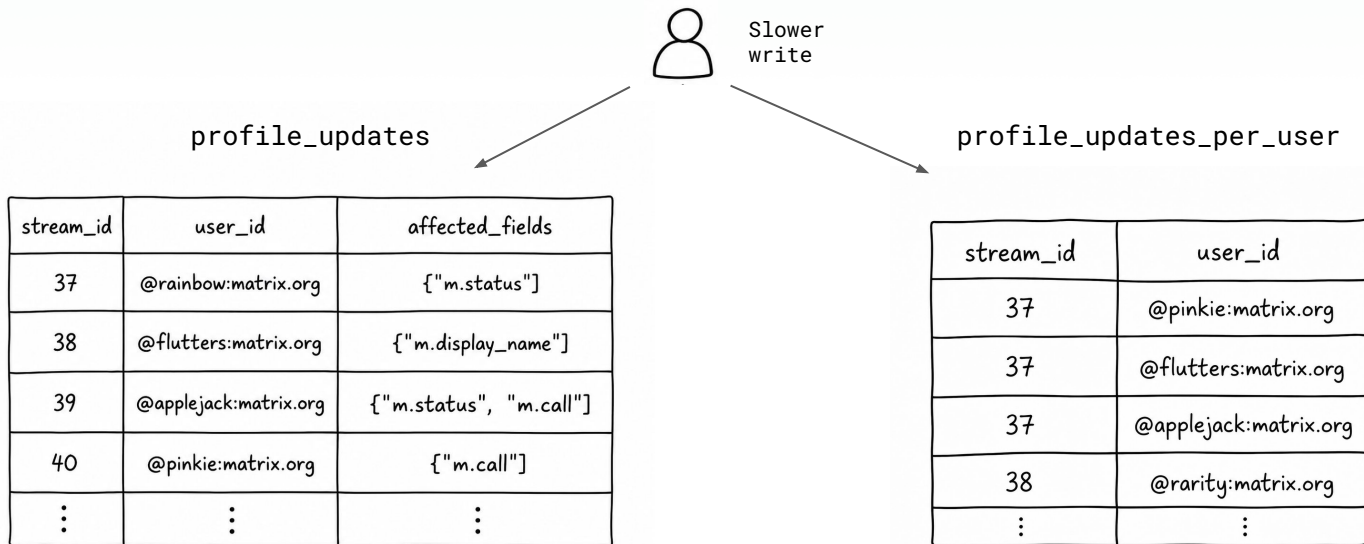
profile_updates

stream_id	user_id	affected_fields
37	@rainbow:matrix.org	{"m.status"}
38	@flutters:matrix.org	{"m.display_name"}
39	@applejack:matrix.org	{"m.status", "m.call"}
40	@pinkie:matrix.org	{"m.call"}
⋮	⋮	⋮

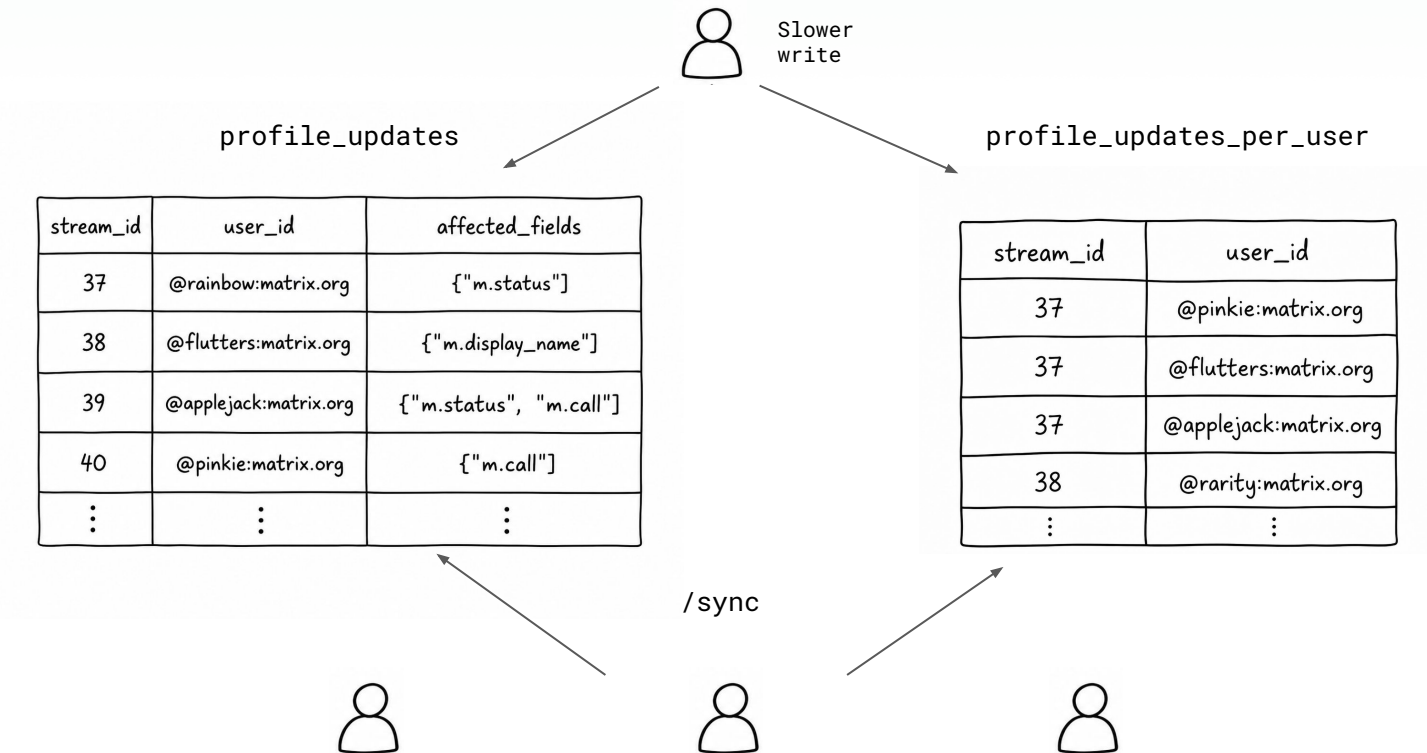
profile_updates_per_user

stream_id	user_id
37	@pinkie:matrix.org
37	@flutters:matrix.org
37	@applejack:matrix.org
38	@rarity:matrix.org
⋮	⋮

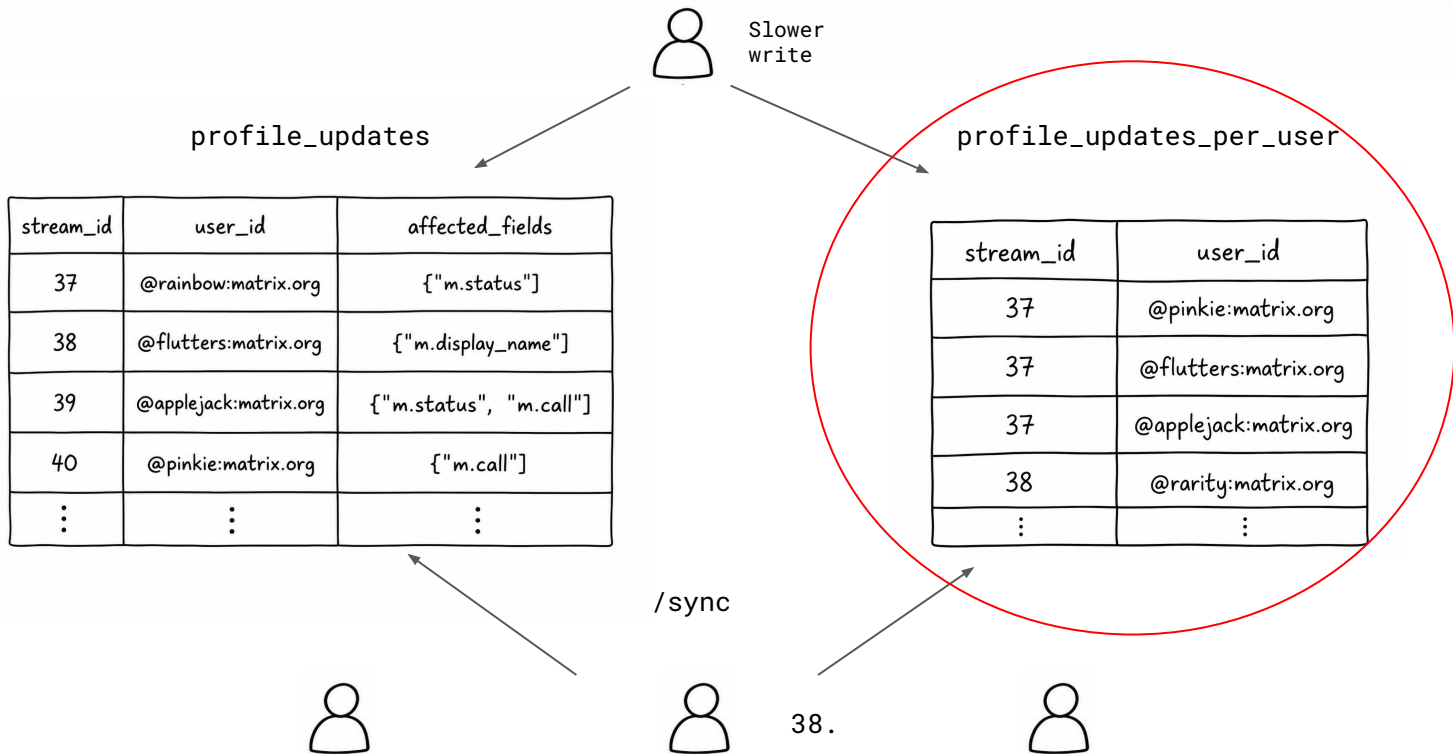
Technical challenges



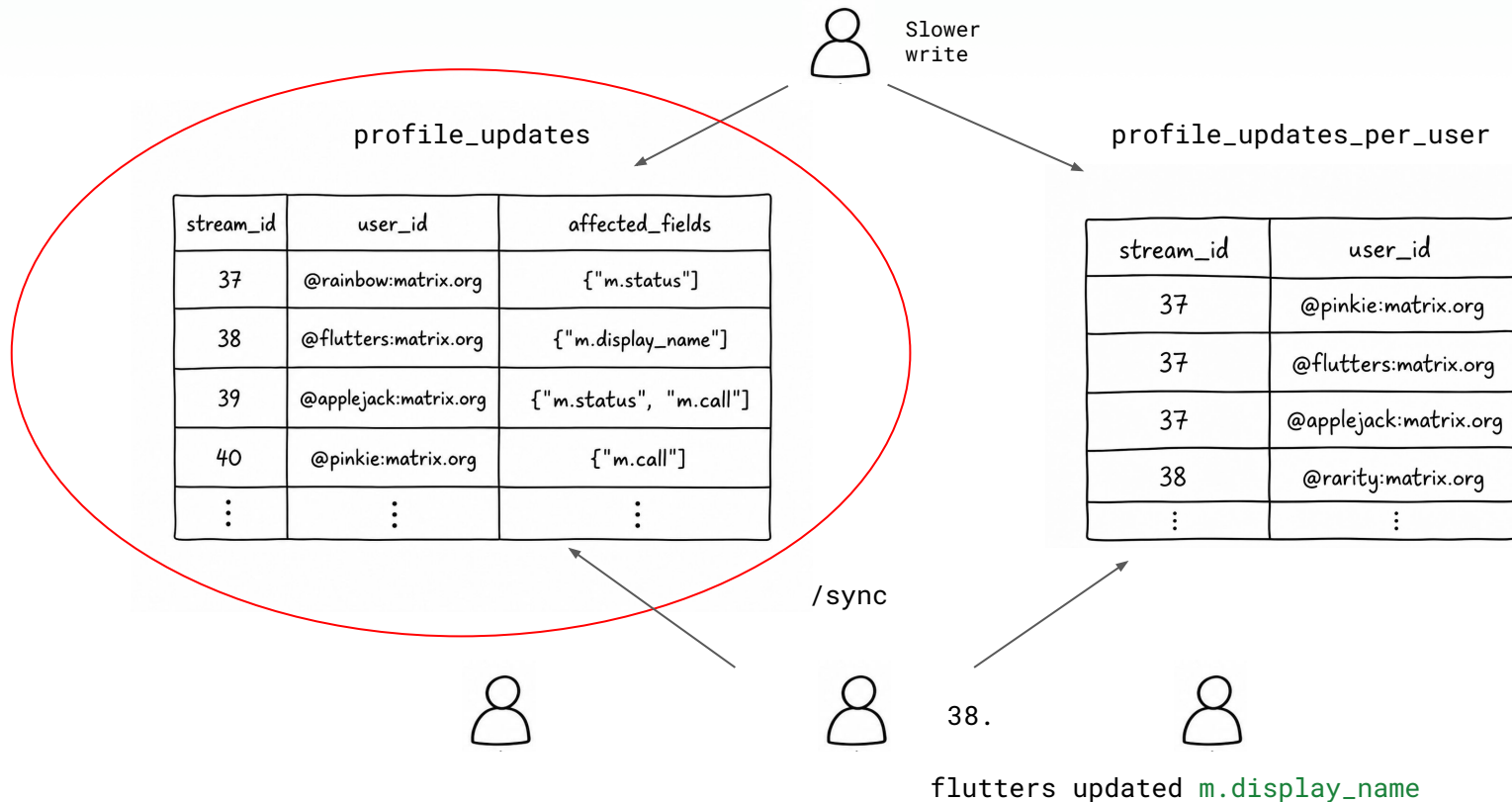
Technical challenges



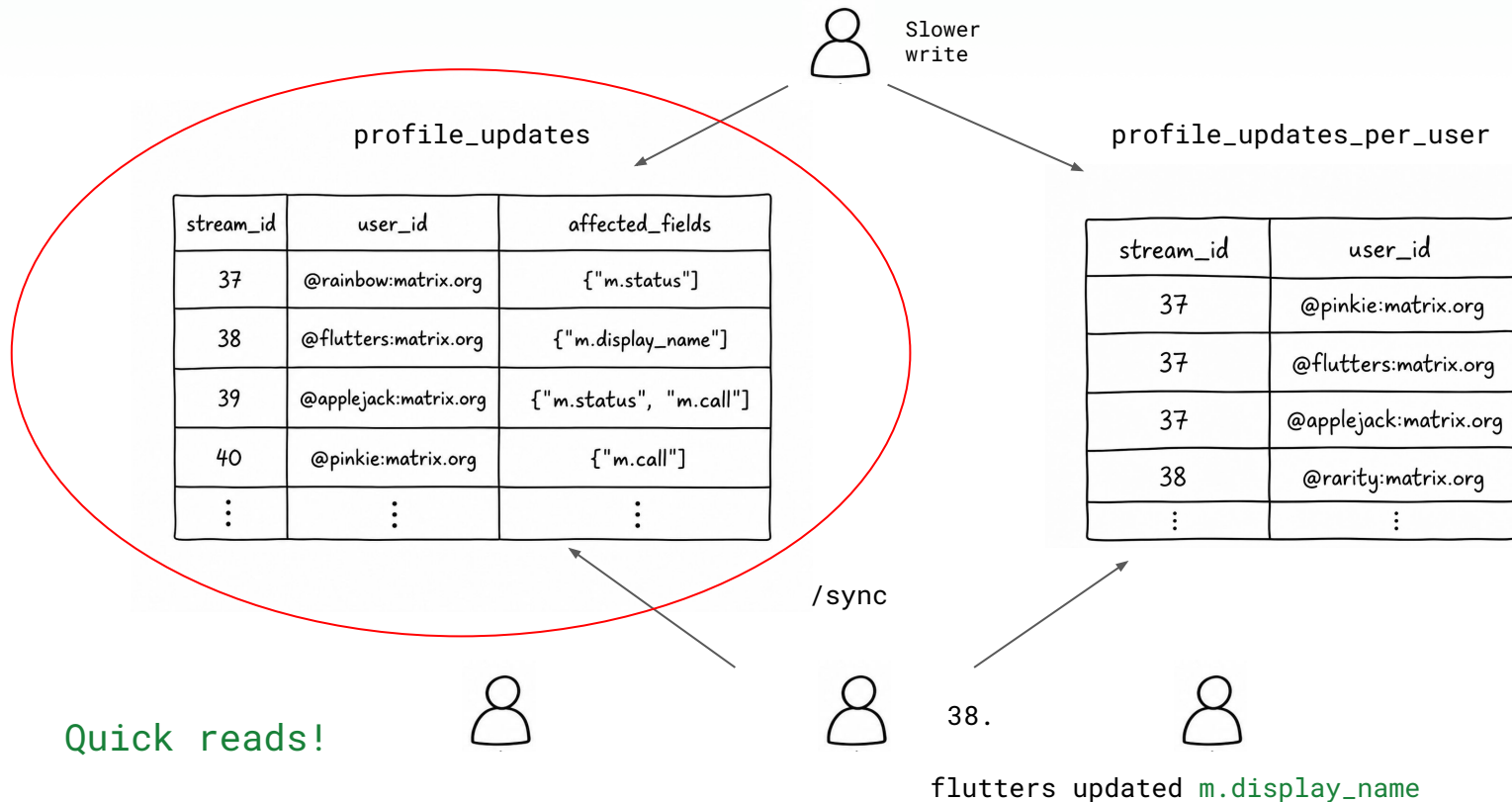
Technical challenges



Technical challenges



Technical challenges



What's left to do?

- Getting it working over federation (current limitation).
- Limiting who can view your profile and receive updates.
- Custom emoji in status updates! 
- MSC4536: Additional endpoints for fetching user profiles.

Future work?

- New federated address book work can build on this.
- New profile features that take advantage of live updates.
- Move display name and avatar to this model, instead of state events??

Thank you!

Any questions?

Contact:

- Andrew Morgan: [@andrewm:element.io](https://matrix.to/#/@andrewm:element.io)
- Aaron Thornburgh: [@aaront:element.io](https://matrix.to/#/@aaront:element.io)