

# What is Beeper Working On?

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Sumner Evans

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Beeper

## A bit about me

My name is Sumner, I'm a **software engineer at Beeper**.

- I graduated from Colorado School of Mines in 2019 with a master's in CS.
- I teach as an adjunct professor at my alma mater.
- I enjoy skiing, volleyball, and football (soccer).
- I'm a 4th degree black belt in ATA taekwondo.

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# Overview

1. A bit about Beeper
2. What we've built
3. Current challenges
4. What it's like to work at Beeper

**This talk is interactive!**

If you have questions at any point, feel free to interrupt me.

# A bit about Beeper

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Our mission is to:

*make it easy for everyone on Earth to chat with each other.*

We specifically chose the word “chat” rather than “communicate” because we are focusing on *people talking to one another*.

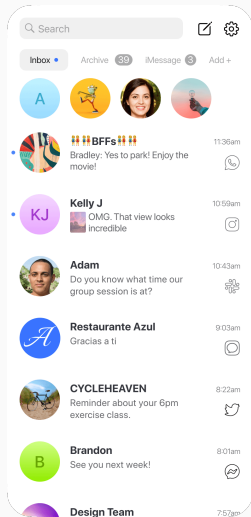
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# What is Beeper?

Beeper is an app that brings all of your chat networks together into a single inbox.





# What is Beeper?

**Beeper allows you to consolidate messages from 15+ chat apps into a single inbox.**

- Beeper is available on macOS, Windows, Linux iPhone, iPad, Android and Chrome OS.
- Beeper is built on top of the Matrix protocol.
- Beeper encrypts all chats, including bridged chats, by default<sup>1</sup>.

<sup>1</sup>We have to momentarily decrypt your chat messages to translate from the other network to Matrix, but we never log or store your unencrypted messages.

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**We are targeting individuals, not enterprises**

**We want to beat WhatsApp, not Slack.**

Our core competency is the 50th highest priority at the big tech companies.

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**We charge a flat \$10/month fee to use Beeper.** This fee allows users to connect as many chat networks as they want.

**No ads. No data mining.** We take advantage of Matrix's E2EE to add additional privacy guarantees.

The transaction is simple:  
users pay us money for a service.

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## Bridging to a glorious Matrix future

We see bridges as a way to onboard users into the Matrix ecosystem.

Users can switch to a new app without losing a single conversation!

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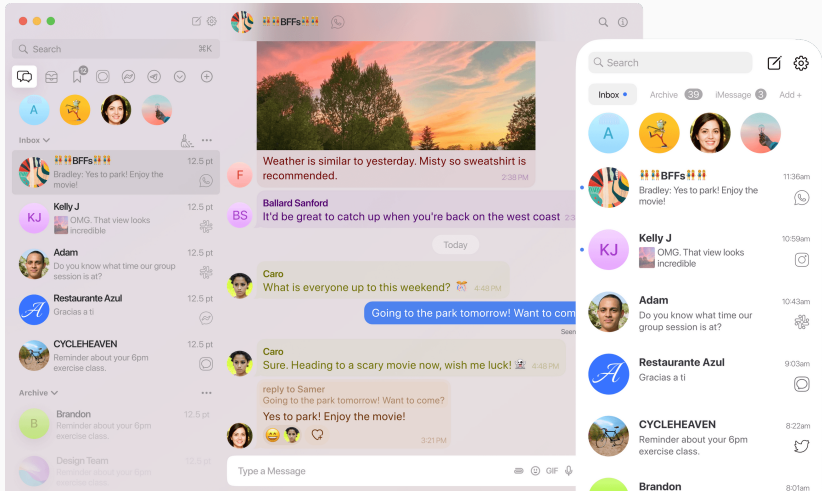
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## What we've built



# Custom clients for desktop and mobile

We forked Element, and added custom features.



# Bridges, bridges, and more bridges!

We have built bridges to 10 networks:

- iMessage
- WhatsApp
- Facebook Messenger
- SMS (Android)
- Telegram
- Signal
- LinkedIn
- Instagram
- Twitter
- Google Chat

We are actively developing new matrix-based bridges to Discord and Slack.

You can also connect to IRC (via the Libera.chat bridge) and the rest of the Matrix federation.

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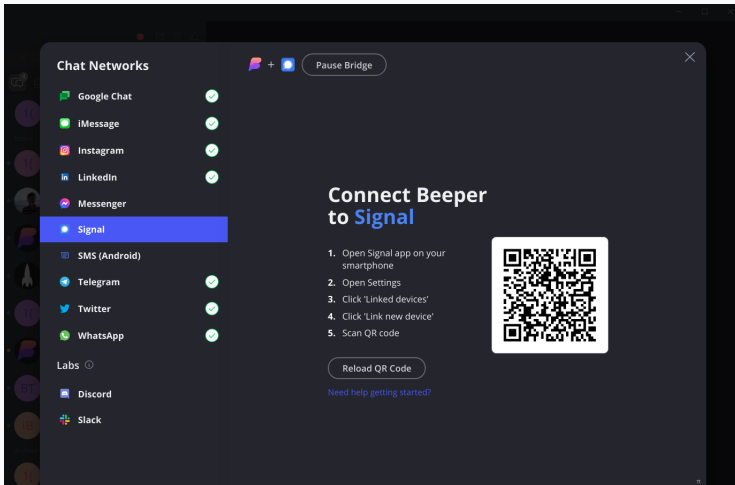
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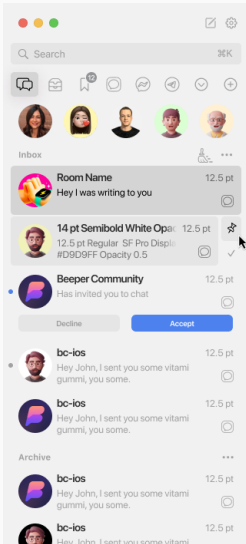
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# Easy chat network connection from clients



I'll demo this later!

# Chat inbox management tools



We've implemented lots of useful inbox management features such as:

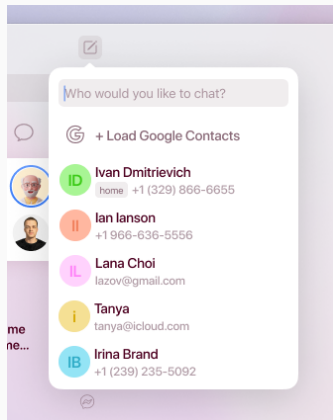
- chat pinning
- chat archiving
- configurable auto-archive
- mark as read
- chat muting



# Start new chat

On some networks, you can start a new chat directly from Beeper.

You can also load your Google Contacts to get the correct names on your chats.



# Much, much, more!

- Message send status
- E2BE on all bridges
- Scheduled messages
- Per-network spaces

Demo!

## Current challenges



**Each user gets their own bridge for each network they connect.**

That means we run a lot of bridges, and each bridge brings more traffic!

- On average, each user brings **4716 puppeted users**.
- On average, each user and their puppets collectively account for **100k events**!

None of the bridge traffic is federated, but Synapse is aggressively federated.

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**We are building a homeserver optimized for unfederated bridge traffic called hungryserv.**

By siphoning off unfederated bridge traffic to a different service, we allow Synapse to do what it does best: federate with other Matrix homeservers.

We can also optimize operations such as room deletion and infinite backfill.

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# The iOS app

Beeper's clients are forks of Element's clients. Having the Element codebase as a starting point has been hugely beneficial to us.

However, the iOS app needs some love.

Element is currently working on Element X for iOS which uses the Rust SDK.

We are taking a different approach: **rewriting the iOS app piece-by-piece and changing the architecture as necessary.**

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# What it's like to work at Beeper

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# What I work on at Beeper

I am on the newly created *Scaling* team.

Our current objective is to prepare Beeper for rocket-ship growth.

I was previously part of the *Bridges* team.

Notable projects included:

- Writing the LinkedIn bridge
- Adding bridge status reporting and message send status.
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## BRAD days: hacking to make Beeper a better company

Every third Friday, we have a Beeper Radical Awesomeness Day (BRAD).

- BRAD is an optional day to build whatever you want to make Beeper a better company to work at.
- Some BRAD day projects have made it into clients such as scheduled messages.
- Other projects include internal tools such as bots, build automations, POCs, and more.

# Team Retreats

About three times a year, we have a team retreat.



You can read more about them on my blog at [sumnerevans.com/categories/work-retreats](https://sumnerevans.com/categories/work-retreats).

Questions?