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# Element X Web

**aka Project Aurora**
June 3 2025

# Element X Web

- Tchap Web, part of Suite Numerique, is a fork of Element Web, which is built on matrix-js-sdk, the first ever Matrix SDK, which is now over 10 years old - and it's *really* showing its age.

- Element itself is the chat component in ZenDiS's openDesk project.

- DINUM, ZenDiS and many others have asked when we'll transformationally speed up and refresh Element Web.

- Something simple, familiar, reliable and FAST!

# Problems with classic Element/Tchap Web

- **Super slow** login and launch (even with sliding sync) - 10s of mins to login on a large account; 10s of seconds to launch.
- **Massive memory usage**
- **No search** (on Web)
- **Clunky Electron** on Desktop
- **No proper storage** in the client
- **Doubling our dev effort** between Web & Mobile

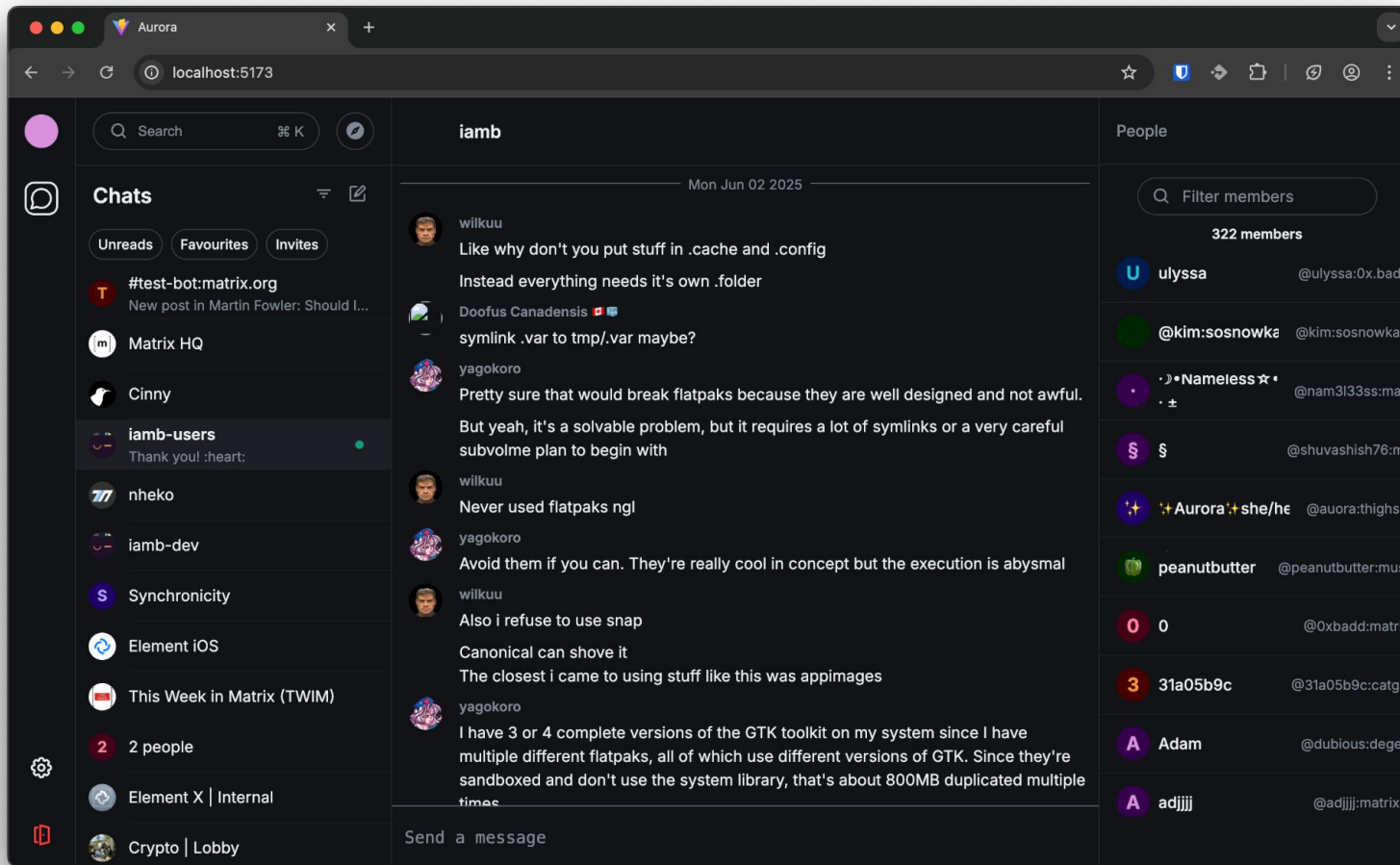⇒ **We already fixed this all on mobile with Element X, using Matrix Rust SDK.**

# Project Aurora

**Can we build a next generation Matrix client for Tchap X / Element X Web, in ~24 hours?**

# Project Aurora

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The critical missing ingredient:
**WASM bindings for Matrix Rust SDK**
provided by Filament.

[PR appeared](#) on Friday(!)

# Demo!

# What did we do?

- Got matrix-rust-sdk-wasm working with existing Aurora testjig.
- Transplanted React MVVM components from Element Web for:
  - Room List
  - Membership List
- Skinned Aurora to look like current Element X Web designs

**Results:**

⇒ **Instant** login, launch & sync

⇒ **15x** memory improvement (1.4GB → 90MB of heap)

⇒ Super-fancy safe, **secure and stable Rust engine**.

⇒ A vision of the future of Tchap X.

# The Team!

- David Langley (Element)
- Florian Duros (Element)
- Michael Telatynski (Element) - remote
- Marc Sirisak (DINUM)
- Pierre de Lacroix (Technostructures)

With help from:

- Matthew Hodgson (Element)
- ...and Daniel Salinas (Filament)

# What's next?

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- Find funding to finish this (ZenDiS? DINUM? MinBZK? BWI?)
- Decide how to merge this with Element Web
  - Move MVVM components from Element Web to Aurora?
  - Switch Element Web to use matrix-rust-sdk?
- Hook up IndexedDB for local storage
- Hook up Search
- Re-introduce Tauri support
- ...and more...

# Merci!