

# MIMI + Linearized Matrix

IETF 117 Hackathon

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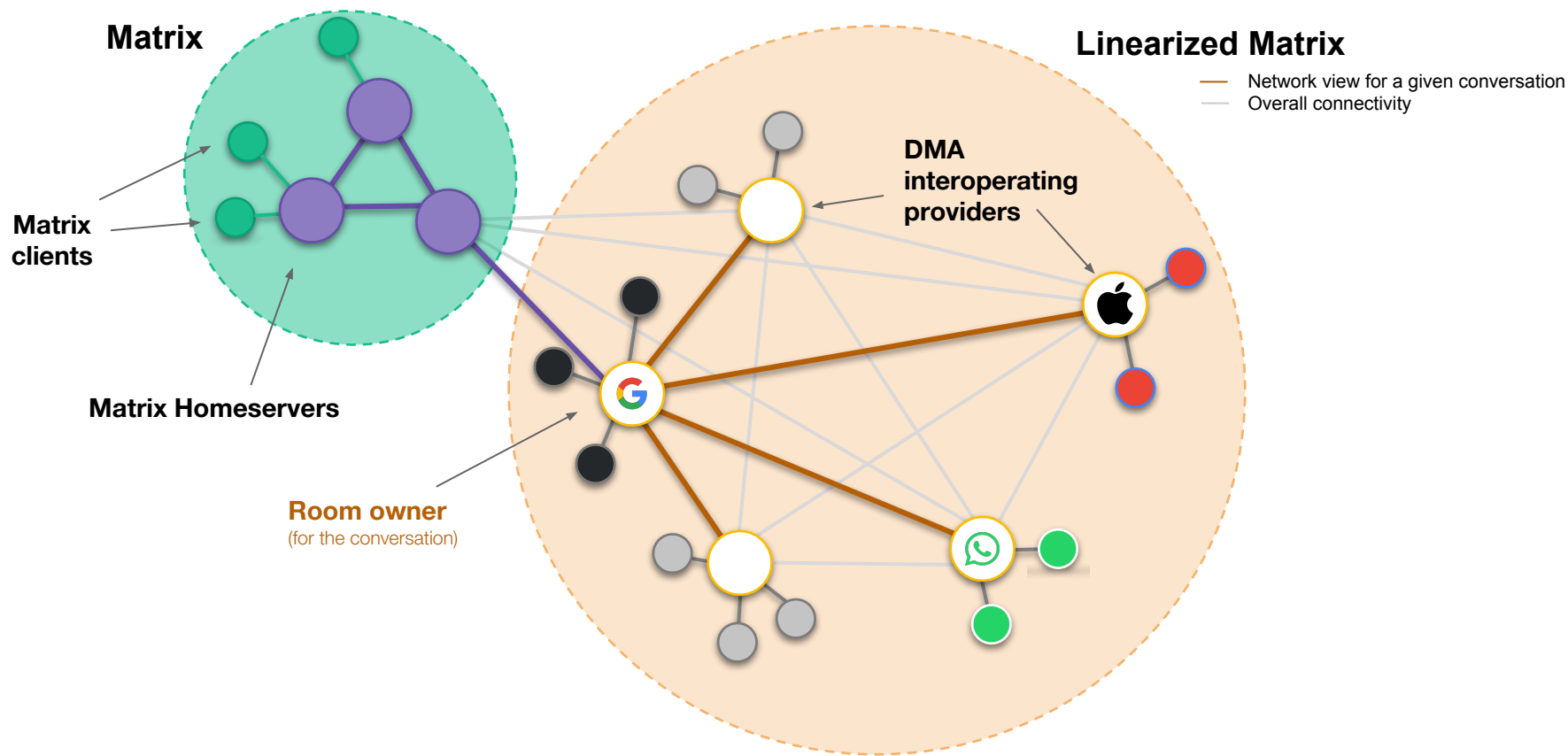
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# The Plan

In the context of the More Instant Messaging Interoperability (MIMI) WG:

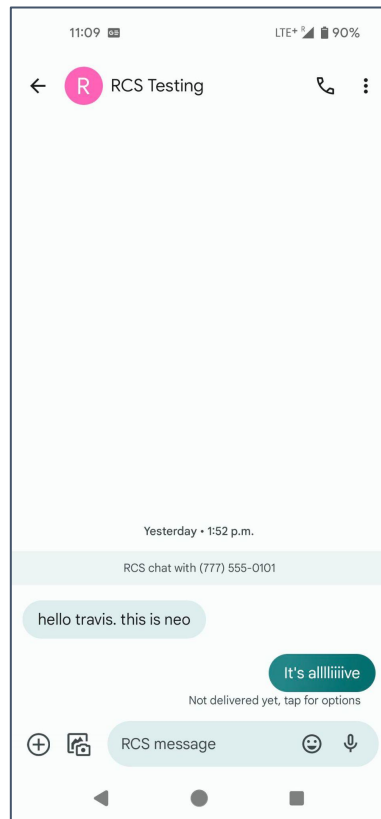
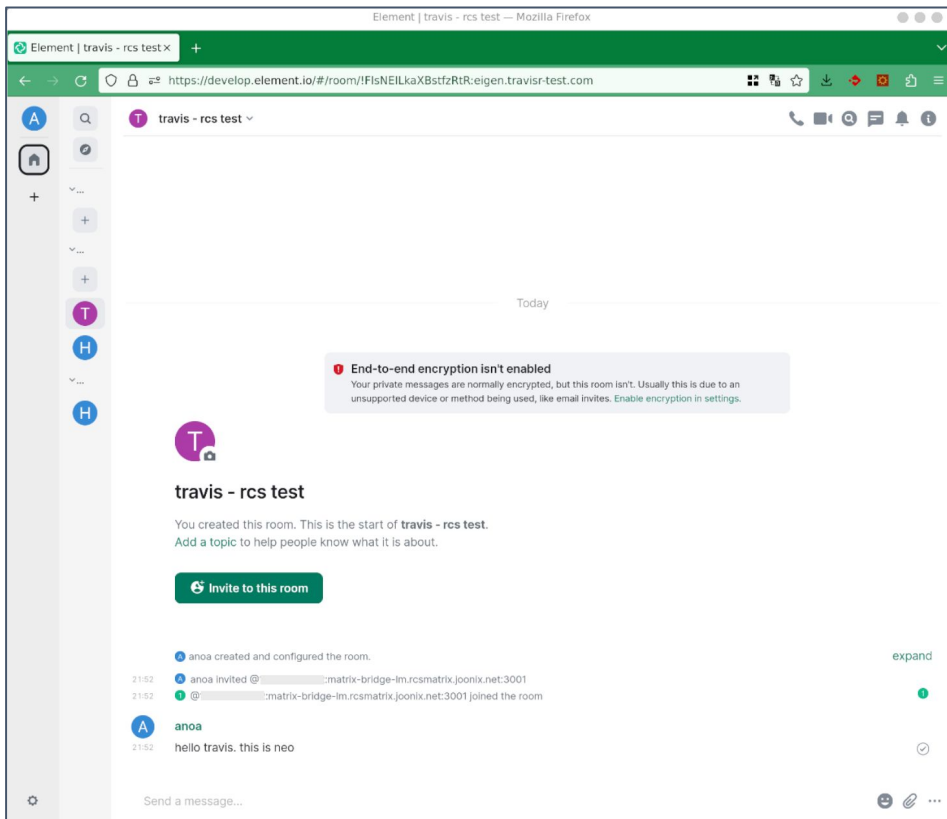
- Test the interop for messaging and access control of [Linearized Matrix \(03\)](#) with existing, early, implementations.
  - Linearized Matrix is a simplified dialect of the Matrix protocol which adopts a hub & spoke model per-room for ease of implementation, with the hub coordinating the room.
- Determine where best to put the MLS layer for MIMI: on top of access controls or under.
- Update/feed back into drafts with the learnings of the above.



# What happened: Interop testing

- Early interop testing worked!
  - Proved existing Matrix protocol and Linearized Matrix can speak to each other: [https://youtu.be/KgFD1X\\_gy2Q](https://youtu.be/KgFD1X_gy2Q)
    - Element Web talking Matrix CS API to...
    - Dual-stack Synapse (Matrix + LM) talking LM to...
    - Eigenserver (LM server) talking to...
    - Eigenclient (LM test client)
  - Worked with the Android Messages team to demonstrate interop as part of evaluating LM!

# Android Messages interop



# Dual-stack Synapse <-> Eigenserver interop

The screenshot displays a dual-stack Synapse and Eigenserver interop setup. The top left window shows a web chat interface in Firefox, with a chat room named "linearized matrix hangout". The chat history shows messages from "admin" and "@20b69573-6541-4d42-b15a-6409f993f6d3:localhost:3000". The top right window shows a terminal window with the Eigenserver development client, displaying the command "ES\_PORT=3000 yarn dev:client:nobuild" and the output "EIGEN-SERVER DEVELOPMENT CLIENT". The bottom left window shows a terminal window with the Synapse app home server, displaying the command "python -m synapse.app.homeserver -c demo/8080/8080.config" and the output "matrix/client/r0/sync?filter=8&timeout=30000&set\_presence=online&since=s126\_34\_4\_47\_35\_1\_1\_7\_0\_1". The bottom right window shows a terminal window with the Eigenserver build server, displaying the command "ES\_PORT=3000 ES\_SIGNING\_KEY\_PATH=.p3000.signing.key yarn dev:server" and the output "TSFILE: /home/work/code/mini-testbed/eigen-server/build/server/index.js.map".

I-D:aston:mini-linearized-matrix-03

# What happened: Layering

- Layering is still a larger question, needing wider input from the WG.
  - Layering everything (group membership, messages, room state etc) over MLS consolidates all security properties in one place.
  - ...but it results in a **very** hard dependency on MLS.
- Meanwhile, we've split out the transport layer of LM for the MIMI WG to consider (proposing gRPC for server fanout).

# What's Next

- WG to discuss more about MLS+policy layering.
- [I-D.robert-mimi-delivery-service-03](#) looks plausible for layering everything over MLS (and could be extended to support decentralization)
- [I-D.mahy-mimi-group-chat-00](#) also looks plausible for policy control, but designs out decentralisation and doesn't build on existing work.
- [I-D.ralston-linearized-matrix-03](#) works differently, and can be layered either over or under MLS as needed.
- WG to discuss LM transport draft (WIP [on GitHub](#)).



# Thank You

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Was our first time at the IETF hackathon! Conversations to continue with the MIMI WG, and on MIMI Zulip and #mimi-dev in the IETF Slack.