

Matrix.org Demo

by

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Summary

The aim of this report is to act as an overview and introduction on Matrix, a relatively new open standard for interoperable, decentralised, real-time communication over IP.

We hope that by reading this report to the end, the reader may be able to understand the ideas behind the Matrix protocol, what the people behind it are trying to achieve, how it works on a surface level and be able to discern when and how they may use it.

0.1. Introduction

In order to prove Matrix.org functionalities, we use a client and perform some request using API available here <https://matrix.org/docs/api/#overview>. For this demo, we used Element client and Matrix.org homeserver.

0.2. Element

Element lets you choose where your messages are stored, putting you in control of your data.

Your conversations stay private with default end-to-end encryption, cross-signed device verification and decentralisation to let you choose where your data lives.

Create an account without a phone number, so you don't have to share those details with the outside world.

0.2.1. Benefits

- Choose where your data is kept, or host it yourself, instead of being forced to use the app's own server.
- Connectivity with other apps, directly or via a bridge so you're not stuck in a walled garden.
- End-to-end encrypted by default, so that the server(s) can't see your data.
- Create your account with a username; a mobile number is optional.
- Ensure other users are genuine, without having to verify each login.

0.3. Demo

Before we start, we have to follow some setup steps:

1. Download matrix client and install it;
2. Create an account;
3. Find a homeserver by google it (choosing a homeserver is like choosing an email provider) because they are decentralized (gmail can send email to yahoo and vice versa, they are using a shared protocol to communicate each other);
 - what client should we use? performance? it depends, each client has its own structure, backend, which leads to own performance
 - home servers affect the speed of your messenger you are use it
4. Send direct messages;

0.3.1. Different Clients

Go to <https://matrix.org/docs/projects/try-matrix-now/> and choose what client should be suitable for your messaging purposes.

0.3.2. Create an account

It's simple as it is. It's straightforward.

Your account is nearly ready

Agree to the terms to create your account.

Ionut Craciun

@icraciun:matrix.org

☐ I have read and agree to the [terms and conditions](#).

Continue

0.3.3. Home server

There are many homes servers that a real user can choose to own purposes. Home servers affect the speed of your messenger you are use it.

Homeserver name	Jurisdiction (and Server location)	Rules	Privacy Policy	Note	Registration method	Version
Ownz.at	Austria	No	No	Personal	In-house Element	1.56.0
activism.international	Germany	Yes	Yes	Left-wing; general host	In-house Element	1.56.0
agdersam.no	Norway (Germany)	No	No	Regional	In-house Element	1.56.0
arcticfoxes.net	US (UK)	Sort of	Yes	Personal	In-house Element	1.56.0
aria-net.org	Italy?	Yes	Yes		In-house Element	1.56.0.arianet.0
arrayinamatrix.xyz	Canada	Yes	Yes	Personal; <i>Residential</i>	In-house Element	1.56.0
asozial.org	Germany	No	No	In German; left-wing	In-house Element	Dendrite 0.5.1+e81ef164
bachgau.social	Germany	Yes	Yes	In German; regional	In-house Element	1.56.0
badstuebner.biz	Germany	No	Unclear	In German; personal	In-house Element	1.56.0

More servers could be found at <https://joinmatrix.org/servers/>.

0.3.4. Messages

Messages are End-to-end encrypted by default, so that the server(s) can't see your data. Like Discord, find an account to chat with.

Before we chat with someone, we have to generate a security key or we can choose a key already generated to prove message authenticity.



0.4. Requests

The list is quite long. The API provides a lot of requests such that getting information about an user, creating rooms, spaces, sending messages, etc. The following requests have been tested and their response has been reflected through Element GUI.

1. GET TOKEN ID: https://matrix.org/docs/api/#post-/_matrix/client/v3/login
2. Add it to Authentication => then perform requests;
3. GET INFO ABOUT USER: https://matrix.org/docs/api/#get-/_matrix/client/v3/admin/whois/-userId-
4. DISPLAY ALL DEVICES FOR THE CURRENT USER: https://matrix.org/docs/api/#get-/_matrix/client/v3/devices
5. CREATE A ROOM: https://matrix.org/docs/api/#post-/_matrix/client/v3/createRoom
6. SEND A MESSAGE TO A ROOM: https://matrix.org/docs/api/#put-/_matrix/client/v3/rooms/-roomId-/send/-eventType-/-txnId-