I have a hard time keeping track of which contacts use which chat systems. This is one of the main reasons we created matrix.org : )
THANKS!

- Matthew Hodgson - Co-Founder
  @matthew:matrix.org

- Ben Parsons - Developer Advocate
  @benpa:matrix.org

- Will Hunt - The Bridge Master
  @Half-Shot:half-shot.uk
INTRODUCTION

What is Matrix?
Community update
Bridges
Demo
End

OLEG FIKSEL

▶ DevOps Engineer
▶ Passionate about tech
▶ Like to automate everything
GOAL OF THIS TALK
GOAL OF THIS TALK

- Provide short introduction into Matrix
  more detail:  Matrix talk @ FrOSCon 2019
Goal of this talk

- Provide short introduction into Matrix
  more detail: [Matrix talk @ FrOSCon 2019](#)

- Community update
GOAL OF THIS TALK

- Provide short introduction into Matrix
  more detail: Matrix talk @ FrOSCon 2019

- Community update

- Explain what type of bridges are available
GOAL OF THIS TALK

- Provide short introduction into Matrix
  more detail: [Matrix talk @ FrOSCon 2019](#)

- Community update

- Explain what type of bridges are available

- Show bridges in action
INTRODUCTION

What is Matrix?

Matrix is an open network for secure, decentralised, real-time communication.
**What is Matrix?**

Matrix is an open network for **secure, decentralised** real-time communication.
WHAT IS MATRIX?
**WHAT IS MATRIX?**
<table>
<thead>
<tr>
<th>INTRODUCTION</th>
<th>What is Matrix?</th>
<th>Community update</th>
<th>Bridges</th>
<th>Demo</th>
<th>End</th>
</tr>
</thead>
</table>

**Matrix distributed architecture**
MATRIX DISTRIBUTED ARCHITECTURE

- **Clients**
- **Home Servers**
- **Application Servers**
- **Identity Servers**
## Why I like Matrix

<table>
<thead>
<tr>
<th>What is Matrix?</th>
<th>Community update</th>
<th>Bridges</th>
<th>Demo</th>
<th>End</th>
</tr>
</thead>
</table>

- Open source
- Distributed and federated network
- E2E encryption as first-class citizen
- Bridges break boundaries between networks
- Healthy and friendly community
Why I like Matrix

- Open source
## Why I like Matrix

- Open source
- Distributed and federated network
Why I like Matrix

- Open source
- Distributed and federated network
- E2E encryption as first-class citizen
Why I like Matrix

- Open source
- Distributed and federated network
- E2E encryption as first-class citizen
- Bridges break boundaries between networks
**Why I like Matrix**

- Open source
- Distributed and federated network
- E2E encryption as first-class citizen
- Bridges break boundaries between networks
- Healthy and friendly community
Community update
ROADMAP FROM 2019

- Better Synapse scalability (Workers, UID Loadbalancing)
- Improve Synapse's minimal footprint to run on smaller hardware.
- New device trust (cross signing devices) - a key step to enable E2EE by default.
ROADMAP FROM 2019

- Better Synapse scalability (Workers, UID Loadbalancing)
Roadmap from 2019

- Better Synapse scalability (Workers, UID Loadbalancing)

- Improve Synapse’s minimal footprint
  To run on smaller hardware.
ROADMAP FROM 2019

- Better Synapse scalability (Workers, UID Loadbalancing)
- Improve Synapse’s minimal footprint
  To run on smaller hardware.
- New device trust (cross signing devices)
  Key step to enable E2EE by default.
COMMUNITY UPDATE (1/2)

- Vector and Riot(X) are now Element
- Mozilla switched to Matrix
- Matrix is used for virtual conferences (CommCon Virtual 2020, HOPE 2020)
- Device cross-signing
- E2EE enabled by default
- E2EE support in bridges and bots (Maubot and Mautrix-* bridges)
- P2P Matrix (p2p.riot.im) (FOSDEM Video)
COMMUNITY UPDATE (1/2)

- Vector and Riot(X) are now Element
COMMUNITY UPDATE (1/2)

- Vector and Riot(X) are now Element
- Mozilla switched to Matrix
COMMUNITY UPDATE (1/2)

- Vector and Riot(X) are now Element
- Mozilla switched to Matrix
- Matrix is used for virtual conferences
  - CommCon Virtual 2020
  - HOPE 2020
COMMUNITY UPDATE (1/2)

- Vector and Riot(X) are now Element
- Mozilla switched to Matrix
- Matrix is used for virtual conferences
  CommCon Virtual 2020
  HOPE 2020
- Device cross-signing
COMMUNITY UPDATE (1/2)

- Vector and Riot(X) are now Element
- Mozilla switched to Matrix
- Matrix is used for virtual conferences
  CommCon Virtual 2020
  HOPE 2020
- Device cross-signing
- E2EE enabled by default
COMMUNITY UPDATE (1/2)

- Vector and Riot(X) are now Element
- Mozilla switched to Matrix
- Matrix is used for virtual conferences
  - CommCon Virtual 2020
  - HOPE 2020
- Device cross-signing
- E2EE enabled by default
- E2EE support in bridges and bots
  - Maubot and Mautrix-* bridges
COMMUNITY UPDATE (1/2)

- Vector and Riot(X) are now Element
- Mozilla switched to Matrix
- Matrix is used for virtual conferences
  - CommCon Virtual 2020
  - HOPE 2020
- Device cross-signing
- E2EE enabled by default
- E2EE support in bridges and bots
  - Maubot and Mautrix-* bridges
- P2P Matrix (p2p.riot.im) ( [FOSDEM Video](#) )
COMMUNITY UPDATE (2/2)
COMMUNITY UPDATE (2/2)

- Home servers
COMMUNITY UPDATE (2/2)

- Home servers
  - Synapse got much scalable thanks to worker model and Redis
COMMUNITY UPDATE (2/2)

- Home servers
  - Synapse got much scalable thanks to worker model and Redis
  - Dendrite is much more mature
COMMUNITY UPDATE (2/2)

- Home servers
  - Synapse got much scalable thanks to worker model and Redis
  - Dendrite is much more mature
  - Conduit (Rust) is catching up fast
COMMUNITY UPDATE (2/2)

- Home servers
  - Synapse got much scalable thanks to worker model and Redis
  - Dendrite is much more mature
  - Conduit (Rust) is catching up fast

- Search in encrypted rooms in Element Desktop using Radical Native
COMMUNITY UPDATE (2/2)

- Home servers
  - Synapse got much scalable thanks to worker model and Redis
  - Dendrite is much more mature
  - Conduit (Rust) is catching up fast

- Search in encrypted rooms in Element Desktop using Radical Native

- Many bots came to life
COMMUNITY UPDATE (2/2)

- Home servers
  - Synapse got much scalable thanks to worker model and Redis
  - Dendrite is much more mature
  - Conduit (Rust) is catching up fast

- Search in encrypted rooms in Element Desktop using Radical Native

- Many bots came to life

- Lots of new clients
  Also clients are implementing more features
  For example FluffyChat supports E2EE and reactions
COMMUNITY UPDATE (2/2)

- Home servers
  - Synapse got much scalable thanks to worker model and Redis
  - Dendrite is much more mature
  - Conduit (Rust) is catching up fast

- Search in encrypted rooms in Element Desktop using Radical Native

- Many bots came to life

- Lots of new clients
  Also clients are implementing more features
  For example FluffyChat supports E2EE and reactions

- Support for Raspberry Pi for matrix-docker-ansible-deploy
COMMUNITY UPDATE (2/2)

- Home servers
  - Synapse got much scalable thanks to worker model and Redis
  - Dendrite is much more mature
  - Conduit (Rust) is catching up fast

- Search in encrypted rooms in Element Desktop using Radical Native

- Many bots came to life

- Lots of new clients
  Also clients are implementing more features
  For example FluffyChat supports E2EE and reactions

- Support for Raspberry Pi for matrix-docker-ansible-deploy

- Support for arm64 for mautrix-* bridges
ROADMAP 2020-2021
Roadmap 2020-2021

- Rework communitites (groups as rooms)
# ROADMAP 2020-2021

- Rework communities (groups as rooms)
- Complement (integration test framework for servers)
ROADMAP 2020-2021

- Rework communities (groups as rooms)

- Complement (integration test framework for servers)

- Further master process sharding for Synapse
## Roadmap 2020-2021

- Rework communities (groups as rooms)
- Complement (integration test framework for servers)
- Further master process sharding for Synapse
- Redesign of matrix.to
Bridges
What are Bridges?
What are bridges?

Bridges are application services, which unite networks.
<table>
<thead>
<tr>
<th>INTRODUCTION</th>
<th>What is Matrix?</th>
<th>Community update</th>
<th>Bridges</th>
<th>Demo</th>
<th>End</th>
</tr>
</thead>
</table>

**BRIDGES ARCHITECTURE**
BRIDGES ARCHITECTURE
BRIDGES ARCHITECTURE
Bridge types

- Bridgebot
- Simple-puppeted
- Double-puppeted
BRIDGE TYPES

- Bridgebot
BRIDGE TYPES

- Bridgebot

- Simple-puppeted
BRIDGE TYPES

- Bridgebot
- Simple-puppeted
- Double-puppeted
# Bridge types - Bridgebot

- **BridgeBot**
  - User experience is moderate
  - Still better than nothing
Bridge types - Bridgebot

- User experience is moderate
**Bridge types - Bridgebot**

- User experience is moderate

- Still better than nothing
## Bridge Types - Bridgebot

<table>
<thead>
<tr>
<th>Micha</th>
<th>matterbridge-bot</th>
</tr>
</thead>
<tbody>
<tr>
<td>OK for 34m 17s</td>
<td>[irc] &lt;Berni&gt; die VM war gecrasht ... danke fürs monitoring :)</td>
</tr>
<tr>
<td>Service: k8s matterbridge</td>
<td>[irc] &lt;Berni&gt; hÄtte ich vermutlich aber auch in den nÄchsten Tagen bemerkt, wenn ich sie gebraucht hÄtte</td>
</tr>
<tr>
<td></td>
<td>[irc] &lt;Berni&gt; kommen meine Umlauts ordentlich an? in der chat-line schauts hier bÄshelfe aus</td>
</tr>
<tr>
<td></td>
<td>[irc] &lt;Berni&gt; aber im chat-history selbst gehts wieder</td>
</tr>
</tbody>
</table>
BRIDGE TYPES - SIMPLE-PUPPETED

- On the other network the messages look native
- Example: Facebook bridge
- Messages written in other network's native client will not be synced to Matrix
BRIDGE TYPES - SIMPLE-PUPPETED

- Matrix ⇒ other network
BRIDGE TYPES - SIMPLE-PUPPETED

- Matrix ⇒ other network

- On the other network the messages look native
BRIDGE TYPES - SIMPLE-PUPPETED

- Matrix ⇒ other network

- On the other network the messages look native

- Example: Facebook bridge
INTRODUCTION

Bridges

Community update

What is Matrix?

Demo

End

BRIDGE TYPES - SIMPLE-PUPPETED

- Matrix ⇒ other network

- On the other network the messages look native

- Example: Facebook bridge

- Messages written in other network’s native client will not be synced to Matrix
**BRIDGE TYPES - DOUBLE-PUPPETED**
B R I D G E  t y p e s  -  D O U B L E - P U P P E T E D

- Matrix ⇔ other network
Bridges

- **Double-puppeted**

  - Matrix ⇔ other network
  - Messages on both sides look native
BRIDGE TYPES - DOUBLE-PUFFETED

- Matrix ⇔ other network

- Messages on both sides look native

- Examples: Slack, IRC, Telegram, WhatsApp
Demo time!
**But first - demo setup**
But first - demo setup
BUT FIRST - DEMO SETUP
**BUT FIRST - DEMO SETUP**
**BUT FIRST - DEMO SETUP**
BUT FIRST - DEMO SETUP
**BUT FIRST - DEMO SETUP**

- Freenode (IRC)
- matrix.org
- appservice-irc
- appservice-slack
- froscon2020.
- fiksel.info
- #matrix-irc-bridge-test
- #test-irc-bridge01
- #FrOSCon
- AS API
- CS API
- #FrOSCon
**But first - demo setup**
**INTRODUCTION**

What is Matrix?

Community update

Bridges

Demo

End

**BUT FIRST - DEMO SETUP**
## INTRODUCTION

### What is Matrix?

- Community update
- Bridges

---

## BUT FIRST - DEMO SETUP

<table>
<thead>
<tr>
<th>Matrix</th>
<th>IRC</th>
<th>Slack</th>
<th>Telegram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freenode</td>
<td>#matrix-irc-bridge-test</td>
<td>#general</td>
<td>mautrix-telegram</td>
</tr>
<tr>
<td>#FroSCon</td>
<td>#test-irc-bridge01</td>
<td>#FrOSCon</td>
<td></td>
</tr>
</tbody>
</table>

- matrix.org
- froscon2020.fiksel.info
- AS API
- CS API
- appservice-irc (Freenode)
- appservice-slack (Slack)
- mautrix-telegram (Telegram)
**BUT FIRST - DEMO SETUP**
Now it’s really demo time!
Thanks!

Oleg Fiksel

Email: oleg@fiksel.info
Matrix: @oleg:fiksel.info
INTRODUCTION

What is Matrix?

Community update

Bridges

Demo

End

LINKS

- FrOSCon Matrix Room: #FrOSCon:fiksel.info
- P2P Matrix talk @ FOSDEM 2020
- Matrix home-assistant bot
- Types of bridging