



Matrix Widgets

in the "Sovereign Workplace" for the German public sector

about:nordeck

- IT Consulting based in Hamburg, Germany
- ~40 IT professionals
- Develop FOSS Matrix integrations with productivity software for public sector

Matrix in the Sovereign Workplace

- Productivity Suite
- Independent from US providers
- Completely open source
- Matrix & Jitsi for real-time communication
- Integrate with other components
- Individual Business Cases with Element through widgets
- Element as application platform

[matrix]

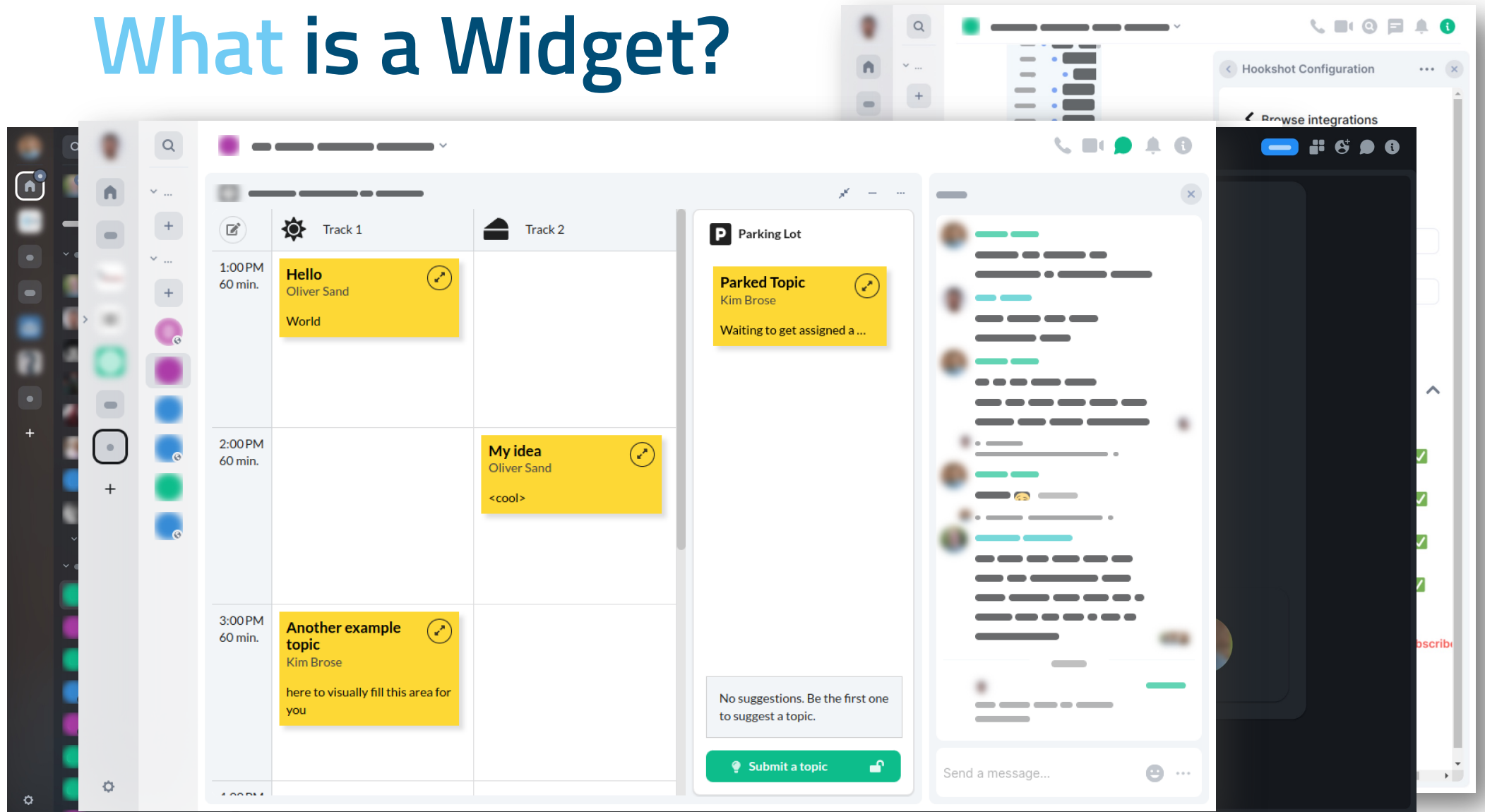
 element



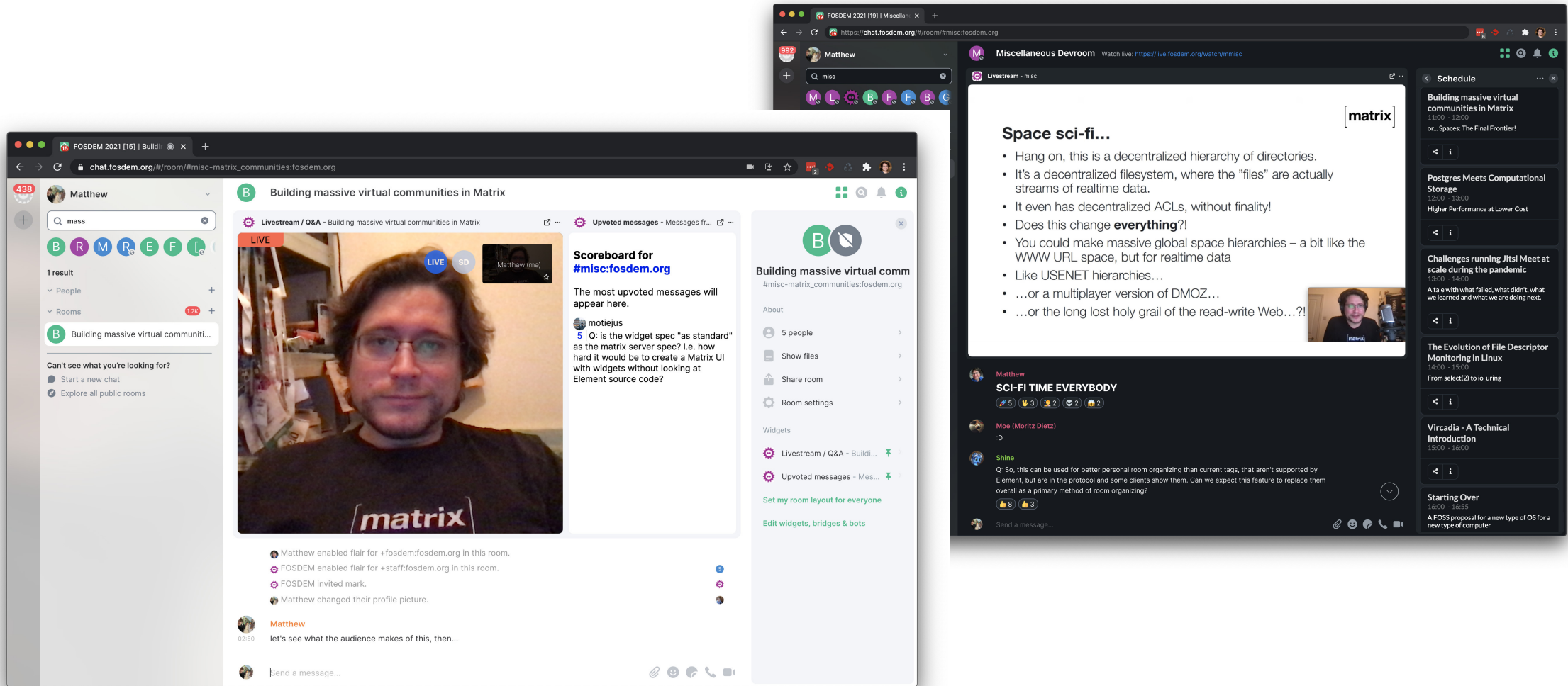
Univention Corporate Server



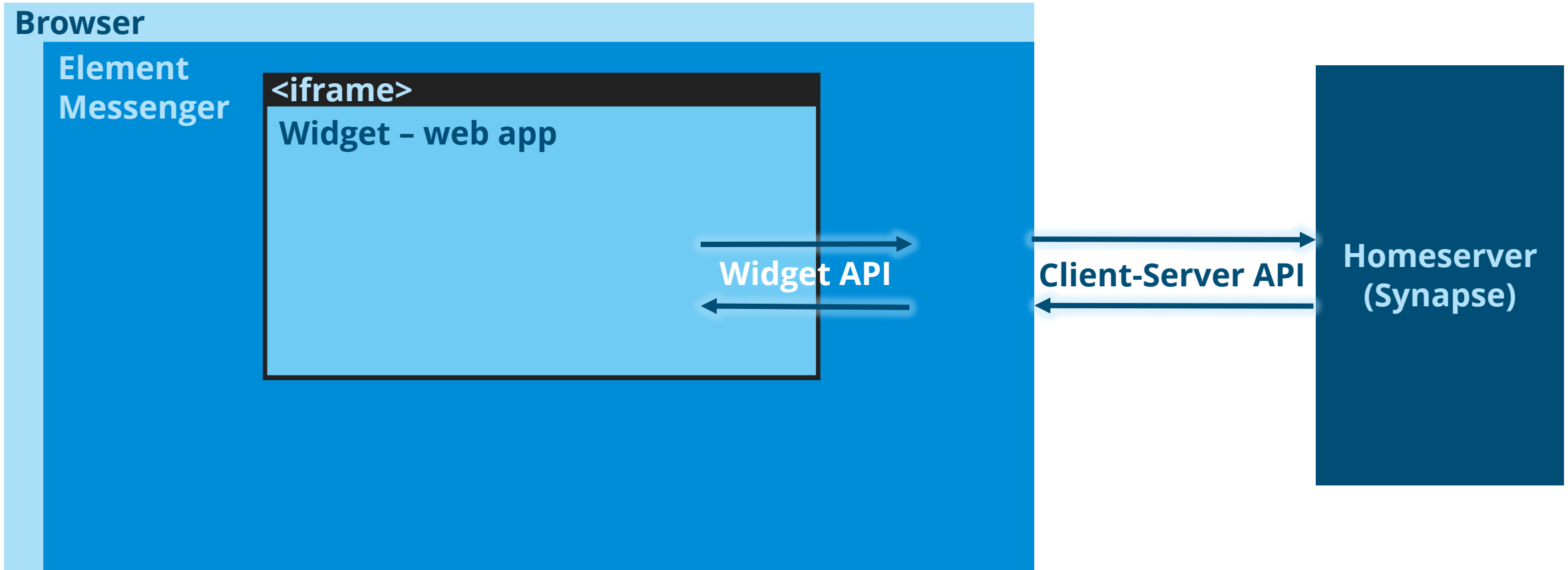
What is a Widget?



What is a Widget?



Widget API



Widget API Features

Client Interactions

- Capability requests
- Display: Always on top, modals

Matrix / Room Interactions

- Send / receive room and state events / to device messages
- Read Relations
- Request OIDC Identity Token

Approve widget permissions



This widget would like to:

- ✓ See **net.nordeck.whiteboard.document.chunk** events posted to this room
- ✓ See **net.nordeck.whiteboard.document.create** events posted to this room
- ✓ See **net.nordeck.whiteboard.document.snapshot** events posted to this room
- ✓ See when people join, leave, or are invited to this room
- ✓ See **m.room.power_levels** events posted to this room
with an empty state key
- ✓ See **net.nordeck.whiteboard.v2** events posted to this room
with an empty state key
- ✓ Send **net.nordeck.whiteboard.document.chunk** events as you in this room
- ✓ Send **net.nordeck.whiteboard.document.create** events as you in this room
- ✓ Send **net.nordeck.whiteboard.document.snapshot** events as you in this room
- ✓ Send **m.room.power_levels** events as you in this room
with an empty state key
- ✓ Send **net.nordeck.whiteboard.v2** events as you in this room
with an empty state key
- ✓ See **net.nordeck.whiteboard.session.signaling** events posted to this room
- ✓ Send **net.nordeck.whiteboard.session.signaling** events as you in this room
- ✓ The **town.robin.msc3846.turn_servers** capability

Remember my selection for this widget

Decline All

Approve

Widget Capabilities

- Widgets can **access a lot**
- Other users can add widgets to a room
- Capabilities keep control at user
- Compare to permissions in Android

State of the Widget API

- Available in Element Web / Desktop
- Not part of the Matrix spec

MSC2192
MSC2762
MSC2765
MSC3009
MSC3662
MSC3846
MSC2871
MSC3751
MSC2974
Widgets, the book
Widgets, the spec
MSC3869
MSC3819
MSC2774
MSC2812
MSC3817
MSC3144
MSC3008
MSC2873
MSC2931
MSC2813
MSC1960
MSC2790

How to extend the Widget API?

- Example: Upload to content / media repository
- Create an MSC with:
- `/_matrix/media/v3/upload` behavior from CS API
- Capabilities
- Implement in `matrix-widget-api`
- Implement in Element

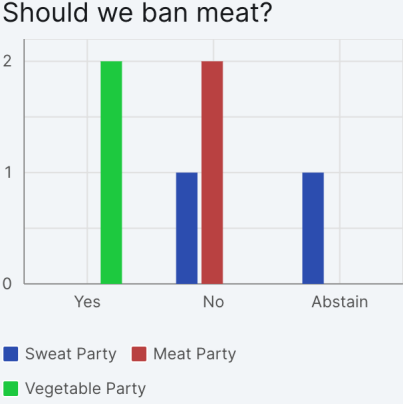
Alternative Widget API designs

- Use Client-Server API directly (MSC3008)
- OIDC scopes – capabilities
- Benefit: Feature parity, no relay, easier to implement
- Challenges: Sync, E2EE, Delegate access to the widget?

Widgets as an App Platform

- Collaborative tools, be creative!
- Data storage in rooms
- Real-Time communication with MatrixRTC?
- Communicate with bots for broader workflows

Our Use Cases



Should we ban meat?

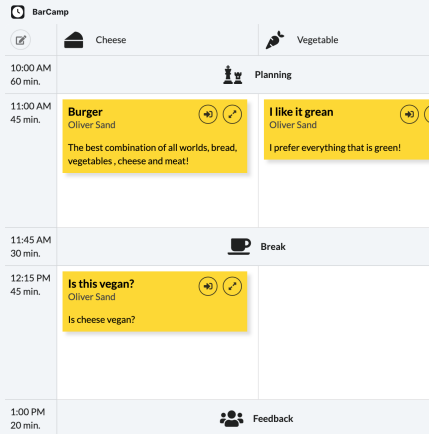
Response	Sweat Party	Meat Party	Vegetable Party
Yes	0	0	2
No	1	2	0
Abstain	1	0	0

■ Sweat Party ■ Meat Party
■ Vegetable Party

Open Source

Polls

<https://github.com/nordeck/matrix-poll>



BarCamp

10:00 AM 60 min. Planning

- Burger** (Oliver Sand): The best combination of all worlds, bread, vegetables, cheese and meat!
- I like it grean** (Oliver Sand): I prefer everything that is green!

11:45 AM 30 min. Break

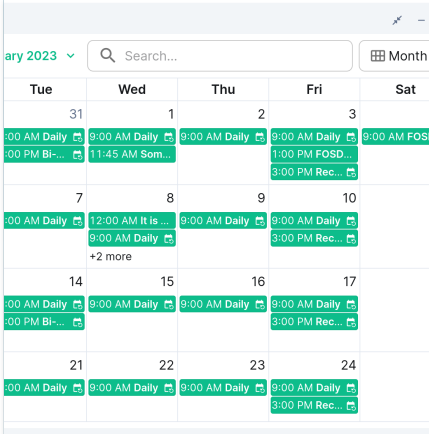
12:15 PM 45 min. **Is this vegan?** (Oliver Sand): Is cheese vegan?

1:00 PM 20 min. Feedback

Open Source Demo

BarCamp

<https://github.com/nordeck/matrix-barcamp>

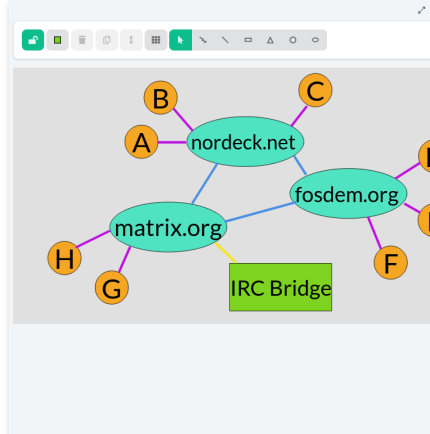


January 2023

Tue	Wed	Thu	Fri	Sat
31	1	2	3	4
9:00 AM Daily	9:00 AM Daily	9:00 AM Daily	9:00 AM Daily	9:00 AM FOSDEM
1:00 PM Bi...	11:45 AM Som...		1:00 PM FOSD...	3:00 PM Rec...
7	8	9	10	11
9:00 AM Daily	12:00 AM It is ...	9:00 AM Daily	9:00 AM Daily	
	9:00 AM Daily		3:00 PM Rec...	
	+2 more			
14	15	16	17	18
9:00 AM Daily	9:00 AM Daily	9:00 AM Daily	9:00 AM Daily	
1:00 PM Bi...			3:00 PM Rec...	
21	22	23	24	25
9:00 AM Daily	9:00 AM Daily	9:00 AM Daily	9:00 AM Daily	
			3:00 PM Rec...	

WIP

Meetings



nordeck.net

fosdem.org

matrix.org

IRC Bridge

WIP

Whiteboard



Server

Edit tracks and time slots

Planning

11:00 AM
60 min.

12:00 PM
60 min.

1:00 PM

End of the BarCamp 🙌

Parking Lot

You can park topics here that you don't want to place in the grid for now.

No suggestions. Be the first one to suggest a topic.

Submit a topic



Chat

Kim Brose and one other joined, matrix-barcamp Bot was invited and joined expand

- Custom widget added by Kim Brose
- BarCamp (developed by Nordeck) widget modified by Kim Brose
- Kim Brose has updated the room layout
- oliver.sand.demo has updated the room layout

Kim Brose

!help

✓ 1

matrix-barcamp Bot

Hi, I'm matrix-barcamp-bot!
Suggest a topic by writing

```
!submit <title>:  
<description> .
```

I will react with these emoji:

- ✓ if your submission was handled
- ✗ if there was an error (please notify you local admin)
- 🔒 if submissions are locked and you may not submit

Kim Brose has updated the room layout 13:59

Send a message...





Thank You!
Time for Q&A

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