

Fixing the internet with a federated cloud



Frank Karlitschek



- Born in Reutlingen, Germany
- Studied Computer Science in Tübingen
- Unit Manager and VP Engineering in different Internet companies
- Founded several startups
- Involved in open source and social networks for 20 years
- Developed openDesktop.org and a distributed social networking API 15 years ago
- W3C invited expert
- Founded ownCloud
- Founded Nextcloud

Agenda

- The problem with centralized services
- The challenges to implement decentralization services
- Some Nextcloud real world examples
- Questions

The Internet started decentralized

The Internet started decentralized

“The Internet is the global system of interconnected computer networks”

What is decentralized?

What is decentralized?

- No central instance
- Multiple provider
- Multiple server software
- Multiple client software
- Open Source / Free Software

Decentralized Internet Services:

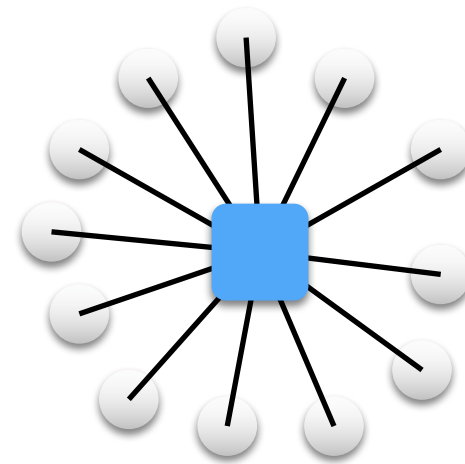
Decentralized Internet Services:

- Mail
- Usenet (News)
- IRC
- Web
- XMPP

Centralized Internet Services:

Centralized Internet Services:

- File sync and share
- Social Networking
- Video / Voice
- Messenger
- IoT
- Cloud Computing
- AI / Personal Assistant



Why is this a problem?

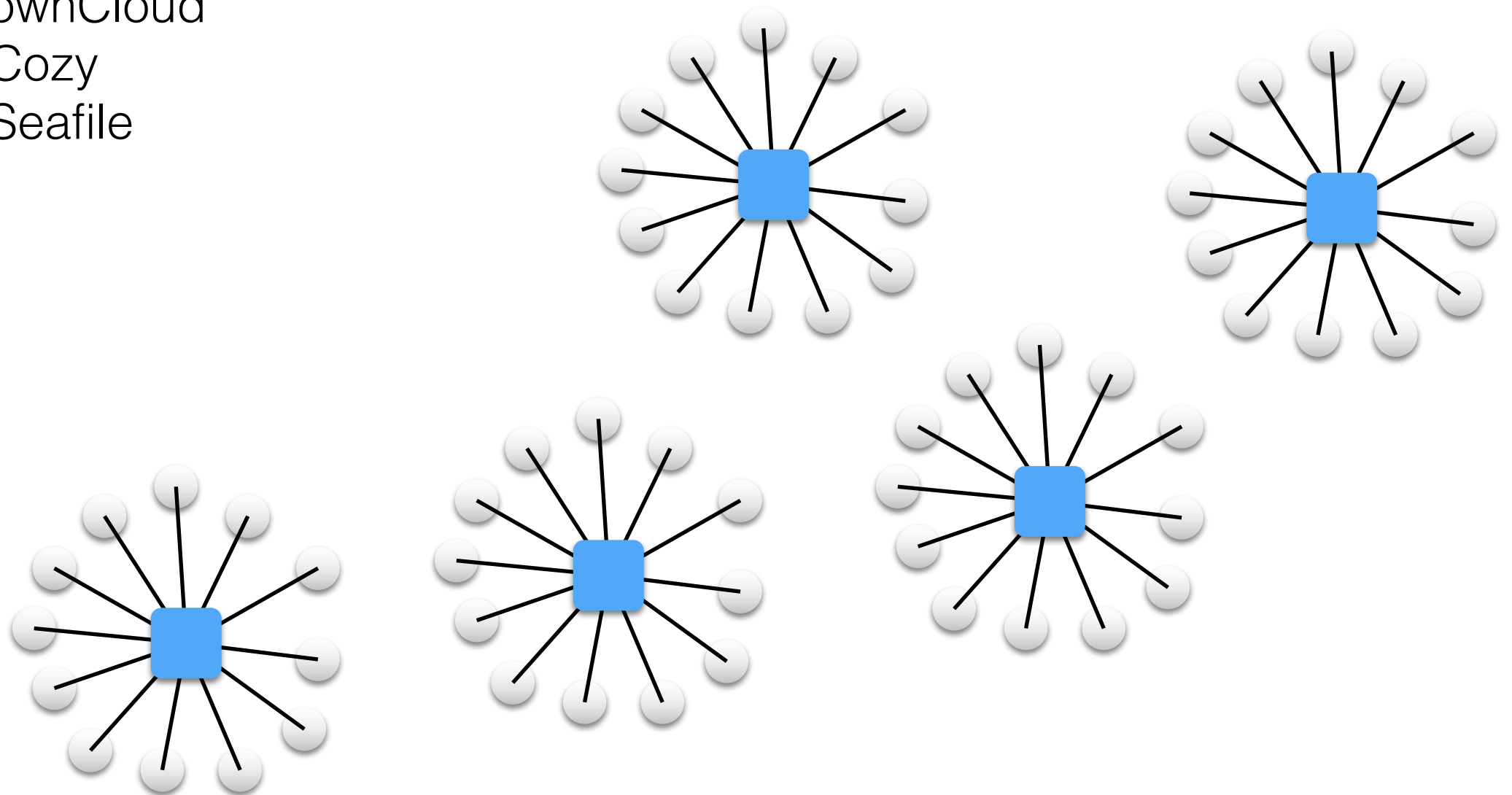
- Proprietary software
- Cost
- Speed
- Legal issues
- Backdoors ? / espionage
- No ownership over own data

What can we do?

Fixing Step 1 - Free Software

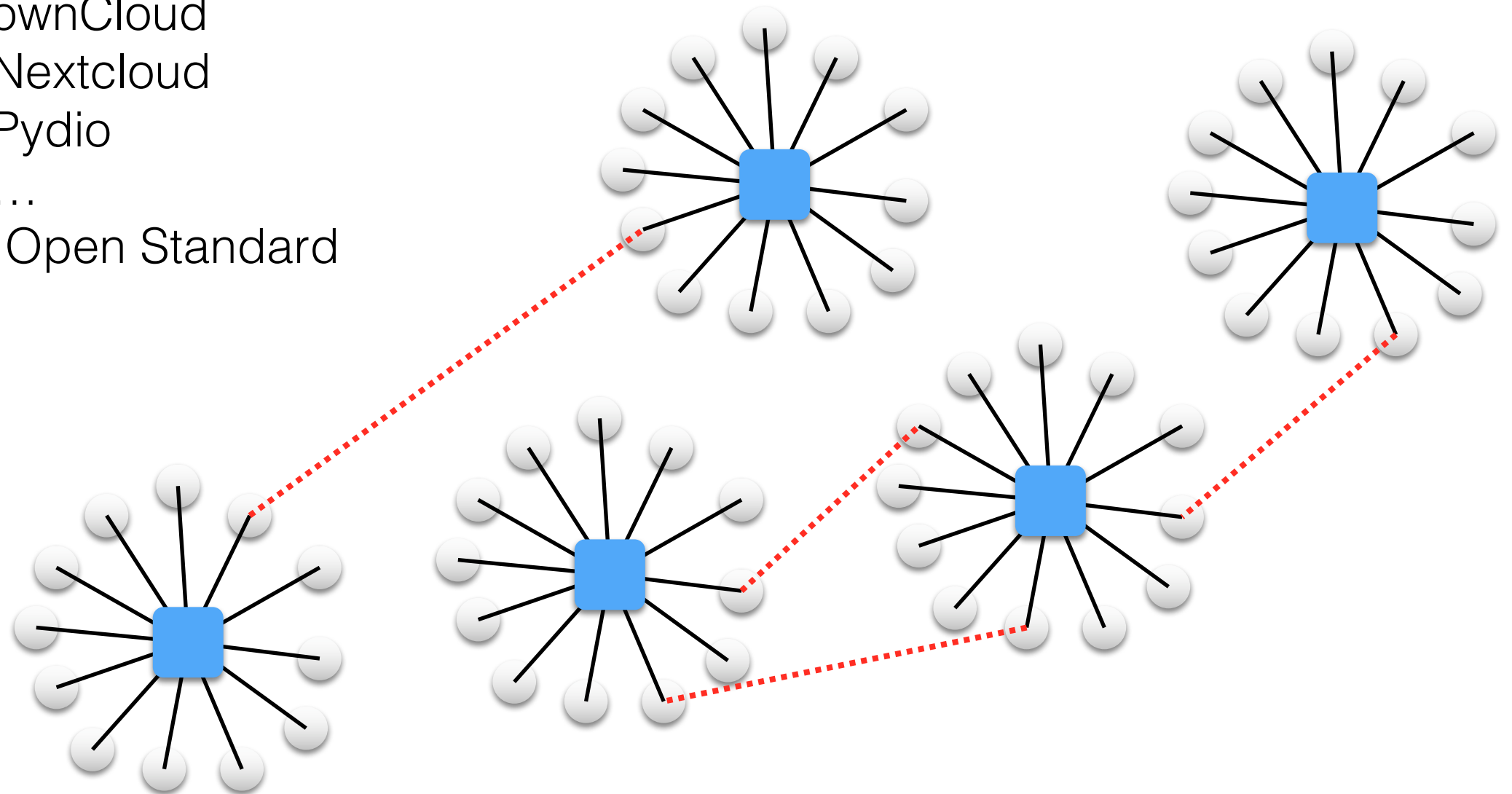
Fixing Step 1 - Free Software

- AjaXplorer
- ownCloud
- Cozy
- Seafiler



Fixing Step 2 - Federation

- ownCloud
 - Nextcloud
 - Pydio
 - ...
- > Open Standard



Fixing Step 2 - Federation

The screenshot displays the Nextcloud Files interface. On the left, a sidebar contains navigation options: All files, Recent, Favorites, Shared with you, Shared with others, Shared by link, and Tags. The main area shows a folder named 'hamburg sides' containing a list of 14 image files. The files are listed with their names, sizes, and upload dates. A share dialog is open for the file 'QR5A4784 - Version 2.jpg', showing the file name, size (6.3 MB), and upload date (2 years ago). The dialog includes options for 'Activities', 'Comments', and 'Tags'. A tooltip is visible, stating: 'Share with people on other servers using their Federated Cloud ID username@example.com/nextcloud'. Below the dialog, there is a text input field for sharing with users, groups, and remote users, and a checkbox for 'Share link'.

File Name	Size	Upload Date
QR5A3826 - Version 2.jpg	6.2 MB	2 years ago
QR5A4335.jpg	7.1 MB	4 years ago
QR5A4412.jpg	8.1 MB	4 years ago
QR5A4428 - Version 2.jpg	5 MB	3 years ago
QR5A4525 - Version 2.jpg	11.6 MB	3 years ago
QR5A4784 - Version 2.jpg	6.3 MB	2 years ago
QR5A4923 - Version 2.jpg	6.3 MB	2 years ago
QR5A5151 (1).jpg	6.1 MB	3 years ago
QR5A5298 (1).jpg	4.2 MB	3 years ago
QR5A5999.jpg	3.8 MB	3 years ago
QR5A6169 - Version 2.jpg	5.8 MB	3 years ago
14 files		75.4 MB

Victory !!

Really ?????

Diaspora vs. Facebook

XMPP vs. WhatsApp

identi.ca vs. Twitter

Ekiga vs. Skype

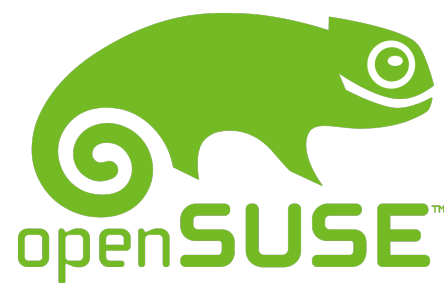
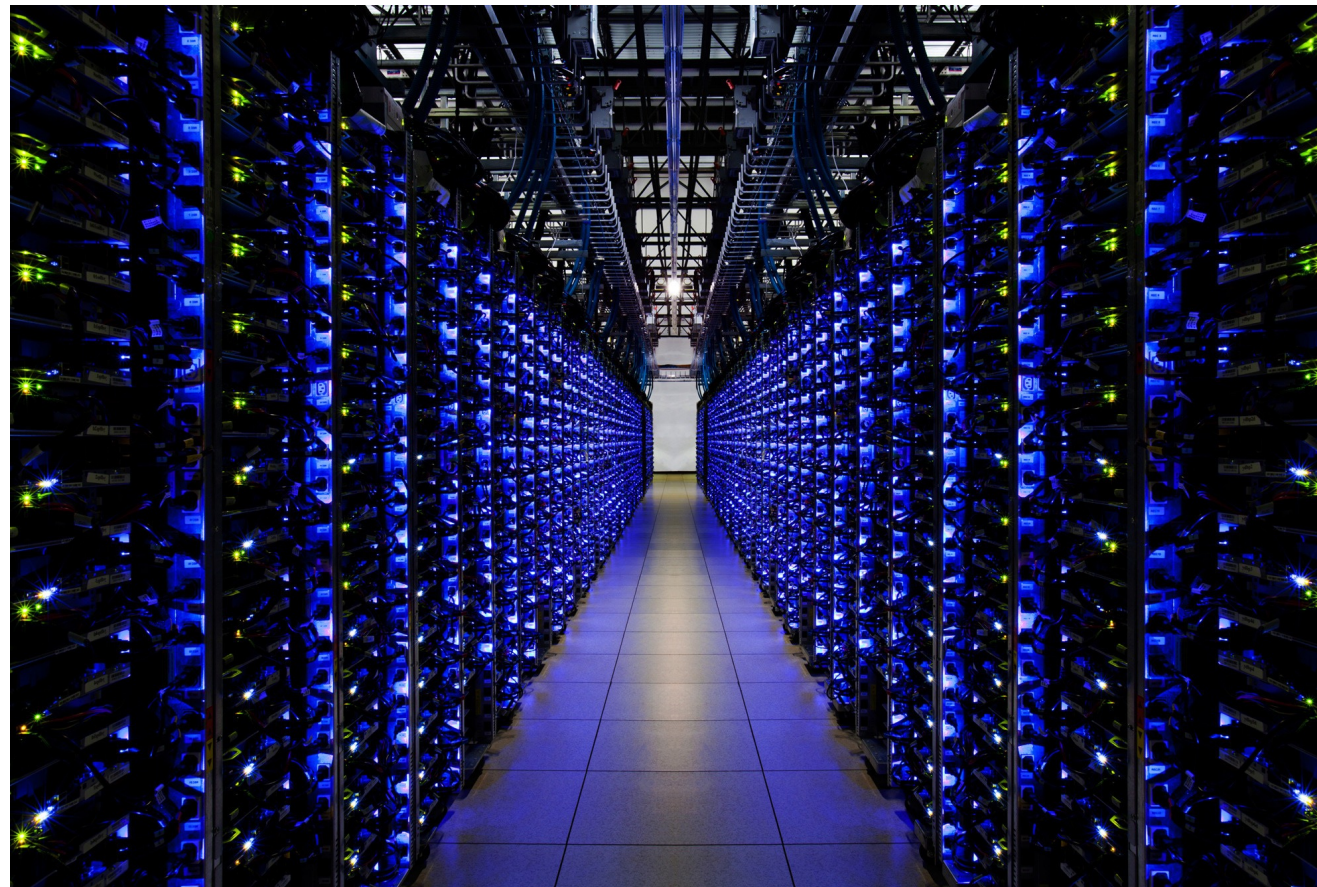
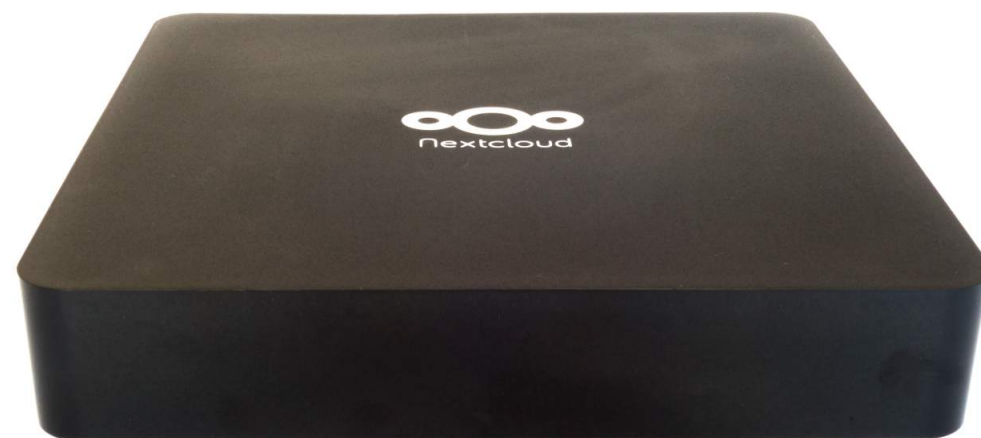
Cloud Federation vs. Dropbox, Google, ...

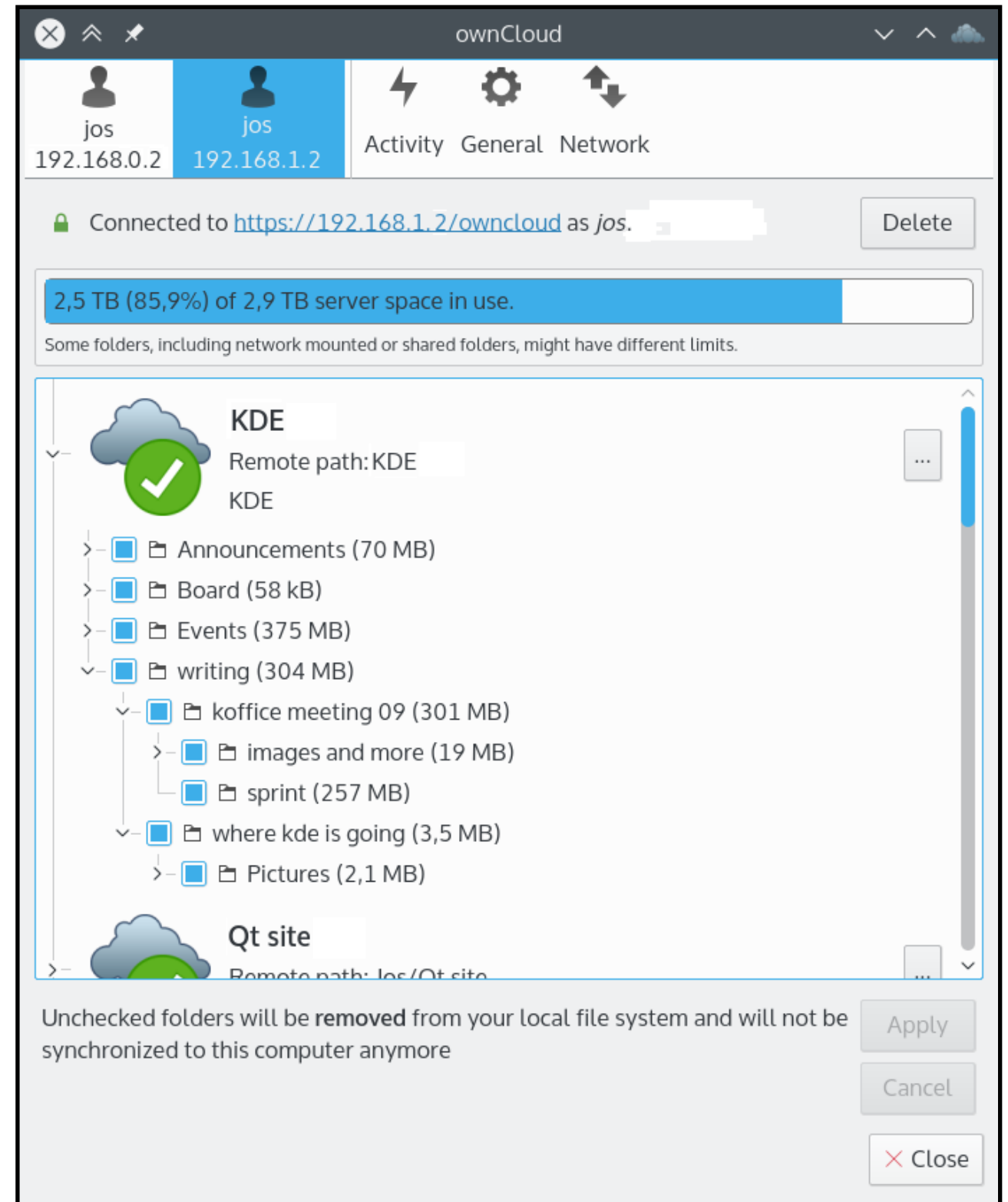
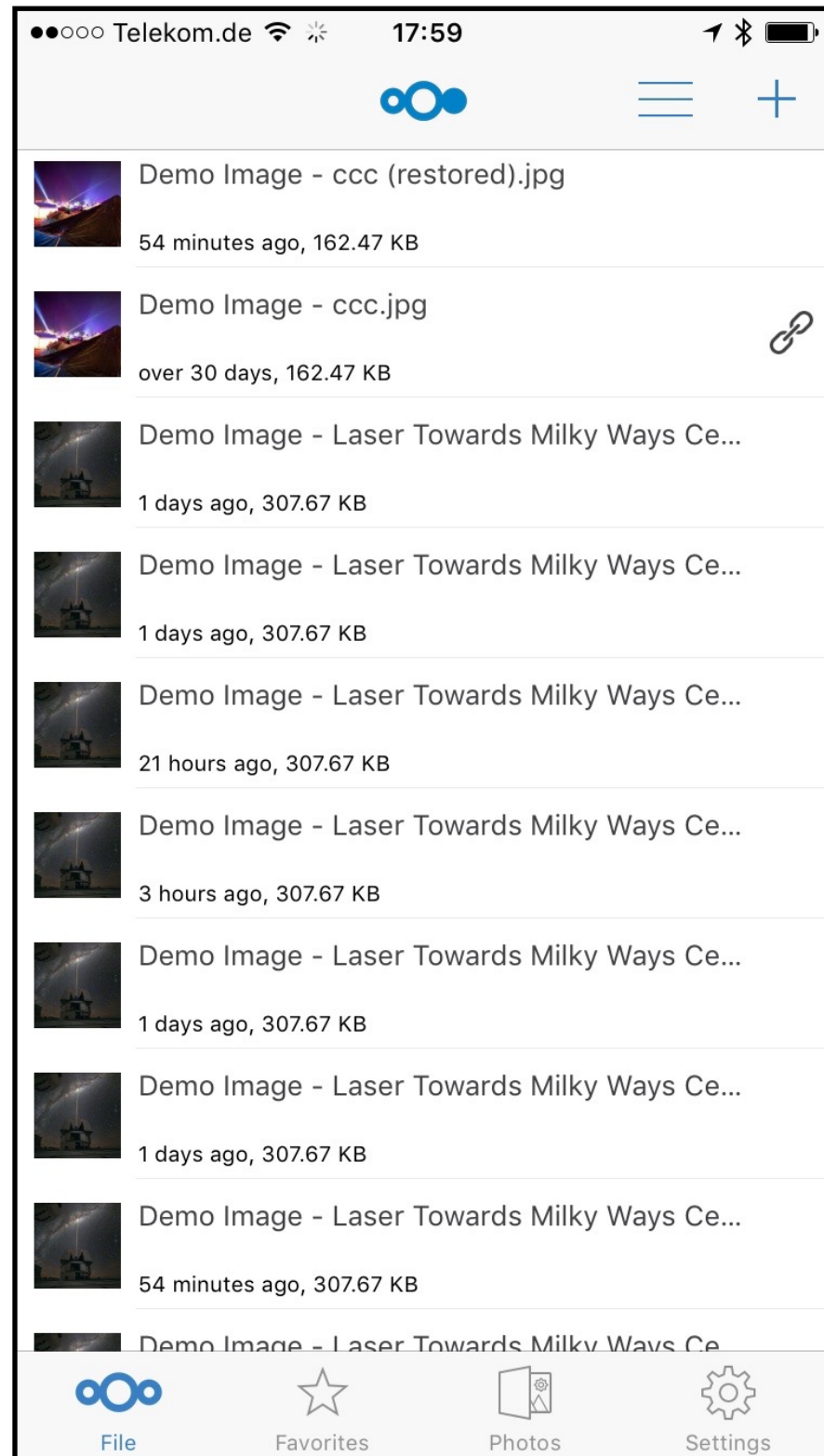
Why didn't this work?

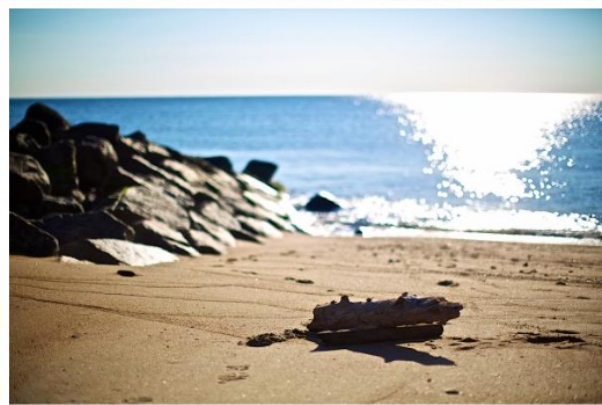
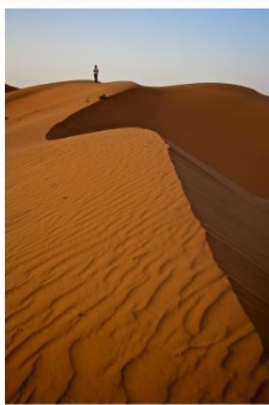
What do we need to do differently?

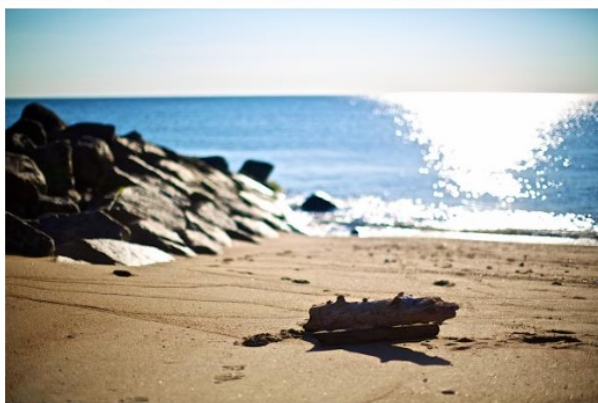
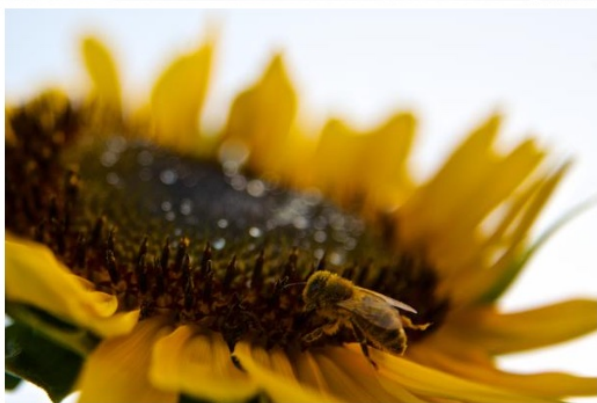
- Making self hosting super easy
- Finding people
- Collaboration between projects
- Thinking out of the box
- Innovate

Nextcloud real world example









Search contacts ...



Björn Schießle
let's call it GNU/Nextcloud ...



Frank Karlitschek
great, see you in Stuttgart!



Jos Poortvliet
got a whole bunch of retwe...

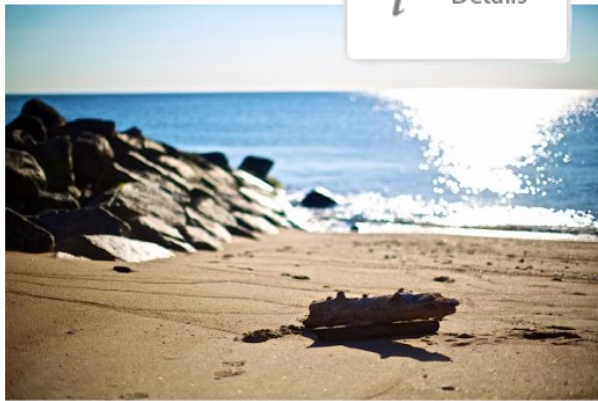




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- Call
- Email
- Chat
- Share
- Details



Public directory



Personal info

Sessions

App passwords

Sync clients

Activity

Federated Cloud

Second-factor backup codes

You are using 10.8 GB of Unlimited

Profile picture 👤



png or jpg, max. 20 MB

Full name 👤

Frank Karlitschek

Phone number 🔒

Your phone number

Website 🔒

karlitschek.de

Email 👤

frank@karlitschek.de

For password recovery and notifications

Address 🔒

🔒 **Private**
Only visible to you

👤 **Contacts**
Visible to local users and to trusted servers

🌐 **Public**
Will be synced to a global and public address book

Groups

You are member of the following groups:

admin

Password

.....

New password



Change password

Public directory

Global User directory

- Network of Lookup-Servers
- Master-Master-Master replication
- Similar to GPG Key Servers

Future:

- Distributed Hash Table
- W3C standard
- Integration of proprietary services

- All files
- Recent
- Favorites
- Shared with you
- Shared with others
- Shared by link
- Tags

General > Company documents

	Size	Modified
Vertrag Freie Mitarbeit.odt	21 KB	23 days ago
Actions and Minutes template.odt	26 KB	5 months ago
Letterhead_Nextcloud.odt	22 KB	5 months ago
Briefbogen_Nextcloud.odt	18 KB	5 months ago
OIN agreement.pdf	118 KB	7 months ago
5 files	204 KB	



Actions and Minutes template.odt
 26 KB, 5 months ago

Activities **Comments** Sharing Versions

Frank Karlitschek
 New comment ...

Frank Karlitschek seconds ago
 Indeed. Very useful

Olivier Paroz 5 months ago
 This is mainly useful when working with customers and partners

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Choose person ...

-  Roeland Douma, Luka... ⋮
-  You ⋮
-  Björn Schießle ⋮

Roeland Douma

Arthur Schiwon

Lukas Reschke

Please help to fix the internet

Every user, company, country should be able to host it

Distribute and federated

Great UI / UX

Open protocols and standards

Fully open source and free software

Change the rules of the game

Questions ?