

Federated Sharing

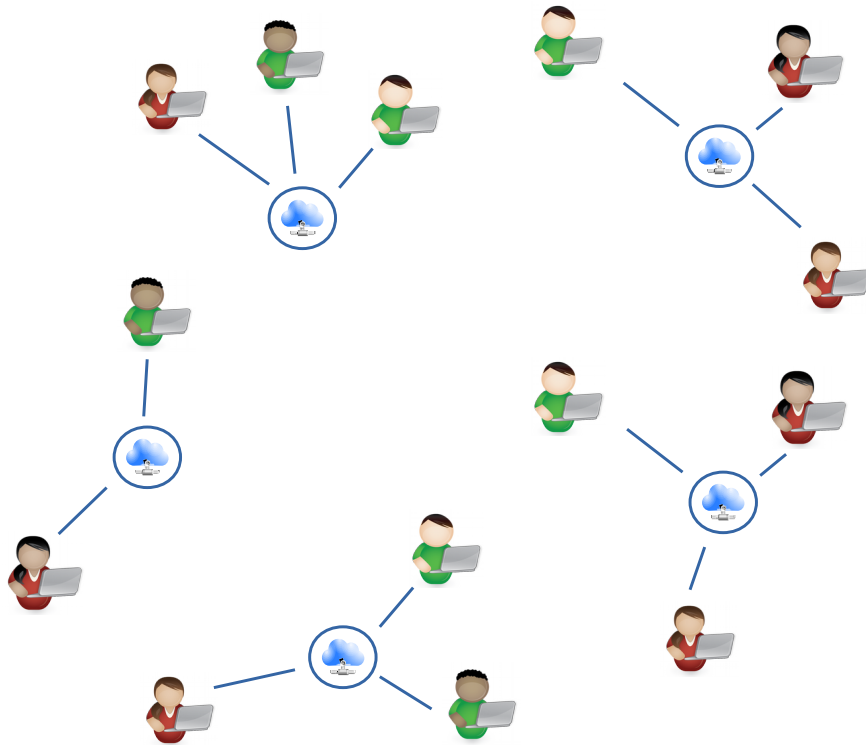
Next Generation

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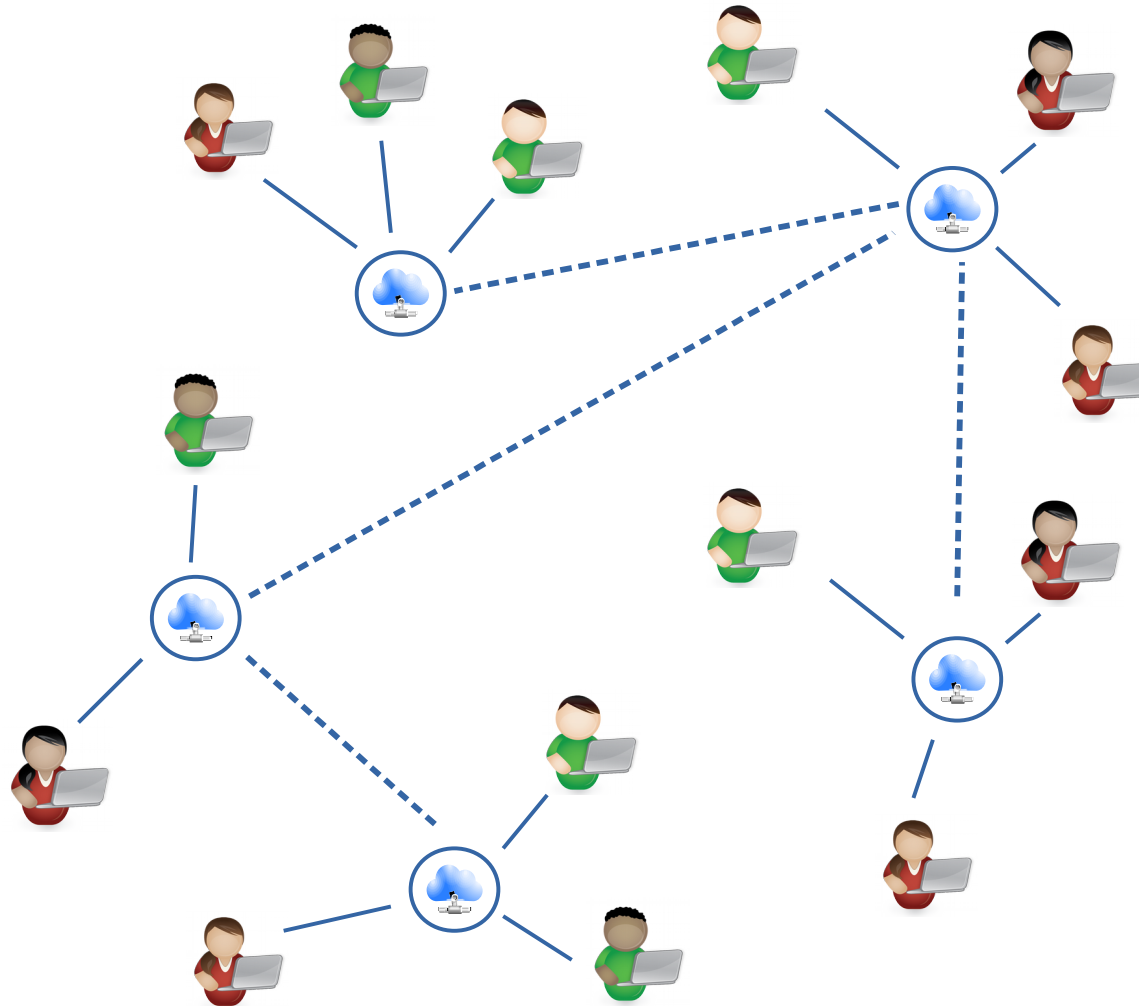


What is Cloud Federation?



- Know where your data is stored
- Know who has access to it
- Control the software
- But: it creates Islands

What is Cloud Federation?



Toward a real Open Standard

- Lead by the OpenCloudMesh initiative
- Well defined APIs based on what already exists
- Well documented
- Easy to pick up by other cloud initiatives

<https://rawgit.com/GEANT/OCM-API/v1/docs.html>



Current Version

- API call to initiate a federated share
- API call to retrieve a share and its status
- API call to send notifications
 - Remove share
 - Accept/decline share
 - Permission change

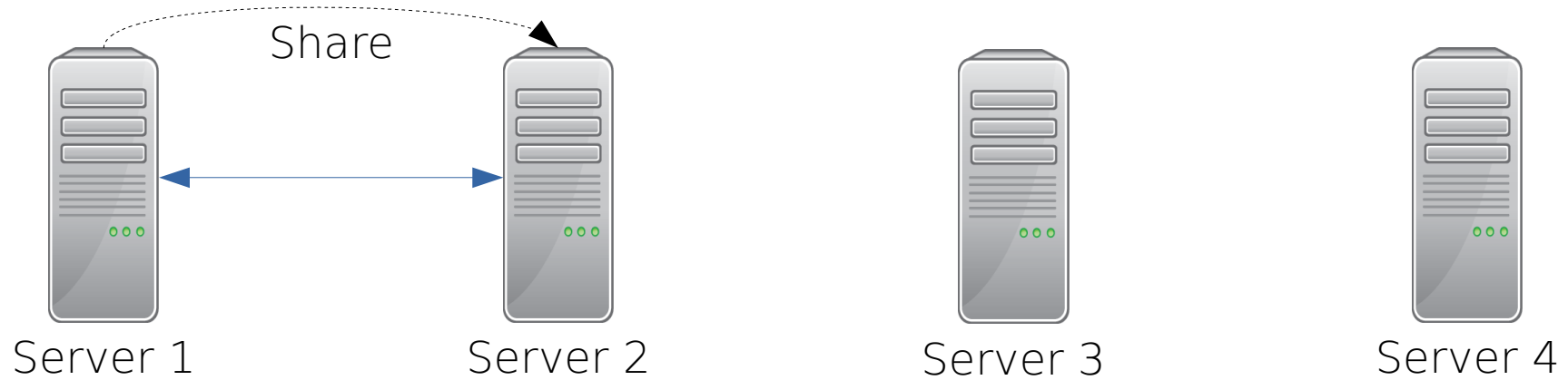


Additional Features

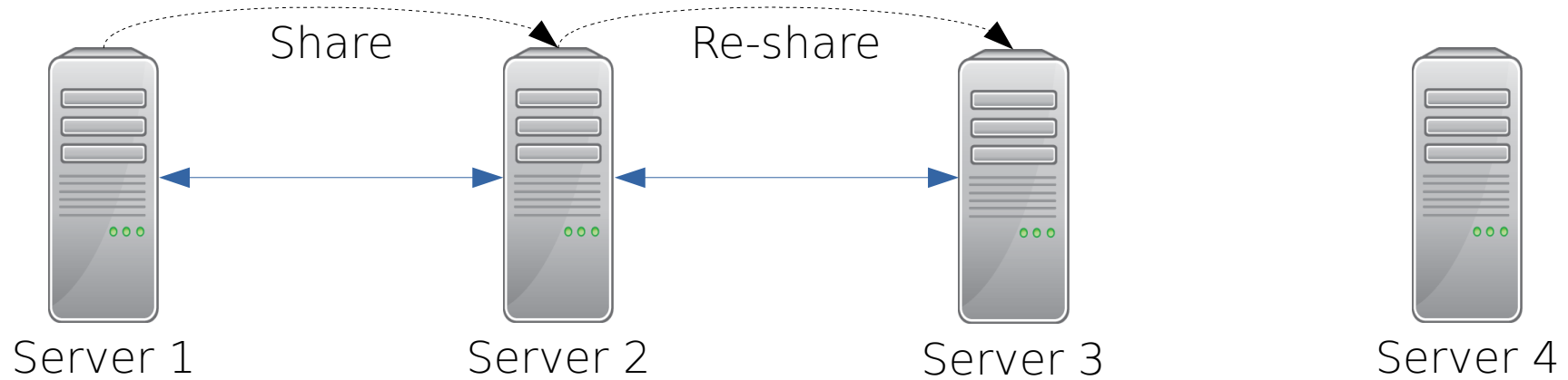
(already available in Nextcloud)



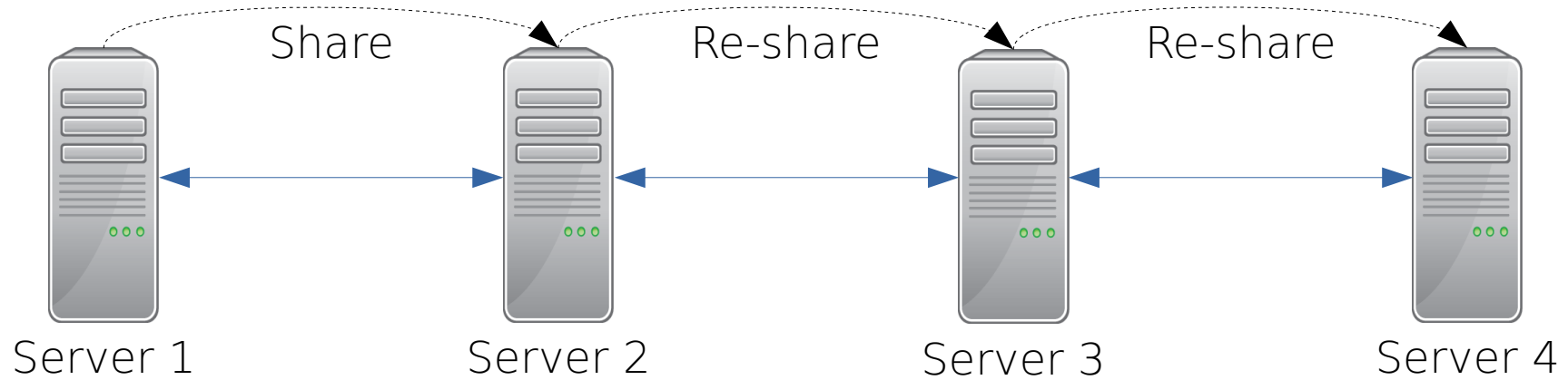
The Re-sharing Problem



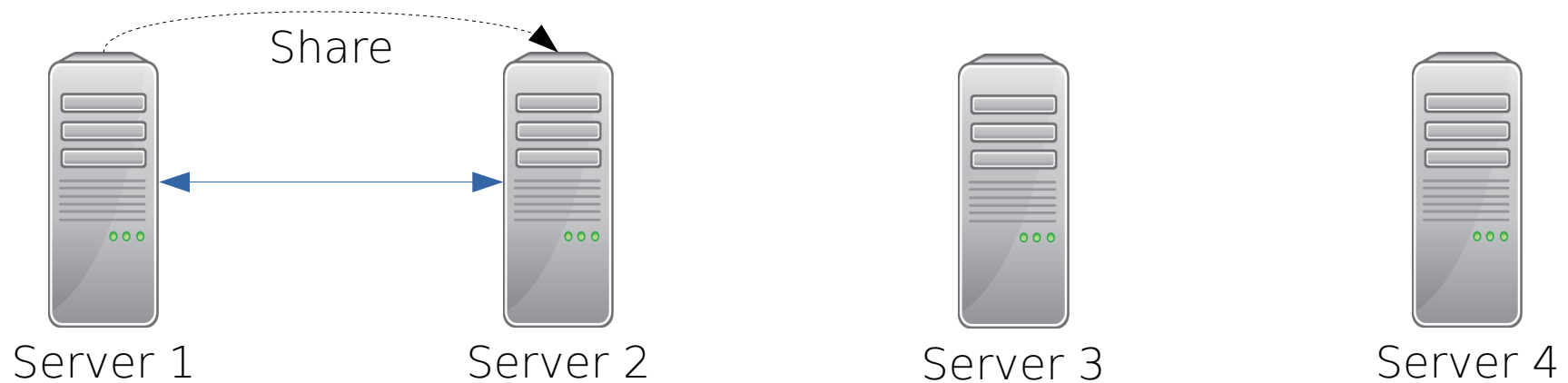
The Re-sharing Problem



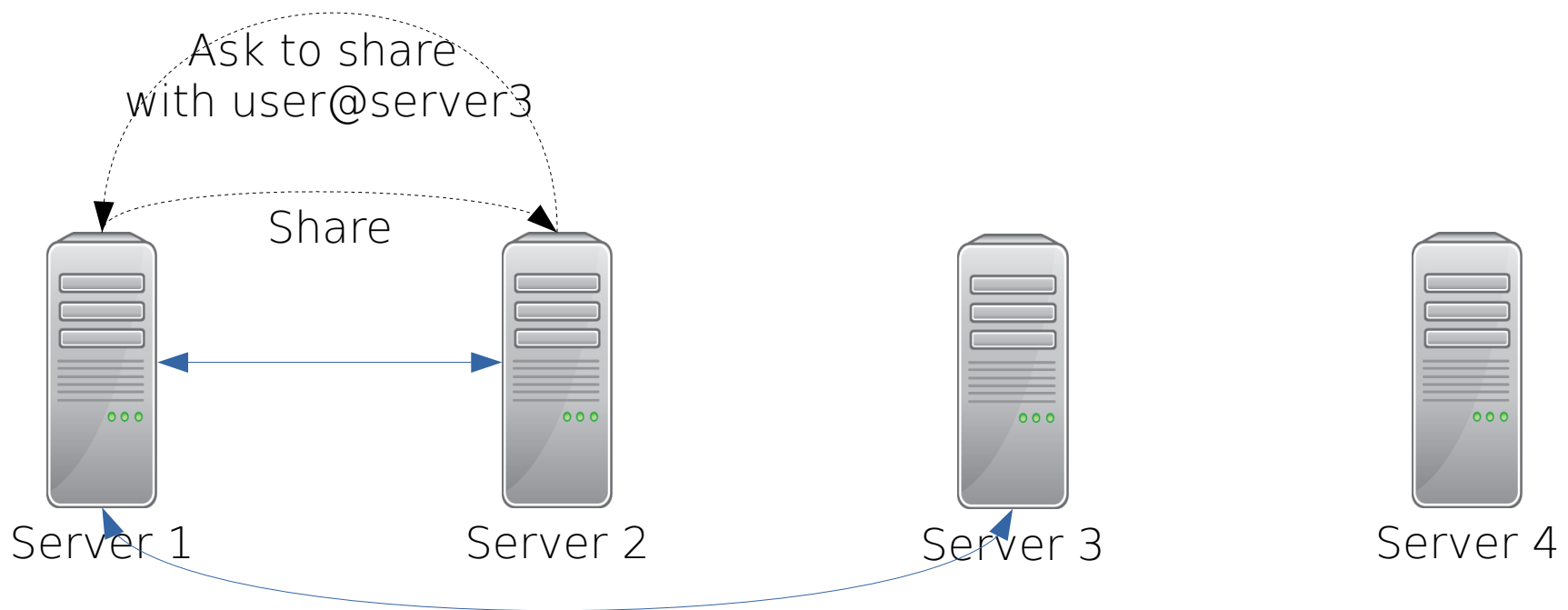
The Re-sharing Problem



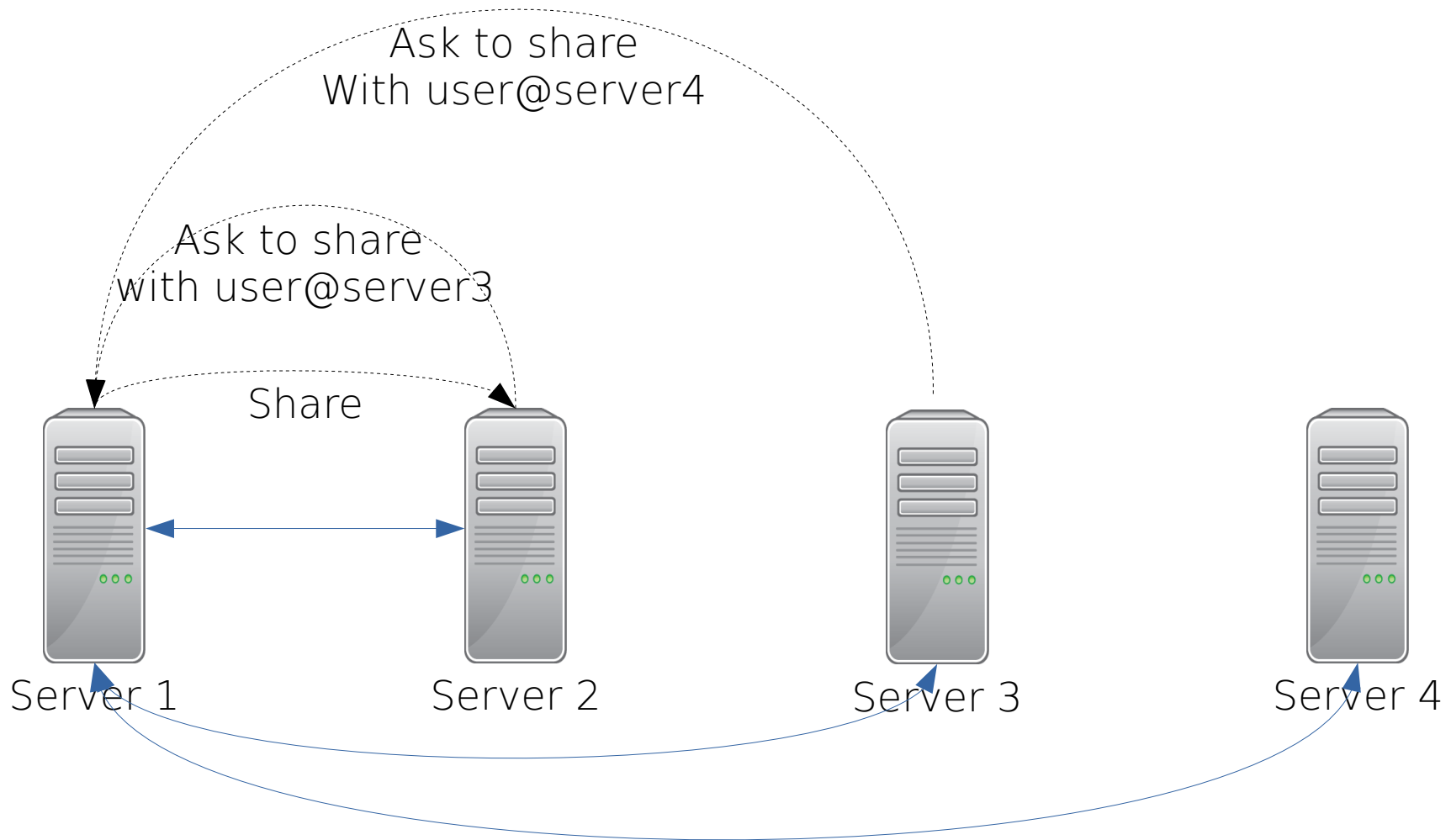
Solving the Re-sharing Problem



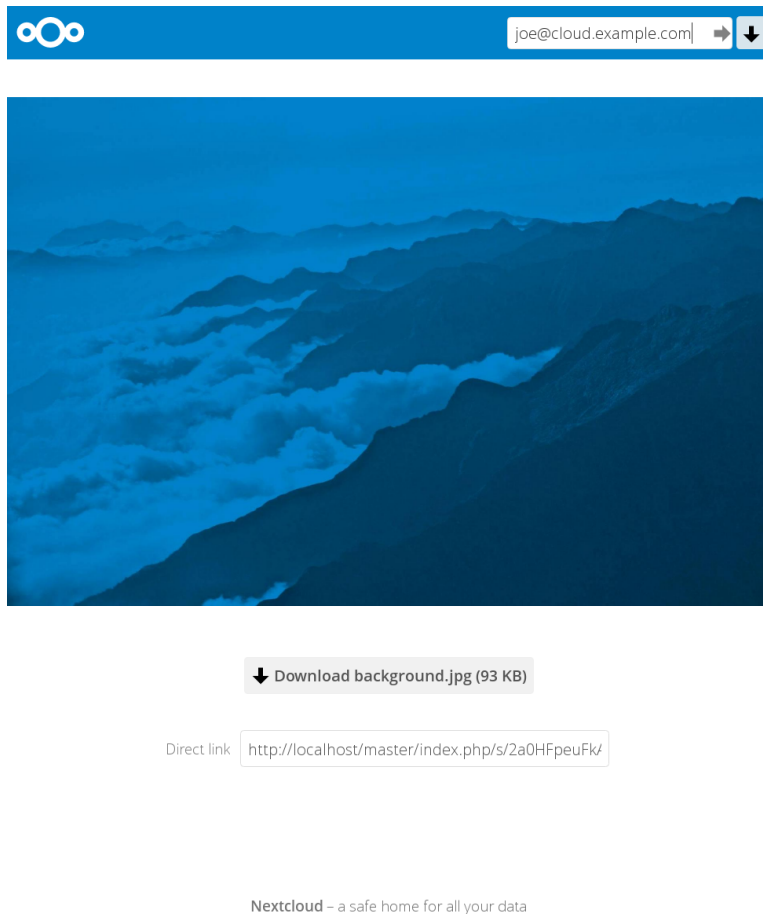
Solving the Re-sharing Problem



Solving the Re-sharing Problem



Convert Public Links



- Share public link
- Recipient adds the public link to his Nextcloud
- Receive federated share from owner
- Owner see who added a public link and can control access to his data

How to find People

Federation

Federation allows you to connect with other trusted servers to exchange the user directory. For example this will be used to auto-complete external users for federated sharing.

Add server automatically once a federated share was created successfully

Trusted Servers

+ Add Nextcloud server

 <https://example1.org>



 <https://example2.org>



 <https://example3.org>



- **Trusted Servers** exchange user directory
- Add servers automatically or manually
- Auto complete from trusted servers

What's Next



User defined Cloud ID

- Problem: user@email.com@cloud.com



User defined Cloud ID

- Problem: user@email.com@cloud.com

Possible Solutions:

- Administrator could define the first part of the Cloud ID
- Users could set their individual cloud id.



User defined Cloud ID - Solutions

- The Administrator defines a pattern for the first part
 - The cloud server could resolve it internally
 - Administrator would need to take care that there is no name collision



User defined Cloud ID - Solutions

- Users define complete custom cloud ID
 - The user could for example decide to use their email Address as federated cloud ID
 - Therefore they could add a well-known/federated-cloud file to the root of their server pointing to the real cloud server
 - ... or store the information in the DNS Record
 - The cloud server will provide a API to resolve the custom cloud ID



A global Address Book

Profile picture 



png or jpg, max. 20 MB

Full name 

Björn Schießle

Email 

bjoern@nextcloud.com

For password recovery and notifications

Website 

www.schiessle.org




Phone name 

+49 7438 8437 8 4837

Twitter 

@schiessle

Address 

-  Private
-  Contacts
-  Public

A global Address Book

- Everybody can set up his own (internal) address book server
- Or use an existing address book server
- You can limit access to one address book, e.g within your company
- Or you can federate with other servers → keep address book entries in sync across multiple servers



Federated global Address Book

- Every user has a private/public key
- Data send to the server are signed with the users private key
- The same key is used to sign/verify Twitter, Webpage,... Accounts from the user
- Trust on first contact: The first time I share with a new user I get their public key
- From now on my server uses the public key to verify updated data records



Benefits of the Address Book

- Make it easier to find people to share with
- It could allow users to migrate from one provider/server to another
 - They only needs to move the key to the new server and update their data with the new federated cloud ID
 - Contacts can detect the change and automatically update existing shares



Summary

- We have a standard for Federated Sharing
- There is other interesting stuff which could become part of a Standard v2
 - Flat re-shares
 - API to ask for a federated share from outside
 - Trusted Servers
 - Update Permissions
- Many things we can think about and improve in the future
 - Custom cloud IDs
 - Global address book

→ Looking for your input and feedback



Thank You!

Question?

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