Contribution ID: **32** Type: **Presentation**

Designing and Implementing for Scale, Distribution & Async

Wednesday 30 January 2019 09:15 (20 minutes)

ownCloud has traditionally used the database to store metadata including the file hierarchy, shares, comments and tags.
Keeping this database metadata in sync with the actual filesystem becomes challenging when requests time out or fail for other reasons such as stale locks, partially traversed trees, or changes on storages that are not propagated, ultimately leading to filecache corruptions.
In order to power the next generation of storage services, we're rewriting the fundamental layers that ownCloud was built on using seven years of experience and combining it with the latest developments in technology.
A new event driven storage architecture makes background processing a first class citizen, allows storing all metadata in the storage, brings commands and queries to replace the synchronous nature of request processing, and an asynchronous protocol opens up new possibilities for distributed storages, federation and client communication.

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Session Classification: Sync/share Technology&Research

Track Classification: Synchronization/Sharing Technology & Research