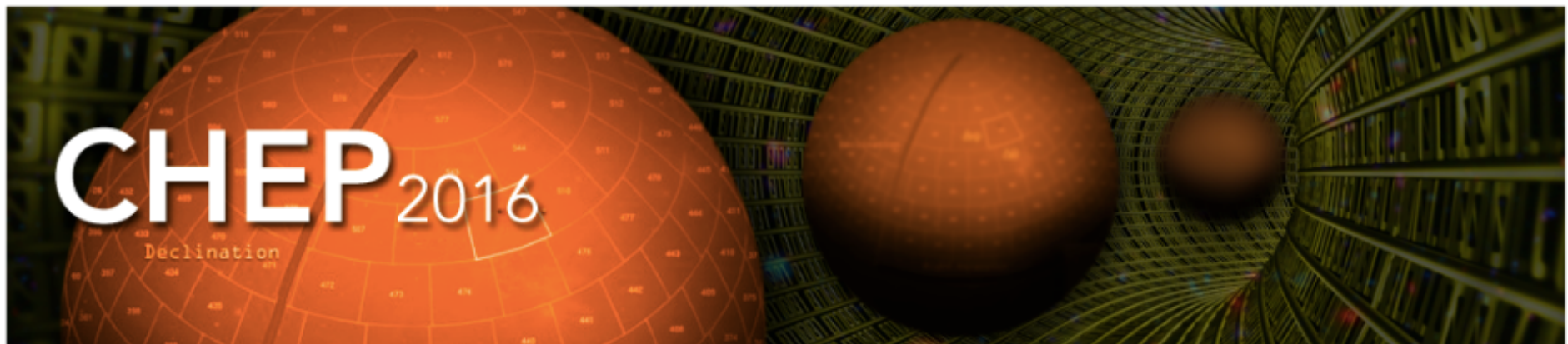


Interconnected Private Clouds for Universities and Researchers

Jakub T. Mościcki (CERN)
Christian Schmitz (ownCloud GmbH)
Peter Szegedi (GEANT)



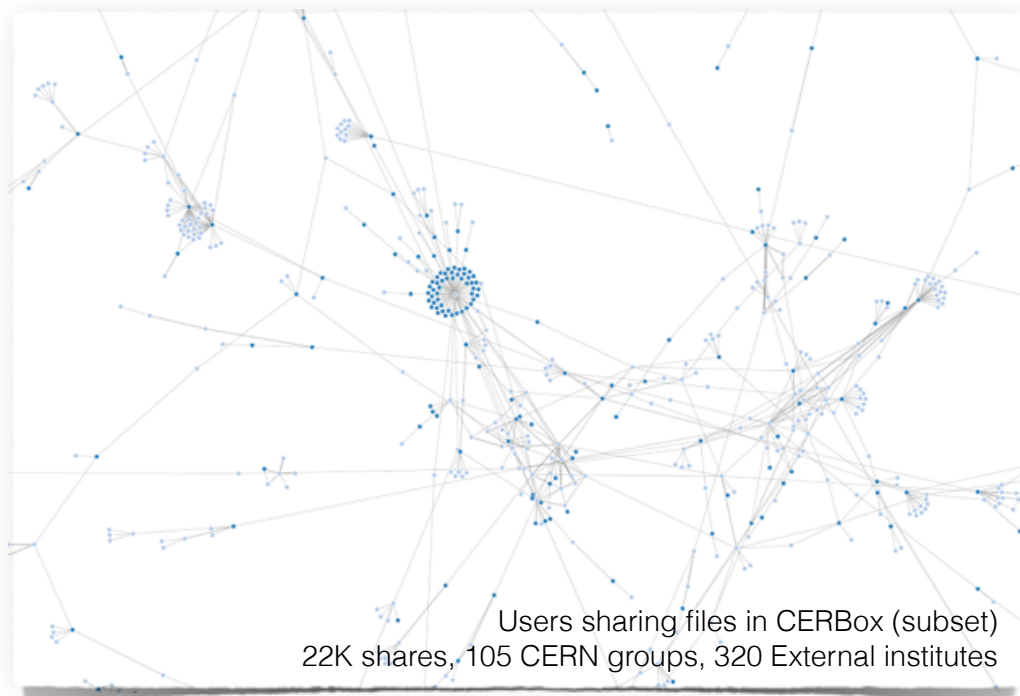
22nd International Conference on Computing in High Energy and Nuclear Physics, Hosted by SLAC and LBNL, Fall 2016

Sharing in on-premise storage clouds

- Sharing made *very* easy

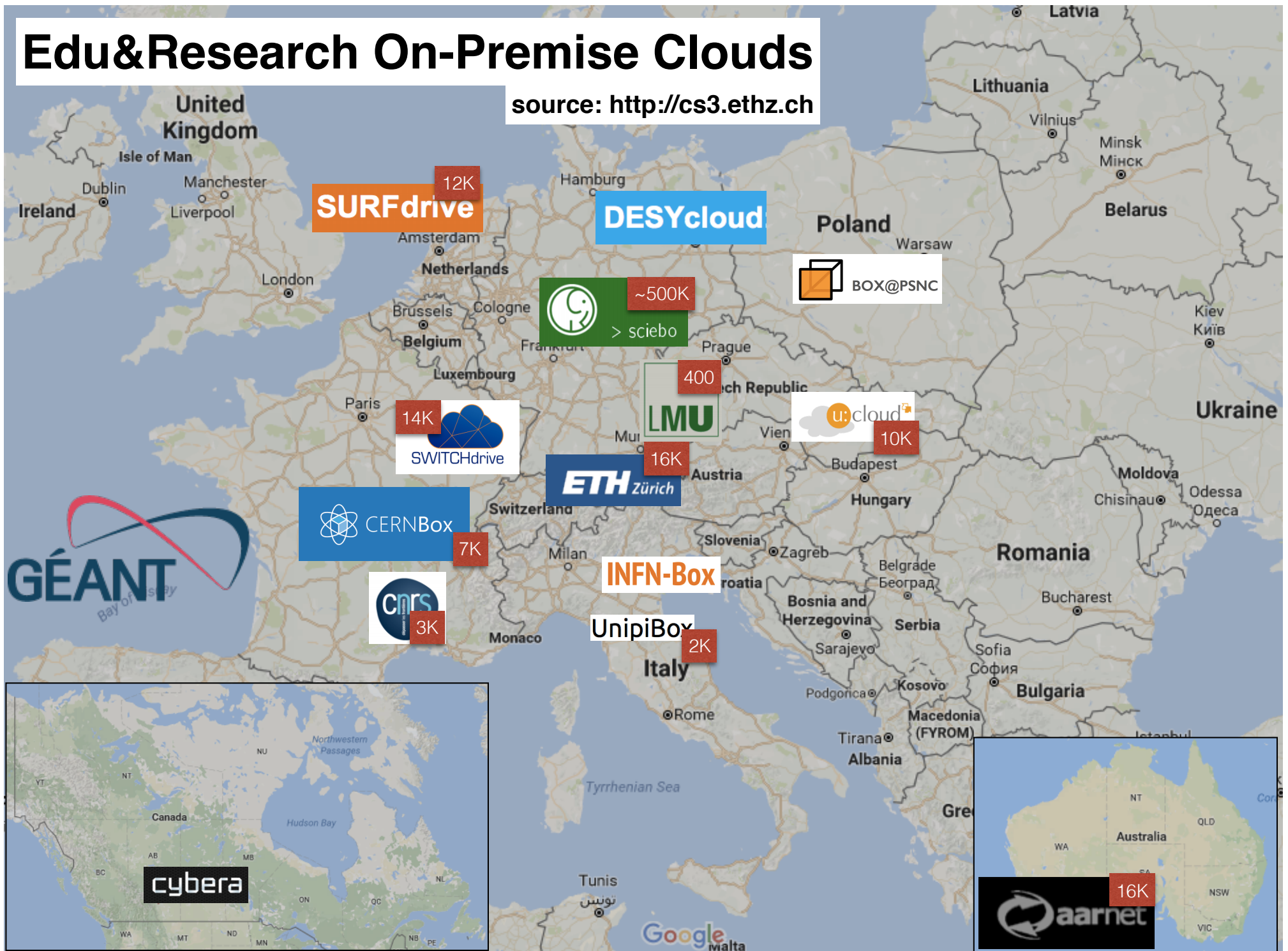


- A successful model

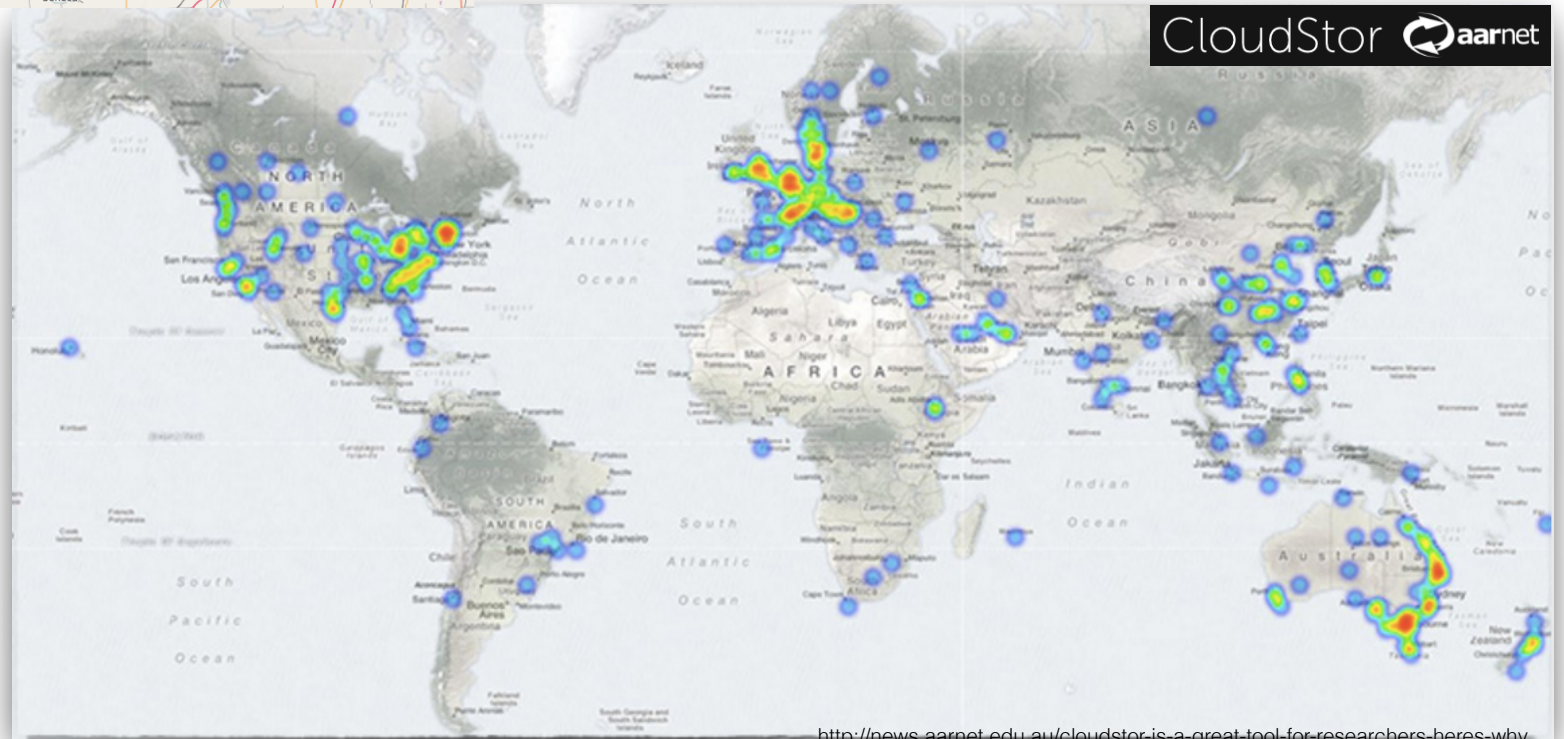
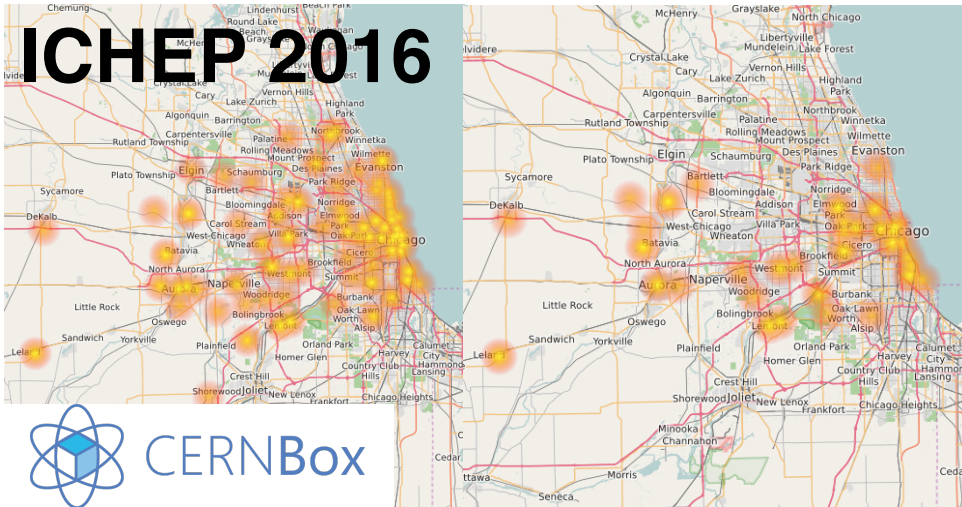
A screenshot of a file sharing interface. At the top left is a blue folder icon with a white link symbol. To the right is a close button (X). Below the icon is the title "Jupyter_Notebooks" in blue. Underneath is a star icon, "0 kB, seconds ago", and the text "Sharing CERNBox Info". There is a search box with the placeholder text "Share with users or groups ...". Below that is a user profile for "Jakub Moscicki" with a blue circular profile picture containing a white 'J'. To the right of the name is a trash icon. Under the name are two options: " write + delete" and " Share link". Below these is a text box containing the URL "https://cernbox.cern.ch/index.php/s/nUS". There are two more options: " Password protect" and " Allow editing". Below these is another option: " Set expiration date". At the bottom is a text box containing the date "09-10-2017". Below the date is the text "The public link will expire no later than 365 days after it is created".

Edu&Research On-Premise Clouds

source: <http://cs3.ethz.ch>



Global & Travelling User Community



Collaboration without borders

- *I want to share and collaborate on my files & data with colleagues from University X*
- This should be as easy as sending email: it works across administrative borders and no matter who&how provides your mailbox



Open Cloud Mesh

- **interconnected, secure private clouds**
- **universal file access** with privacy, control and security an on-premises cloud provides.



Who is engaged?

- Idea developed by C.Schmitz/ownCloud
 - initial implementation of “Federated Sharing” provided in ownCloud 8 and deployed in many sites
- Commercial interest
 - 3 companies already implemented the initial specification
 - 2 others express interest

Who is engaged ? (2)

=> Towards vendor neutral specification

- GEANT Project setup
 - <https://wiki.geant.org/display/OCM/Open+Cloud+Mesh>
- Pilot users:
 - Edu&Research community is a natural candidate for this use-case: many collaborating institutes
 - Critical mass of clouds (and users) exist already

(Some) future opportunities

- Bring top-end science closer to K12 Education
 - *I want to make my science (analysis, data, pictures, plots, ...) easily accessible to students in High Schools*
- Explore Federated Sharing in informal learning paths
 - **Up to University — Up2U** — GEANT-led project about to start
- Example: Sharing Educational Notebooks (based on Jupyter Technology)
 - Related contributions @ CHEP2016:
 - **Talk: SWAN: a Service for Web-Based Data Analysis in the Cloud, Track 6, Wednesday, 12 Oct 2016, 11:45**
 - **Poster: CERNBox: the data hub for data analysis**

CS3 Workshop Series

- Next event gathering OCM participants and contributors

CS3 Workshop Series

Cloud Services for Synchronisation and Sharing (CS3)
Novel applications, cloud storage technology, collaborations

Interface OCNFilesStorage extends Interface IOFilesStorage

Interface IOFilesStorage implements Abstract class IOFilesStorageCommon

Abstract class IOFilesStorageCommon extends class IOFilesStorageAbstract and class IOFilesObjectStorage

class IOFilesObjectStorage uses Interface IOObjectStore

class IOFilesObjectStorage implements class EOS

class IOFilesObjectStorage implements class DepBox, Swift, S3

* We have modify ObjectStoreStorage to avoid oc-filesache and check our custom Cache, because there is not an interface to implement.

SURFsara Amsterdam
30 Jan - 1 Feb 2017
<https://cs3.surfsara.nl>

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Logos: CERN, ETH zürich, SURF SARA, aarnet