polybox : Mobile Working Use Case enabled by sync and share at ETH Zurich
Review

- Since summer 2013 the service „polybox“ based on owncloud got operative as a storage service.
- The polybox service is appreciated by many ETH users – students, PHD students, Professors and all staff members.
- With 50GB quota per user we have about 21,000 users using nearly 63TB of storage today.
polybox as a service – enabling System of Engagement [Pic. By Clod Barrera]

Traditional workloads
- Transactional systems
- Deployed workstations
- Virtual servers and desktops

New workloads
- Sync & Share
- Scientific Applications
- (Big)Data - Analytics

Systems of Record
- Benefit from simplified infrastructure
- Require cost efficiency through improved virtualization and automation
- Drive controlled data growth

Systems of Engagement
- Enable mobile working with synchronized data
- Require massive scale and rapid pace
- Accelerate scientific insights
- Rely on data elasticity, supporting diverse hardware
polybox as a service for all ETH Members

- **USE CASE “Mobile Working”:** Allow users to share/synchronize their personal, actively in-use data between all of their devices. Also ensures that a copy of all their local data (and settings) are in a safe on-premise location (Cloud storage plus selective client backup).

- **User driven Use Case:**
  Users of scientific departments asked for enabling a mobile working use case. Today state of the art mobile devices are providing IT resources (CPU, local storage) to users. Therefore, users want to be able to “preprocess” data (e.g. data being measured offline) and synchronize & share these scientific data sets beside their personal data.
Reduction from three Use Cases to one Use Case in an open discussion

**UC-9**
Daily Business Storage

Storage for the everyday work. Personal storage for the users and storage for a group of users (collaboration share). In some cases this might involve a complex structure and complex access rights. Storage should scale up well (scientific group data). Same share must be accessible by different mechanisms, i.e. via Cloud Front-End and as a traditional share (e.g. via CIFS/SMB/NFS). Example: CERN EOS storage with CernBox access layer. http://cernbox.web.cern.ch

**UC-14**
Sync & Share your documents

offers all ETH members "Dropbox-similar ETH on-campus storage" (multi user capable 10000+) for all kinds (size, numbers) of data objects

**UC-16**
Mobile Working

Allow users to share/synchronize their personal, actively in-use data between all of their devices. Also ensures that a copy of all their local data (and settings) are in a safe on-premise location (Cloud storage plus selective client backup).
polybox service development

- Replace home directories
  - BYOD is common today
  - Old school home directories only for special educational courses as eg. Gaussian as special SW

- Integration of educational frameworks as eg. moodle

- Scientific collaboration
  - Enable sync & share for scientific data

- Storage
  - Integration into IBM Spectrum Scale Storage
polybox set up

- Backend
- Frontend
- Storage

# total aktive Accounts  21'100
# different users per day  ~ 4800
# different users per week  ~ 6000
# different users per month  ~ 7000
Some numbers from early 2016

Filetypes / Storage usage

Modification / Storage Usage

Distribution of modification dates in data
Summary

- Development of the polybox service aligned to use cases
- Integration of an educational framework
- Integration of scientific data sync & share capabilities
- Make the Spectrum Scale Storage Sync & Share ready
Thank you for your attention