dCache, Sharing, Sync`ing Big Data and Cloud Strategies

LSDMA Topics Meeting on Sharing data 2014, Jülich

Patrick Fuhrmann
dCache Cloud and BIG DATA

Work in progress
How do people see “The Cloud”?

- From the Web 2.0 experience:
  - Accessible from all kind of OS’s and mobile devices and from anywhere.
  - Synchronizing folders with “The Cloud”
  - Very easy to share data with groups and/or individuals.

- From the Amazon, Google, etc experience:
  - Unlimited storage space
  - Indestructible data store, never loosing data
  - Fast immediate access versus slow archive
  - Pay per use
Customers expect dCache to become a cloud service
The dCache cloud (cont)

What does that mean for dCache?

Big Data Part
- Unlimited storage space (scalability)
- Indestructible data store (resiliency)
- Fast immediate access versus slow archive
- Pay per use, (billing)

Web 2.0
- Accessible from all kind of OS’s and mobile devices and from anywhere.
- Synchronizing folders with “The Cloud”
- Very easy to share data with groups and/or individuals.
Why not getting help from experts?
This is what OwnCloud says what OwnCloud is.

Your Data from **any storage** ... ... available on **all devices**!

Without friendly Courtesy of OwnCloud ©
OC Features important for us...

- provides sync clients for all OS’s
- provides upload/download clients for mobile devices
- allows simple sharing of data
dCache – OwnCloud
Data Management

WEB 2.0

Unlimited hierarchical Storage Space
NFS 4.1
CDMI

SSDs

Spinning Disks
Tape, Blue Ray …

dCache.org
• Simply running OwnCloud on dCache was the easy bit and works nicely.

• But how about
  – Owner ship
    • Files owned by ‘patrick’ in OwnCloud are owned by apache/owncloud in dCache
    • That prevents us from using the same data with NFS4.1 or CDMI from dCache
  – dCache ACL’s versus OwnCloud Sharing
    • Files shared in OwnCloud needs to have similar ACL in dCache.
Ownership issue

Tigran fixed the ownership issue
(Similar with authentication)

OwnCloud owner: patrick

dCache owner: patrick

LDAP (Similar with authentication)
About paths

/base/patrick
/base/tigran
/base/<user>
/base/data/patrick
/base/data/tigran
/base/data/<users>

/dCache/cloud/patrick/OwnCloud
/dCache/cloud/trigran/OwnCloud
/dCache/cloud/<user>/OwnCloud
/dCache/cloud/<user>/OtherdCacheData

- Not much data.
- Can be anywhere, including dCache
- Might become r/m/w in the future

- Big data
- Immutable
- dCache
The dCache OwnCloud sharing issue is not at all solved yet.

User: Bernd

User: Markus

/home/dcache/ocloud/bernd/files/FOO

/home/dcache/ocloud/markus/files/FOO
dCache Big Data Cloud

LOFAR antenna
Huge amounts of data

WebDAV HTTP(S)
Globus Online
Cloud

X-FEL (Free Electron Lasers)
Fast Ingest

Mounted POSIX FS (NFSv4.1, pNFS)

Computer farm

Mounts

dCache Sharing Strategy | LSDMA Topic Meeting: Sharing | Patrick Fuhrmann | 03 Apr 2014 | 14
The End

further reading

www.dCache.org