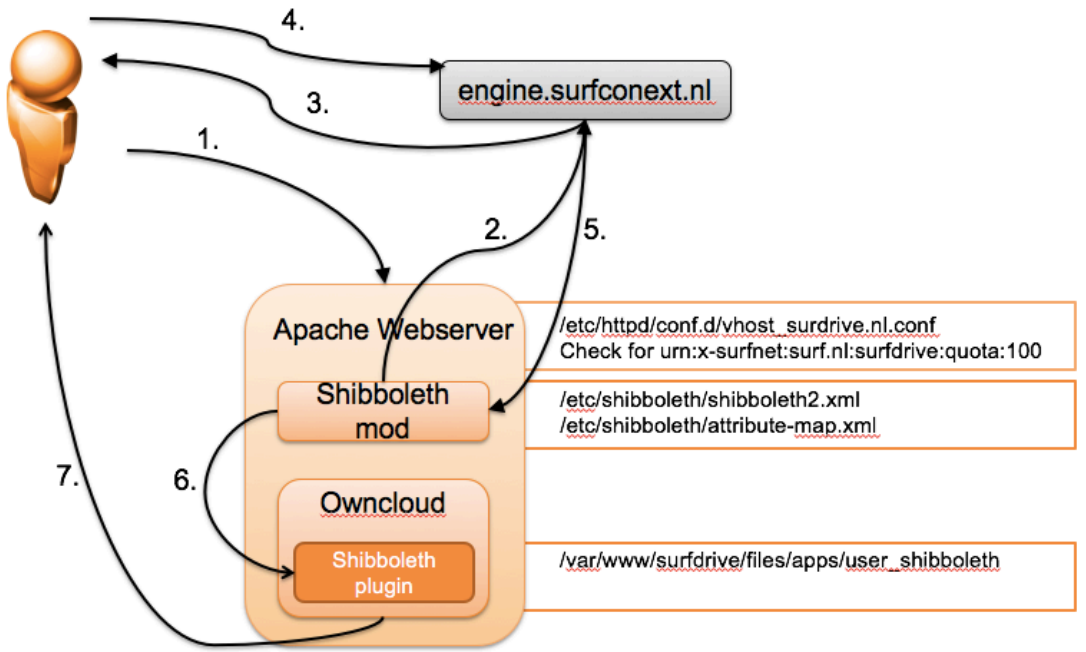
2 years of SURFdrive lessons learned and future plans

RON TROMPERT ON BEHALF OF THE SURFDRIVE TEAM

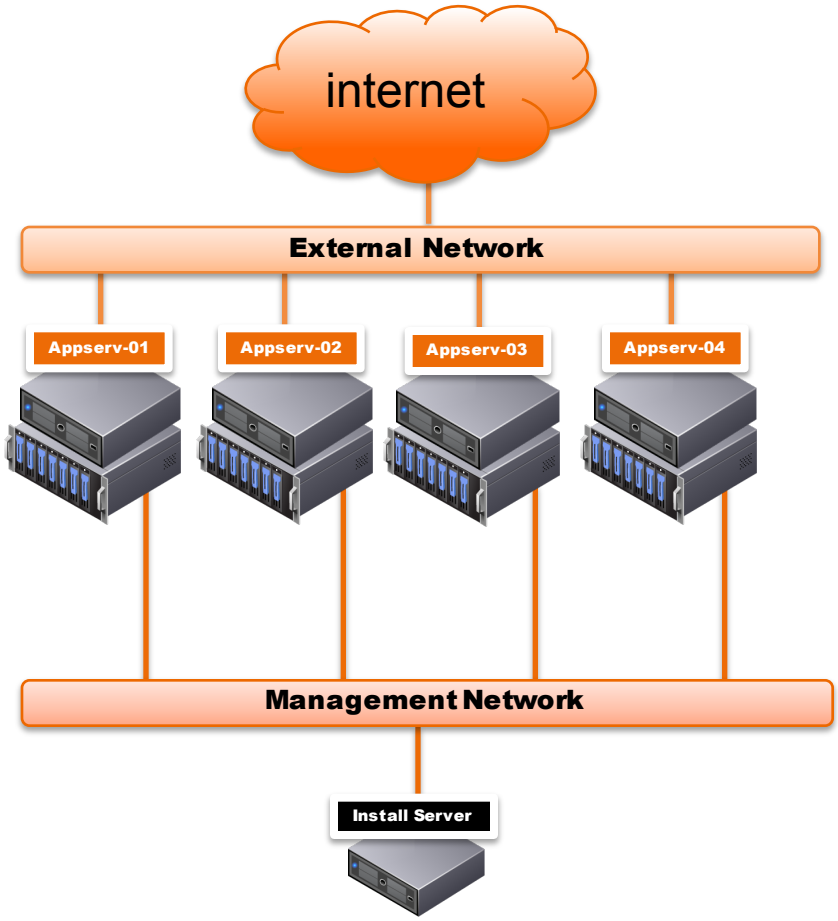
About SURFdrive

- Sync-and-share service for Dutch Universities and higher education
- 100GB per user
- Federated login (SAML2)

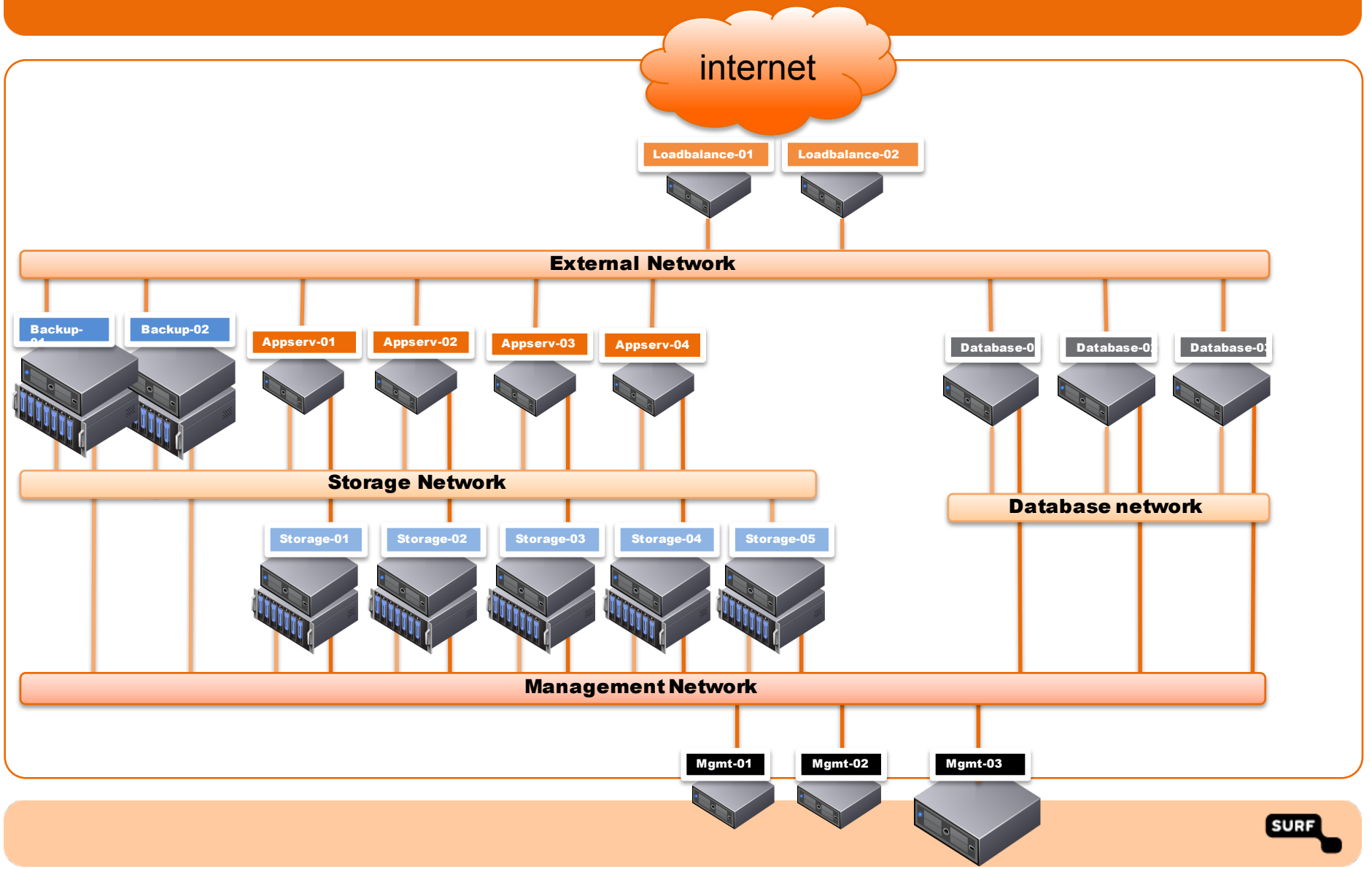


SURFdrive april 2014

- GlusterFS
- MariaDB Galera
- HAProxy
- Apache

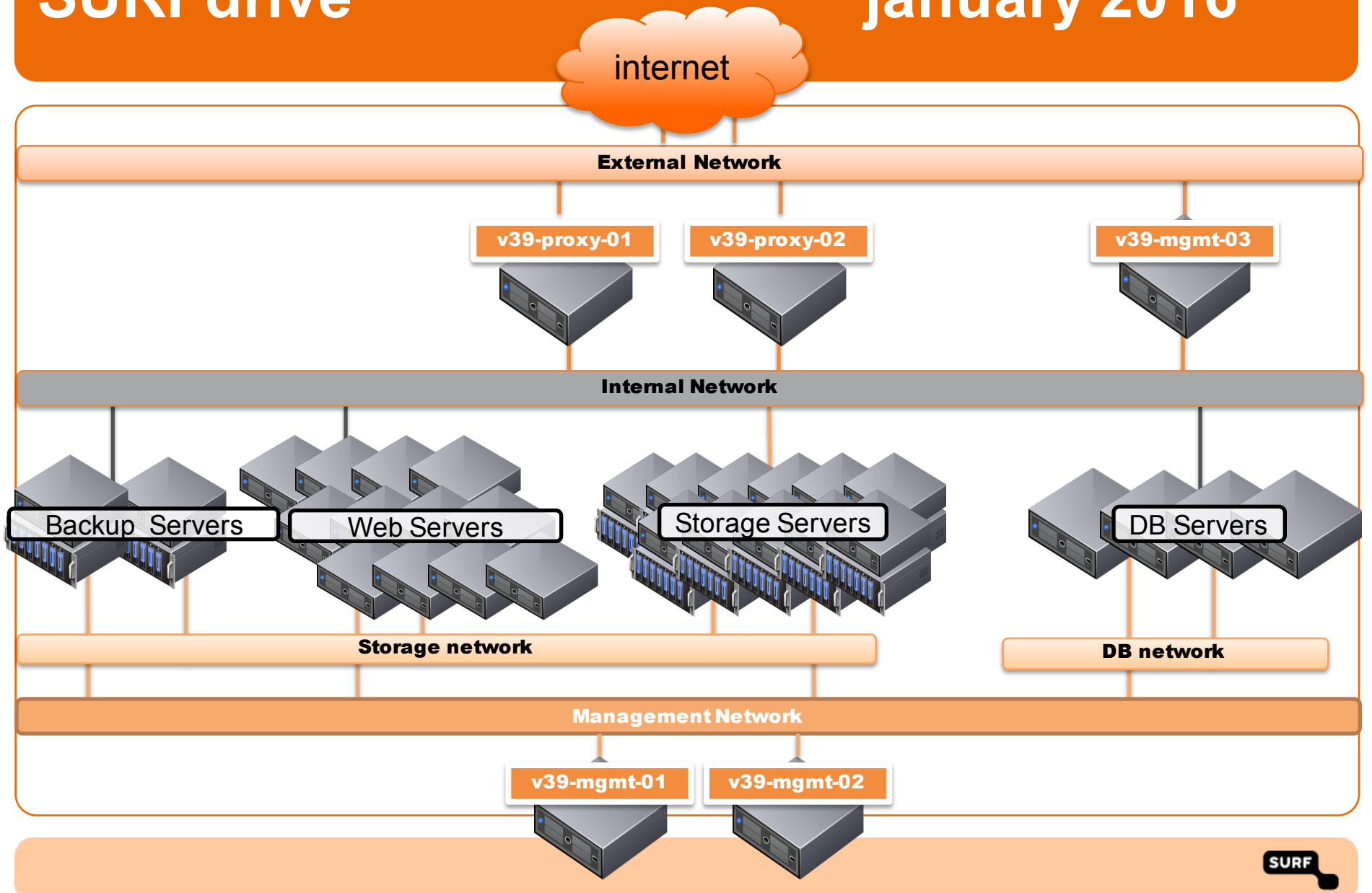


SURFdrive june 2015

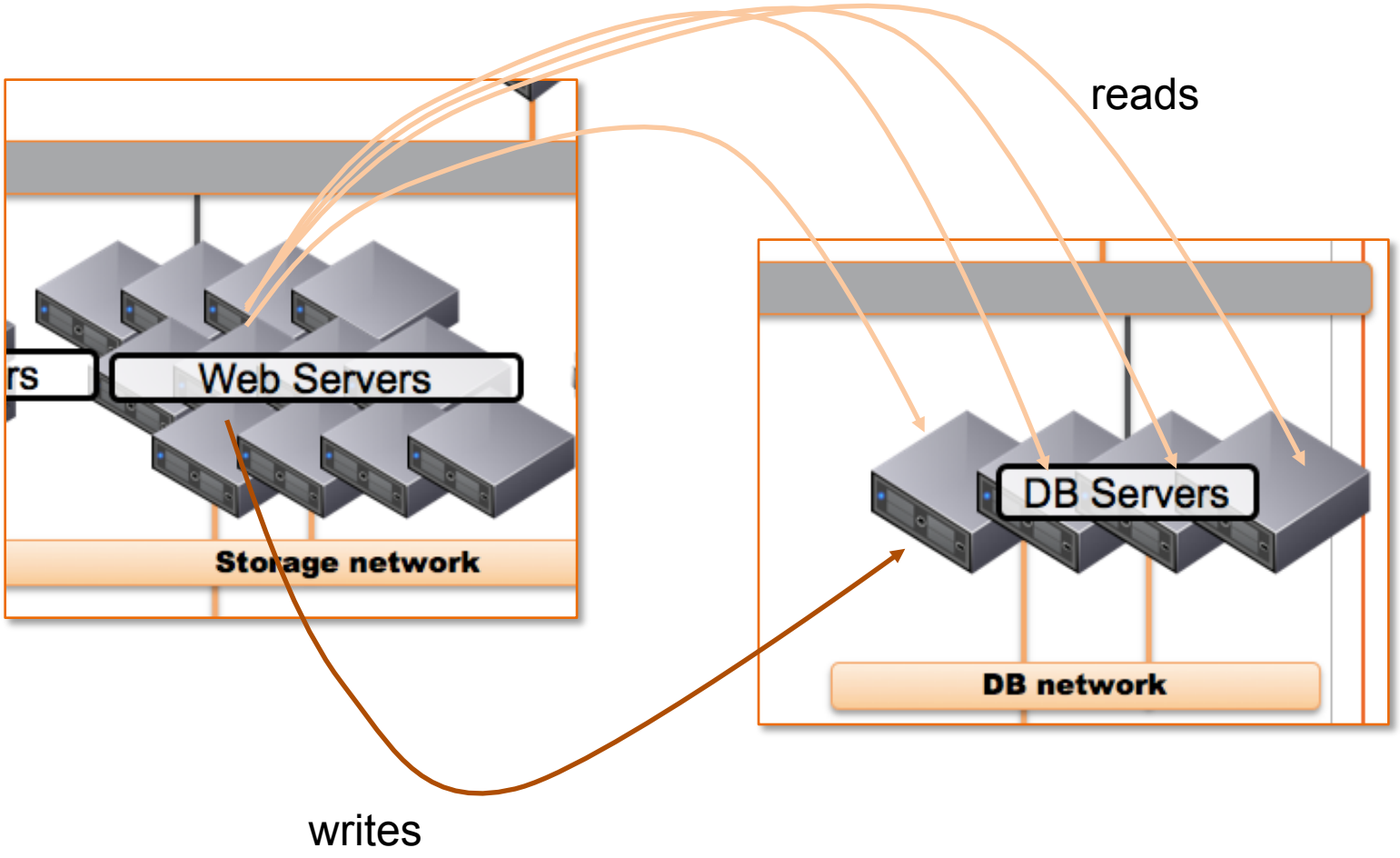


SURFdrive

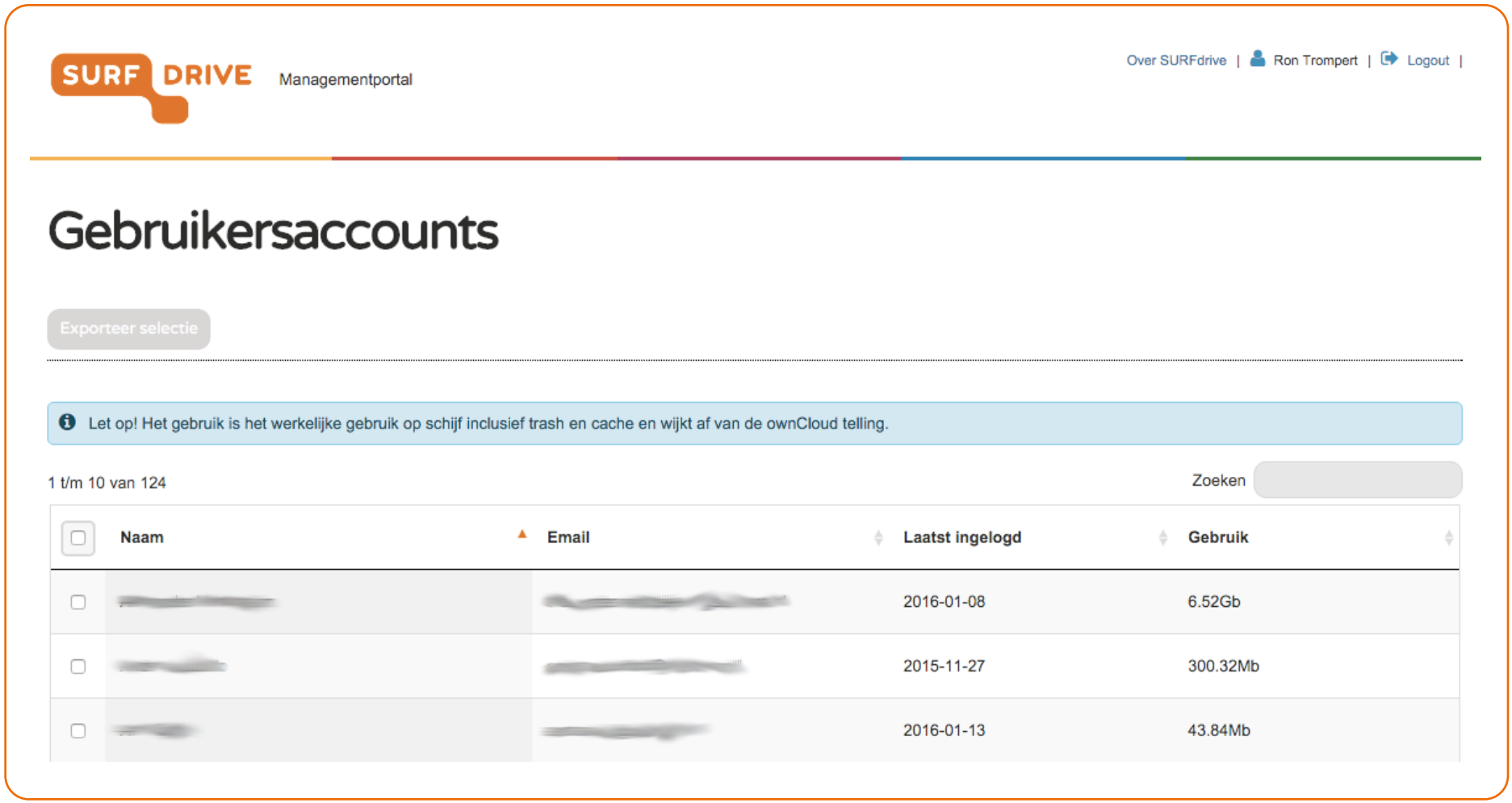
january 2016



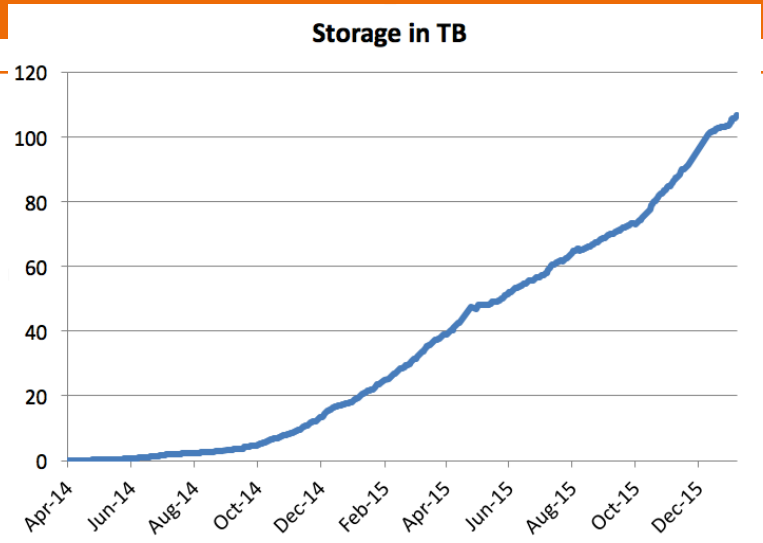
Maxscale

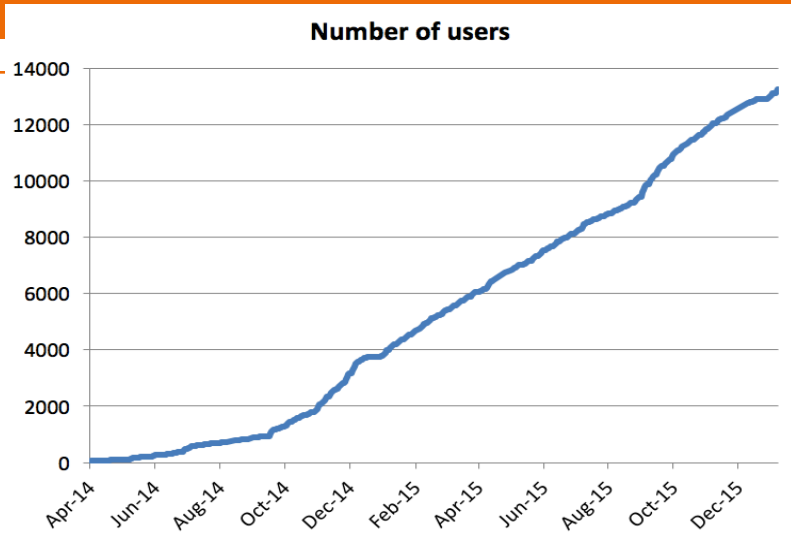

reads
rs
Web Servers
Storage network
DB Servers
DB network
writes

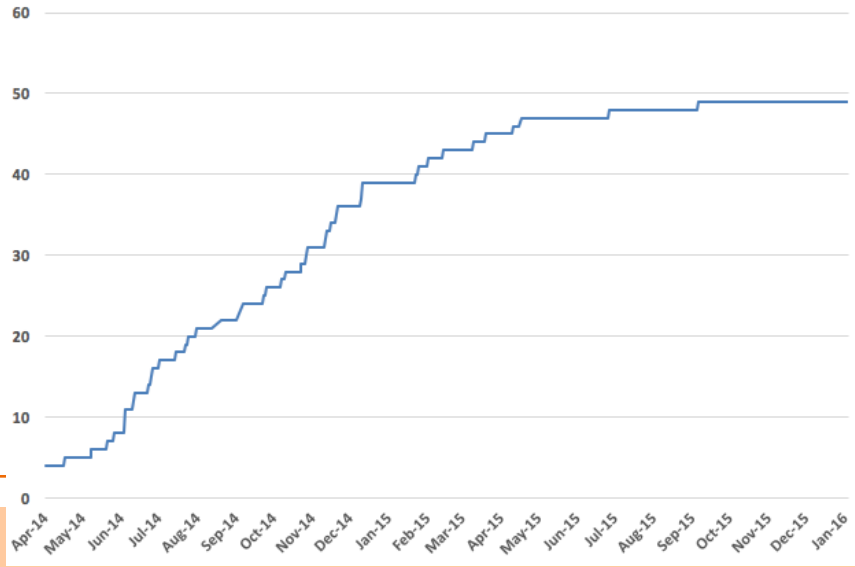
Management Portal



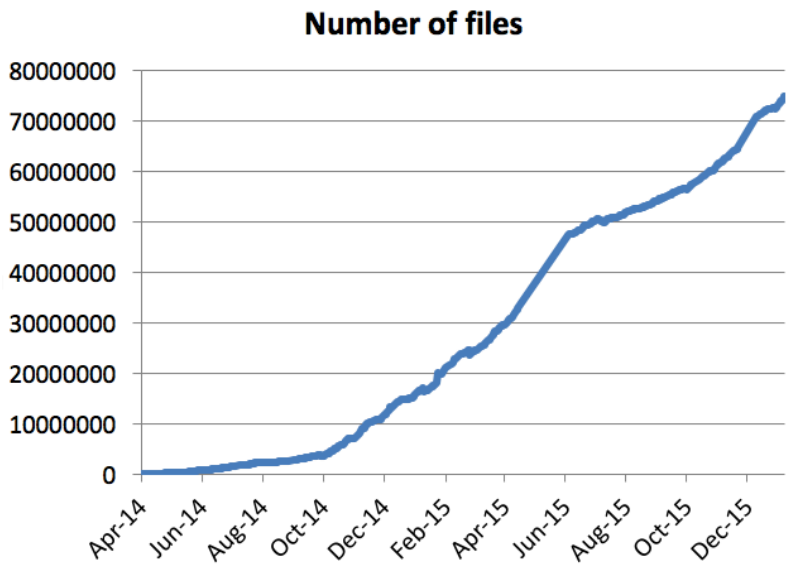
Storage, Users and Institutes

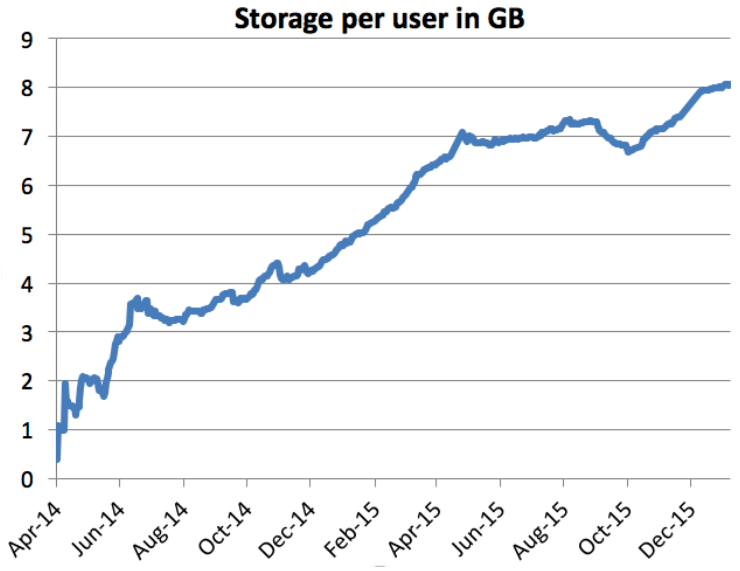




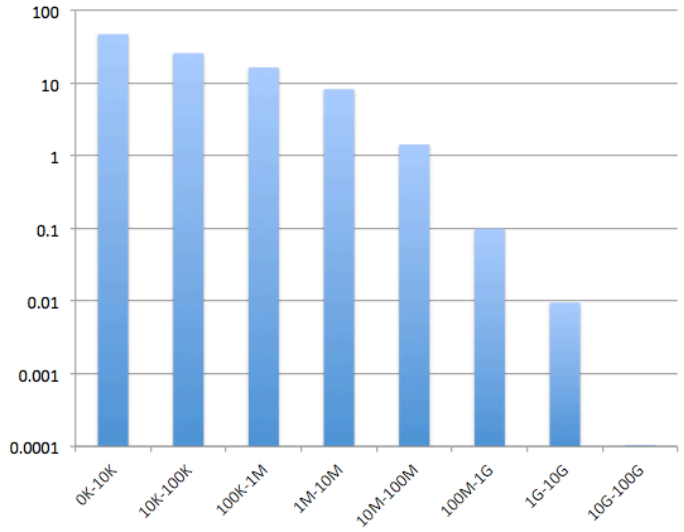


#Files and Storage per User



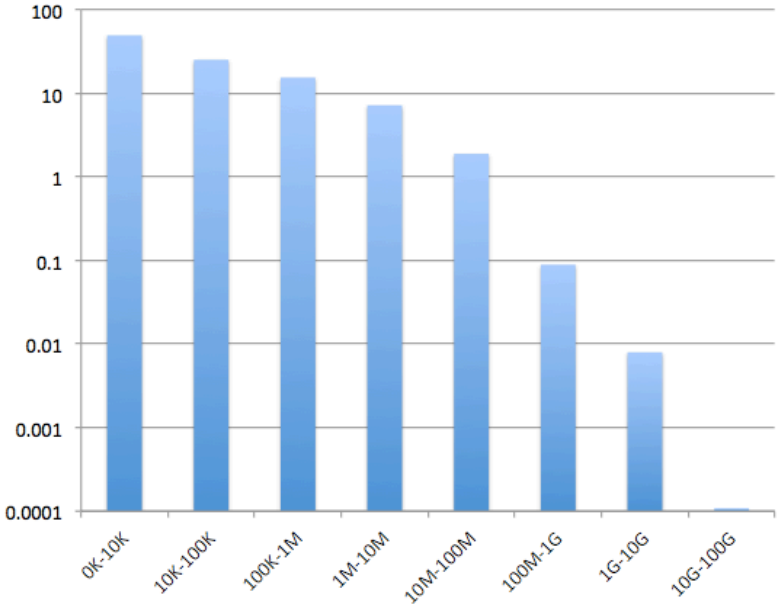


File size distribution

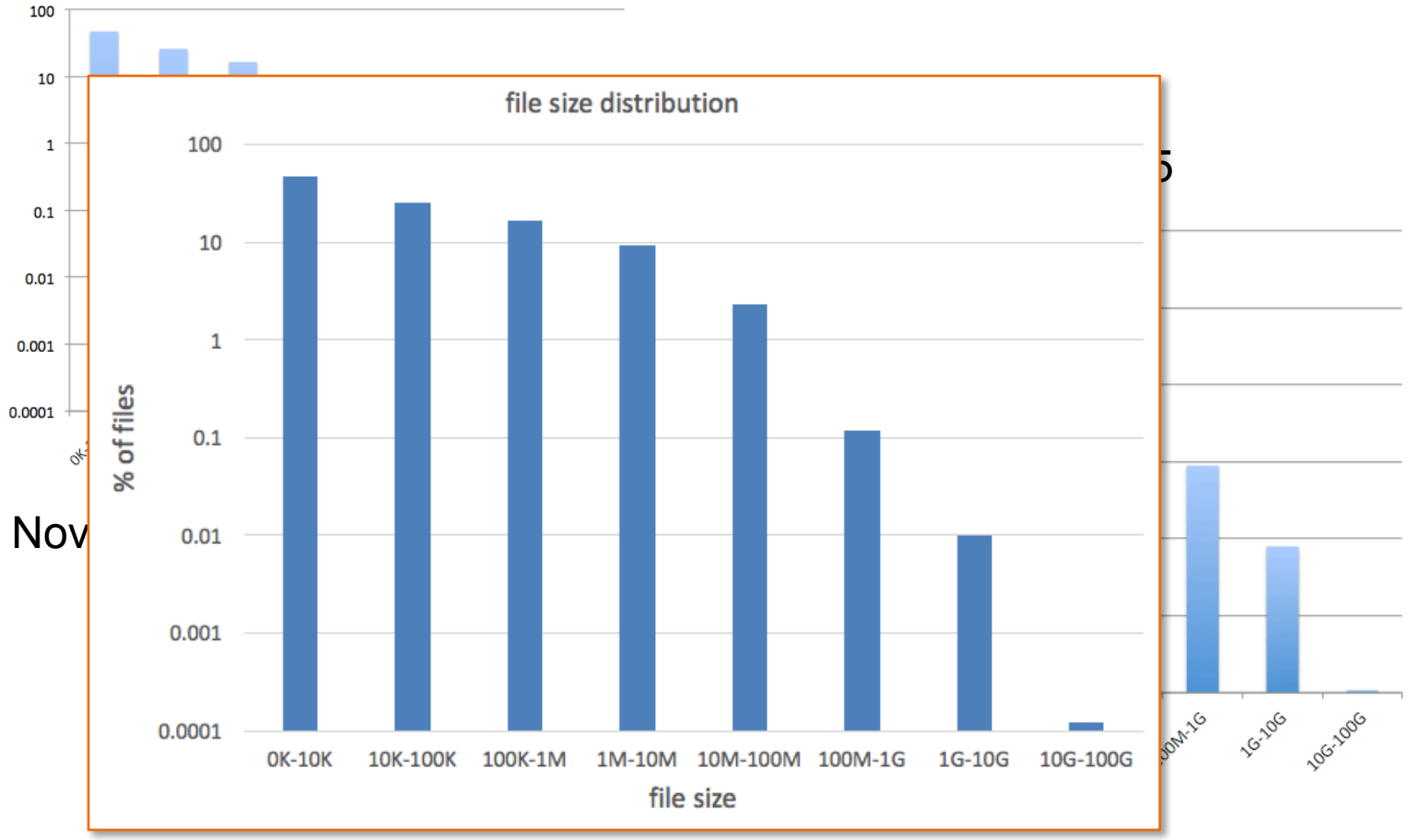


November 2014

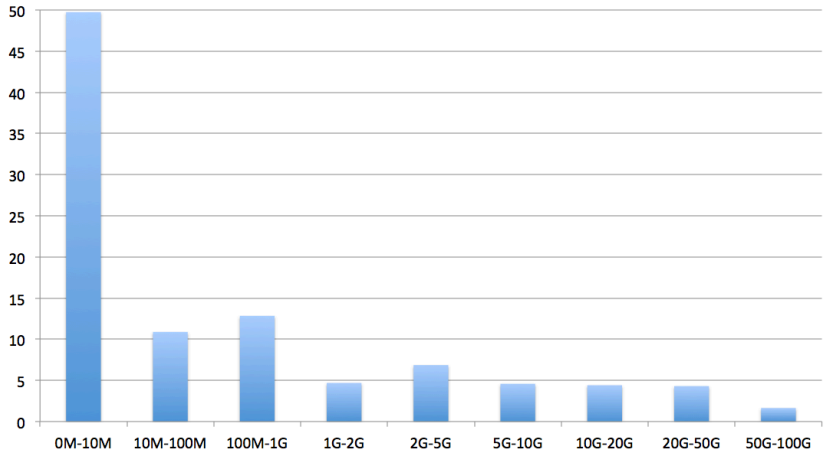
June 2015



File size distribution



Storage per User



November 2014

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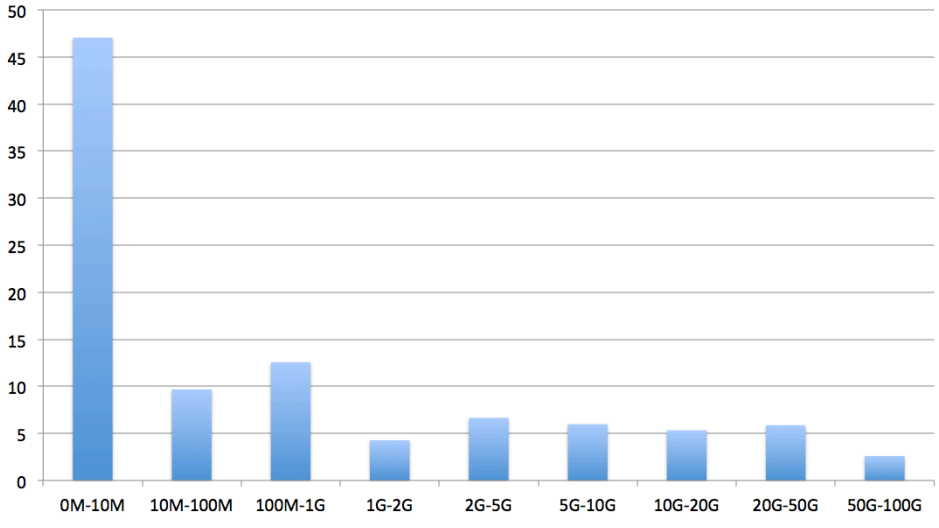
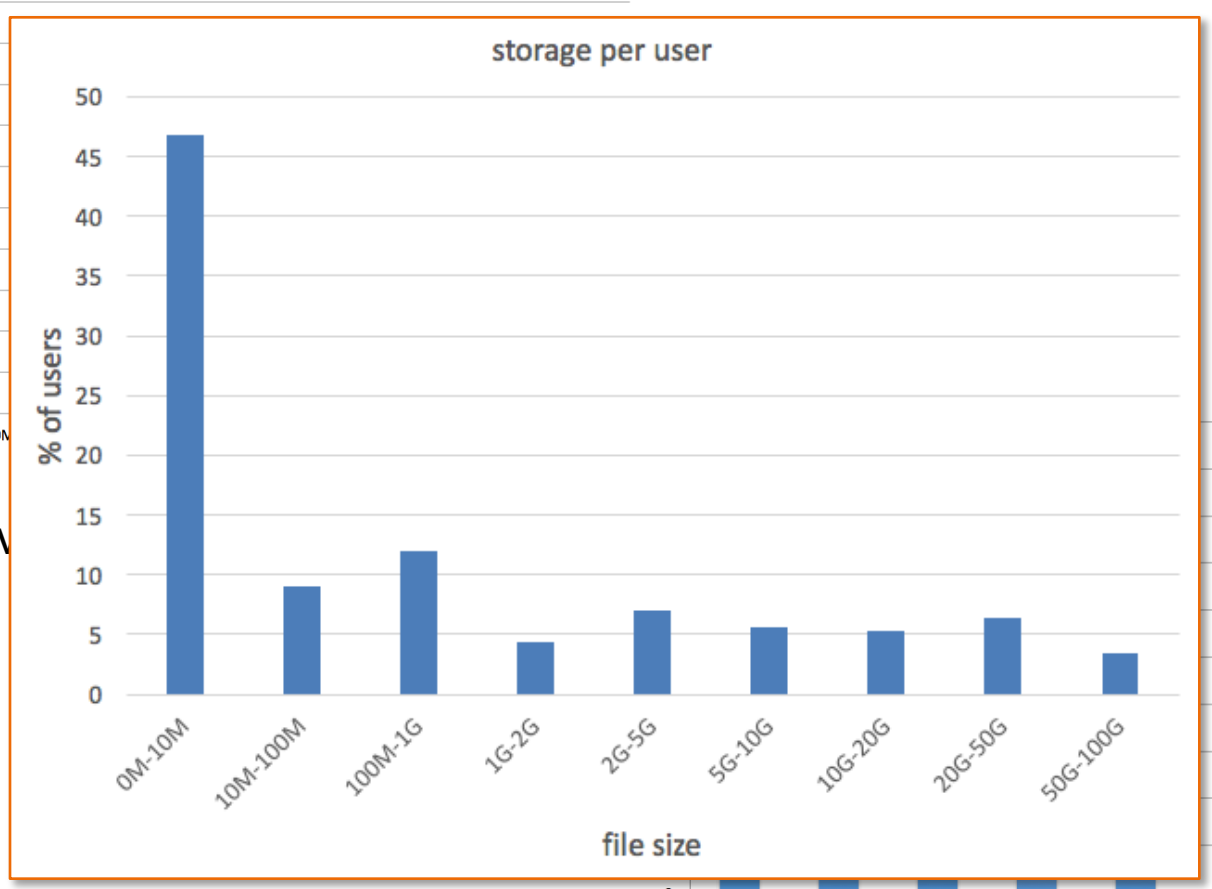
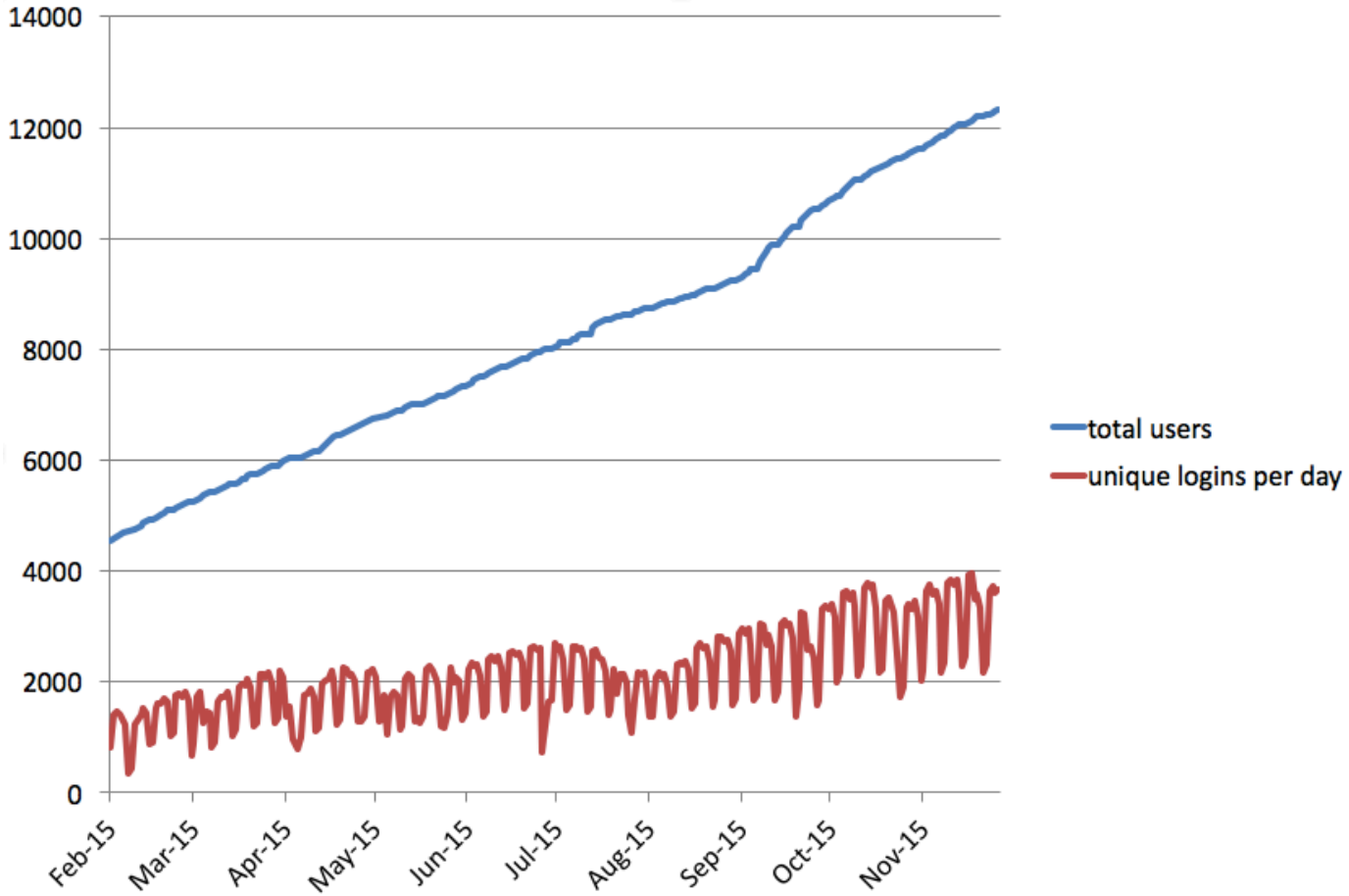


Storage per User

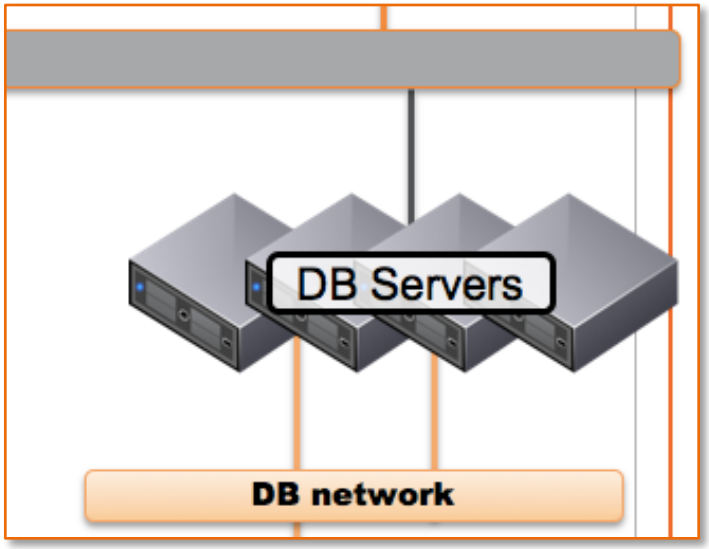


Users


14000
12000
10000
8000
6000
4000
2000
0
Feb-15
Mar-15
Apr-15
May-15
Jun-15
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
total users
unique logins per day

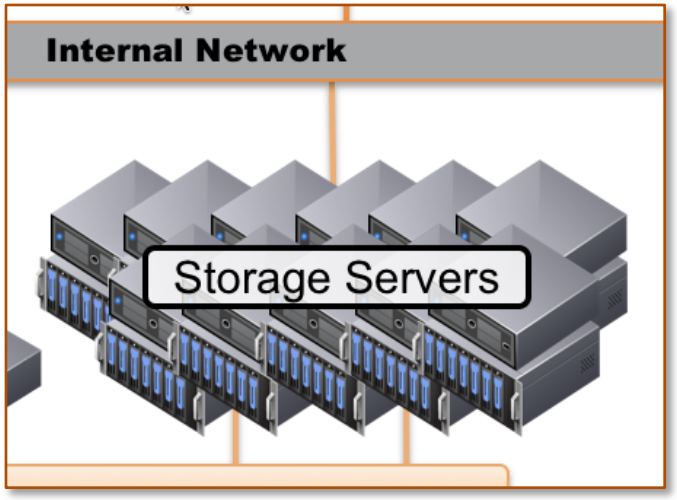
Database

- Scaling issues
- More memory
- Replaced database servers with much heavier hardware
- maxscale



GlusterFS

- Distributed replicated
- Rebalancing takes a looooooooooooong time
- Extra load on Gluster clients
- Backup facilities of GlusterFS are not the best
- Replace GlusterFS with for example:
  - GPFS
  - EOS



Future

- Migration to other storage backend
- Two Factor authentication
- Group functionality

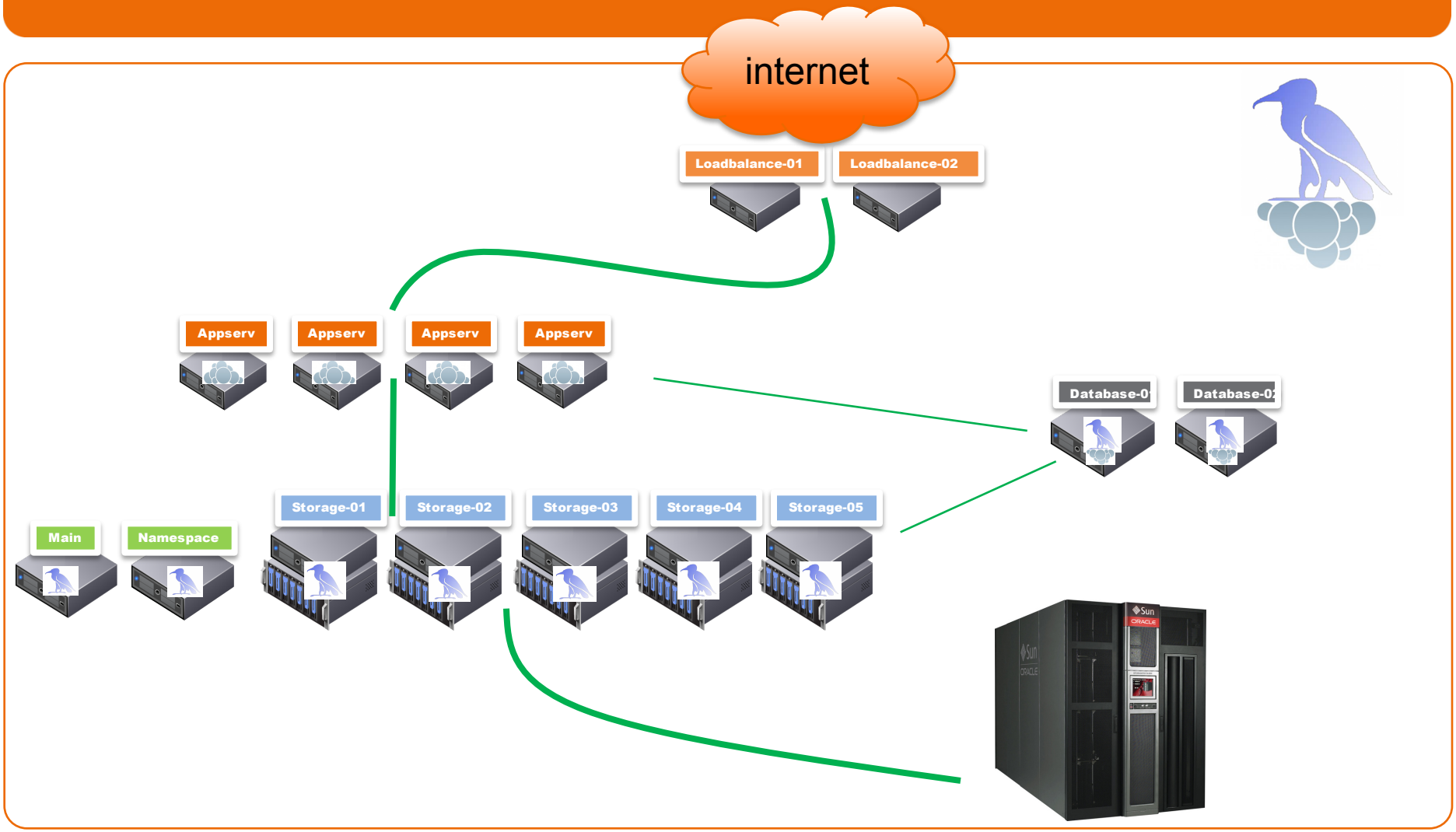
- SURFdrive -> SURFdrive->SURFdrive

OwnCache

OwnCache

- Organisations with a data problem
  - Lots of data that they find difficult to handle
  - Archiving data on tape
  - Share data with clients or colleagues abroad.

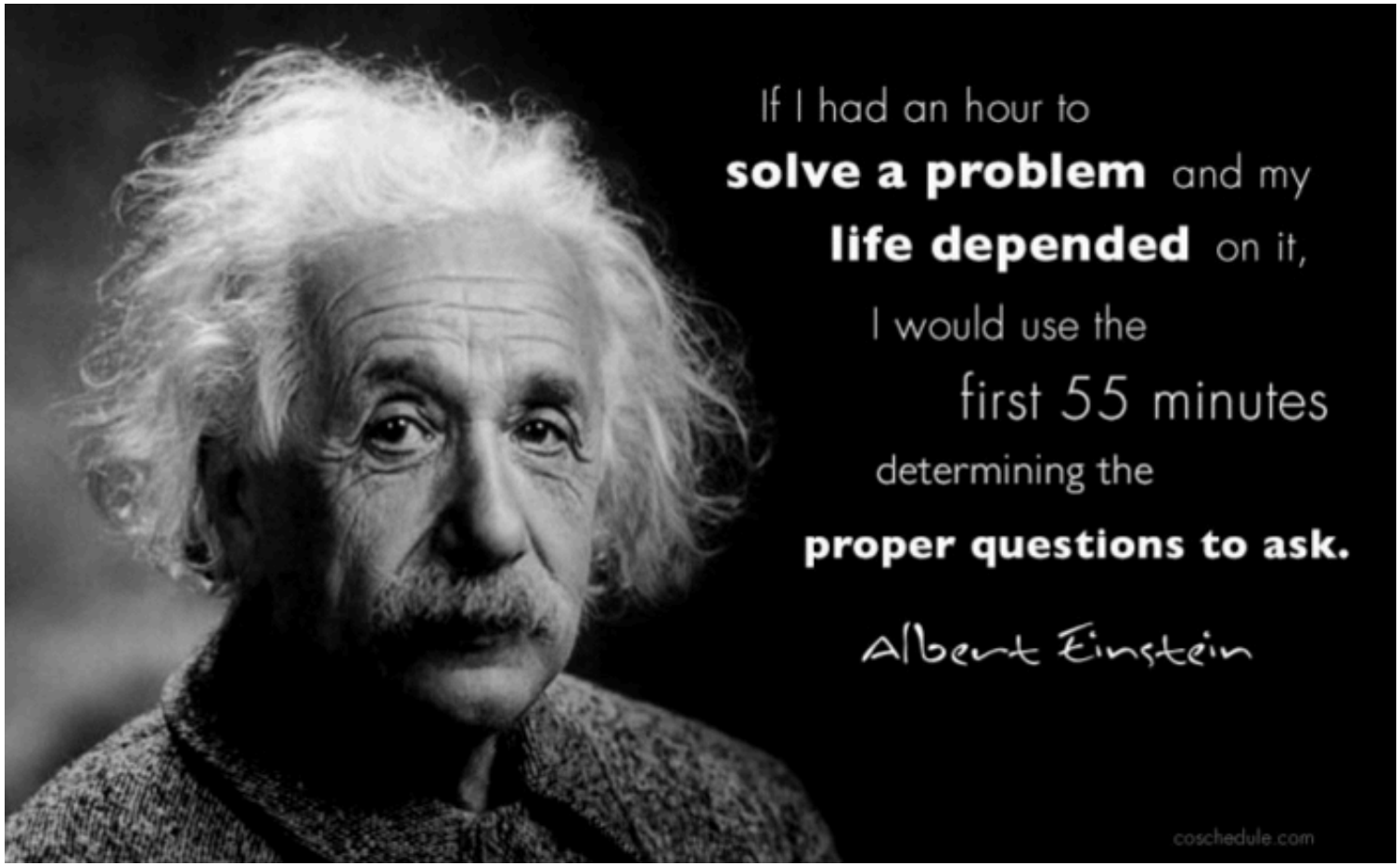
OwnCache


internet
Loadbalance-01
Loadbalance-02
Appserv
Appserv
Appserv
Appserv
Database-0
Database-0
Main
Namespace
Storage-01
Storage-02
Storage-03
Storage-04
Storage-05

OwnCache

- Data access through Owncloud as well as the protocols supported by dCache
- Issue: Data uploaded to dCache not visible in Owncloud
  - Idea: Use dCache's hook to migrate data to tape to enter the files in the Owncloud database

Questions??????????


If I had an hour to
solve a problem and my
life depended on it,
I would use the
first 55 minutes
determining the
proper questions to ask.
Albert Einstein
coschedule.com