SURFdrive (SURFSara Site Report)
• Owncloud
• Apache
• Shibboleth
• MariaDB Galera
• HAProxy
• GlusterFS
SURFdrive june 2015
Now 3000 users are using SURFdrive :) 

7500 users are now using SURFdrive !!! ^RT

10,000th SURFdrive University of Applied 7500 users are now using SURFdrive !!! ^RT

More than 20,000 SURFdrive users at 48 institutions. Read the news item about the 20,000th user ow.ly/L4O13O5kTpt

15000 users are now using SURFdrive!!! ^RT

Now 5000 users are using SURFdrive !!!

13000 users are now using SURFdrive. ^RT
Users
Storage

The graph shows the storage growth from April 2014 to December 2016. The storage has increased significantly over this period, with a sharp rise around August 2015 and another peak in August 2016.
Storage per user

Graph showing the storage per user from April 2014 to January 2017. The storage has increased significantly over this period, peaking around August 2016 before decreasing towards the end of the period.
Connected clients

![Graph showing the number of connected clients from March 2016 to December 2016. The graph indicates fluctuations in the number of connected clients with peaks and troughs.]
Connected IPs
Unique users
Unique users
Data centre move
Data centre move

• Move the hardware with (almost) no downtime
• From september 16th until september 30st SURFdrive was moved, server by server.
• 2-3 servers per day
**GlusterFS Issues**

- Rebalancing takes a long time
- Brick migration takes a long time
- Expanding the storage hardware causes outages
- Backup GlusterFS sssllllloooooowwww!!!
- Failure of more nodes at the same time,
- Gluster appears normal to clients only some data is not visible on the file system
OK, no GlusterFS but what else then?

- Migrating the users is a lengthy operation. Only want to do this one time.
- Avoid risks as much as possible
- Only look at solutions already successfully deployed in sync-and-share services of some scale
- Performed tests with IBM Spectrum Scale (GPFS) and Scality.
- And the winner is……..
Scality

- Object Storage
- NFS, S3, REST, SMB, Fuse
- Multidatacenter
- 3 replica's and erasure coding
- Scalable
  - LANL (500PB)
  - Dailymotion
Migration

- Started in december, will end by the end of february.
- Institute-by-institute, group of users by group of users
- No downtime, but users are locked out for a (usually brief) period of time
- Procedure
  - Sync data from backup servers
  - Lock-out user (filewall)
  - Final sync
  - Symlink to point to Scality
  - Remove lock-out
Scalability

- A major concern with respect to DBs
- What to do when universities decide to give their students accounts and we end up with 100000+ users?
- Already a DB cluster of 7 pretty big machines
- We want to ingest 1.3 billion files per day :)

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Scalability
Future plans

- Guest accounts
- Group accounts
- Multidatacenter setup and 24x7 support
- API
- New apps
Energy savings for institutes that share cloud storage

Institutes that store their data in the cloud instead of on their own server save a great deal of energy. A sample calculation with SURFdrive shows that the connected institutes can potentially save 60,000 kWh per hour collectively. In other words, a consolidated cloud service is 13 times as energy-efficient as hosting on individual servers.

The energy consumption in the ICT sector continues to increase year on year. Large numbers of servers are running around the clock, 365 days a year at large as well as small companies. However, ICT equipment is becoming increasingly energy-efficient. And this equipment is also being used more efficiently. A well-known method for using resources more efficiently is based on consolidation, which involves putting dispersed IT resources together. The most frequently used method for consolidation is server virtualisation. With one physical server, it is possible to virtualise several smaller servers in order to utilise the resources of the server more efficiently.

On the Global e-Sustainability Initiative website, you can see how much energy would be saved if various countries would switch from their own servers to a consolidated cloud environment. Unfortunately, the Netherlands is not on the list. Yet according to a 2014 report by Capgemini, the Netherlands is one of the leaders when it comes to the cloud, with an adoption rate of 28%. By way of comparison, the European average is 19%. Of course, these numbers will have increased somewhat by now, but the adoption percentage is still surprisingly low.

Thirteen times as economical
Questions

OUTTA BULLET POINTS

ANY QUESTIONS?