



6th TF-Storage meeting
Thursday, June 3, 2010
at TNC'10, in Vilnius, Lithuania

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Minutes

1. Welcome and apologies

The sixth TERENA Storage Task Force meeting (only half-day) was held on 3 June, 2010, in Vilnius, Lithuania, co-located with the TERENA Networking Conference 2010. Jan Meijer (UNINETT), as the chair of TF-Storage, welcomed the 13 participants and asked for a roll call. Brian Boyle (HEAnet) had apologised before the meeting. The TERENA secretary was Peter Szegedi.

2. Approval of agenda

The proposed meeting schedule was agreed with the participants without any changes. The presentations are available on the TF-Storage website:

<http://www.terena.org/activities/tf-storage/ws8/agenda.html>

3. Participants' presentations

Gábor Róczy summarised the NIIF/HUNGARNET current storage developments. There is an ongoing infrastructure development project in Hungary including the reengineering of the current data network, computing and storage resources, videoconferencing and trust federation services. The total budget is 15 MHUF (~55 kEUR) of which 5 MHUF (~18 kEUR) is dedicated to computing and storage.

The recently purchased, 0.5 Peta byte capacity storage system is based on Fujitsu ETERNUS DX80 platform. It uses iSCSI protocol for the data access with 110 Mbyte/sec/port sequential read (1 device has 4 ports). The speed is limited by the current setup and not by the device itself. The platform achieves the highest energy savings (green computing) with spinning down the unused disks automatically. The specific cost of the whole project was 400 EUR/TByte.

The storage devices will be placed in three major cities in Hungary where local universities provide the co-location places. The storage will be integrated part on the NIIF 10G backbone network called HBONE. The storage system is planned to be used for backup services, cloud infrastructure, and conventional usage (such as web and mail).

There is a storage software development activity in parallel at NIIF. The users can request a specific storage service (e.g., RAID level, LUN size, classic LVM parameters) via a web interface and/or a Web Service API (ARC middleware).

Gábor promised more details about the actual storage deployment and first experiences on the next coming TF-Storage meeting. The slides are available here:

<http://www.terena.org/activities/tf-storage/ws8/slides/030610-storage6-niif-gabor.pdf>

Leif Johansson (SUNET) gave a presentation about Lobber (aka NORDUshare). The idea behind Lobber is the usage of bittorrent protocol. The Proof of Concept storage node is based on the command-line oriented bittorrent client "transmission".

The project website is available here: <https://portal.nordu.net/display/LOBBER>

The BETA version of Lobber can be accessed here: <https://beta.lobber.se>

The short-term development plan includes the written documentation of the API, the inclusion of sample producers and consumers and the trusted introducers (constrained delegation). Later in the year, there is a plan to use OAuth for the "application keys" (we're waiting for OAuth 2.0 to get done), as well as integrate with SWESTORE and possibly with Vuze.

Leif's presentation is available here:

<http://www.terena.org/activities/tf-storage/ws8/slides/030610-storage6-sunet-leif.pdf>

Leif tried to position Lobber as a storage service. For low-end users (i.e., sending files one-to-one) FileSender-like applications are perfect. For high-end users, massive data storage solutions are available. In the mid-range, there are lot of projects around, but most of the education and scientific community cannot afford to implement them.

Lobber provides the ease of access and integration into the scientific workflow. Its real advantage is that it goes down to the desktop (that is what bittorrent does) and being easily available for end-users. Bittorrent protocol is designed to ensure the seamless restart of uploading/downloading, so the end-users can interrupt the storage procedure and start again from another location. Lobber is good for mid-range scientific users.

It was noted that, if only a limited number of users is accessing the data, it makes sense to use bittorrent as FileSender backend. Guido (AARNet) found it interesting to try and implement it in Australia.

4. A storage challenge

After the coffee break Jan Wennström (Åbo Akademi) presented their storage challenge of providing multiple terabyte storage with collaborating users in different organizations including backup. There is an available budget of <30–50 kEUR. The authentication across administrative domains, the amount of data, and the backup are equally important requirements. Abo is looking for advices on both software and hardware solutions.

The targeted user community is biosciences (i.e., analysis/editing of microscope data (pictures) and/or sequencer data). Users (less than 100 workstations) are from different organizations (at least 3) eager to smoothly access the same data/files across organisational boundaries. The estimated amount of data is 40 TB during the first year but it is growing up to ~500 TB during the next 4–5 years. Backup is also needed!

The slides with the specific requirements are available here:

<http://www.terena.org/activities/tf-storage/ws8/slides/030610-storage6-abo-jan.pdf>

The meeting participants discussed the potential options to solve this problem. Jan (UNINETT) said that iRODS looks a proper solution for this. iRODS explorer is available for Windows machines. <https://www.irods.org/>
For the authentication part, the storage system can be hooked up with CSC/FUNET AAI. The TERENA TCS (grid certificates) can easily be implemented at the user sites.

Faidon (GRNET) offered their open-source storage solutions called Pithos/GSS. They are doing similar things with that in Greece: <http://code.google.com/p/gss/>
It uses Mozilla Firefox framework for the web interface but it has a standard API either. Currently GSS code is only maintained by GRNET, while iRODS has a larger development community that lowers the risk of reaching product end-of-life.

Regarding the hardware, the easiest way is to call for a tender. Perhaps that is not the cheapest way. For backup, tape has some disadvantage, so not recommended. Probably ZFS? CSC's tape robot can be used in case of really large amount of data.

If you have any other suggestion, please contact Jan Wennström <jan.wennstrom@abo.fi>

5. FileSender update and demonstration

Jan Meijer (UNINETT) demonstrated the FileSender application. It is more like a transfer solution not a storage solution. Features such as deleting uploads, tracking who downloaded, resend notification e-mail without uploading the file again, sending out invitation to upload, managing download permissions, etc. were shown.

The open-source FileSender code is available under BSD licence. The almost solid 1.0 release will soon be out. It still lacks of documentation. Good news is that the developer community is increasing. SURFnet offered to spend more time on usability, HEAnet offered a release manager expert, and AARnet pulled in some software testers.

Up to now, there are several deployments in various phases namely in Australia, Norway, Ireland, The Netherlands, Belgium, Croatia and Czech Republic. The deployed service can be rebranded.

The project still needs more developers, testers, technical writers, etc. Please, contact Jan Meijer (UNINETT) for more information < jan.meijer@uninett.no>

6. Date of next meeting, aob and close

The next coming TF-Storage meeting will be held on 9-10 September, 2010, in Poznan, Poland kindly hosted by PSNC/PIONEER.

List of participants

Name	Affiliation
Guido Aben	AARNet
Paul Dekkers	SURFnet
Jan Furman	CESNET
Leif Johansson	SUNET
Faidon Liambotis	GRNET
Rosend Llurba	NCF
Jan Meijer	UNINETT
Jean-Christophe Real	BELNET
Gabor Roczei	NIIF/HUNGARNET
Magnus Strømdal	UNINETT
Peter Szegedi	TERENA
Mario Vandaele	BELNET
Jan Wennström	ABO