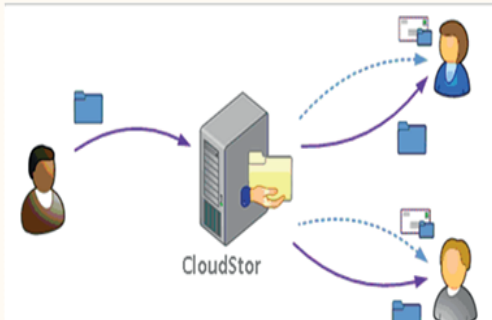


CloudStor Web Service

Introduction Australia's Academic and Research Network (AARNet) is a non-profit organisation that provides high capacity leading edge Internet services for the tertiary education and research sector communities and their research partners. AARNet has been collaborating with NRENs to develop a user friendly file transfer solution to exchange large data sets and other large data files across the AARNet network.



The Challenge

File size is a key barrier for researchers and educators in many fields who want to share electronically the vast quantities of data they often generate. There are two aspects to the problem: *bandwidth* and *application support*.

AARNet's network itself, of course, solves the raw bandwidth problem for connected researchers and students. The National Broadband Network (NBN)

A few web-based solutions exist that offer large file transfer as a subscription service. These services tend to be hosted in overseas data centres, which poses an issue for researchers. There are good reasons to be concerned about data ownership, transfer costs and vendor lock-in.

We cannot afford to ignore the problem. Modern research practice routinely generates scientific files in the multiple-Gigabit or even Terabit range, be these

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Guido Aben - Director eResearch, AARNet Pty Ltd

holds the promise to alleviate the situation for people working from home. That leaves application support untouched and yet this is where the real problem lies. People commonly use email attachments to transfer files; however, most institutes pose limits on attachment sizes and inbox storage. Historically popular file transfer solutions, such as Anonymous FTP and open web directories, are frowned upon by increasingly security conscious IT departments.

high resolution medical imagery, or genome sequences, or astronomical observations. As a corollary, many researchers and academics have a pressing need to send these large files to their collaborators. In the past, to get the job done, researchers often would resort to (snail-)mailing or physically delivering hard disks or thumb drives. At AARNet, we believed we could improve on this situation, which is why we developed CloudStor.





The Solution

We believe that CloudStor is providing a compelling reason for customers to keep their hard disks at home. There's a few fundamental technologies behind the operation of CloudStor, and the AAF certainly is one. If it weren't for the AAF, we would have to manually enroll every user who wanted to make use of CloudStor, which would be absolutely detrimental – CloudStor needs to be there for researchers the moment they realise they have a need. We can't afford to wait a day to process a new user account; doing so may well cause that super-large powerpoint file to miss the deadline for that important presentation.

With the AAF in place and working smoothly, there is no effort wasted on user account add/move/change/delete operations, and all the time this frees up goes right into further platform development.

The web-based program, known as CloudStor, allows the transfer of oversize files to anyone in the world via AARNet's high-speed network. AARNet built CloudStor in anticipation of such a need, knowing that more and more Australian researchers and educators would demand to share larger and larger files – the largest we've seen so far is 100Gb, but records are there to be broken.

The platform has been specifically designed to work on every desktop; all it needs is a browser. It's also been designed to be very easy to use. Users securely upload files to a central storage point on AARNet servers. Australian and overseas collaborators download the files by clicking on a link in an email notification.

CloudStor has been federated with the Australian Access Federation (AAF). This means that AAF subscribers no longer need to apply for a beta account but can make use of their home institution's username and password.

The benefits

- The platform has been tested to handle 100 Gb data sets (files) across the AARNet network; the theoretical limit is much higher though and essentially limited by user patience only.
- CloudStor is a “central server on AARNet that customers can trust” for a more efficient transfer of files across the network.
- An ‘overflow feature’ is currently being tested which will allow storage to the next available storage unit within AARNet if the last one is filled.

For further information on CloudStor and how it can assist you, go to:
<http://www.aarnet.edu.au/services/content-delivery/cloudstor.aspx>

**For further information on the AAF,
its benefits and how to join, visit**
www.aaf.edu.au