

# Monash Large Research Data Store ( LaRDS )

**LaRDS** is Monash University's 'petascale' research data store. LaRDS currently comprises **250 TB** of on-line disk file storage capacity plus around **1,300 TB** (1.3 PB) of near-line tape media capacity, held in automated robot-controlled libraries in Monash's two main data centres. Significant additional capacity is added on a regular basis.

LaRDS is available for use by all Monash researchers including Higher Degree by Research (HDR) students.

**No usage charges apply for normal use of LaRDS data storage capacity.\***

\* Each faculty is allocated a generous standard allocation by formula. Significant Monash and Australian Government capital has been invested in establishing LaRDS. Operation, expansion and use of LaRDS is centrally funded – pre-paid via the University's normal Central Support Services charging mechanism. Additional capacity, for very high-level users, is available for purchase at modest rates.

## What is a petabyte?

- 1 petabyte = 10<sup>15</sup> byte**
- 1 PB = 1,000 TB
- 1 PB = 1,000,000 GB
- 1 PB = 1,000,000,000 MB
- 1 PB ≈ 250,000 DVD**

**LaRDS** supports important medical, engineering and scientific research, including:

- Protein crystallography
- Australian Mouse Brain Map
- Climate research

and digital and micro imaging in a variety of research domains.

**LaRDS** also stores important audio, image and video cultural archives for Arts and Education

## Laboratory Information Management Systems (LIMS)

LaRDS can support a wide variety of LIMS from unstructured wikis and blogs using **Sakai** and **Confluence** through to formal record keeping systems, such as the *Monash Immunology and Stem Cell Laboratories (MISCL) eNotebook* and proprietary systems required by industry partners, such as the *Centre for Drug Candidate Optimisation (CDCO) idbsELN eWorkbook*.

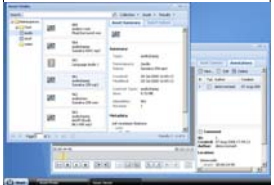
**School of Music** South East Asian and Jewish music cultural archives preserve around 1,000 hours of digitized field recordings, held in LaRDS Novell

**R:\ drive** and will also use the **Mediaflux** system. Subject to copyright some of the material is publicly available through the **ARROW** repository.

**Collaboration** Research groups can use LaRDS to collaborate and share files using **Confluence** wiki and **Sakai** virtual research environment →

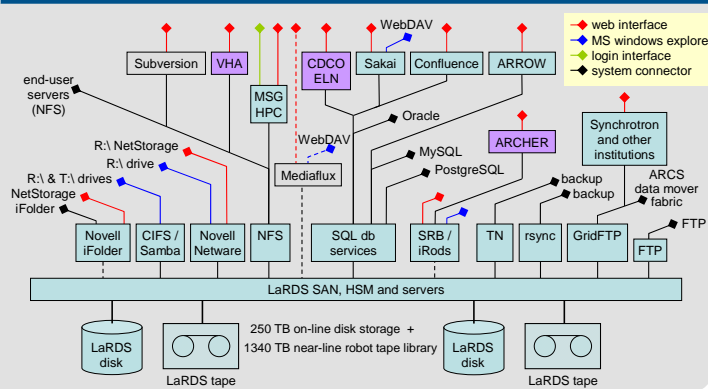
## Coming soon

- **Subversion (SVN)** source code repository and general purpose version management system
- **Mediaflux** general purpose Digital Asset Management System



**The Shoah Foundation** Visual History Archive (VHA) comprises over 50,000 video testimonies of Holocaust survivors witnesses, and is the largest visual history archive in the world. Of these, over 2,000 Australian and other sought after testimonials, comprising around 10 TB of digitized video material, are stored in LaRDS, for easy access by local researchers.

**LaRDS** is not just a single system or software application. It comprises many different applications and interfaces over a common infrastructure:

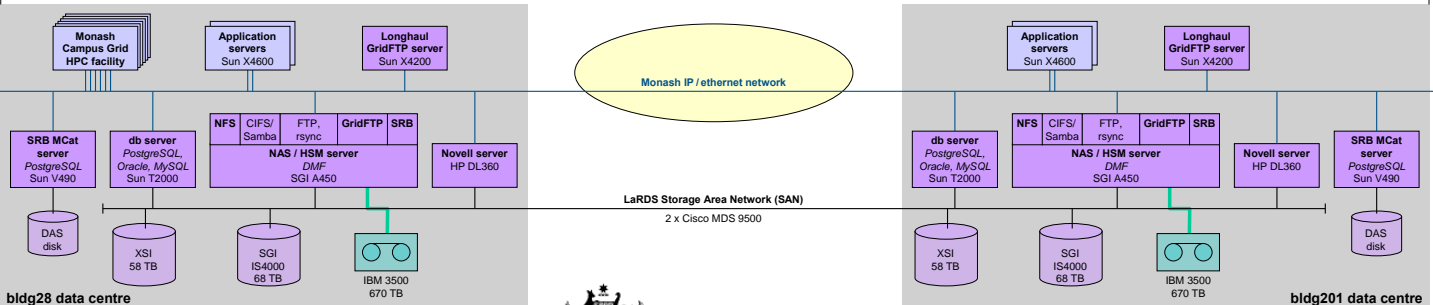


**Flexibility:** LaRDS provides a reliable secure long-term common data storage infrastructure, which is made available to wide spectrum of applications and services, so as to meet the diverse needs of different research groups, from Novell Network **R:\ drive** for individual and shared network drives for workgroups, **Oracle** databases, collaboration environments such as **Sakai** and **Confluence** wiki, and a range of specific custom applications for individual research groups, such as the Shoah Foundation Visual History Archive and the Centre for Drug Candidate Optimization Electronic Laboratory Notebook.

**High Performance Computing:** In addition, all 'home-directories' and research data of all users of Monash's High Performance Computing facility (the **Monash Sun Grid**) are stored on LaRDS. Applications of the Monash Sun Grid include climate research and a wide range of other numerical modelling and simulation applications.

**National Data Grid:** LaRDS can also connect to the Australian Synchrotron and other institutions via the Australian Research Collaboration Service (ARCS) data mover fabric, using GridFTP protocol.

**Data preservation:** All information held in LaRDS is automatically backed up to tape in Monash University's two physically diverse data centres:



Major LaRDS hardware components showing replication across both Monash data centres

