Provisioning and sustaining research workspaces and repositories

Progress on ReDBox 2.0

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ReDBox 1.10

- Research data catalogue / metadata store
- 8 Australian institutions
- Maintained by QCIF (Queensland Cyber Infrastructure Foundation)
- OAI-PMH feed publishing metadata records to aggregators like RDA
- More recent releases include a data management planning tool
Problems with (our) 1.10

• Outdated technology stack: Java / Jython / Apache, old JS frontend

• Researchers can submit metadata records for review but not data files – there’s still a manual data publication process

• Curation – don’t publish a record until everything it refers to has been published. Brittle, hard-to-debug, records get stuck in curation.
Provisioner

- UTS project for integrated research data management
- Learn from earlier attempts to provide data + metadata capture
- Integrate with specialised research applications: OMERO, GitLab
- More general applications: fileshares, ReDCAP surveys
- General data review and publication
ReDBox 2.0 / Provisioner

- UTS – big risks for this sort of software development
- Collaborate with QCIF
- ReDBox 2.0 is a ground-up reimplementation of the platform
- Research data planning
- Describe and publish data sets
- Provisioning workspaces
Development

- QCIF – reimplementing the ReDBox platform
- UTS – workspaces and data migration, business analysis, form and process development
- Agile project methodology
- Collaboration via Slack and weekly sprint meetings
- Late 2017 – early 2019
The techie slide

- node.js
- MongoDB for record storage
- Sails.js – an MVC web app framework based on express.js
- Frontend: Angular
- Much better performance than v1.n
- Compiling it can melt your laptop
ReDBox 2.0

- Modern UX
- Pre-filling forms with details from project records is much better
- Workspaces can be created and linked to RDMPs
- Data records linked to RDMPs which can have attached data
- Data publications based on data records
Welcome to Stash: managing your research data

Plan a Research Project
- Create RDMP
- View/Update RDMPs
- Get advice

Organise Workspaces
- View workspaces
- List of available services

Manage data
- Create archival Data Record
- View/Update archival Data Records
- Transfer responsibility

Publish and share
- Create Data Publication
- View/Update Data Publications

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Project overview

Project name (*)

Feasibility studies of cavitation effects on jet cutting devices

Project ID (*)

100002787

Project Description (*)

Conventional jet cutting devices rely on high velocity jets and experience intensive nozzle erosion. The feasibility of reducing the nozzle wear, by using cavitation, without sacrificing cutting speed will be studied. The feasibility studies will be initiating using a UTS-O’Brien Link grant and an application for a SPIRT grant will then be made enabling to fully investigate the problem and develop an improving design for a jet cutting machine with minimum wear in the jet nozzle but maximum erosion of the target. The project will lead to a dramatic reduction in the frequency of nozzle replacement, maintenance and energy used, giving an advantage edge to Australian manufacturing. Finally, factors governing surface erosion in a particulate-laden cavitating jet flow will be studied.
What’s next?

- We went live last week: planning a bugfix release in the next month
- Data publication repository with Peppermint search/discovery app
- Oxford Common File Layout
- More research apps:
  - LabArchives ELNs
  - File storage
What’s after that?
Links

• [https://eresearch.uts.edu.au/](https://eresearch.uts.edu.au/)
• [https://www.qcif.edu.au/](https://www.qcif.edu.au/)
• [https://ardc.edu.au/](https://ardc.edu.au/)
Thank you