Adopt, Adapt, Reuse: C-DeVL (CVL) Project

Sharing and reusing outputs from ARDC funded domain projects

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www.cvl.org.au

What is the CVL?

The **Researcher** view:

A single place where you can access your characterisation data and software tools, in a user friendly format.

Project (C-DeVL) view:

A program of work to connect Australian Characterisation instruments with data management environments, tools and analysis pipelines on the Australian research cloud.

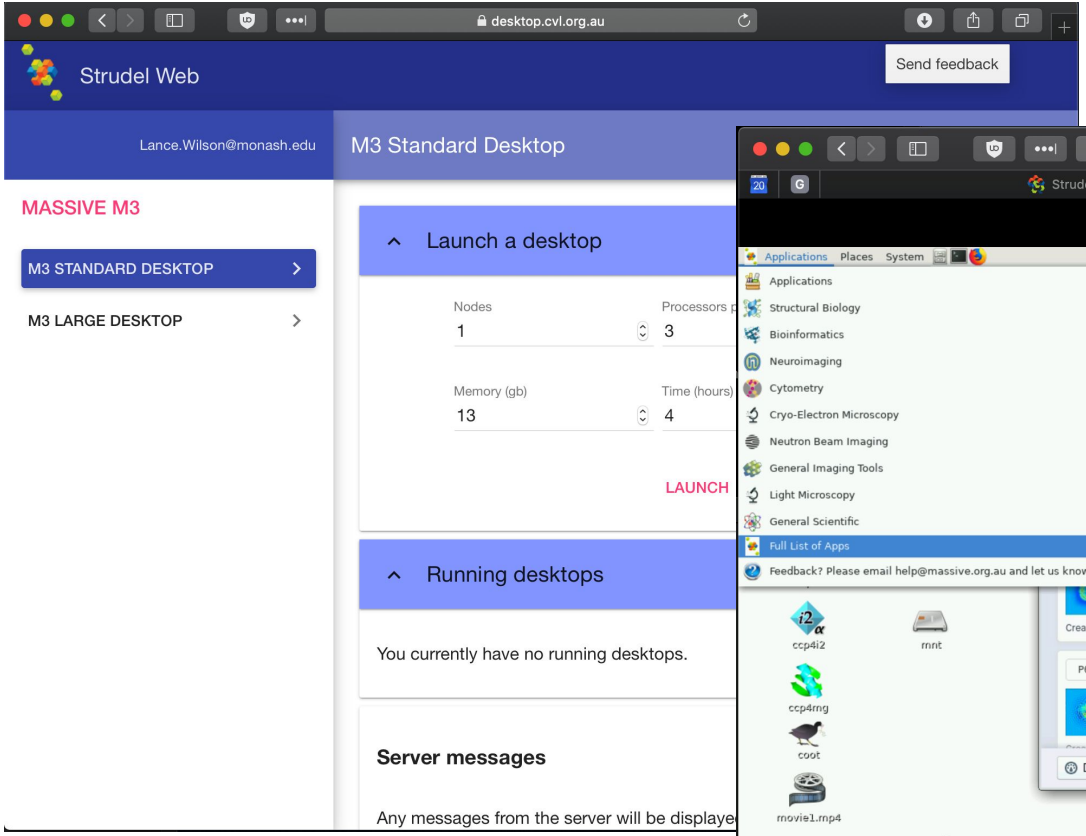
Contents

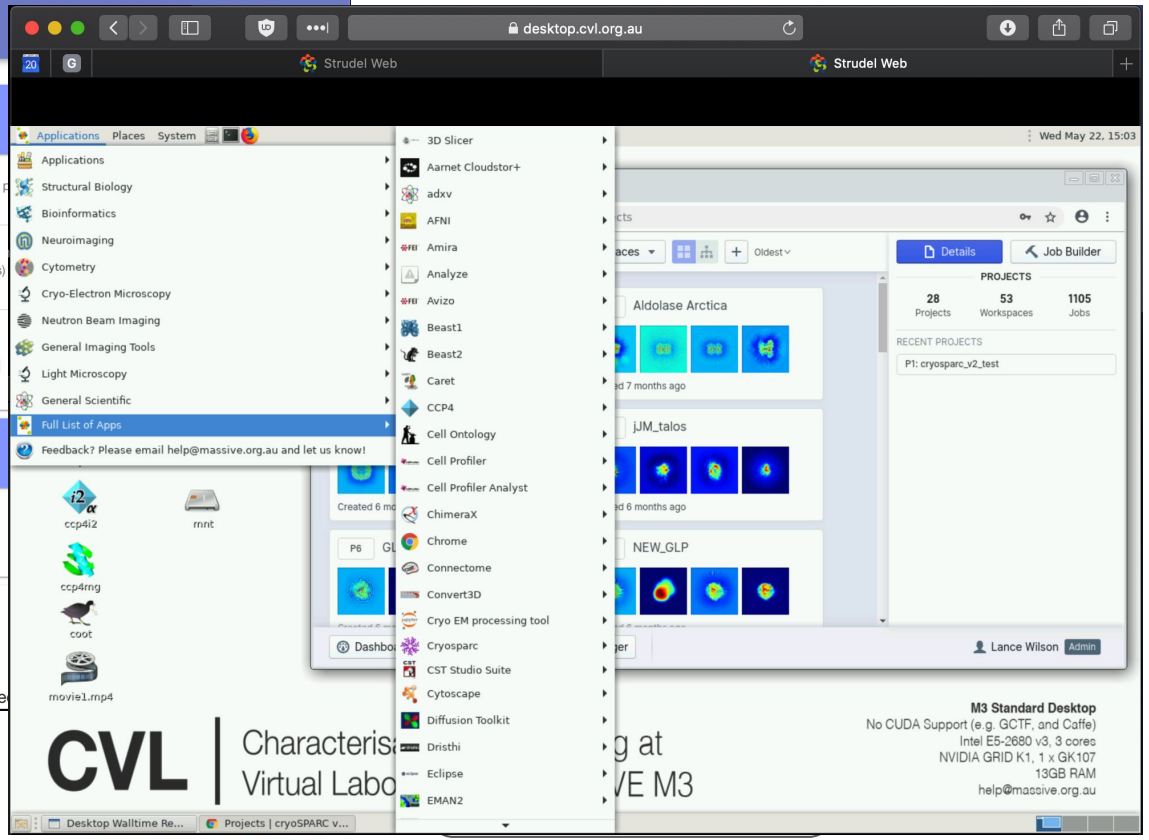
- **Reusable Components** - what can you reuse now?
- **Federation** - how are we re-deploying across Australia?
  - Technical
  - Procedural and Operational

Reusable Software and Infrastructure

- Strudel and Strudel Web
- MyTardis (www.mytardis.org)
- AuthZ (authentication certificates)
- Ansible scripts for all services/applications
- Data repatriation scripts from ANSTO Australian Synchrotron
- Software containers

Strudel Web & Desktop





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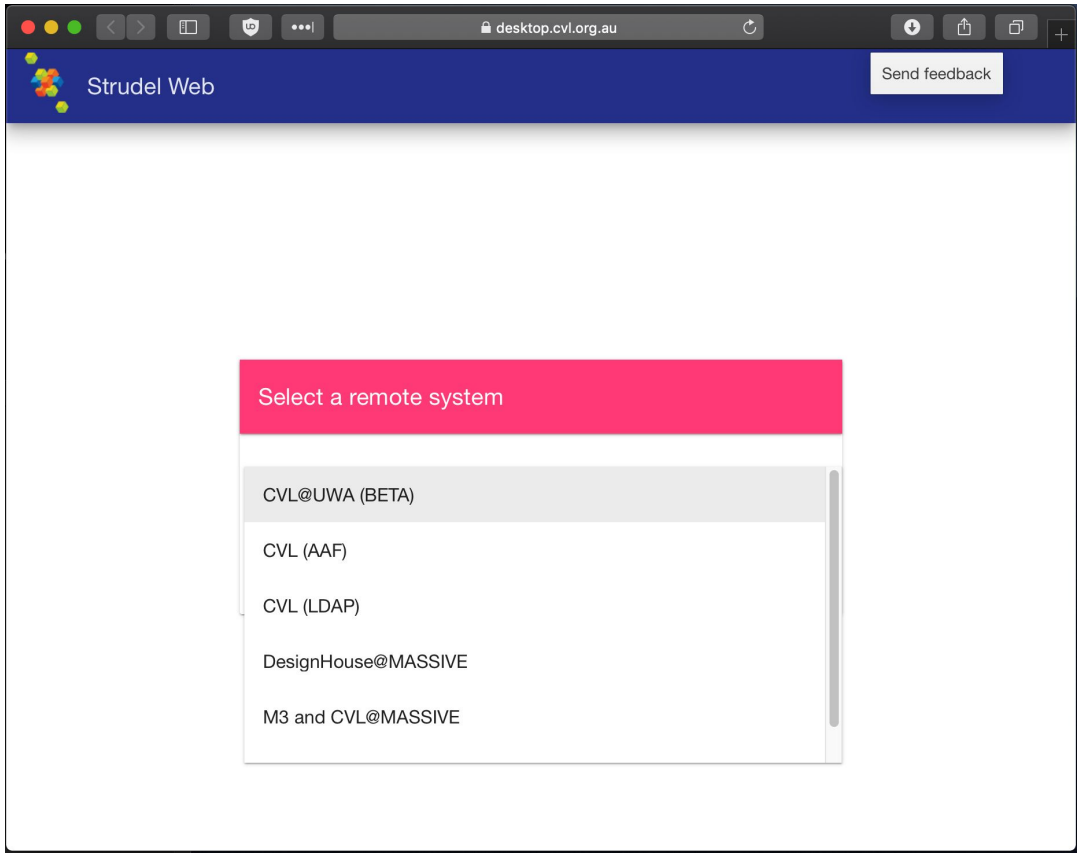
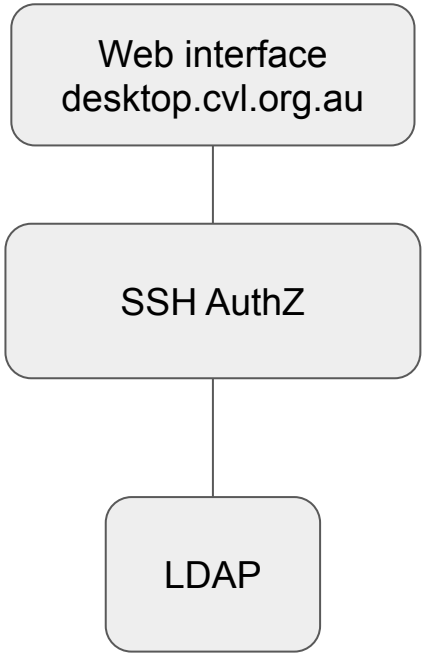
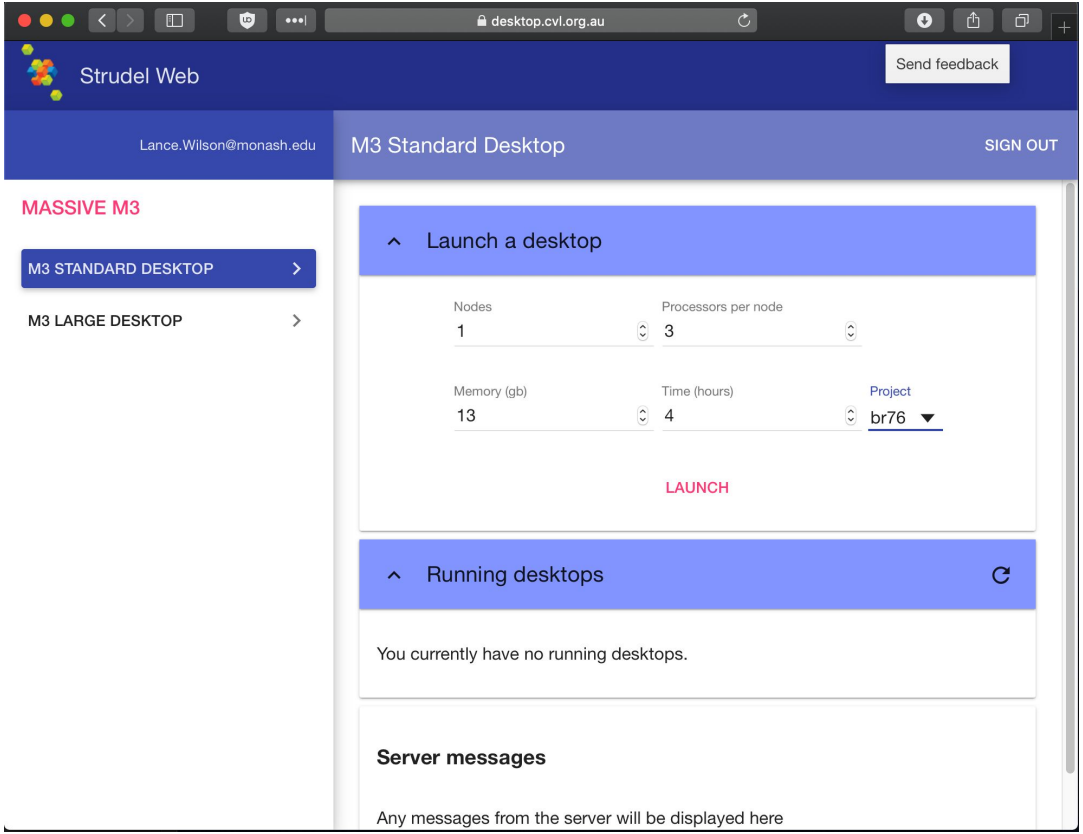
Strudel Web & Desktop







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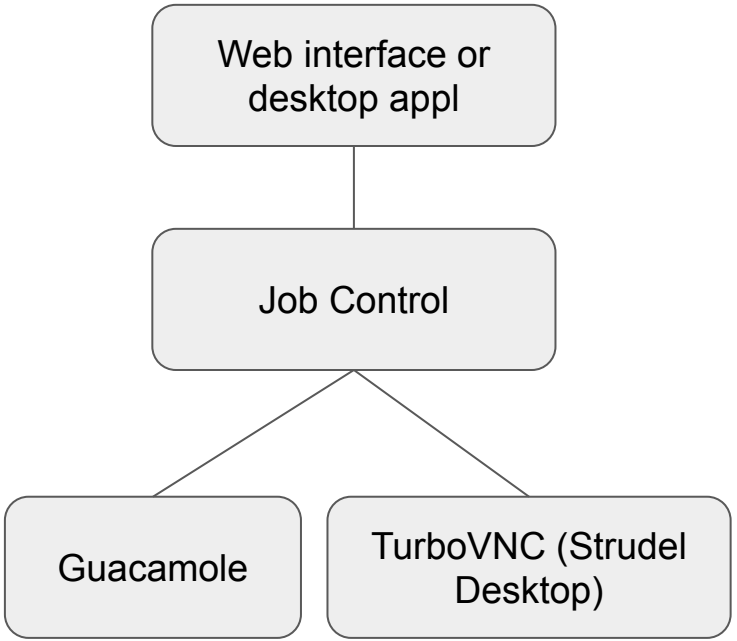
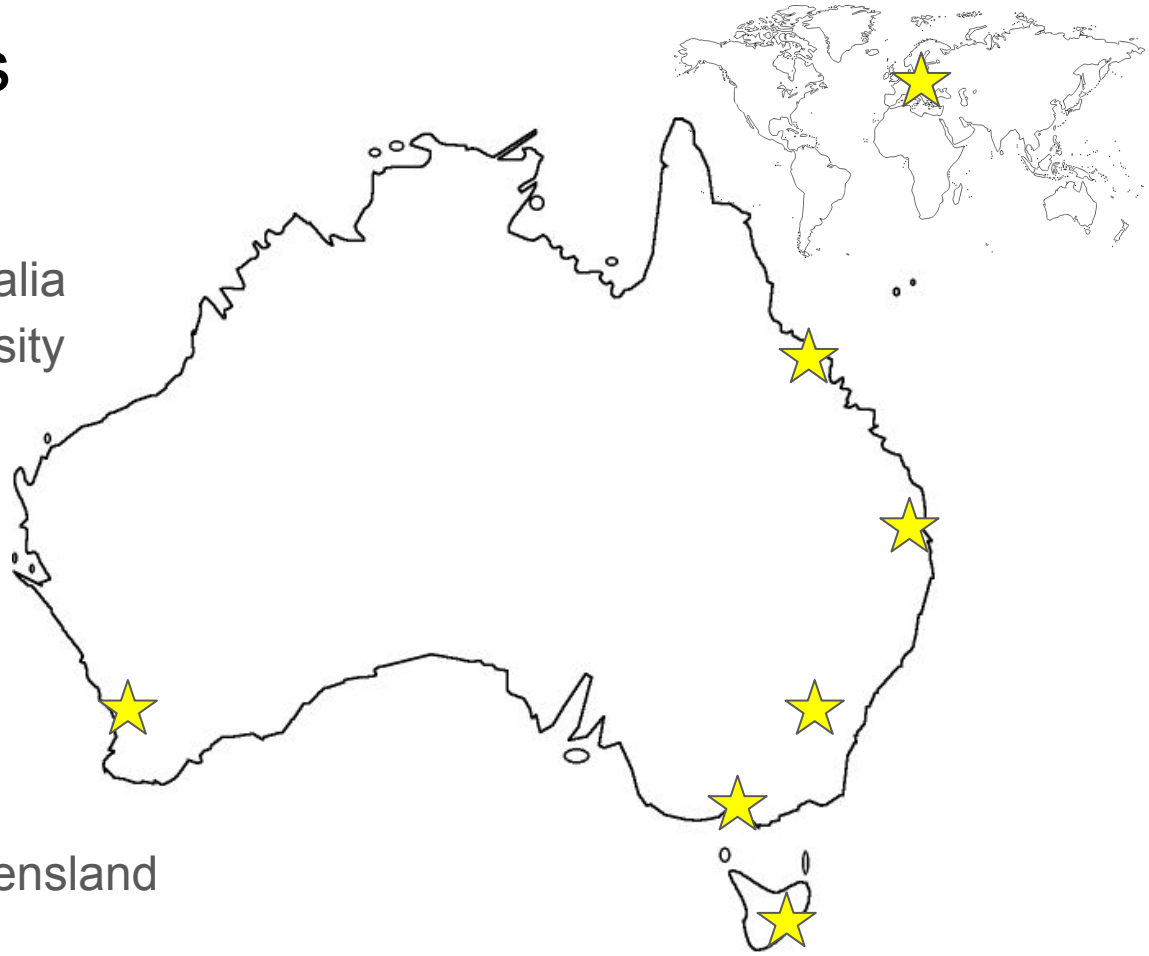


Strudel Deployments

- University of Queensland
- University of Western Australia
- Central Queensland University
- NCI
- Pawsey
- Julich
- TERN
- TPAC
- Swinburne University
- University of Melbourne
- University of Southern Queensland



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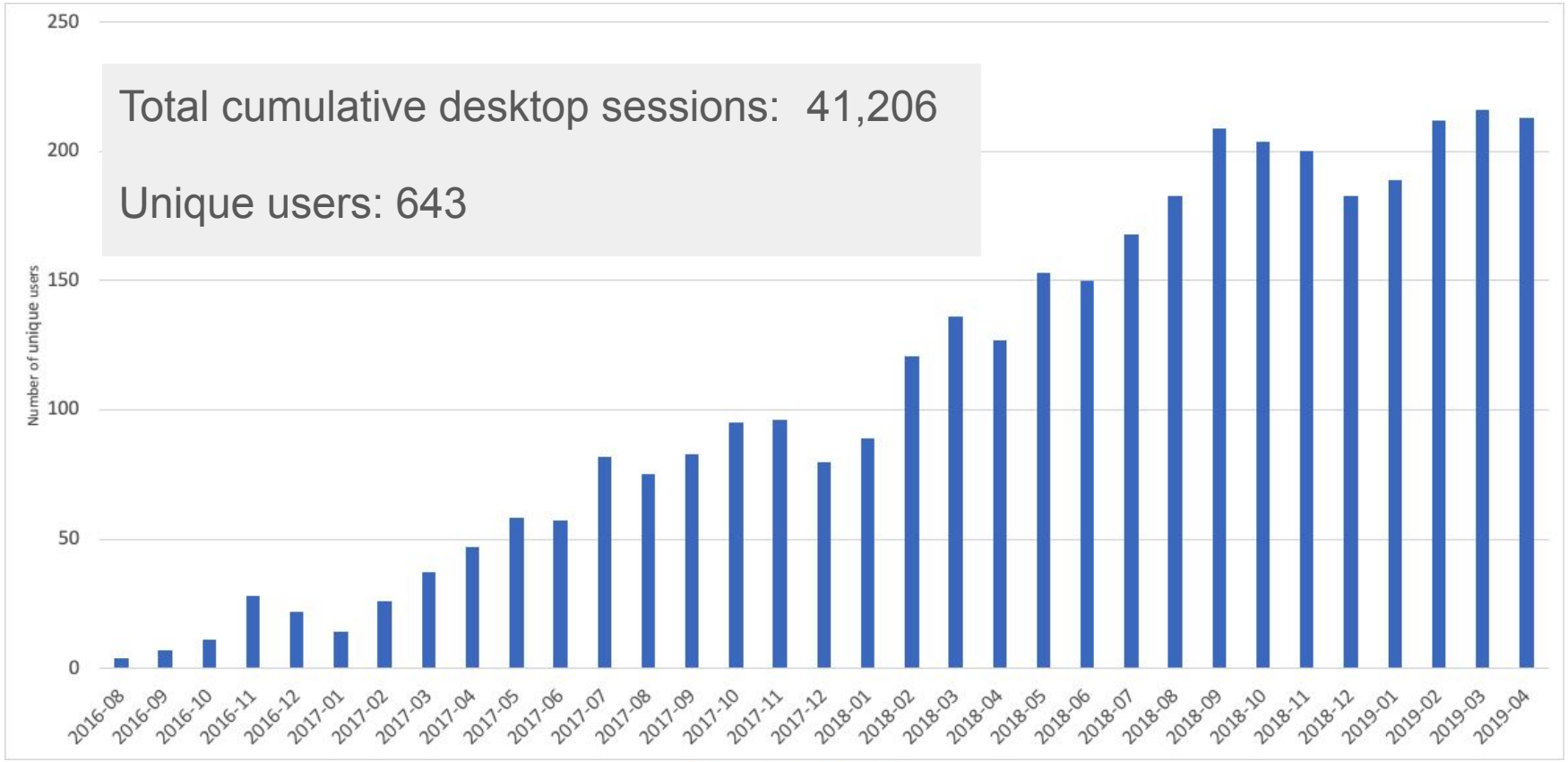
CVL Desktop Unique Users per month (CVL@MASSIVE) 08/2016 - Current

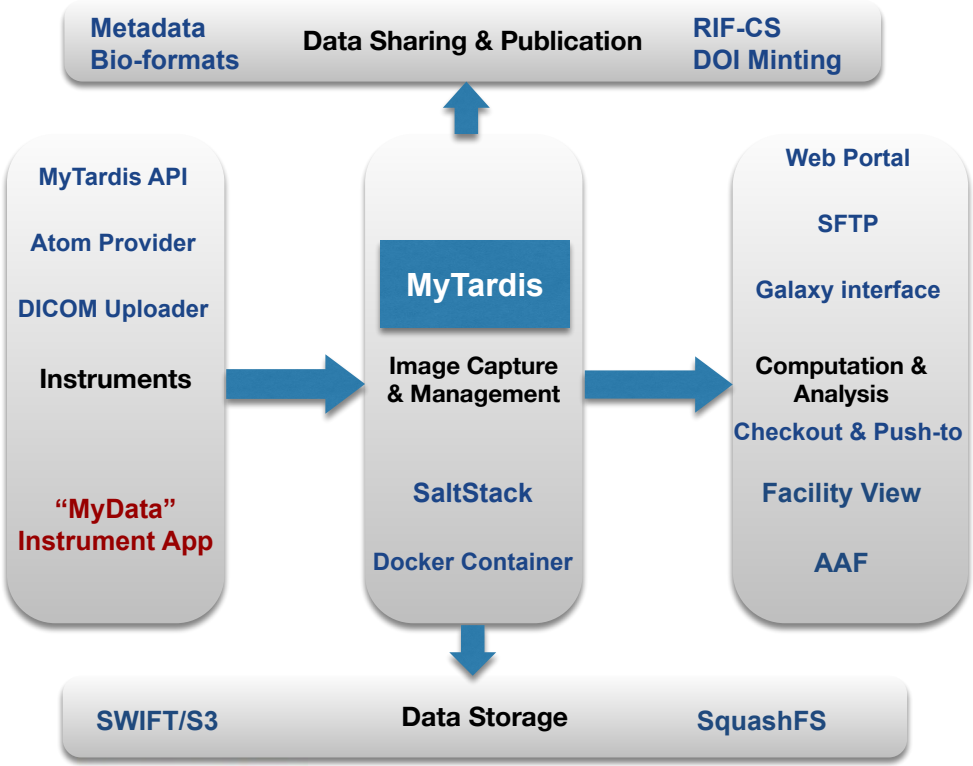


What is MyTardis?

A data management system for instruments - http://mytardis.org/

MyTardis is a data management system, developed by Monash, for instrument data.

The Monash instance of the MyTardis service is called Store.Monash

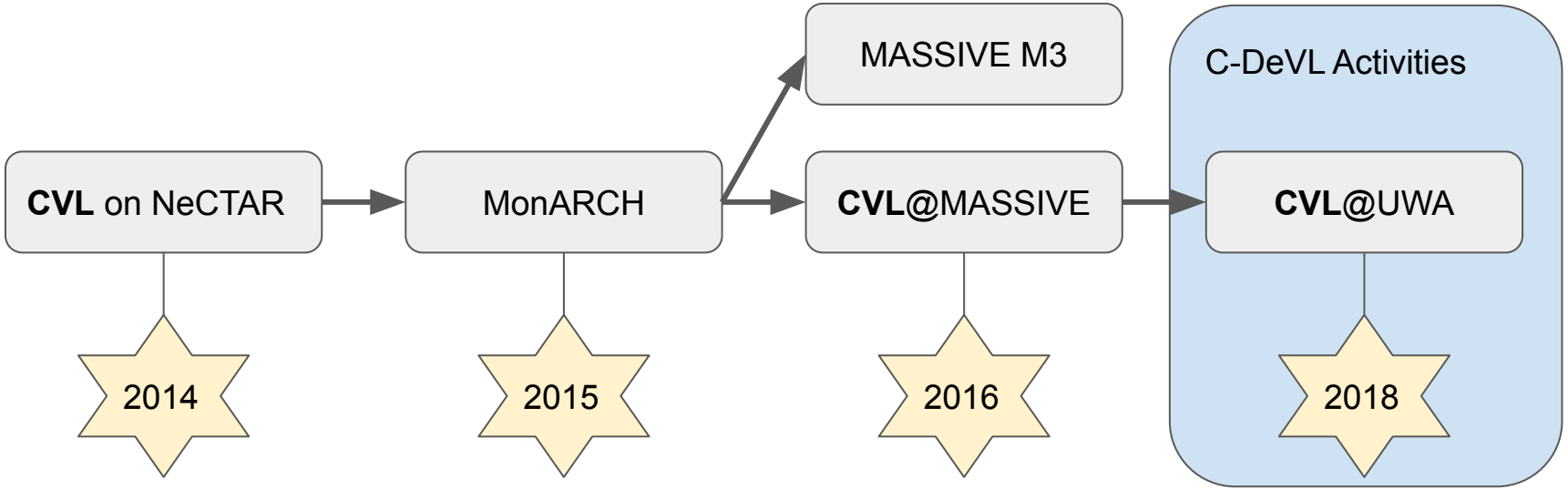


Federation Activities

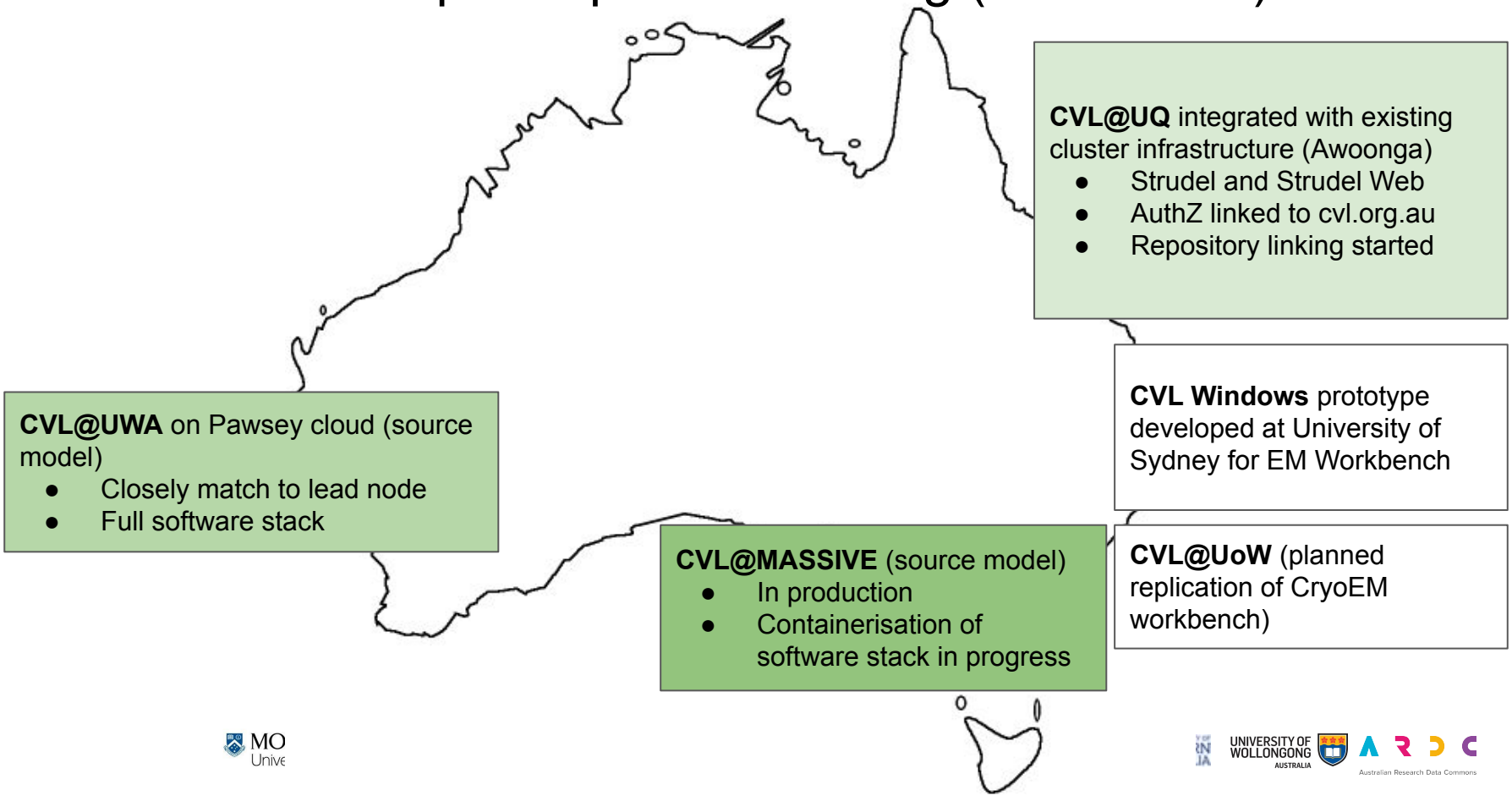
Federation

- History and Architecture
- Principles (What are we trying to achieve?)
- Procedures/Processes (How are we going to achieve it?)
- Technical Implementation

CVL “Cluster in a Box” Deployment Technology Timeline of development and reuse



Where are we Adopt Adapt and Reusing (CVL nodes)?



CVL@UQ integrated with existing cluster infrastructure (Awoonga)

- Strudel and Strudel Web
- AuthZ linked to cvl.org.au
- Repository linking started

CVL Windows prototype developed at University of Sydney for EM Workbench

CVL@UoW (planned replication of CryoEM workbench)

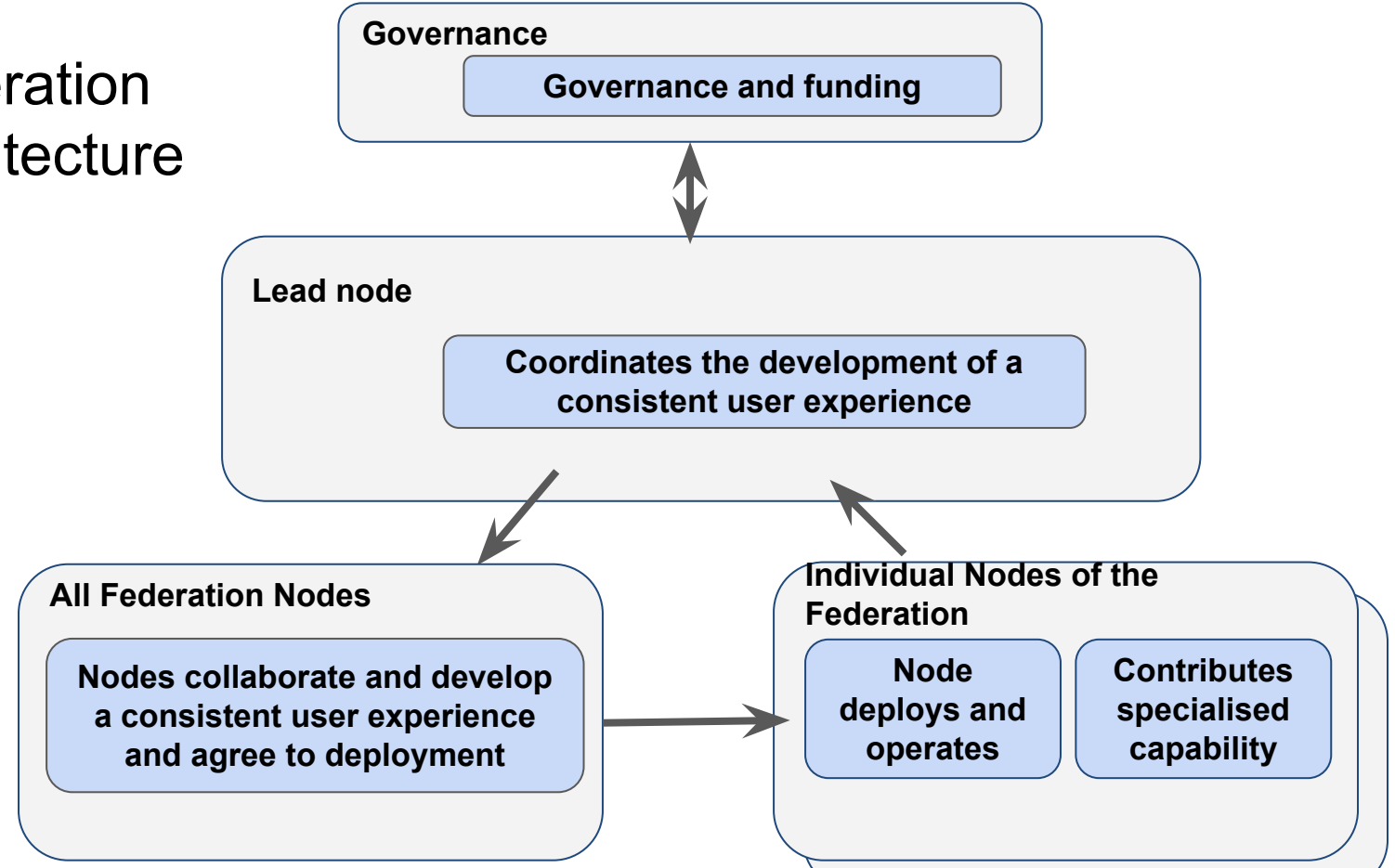
CVL@UWA on Pawsey cloud (source model)

- Closely match to lead node
- Full software stack

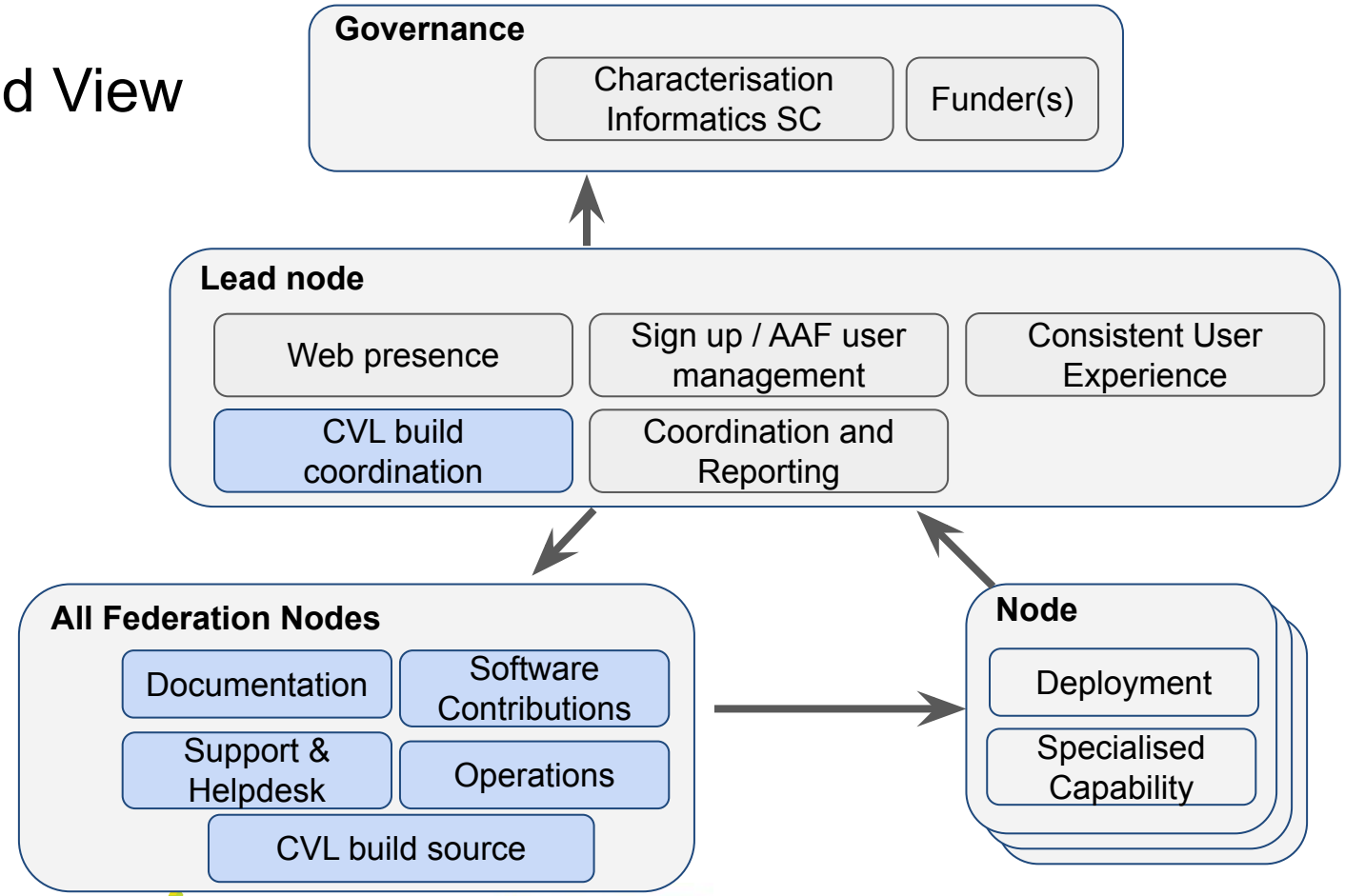
CVL@MASSIVE (source model)

- In production
- Containerisation of software stack in progress

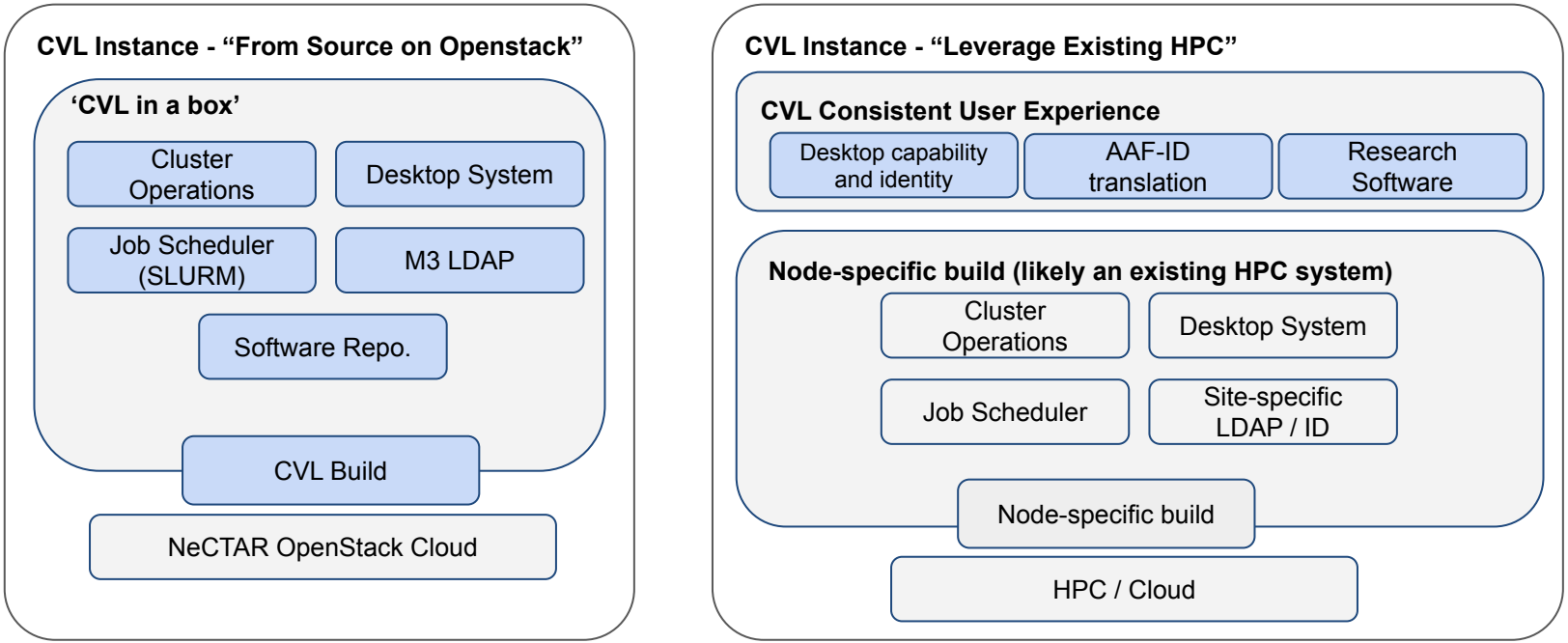
Federation Architecture



Detailed View



Types of desired CVL nodes we've identified (Technical)



Example Federation Principles

Principle/Feature	Status	Future Work
Single user portal	Website is up	Forking of docs.massive.org.au to docs.cvl.org.au and adding of champions materials
Single sign up/registration (AAF authenticated)	Resource allocation system under development (CRAMS)	Implement CRAMS for CVL@UQ and others
Single help desk	NeCTAR model investigated. help@cvl.org.au being implemented	Define SLA and partner contributions. MOU
Single software stack	Repository created, packages being built nationally,	Rebuild existing software to support different infrastructure
Single desktop user interface and branding	Portable desktop configuration begun. CVL from source nodes have consistency	Develop production ready desktop configuration for alternate CVL model

Federated Research Software Stacks

- Procedures for contributions have been developed (link)
- A public repository is now available for container build scripts

https://github.com/Characterisation-Virtual-Laboratory/CharacterisationVL-Software

- 31 Packages have been committed to the repositories (and growing)
- Pre-built containers are available from a public repository (Singularity Hub)
- Ongoing work to accommodate disparate clusters

What communities (new and/or existing) are important to you?

Summary

- **Reusable Components**
  - Strudel Desktop and Strudel Web (desktop.cvl.org.au)
  - MyTardis (www.mytardis.org)
  - AuthZ (https://github.com/monash-merc/ssh-authz)
  - Software containers - https://github.com/Characterisation-Virtual-Laboratory/CharacterisationVL-Software
- **Federation**
  - www.cvl.org.au
  - https://github.com/Characterisation-Virtual-Laboratory

How do we do Federated Reporting?

- Central
  - Researchers (Institutional affiliation)
  - Projects (FOR and SEO)
- Nodes
  - Number of desktops
  - Distribution of times
  - Number of denied requests
  - Data volumes
  - Repository usage

What other metrics are important to you and your funders?