



# ARCS Data Fabric

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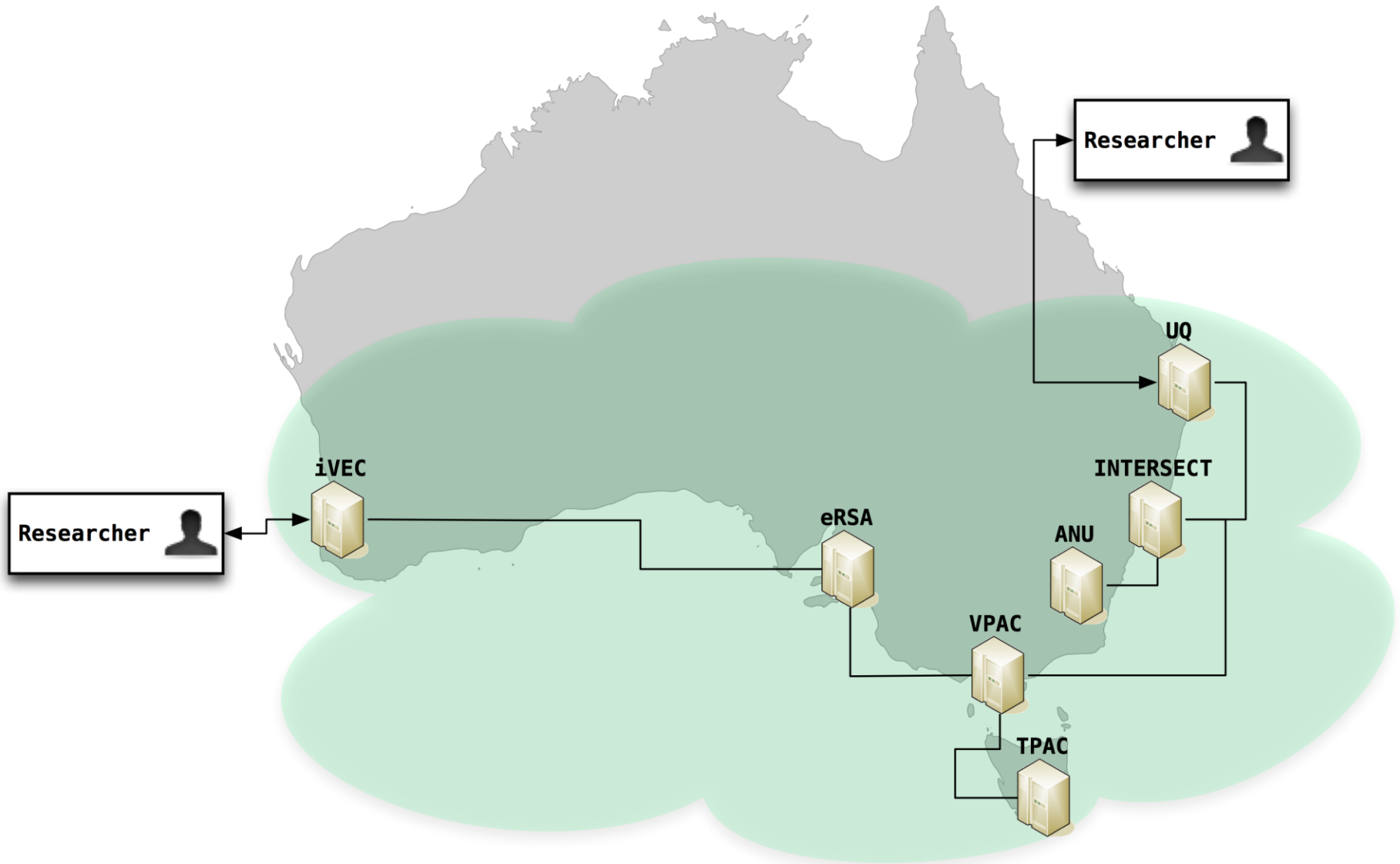
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ARCS Data Services

# Outline

- Introduction to the ARCS Data Fabric
- Migration from SRB to iRODS
- Davis
- Hermes

# ARCS Data Fabric



# Why SRB?

- In June 2008, iRODS lacked
  - Full GSI Authentication
  - Federation
- Now migrating to iRODS 2.0
  - ***Supports both GSI and federation***
  - Open-sourced
  - Microservices and Rules Engine

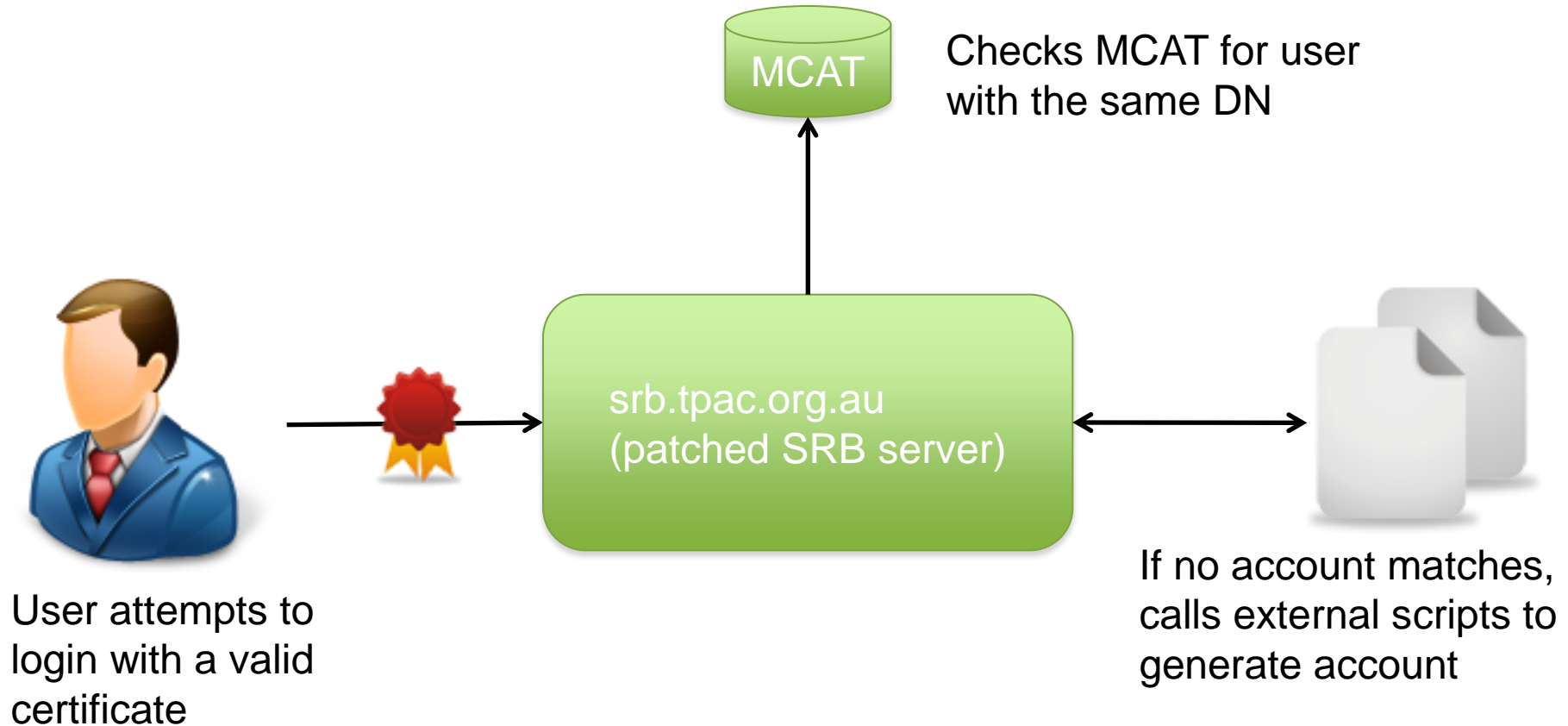
# Migration

- Modified migration script handles:
  - Users
  - SRB Objects and Collections
  - Metadata
  - Groups
- Does not migrate
  - Permissions
  - User DNs

# Migration

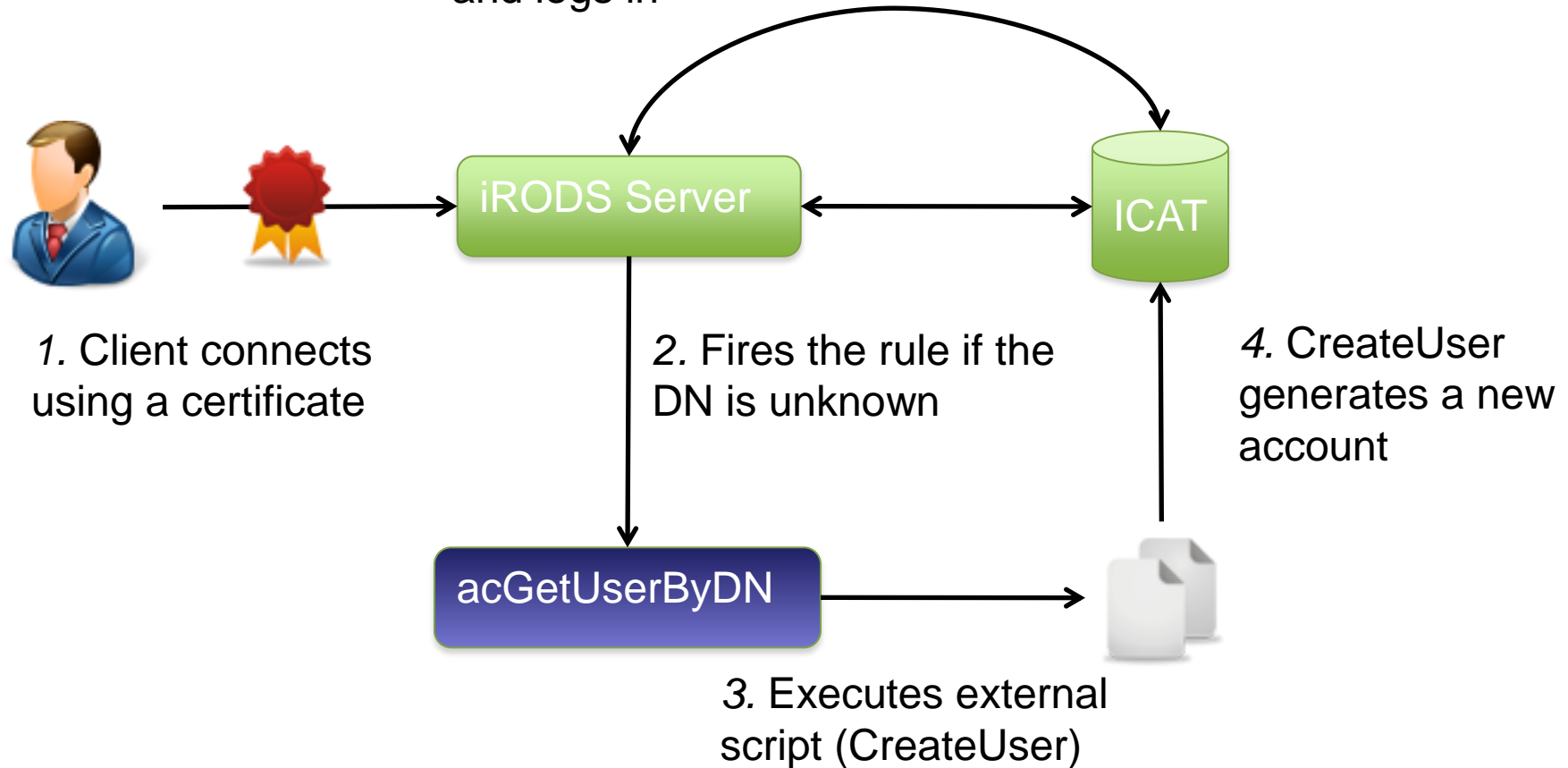
- Moving other processes from SRB to iRODS
  - Automatic account creation
  - Usage statistics
  - User sync

# Automatic Account (SRB)



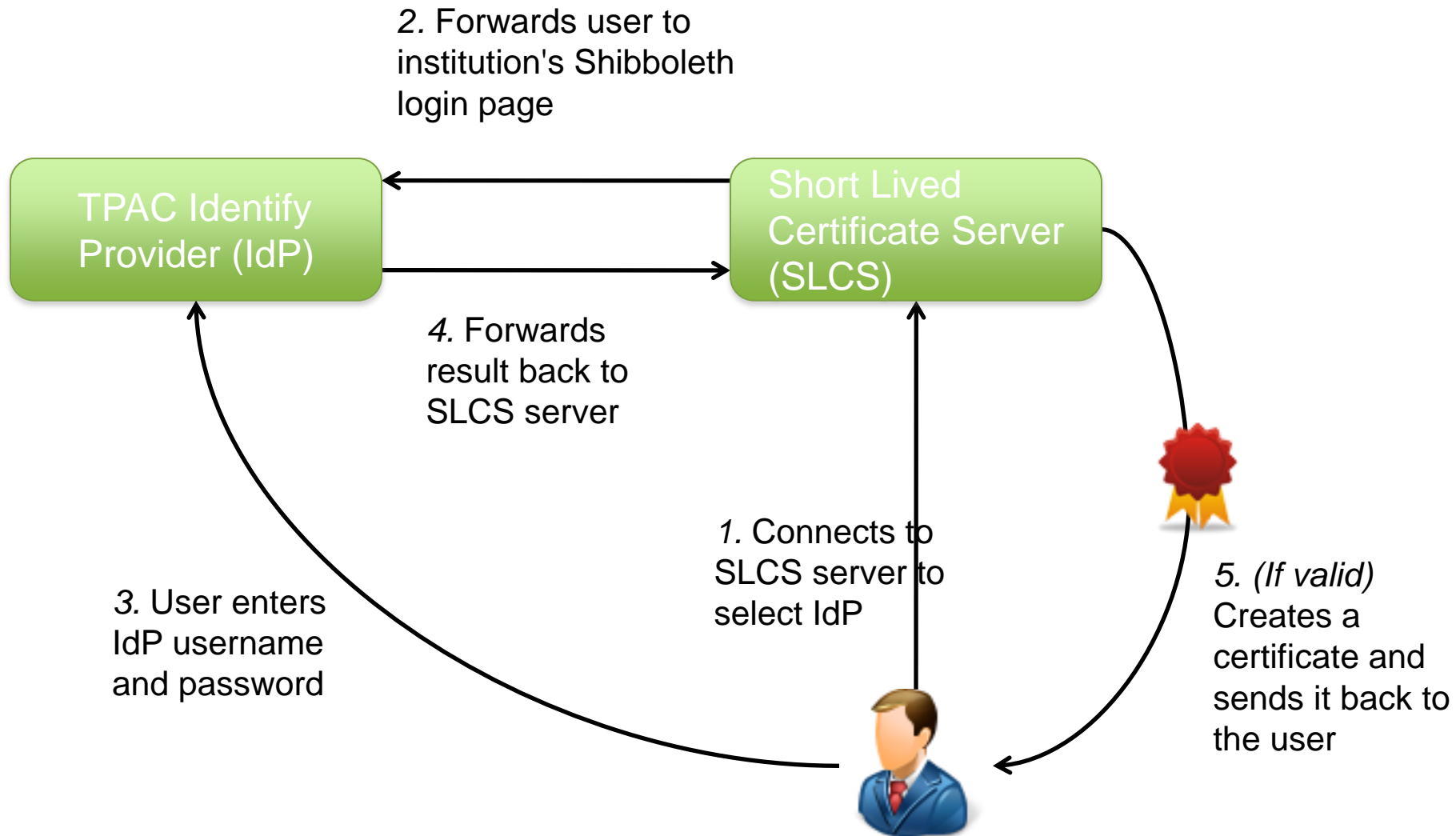
# Automatic Accounts (iRODS)

5. The server retrieves new username from script output (or query ICAT by DN) and logs in

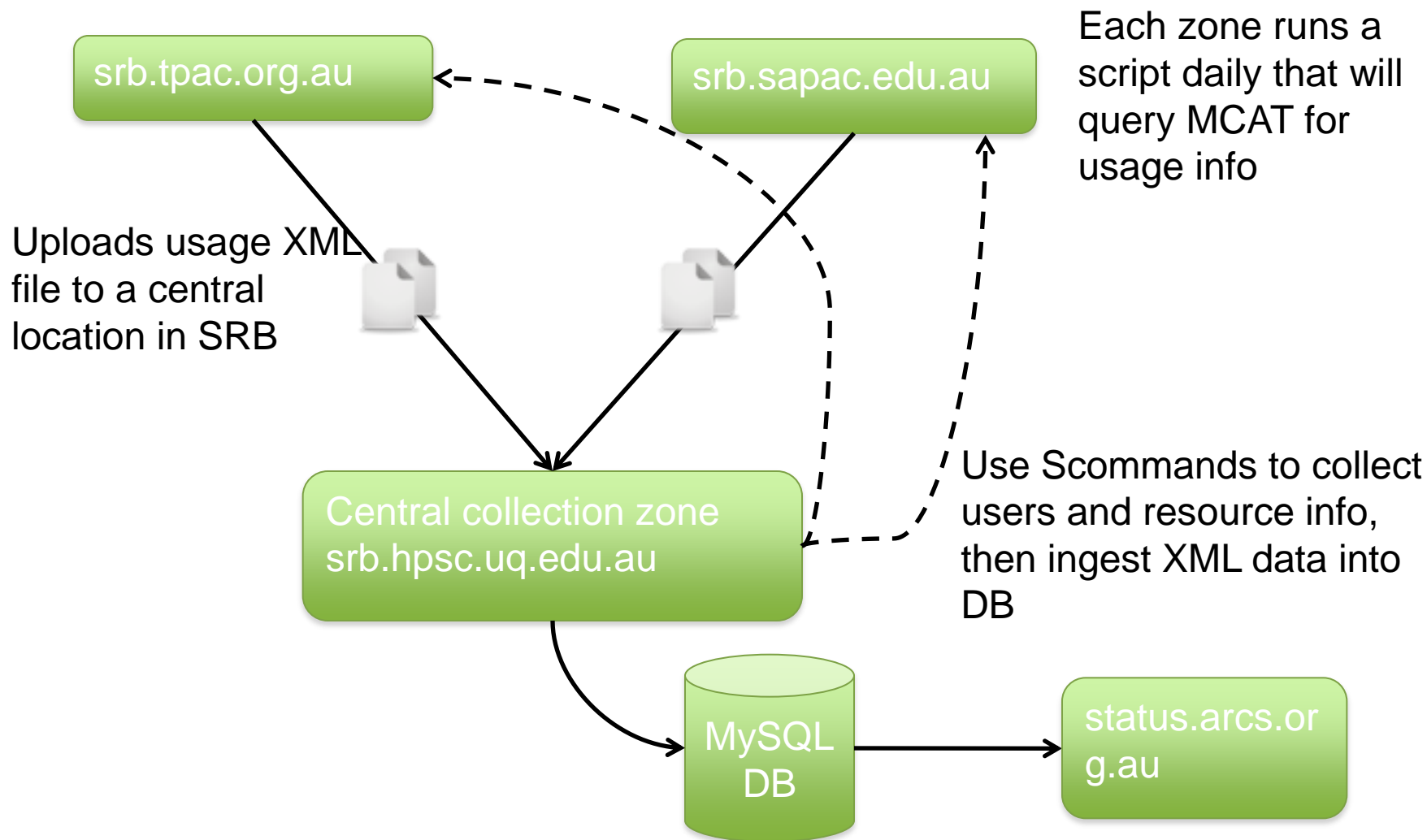




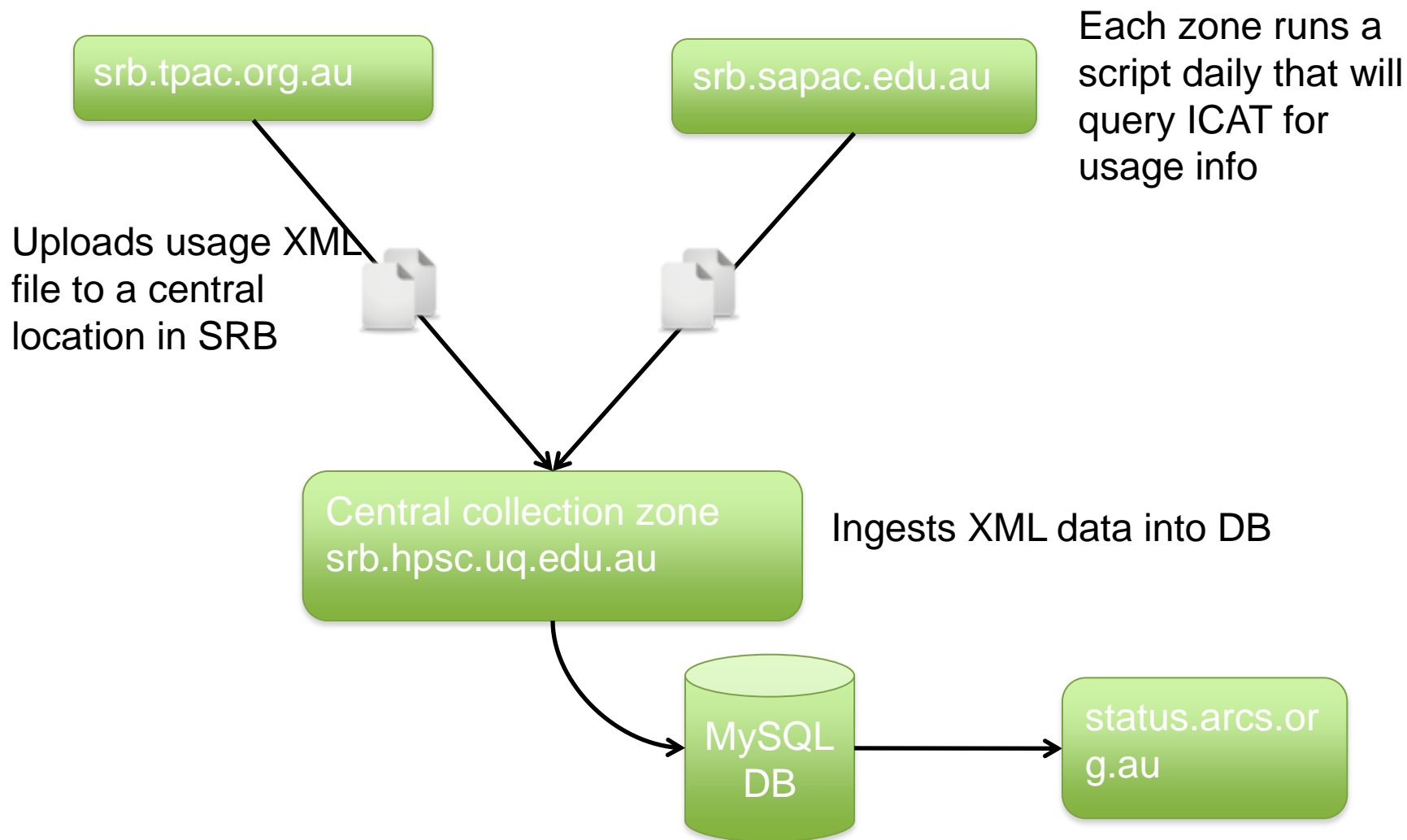
# Shibboleth & SLCS



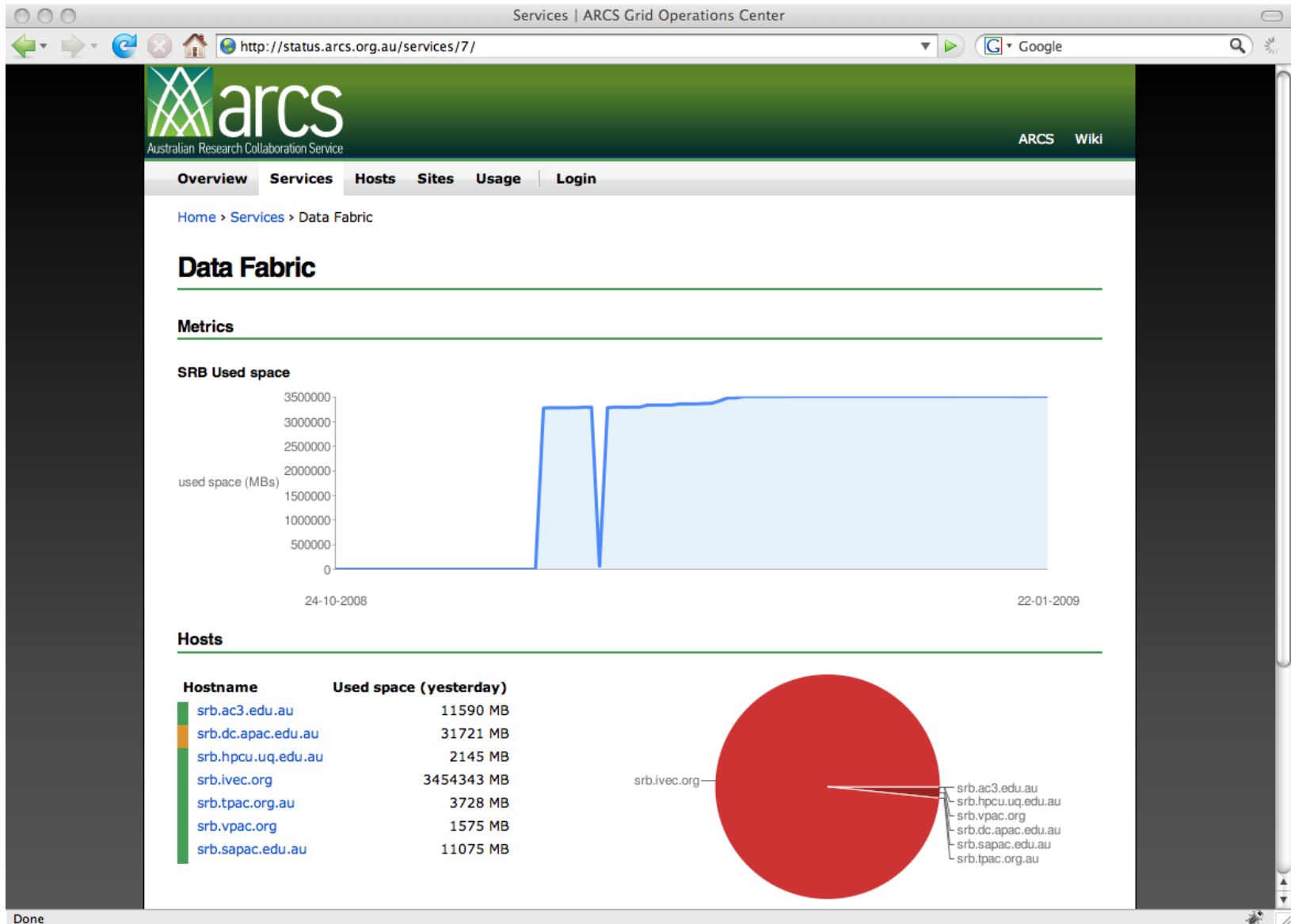
# Usage Scripts (SRB)



# Usage Scripts (iRODS)



# status.arcs.org.au

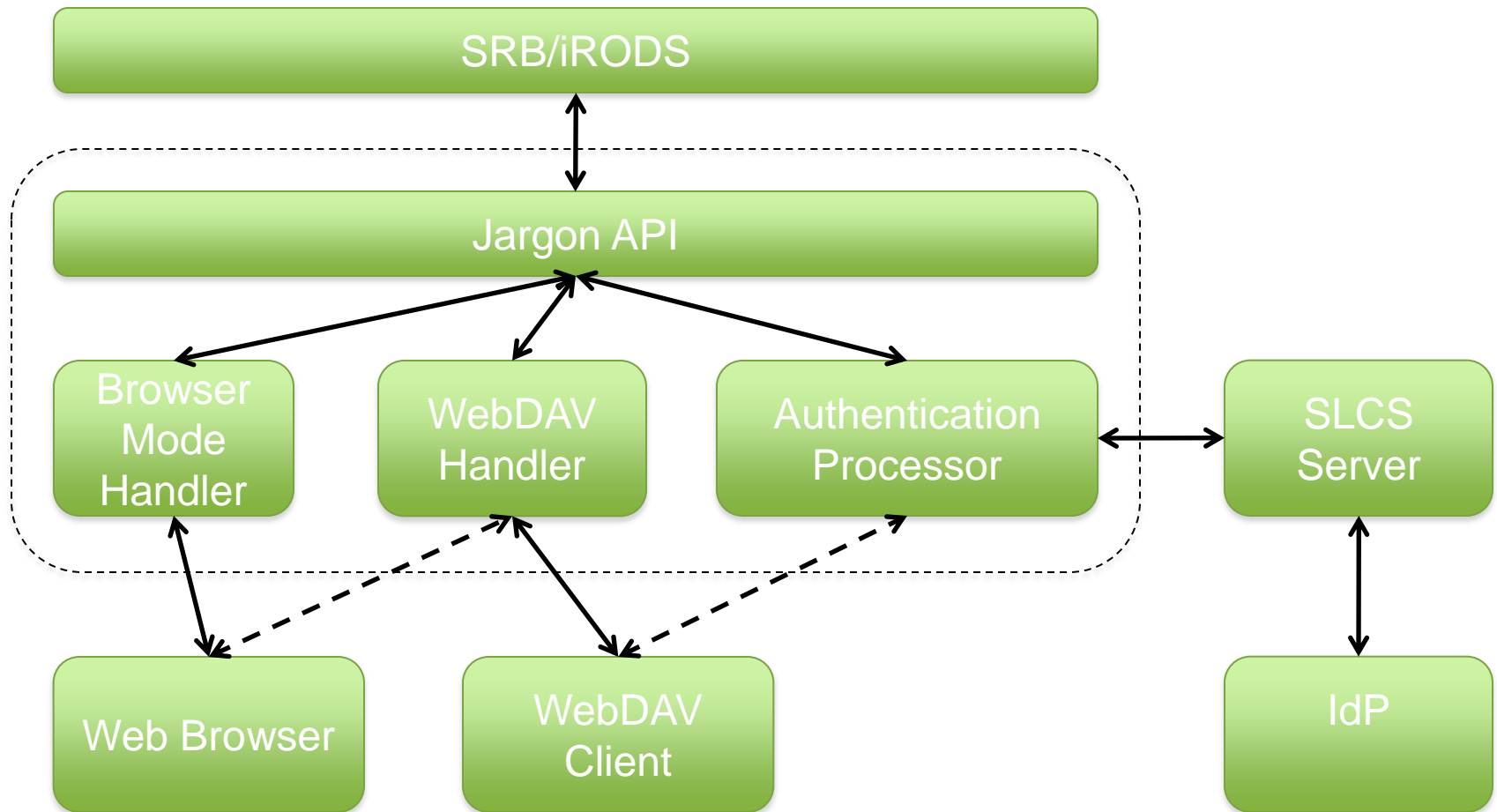


# Migration – Zone sync

- We only sync users
- SRB
  - Szonesync: executed hourly
  - Federation can lag for up to an hour
- iRODS
  - Executing rules *immediately* when a user is added

- WebDAV
- Supports SRB and iRODS
- Browser and client mode
- Supports Shibboleth
- Multi-threaded and resumable downloads
- Simplifies access

# Davis Architecture



# Davis – Modes

Davis – /srb.vpac.org/home/paulinemak.srb.vpac.org

https://srb.vpac.org/~

DataServices – syste... DataServices – syste... davis – Trac commons-vfs-grid ... jargon-ext – davis – ... National Committee f... macddap – Trac

**/srb.vpac.org/home/paulinemak.srb.vpac.org**  
**srb://paulinemak.srb.vpac.org@srb.vpac.org:5544/srb.vpac.org/home/paulinemak.srb.vpac.org**  
Last modified on Wed, 28 Jan 2009 10:26:25 GMT.  
**Parent**

Total 1,706,664 bytes (1,667 KB).  
4 objects (0 directories, 4 files):

.iRODS_Workshop.ppt	4 KB	Wed, 28 Jan 2009 10:26:25 GMT application/vnd.ms-powerpoint	M	P
._MARCS.tiff	4 KB	Wed, 28 Jan 2009 10:28:30 GMT image/tiff	M	P
iRODS_Workshop.ppt	1,059 KB	Wed, 28 Jan 2009 10:33:48 GMT application/vnd.ms-powerpoint	M	P
MARCS.tiff	600 KB	Wed, 28 Jan 2009 10:29:22 GMT image/tiff	M	P

~

DEVICES  
Macintosh HD

PLACES  
Desktop  
pmak  
Documents  
src  
trunk  
apache-tomcat...

SEARCH FOR

iRODS\_Workshop.ppt  
Microsoft PowerPoint document

Name	Date Modified
iRODS_Workshop.ppt	Today, 9:33 PM
MARCS.tiff	Today, 9:29 PM

2 items



# Davis - Permissions

Davis - /srb.vpac.org/home/paulinemak.srb.vpac.org

https://srb.vpac.org/~

DataServices - syste... DataServices - syste... davis - Trac commons-vfs-grid ... jargon-ext - davis - ... National Committee f... macddap - Trac

**/srb.vpac.org/home/paulinemak.srb.vpac.org**  
srb://paulinemak.srb.vpac.org@srb.vpac.org:5544/srb.vpac.org/home/paulinemak.srb.vpac.org  
Last modified on Wed, 28 Jan 2009 10:26:25 GMT.  
**Parent**

Total 1,706,664 bytes (1,667 KB).

4

**Permissions**

Username	Domain	Permission
paulinemak	srb.vpac.org	all
shunde	ngspare.sapac.edu.au	read

Domain: srbdev.vpac.org

Username:

Permission: deborahgardiner, freddoe, graham, grahamjenkins, inca, josephantony, paulinemak, srbAdmin, sridhar, vladimirmenci

Recursive: ☐

Apply Cancel

srb.vpac.org

# Davis - Metadata

Davis - /srb.vpac.org/home/paulinemak.srb.vpac.org

https://srb.vpac.org/~

Google

DataService - syste... DataService - syste... davis - Trac commons-vfs-grid ... jargon-ext - davis - ... National Committee f... macddap - Trac

**/srb.vpac.org/home/paulinemak.srb.vpac.org**  
srb://paulinemak.srb.vpac.org@srb.vpac.org:5544/srb.vpac.org/home/paulinemak.srb.vpac.org  
Last modified on Wed, 28 Jan 2009 10:20:00  
**Parent**

Total 1,706,664 bytes (1,667 KB).  
4 objects (0 directories, 4 files):

._IRODS_Workshop.ppt	4 KB	Wed, 28 Jan 2009 10:20:00
._MARCS.tiff	4 KB	Wed, 28 Jan 2009 10:20:00
IRODS_Workshop.ppt	1,059 KB	Wed, 28 Jan 2009 10:20:00
MARCS.tiff	600 KB	Wed, 28 Jan 2009 10:20:00

**Metadata**

Refresh Add Metadata Remove Metadata Save Cancel

Name	Value
Last modified date	28/1/2009
Workshop Location	ARCS Data Fabric

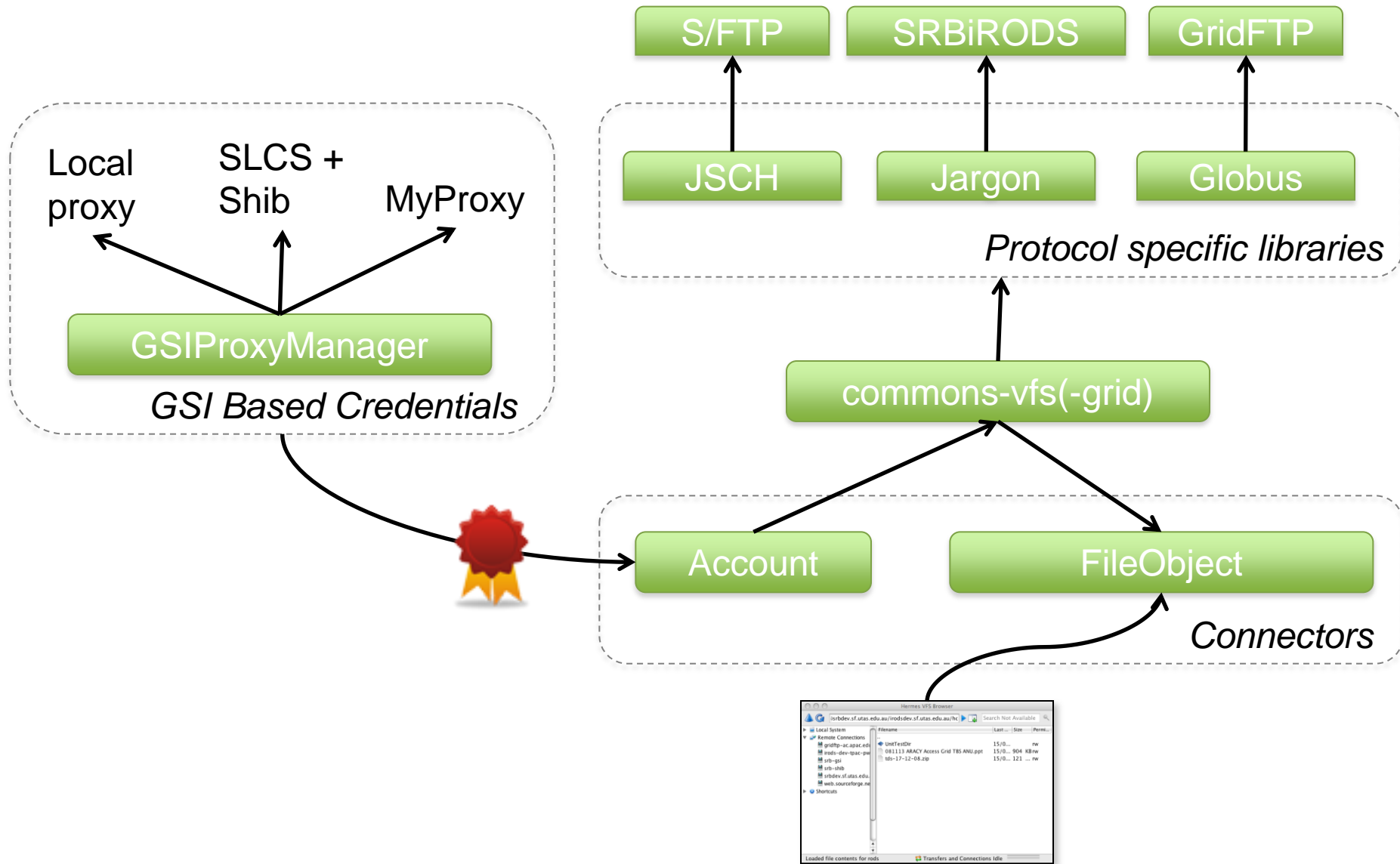
Done

srb.vpac.org

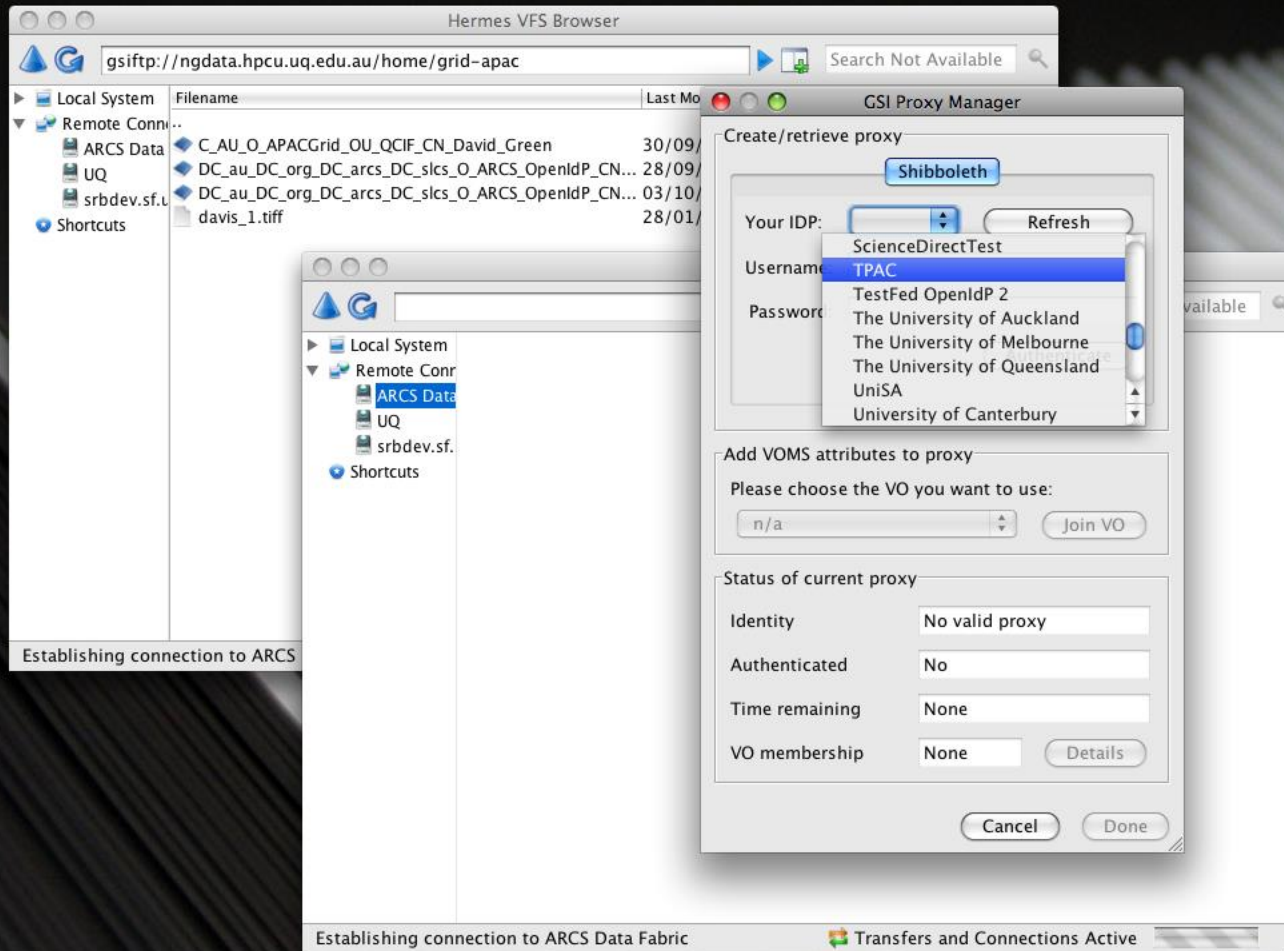
# Hermes/commons-vfs-grid

- Originally from JCU (ARCHER project) – Mathew Wyatt
- Commons-vfs
  - local, SFTP, WebDAV
- Commons-vfs-grid:
  - grid-related protocols
  - GridFTP contributed by David Meredith

# Hermes Architecture



# Hermes – Browser



# Hermes - Permission

The screenshot displays the Hermes VFS Browser window. The address bar shows the path: `srb://paulinemak.srb.tpac.org.au@srb.tpac.org.au/srb.tpac.org.au/home/paulinemak.srb.tpac.org.au/workshop`. The left sidebar shows a tree view with 'Local System' and 'Remote Connections' (including ARCS Data Fabric, UQ, and srbdev.sf.utas.edu.au). The main pane shows a file list with columns: Filename, Last Modified, Size, Permissions, Attribute, and Value. The file 'outline.gif' is selected. A 'Change Permission' dialog box is open over the file list, showing fields for Username (shunde), Domain (srb.sapac.edu.au), Permission (read), Recursive (unchecked), and Sticky (unchecked). The dialog has 'OK' and 'Cancel' buttons. To the right of the dialog, a 'Property Value' table is visible, showing properties for 'srb.tpac.org.au' and 'srb.sf.utas.edu.au'. The status bar at the bottom indicates 'Loaded file contents for workshop' and 'Transfers and Connections Idle'.

Filename	Last Modified	Size	Permissions	Attribute	Value
data_fabric.gif	29/01/200...	9 KB	rw		
datafabric.jpg	29/01/200...	27 KB	rw		
davis_1.tiff	29/01/200...	422 KB	rw		
Etap_Hotel_Search results.pdf	29/01/200...	78 KB	rw		
iRODS_Workshop.ppt	29/01/200...	992 KB	rw		
irods2.0.1.tgz	29/01/200...	6 MB	rw		
iRODS workshop @ CC-IN2P3 (02-05 Fe...	29/01/200...	71 KB	rw		
MARCS.jpg	29/01/200...	139 KB	rw		
MARCS.tiff	29/01/200...				
MARCS.xcf	29/01/200...				
metadata.tiff	29/01/200...				
ncrislogo.gif	29/01/200...				
ncrislogo.jpg	29/01/200...				
newz.jpg	29/01/200...				
newz.xcf	29/01/200...				
outline.gif	29/01/200...				
outline.xcf	29/01/200...				
permission.tiff	29/01/200...				
ph24.gif	29/01/200...				
STA Travel Booking Confirmation.pdf	29/01/200...				
Travel_approval_notes_final-1.doc	29/01/200...	90 KB	rw		

Property	Property Value
	srb.tpac.org.au
	srb.tpac.org.au
ain	
urce	srb.sf.utas.edu.au

# Hermes - Metadata

Hermes VFS Browser

Address bar: `srb://paulinemak.srb.tpac.org.au@srb.tpac.org.au/srb.tpac.org.au/home/paulinemak.srb.tpac.org.au/workshop`

Local System: Remote Connections

- ARCS Data Fabric
- UQ
- srbdev.sf.utas.edu.au
- Shortcuts

Filename	Last Modified	Size	Permissions
data_fabric.gif	29/01/200...	9 KB	rw
datafabric.jpg	29/01/200...	27 KB	rw
davis_1.tiff	29/01/200...	422 KB	rw
Etap_Hotel_Search results.pdf	29/01/200...	78 KB	rw
iRODS_Workshop.ppt	29/01/200...	992 KB	rw
irods2.0.1.tgz	29/01/200...	6 MB	rw
iRODS workshop @ CC-IN2P3 (02-05 Fe...	29/01/200...	71 KB	rw
MARCS.jpg	29/01/200...	139 KB	rw
MARCS.tiff	29/01/200...	600 KB	rw
MARCS.xcf	29/01/200...	680 KB	rw
metadata.tiff	29/01/200...	134 KB	rw
ncrislogo.gif	29/01/200...	7 KB	rw
ncrislogo.jpg	29/01/200...	19 KB	rw
newz.jpg	29/01/200...	9 KB	rw
newz.xcf	29/01/200...	12 KB	rw
outline.gif	29/01/200...	4 KB	rw
outline.xcf	29/01/200...	70 KB	rw
permission.tiff	29/01/200...	134 KB	rw
ph24.gif	29/01/200...	3 KB	rw
STA Travel Booking Confirmation.pdf	29/01/200...	97 KB	rw
Travel_approval_notes_final-1.doc	29/01/200...	90 KB	rw

Attribute	Value
description	outline of Australia
source	<a href="http://www.ga.gov.au/map/">http://www.ga.gov.au/map/</a>

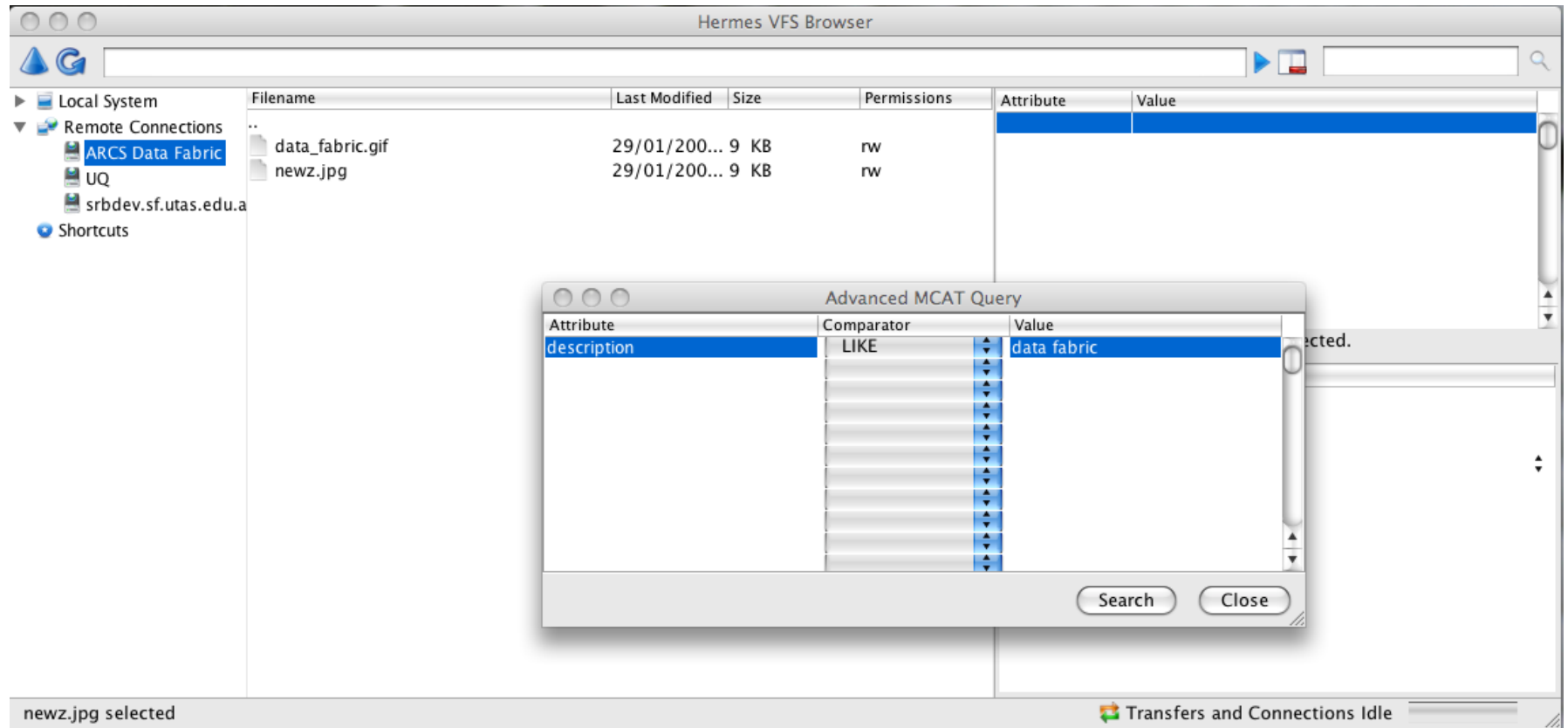
outline.gif

Property	Property Value
Host	srb.tpac.org.au
Zone	srb.tpac.org.au
Domain	
Resource	srb.sf.utas.edu.au

outline.gif selected

Transfers and Connections Idle

# Hermes – metadata search





# Questions?

# Links

- <http://www.arcs.org.au> (ARCS)
- <http://www.tpac.org.au> (TPAC)
- <http://projects.arcs.org.au/trac/davis/> (Davis)
- <http://projects.arcs.org.au/trac/commons-vfs-grid/> (Hermes)
- <http://projects.arcs.org.au/trac/systems/wiki/DataServices/SRB>
- <http://projects.arcs.org.au/trac/systems/wiki/DataServices/iRODS>