



Consortium Update

Terrell Russell, Ph.D.
@terrellrussell
Executive Director, iRODS Consortium

June 17-20, 2025
iRODS User Group Meeting 2025
Durham, NC

Welcome!



June 17 - June 20, 2025	iRODS Consortium	Durham, North Carolina, USA
May 28 - May 31, 2024	SURF	Amsterdam, Netherlands
June 13 - June 16, 2023	iRODS Consortium	Chapel Hill, North Carolina, USA
July 5 - July 8, 2022	KU Leuven	Leuven, Belgium
June 8 - June 11, 2021	Wellcome Sanger Institute	Virtual
June 9 - June 12, 2020	University of Arizona	Virtual
June 25 - June 28, 2019	Utrecht University	Utrecht, Netherlands
June 5 - June 7, 2018	iRODS Consortium	Durham, North Carolina, USA
June 13 - June 15, 2017	Utrecht University	Utrecht, Netherlands
June 7 - June 9, 2016	iRODS Consortium	Chapel Hill, North Carolina, USA
June 9 - June 11, 2015	iRODS Consortium	Chapel Hill, North Carolina, USA
June 18 - June 19, 2014	Institute for Quantitative Social Science, Harvard University	Cambridge, Massachusetts, USA
February 28 - March 1, 2013	Max Planck Institute for Plasma Physics	Garching, Germany
March 1 - March 2, 2012	University of Arizona	Tucson, Arizona, USA
February 17 - February 18, 2011	RENCI at UNC-Chapel Hill	Chapel Hill, North Carolina, USA
March 24 - March 26, 2010	RENCI at UNC-Chapel Hill	Chapel Hill, North Carolina, USA
February 2 - February 5, 2009	CC-IN2P3	Lyon, France

Thank you!

Laura Capps
Kory Draughn
Alan King
Justin James
Daniel Moore
Jayasree Jaganatha
Marcus Anderson
Stephanie Suber

Markus Kitsinger
Martin Flores
Derek Dong
Lance Leathers
Ramsey Jooss
Sameer Khan
Yujun Ming

Users
Sponsors
Venues
Catering

Our Mission

- Continuous Improvement
- Grow the Community
- Standardization
- Show value to our Membership
- Sustainability



Founded in 2013



SRB started at SDSC in 1995

Reagan Moore
Chaitan Baru
Michael Wan
Arcot Rajasekar
Wayne Schroeder
Richard Marciano
Richard Frost
Randall Sharpe
Robert Templeton
David Wade
Thomas Hacker

iRODS

— CONSORTIUM —

renci

RESEARCH \ ENGAGEMENT \ INNOVATION



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

Start with proof of concept

- Use Case Driven
- Hands on
- Service and Support Contracts

Consortium Membership

- Four Levels - \$12k to \$90k
- 10 hours of support
- Participation in Software roadmap
- Discounted hourly rate

Tier 3 Support

- Systems Integrators
- Compute Vendors
- Storage Vendors

Our Membership

iRODS



Universiteit Utrecht



- 22 Membership Renewals
- 3 New Members
- 2 New Service Contracts
- Multiple Proofs of Concept
- 11 Conferences and Events
- 4 Internships



**THE GEORGE
WASHINGTON
UNIVERSITY**

WASHINGTON, DC



WAGENINGEN
UNIVERSITY & RESEARCH

Organized community efforts to standardize protocols, technologies, and methodologies

Technology Working Group

- Goal: To keep everyone up to date, provide a forum for roadmap discussion and collaboration opportunities
 - All iRODS Consortium Membership

Metadata Templates Working Group (Dissolved)

- Goal: To define a standardized process for the application and management of metadata templates by the iRODS Server
 - NIEHS, Utrecht, Maastricht, Arizona / CyVerse, KU Leuven

Authentication Working Group

- Goal: To provide a more flexible authentication mechanism to the iRODS Server
 - SURF, NIEHS, Sanger, Arizona / CyVerse, IT4Innovation, Utrecht, KU Leuven

S3 Working Group

- Goal: To develop tools to present iRODS as S3-compatible storage to existing S3 clients
 - Arizona / CyVerse, NIEHS, SURF

Imaging Working Group

- Goal: To provide a standardized suite of imaging policies and practices for integration with existing tools and pipelines
 - New York University, Santa Clara University, UC San Diego, NIEHS, Harvard, Arizona / CyVerse, Open Microscopy Environment (OMERO), UNC Neuroscience Microscopy Core, KU Leuven, Maastricht, NYU Langone, UMass Medical, Netherlands Cancer Institute, Sanger, UCSC, Crick (UK), U. Osnabrück, CRS4 (Italy), RIKEN (Japan)

- New Major Version
 - Met backwards compatibility promise for 11 years
- Standardization
 - Metadata Templates
 - Authentication
 - Protocol Plumbing
- Partnerships for broader impact
 - Globus
 - OMERO
 - RSpace
 - Dataverse
 - Some under NDA
- Continued RENCi engagement and projects
 - Focus on return on investment and university initiatives

Area	Aggregated Responses
zones	most organizations have 1, some have up to 10 zones federated
servers	average 2-3 servers per zone - usually in VMs, some docker - larger installations managed via ansible and puppet - 16GB RAM, up to 1TB
data	most less than 1PB, up to 50PB under management - many holding 100M to 500M data objects
database	most using postgresql, some mysql
network	mix of 10G and 100G network interfaces
storage	Lenovo and IBM StorageScale, Dell PowerScale OneFS, NetApp, iTernity, mounted as NFS or unixfilesystem, and S3 (both cloud and local)
tape	relatively rare, managed by others
automatic tiering	still rare, but interest/testing beginning
data sources	very wide variety, from microscopes, telescopes, simulations, smartphones, ECG/EEG machines, sequencers, students in courses
logs	larger installations aggregate and monitor via rsyslog

Hardest Things

- Concurrent database connection management
- Migrating from iRODS Rule Language to Python rules
- Seeing metrics per user, per institute, per faculty, per group
- Seeing age of data in aggregate, i.e. data retention compliance
- Decoupling logic for zone-wide rules and collection-wide rules

Local Control

- Hybrid deployments and topologies are becoming necessary and normal
- Repatriation and domestic control of data and data products
- Sovereignty concerns over hyperscalers and runaway costs
- Your data as a moat due to AI/LLMs/LRMs
- Compliance with both in-house and regulatory requirements

Standardization Efforts

- Global Alliance for Genomics and Health (GA4GH)
- OME-Zarr
- JWT/JWK/OAuth2

The iRODS Consortium serves as a sustainability model around the software.

This requires evangelism, outreach, and funds.

We are not there yet. We need your help.

Members

- Request / Demand engagement from your vendors
 - Make sure they are aware of and compatible with iRODS
- Share ROI of Membership with us
- Share ROI of Membership with your executives
- Share ROI of Membership with your neighbors and partner organizations

Consortium Partnerships

- Products
- Revenue sharing
- Services



We met our 11-year backwards compatibility promise.

iRODS 5 is here.

Now we get to push forward.

Thank you

Questions?