

Updates  
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The logo for Renci, featuring the word "renci" in a lowercase, sans-serif font. The letter "i" has a blue arrow pointing upwards and to the right, integrated into its design.

RESEARCH \ ENGAGEMENT \ INNOVATION



# National Scale CI efforts powered by iRODS

- Represent iRODS and CI built on iRODS to NSF and other research partners, employ as key architecture in ongoing domain research
- Apply policy management principles to multi-disciplinary research
- We'll hear from BRAIN-I
- We'll hear from CyVerse



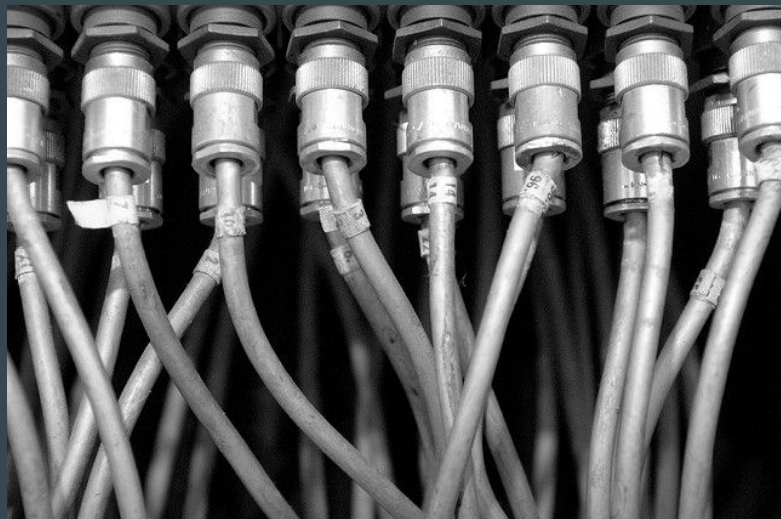
# Dogfooding....

- From research Cyberinfrastructure (CI) to production CI using the facilities and approaches pioneered in iRODS.
- Like iRODS, from build your own to cafeteria-style CI deployed to domains



# API and Improvements

- Prepare for V5 API and pluggable transport!
- New language bindings!
- Clean room Jargon2
  - Pluggable frameworks
  - Client-side extensible PEPs
  - NIO and standard i/o support
  - JMX exposed real time monitoring and tuning
  - ZeroMQ based instrumentation
  - Caching support and conn pooling
  - Thin declare and go zero install architecture
- Pluggable transport
  - Thin alternatives + pluggable transports including C level bindings



# CI Service Interfaces

- Standardized REST interfaces across common CI services
- Swagger based specification
- Share-nothing microservices architecture
  - packaged for easy install
  - scalable and manageable
- LOD support for iRODS data

```
1 swagger: "2.0"
2 info:
3   description: |
4     Metadata Templates Rest API
5   version: "2.0.0"
6   title: Metadata Templates Service API
7   contact: |
8     name: michael_comey@unc.edu
9   host: renci.org
10  basePath: /v1
11  schemas:
12  - https
13  paths:
14  - /server/ping:
15    get:
16      tags:
17        - status
18      summary: Get a ping back from the server
19      description: Call iRODS as an authorized user and get back a simple ping response
20      operationId: server
21      produces:
22        - application/json
23        - application/xml
24      parameters:
25        - name: requestIdOnly
26          in: query
27          description: causes ping to only reach the REST mid tier and not
28            query the back-end, provides a simple heartbeat of the mid-tier.
29            By default a ping will talk to the back end iRODS server
30          restricted: false
31          default: false
32          type: boolean
33      responses:
34        200:
35          description: 'Successful ping, containing info on how long it too
36            the REST backend to connect to iRODS'
37          schema:
38            $ref: '#/definitions/Ping'
39  /templates/public:
40    get:
41      tags:
42        - query
43      summary: list publicly available metadata templates
44      description: "List all publicly available metadata templates in the
45        configured public repo"
46      operationId: listPublicTemplates
47      produces:
48        - application/json
49        - application/xml
50      responses:
51        200:
52          description: 'List of metadata templates retrieved'
53          schema:
54            $ref: '#/definitions/MetadataTemplateList'
```

**Swagger Editor** File Edit Generate Server Generate Client Search back to previous editor

## Metadata Templates Service API

1.0.0

[ Base url: renci.org/v1 ]

Metadata templates Rest API

Schemes:

### status

**GET** /server/ping Get a ping back from the server

### query

**GET** /templates/public List publicly available metadata templates

### template management

**GET** /templates/public List publicly available metadata templates

**POST** /templates/public Add a public metadata template

## New Services

- Metadata Templates
- Indexing Framework
- Virtual Collections
- Publishing Framework
- Expansion into standard interfaces  
(Infinispan, JCR, Spring Data)

## New Interfaces

- Cloud Browser news
- REST API (core + extended) news
- CyVerse news
- Revisit desktop GUI/Agents