NetKarma Portal

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Portal Goals

- Make it much easier for experimenters to capture provenance data with experiment

- Integrate with:
  - Measurement Data Sources (GEMINI, LAMP, GIMI, etc..)
  - Data Archival services (iRODS)
  - Status and event data (GMOC, ProtoGENI, Planetlab)
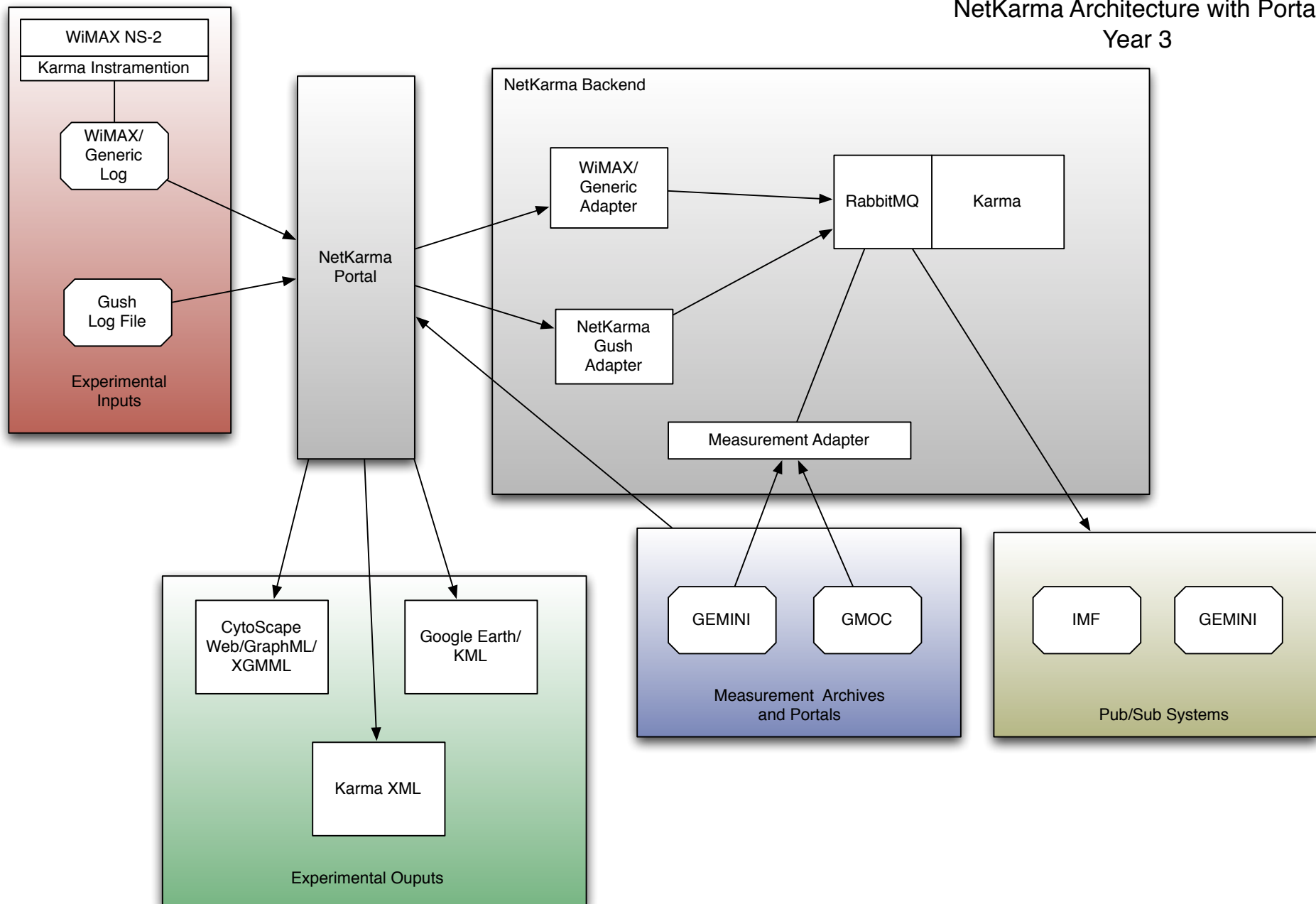
What the Portal provides

- Easy ingestion of data sources
  - Automatic by references in the ingested data
  - Web based ingestion
  - Built into tools
  - Includes structured and unstructured metadata
- Visualization
  - Workflow
  - Resources (and their topology)
  - Data and Metadata
  - "Experiment as a movie"
  - Output for other tools (KML, GraphML, etc..)

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What the Portal provides

- Archival services interface
  - Pass-through of information to iRODS and I&M
- Access to Data
  - Karma Workflow graphs (Karma DB, Karma XML)
  - Includes additional Metadata products
  - Searchable archives
- Links to other services
  - I&M
  - GMOC

InCNTRE

NetKarma Architecture with Portal
Year 3

Experimental Inputs
- WiMAX NS-2 / Karma Instramention
- WiMAX/Generic Log
- Gush Log File

NetKarma Portal

NetKarma Backend
- WiMAX/Generic Adapter
- NetKarma Gush Adapter
- RabbitMQ / Karma
- Measurement Adapter

Experimental Ouputs
- CytoScape Web/GraphML/XGMML
- Google Earth/KML
- Karma XML

Measurement Archives and Portals
- GEMINI
- GMOC

Pub/Sub Systems
- IMF
- GEMINI

How the Portal is used

- Experimenter drags and drops files into the NetKarma "data hopper"

- Experimental handle (DOI or ARK) created if not already existing

- Workflow information is extracted from uploaded data

- Visualization of Workflow product

- All data including new metadata products created added to long term archives

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NetKarma

File Upload

Experiment Description

Files to upload:

[Choose Files] No file chosen

    or drop files here

Gush log files and UNIS/NMWG topo file parsing is
supported. All others are saved as artifacts.

Status Messages

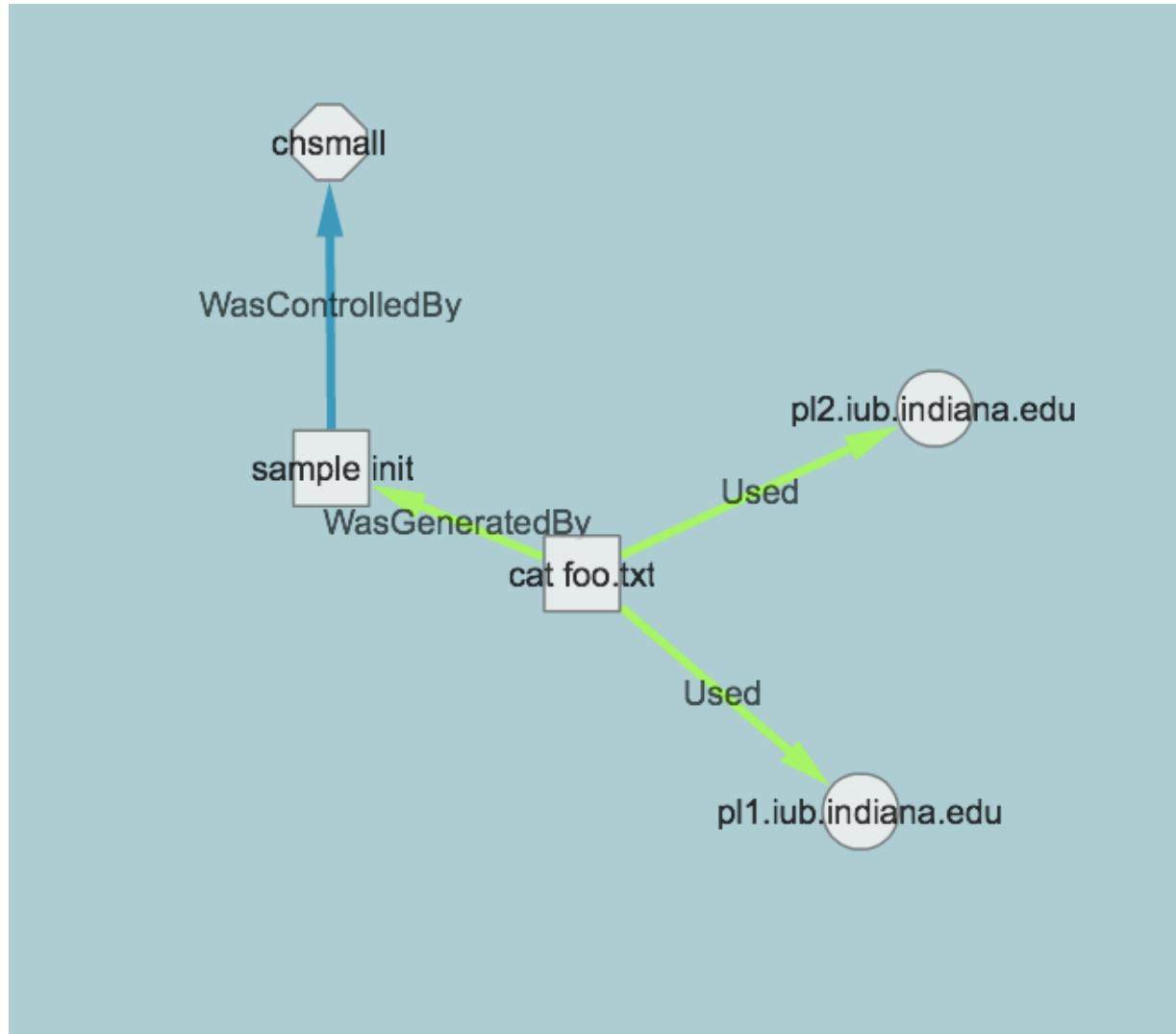## Experiments

Show [10 ▾] entries   Search: [   ]

Experiment ID ▲	Description ⬍	# of WorkFlows ⬍	# of Archives ⬍	Creator ⬍
ark:/99999/fk4p84mr0	XSP	1	0	chsmall@indiana.edu
ark:/99999/fk4sx6p48	Twister	1	0	chsmall@indiana.edu

Showing 1 to 2 of 2 entries

FirstPrevious1NextLast

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INDIANA UNIVERSITY

NetKarma

Karma DB   Visualisation

Show [10 ▼] entries   Search: [   ]

Workflow Description ▲	Workflow ID	Experiment Description ⇕	Experiment ID ⇕	User ⇕	Start ⇕	End ⇕
No Description	urn:tool:gush:8fd010b7-4391-46da-93b6-62f204b4f0b2	Twister	ark:/99999/fk4sx6p48	chsmall	Tue Feb 21 00:31:18 2012	Tue Feb 21 01:31:18 2012
No Description	urn:tool:gush:ccb0457c-e183-497f-8abf-1ed296cb4d41	Twister	ark:/99999/fk4sx6p48	chsmall	Tue Feb 21 00:31:18 2012	Tue Feb 21 01:31:18 2012

Showing 1 to 2 of 2 entries   FirstPrevious1NextLast

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Karma OPM Workflow

NetKarma

Karma DB   Visualisation

chsmall

WasControlledBy

sample init

WasGeneratedBy

pl2.iub.indiana.edu

Used

cat foo.txt

Used

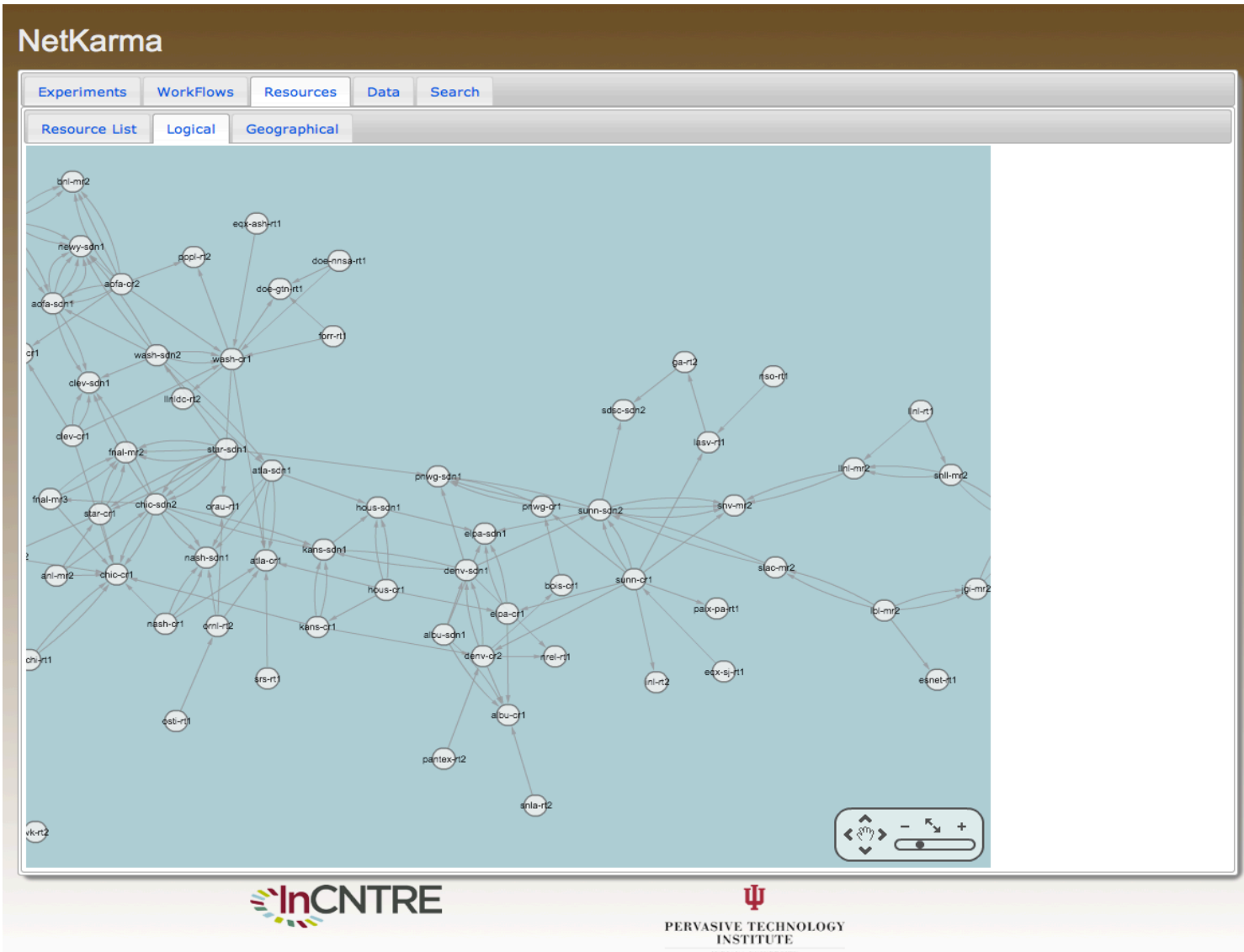pl1.iub.indiana.edu
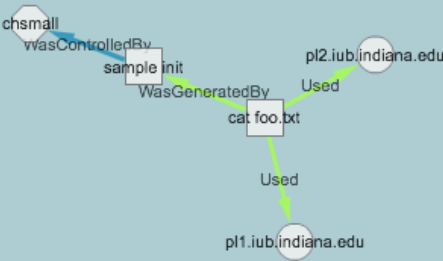
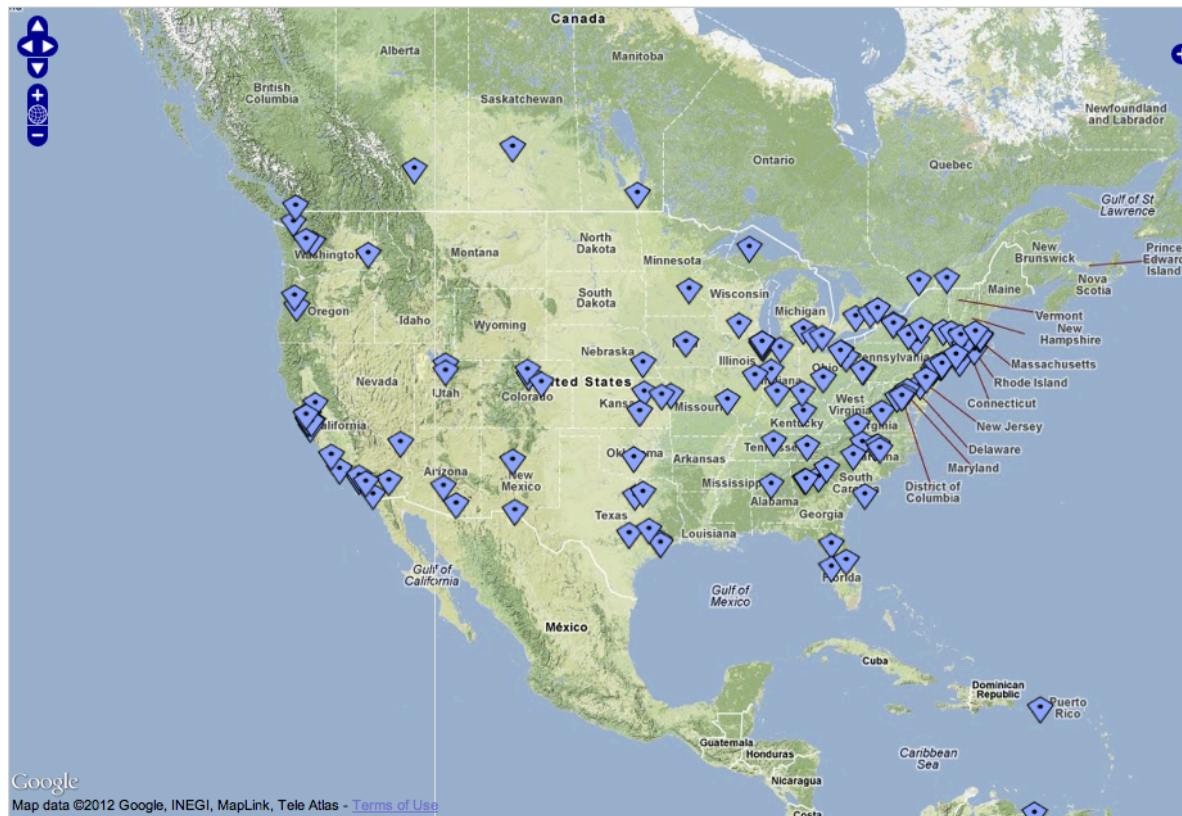☐ Toggle Edge Labels

Time Window

NMWG/UNIS topology

Geographic topology representation with status from GMOC


NetKarma Geographical Visualization

Archival service

- All data sent to the NetKarma portal
- Metadata annotations added
- Will be searchable
- Testing iRODS to store all files
  - Secondary Data Products (Karma OPM XML, GraphML Topology)
  - Metadata (MDOD)
  - Data
  - Source Code, Notes, config files, etc stored there

Data Archival Service Interfaces

- iRODS web interface
- Unix – i-commands
- iRODS explorer
- Mounted File system
- NetKarma portal?

InCNTRE
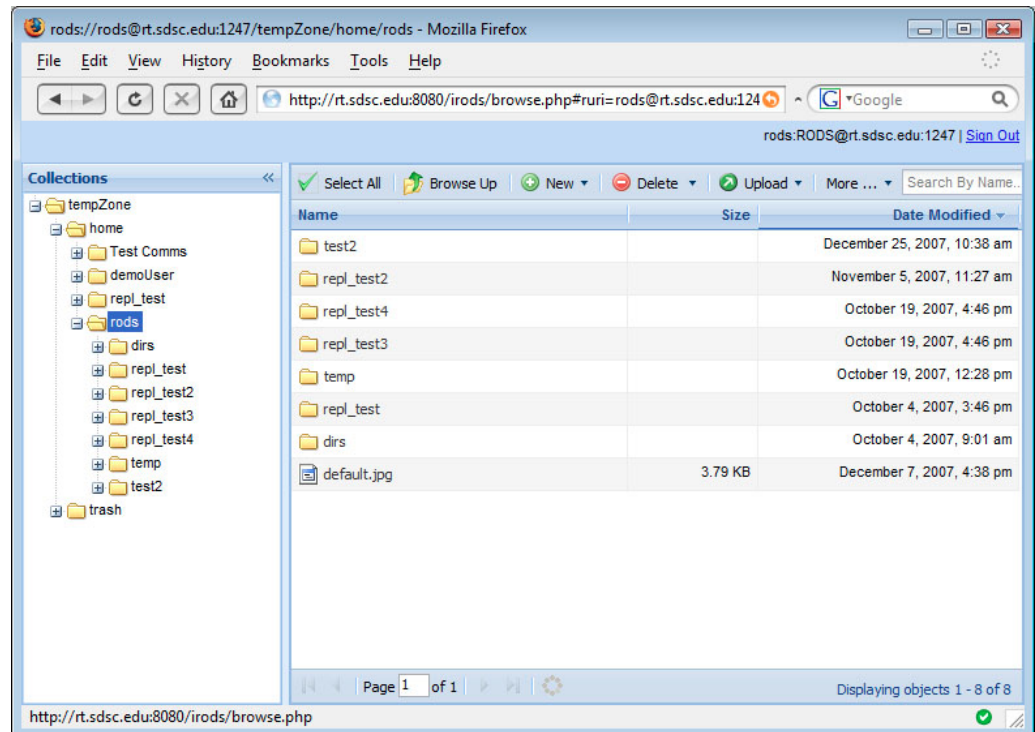
Milestones

- Ingestion of multiple sources (GUSH, Imax, Topology files, etc.) of workflow data

- Increased usability and utility of all workflow provenance capture

- Automatic references to other sources of data

- Data ingestion with structured Metadata (MDOD) or unstructured (name/value files)

- Integration with IMF (iRODS),GMOC, and others