ICAT Data Service (IDS)

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Outline

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ICAT Data Service
ICAT Data Service

What is it?

• An interface used by data services that hold data referenced by ICAT

• Defines an API for a RESTful web service
  – Uses HTTP methods GET, POST, PUT, DELETE

• Previous talk at NOBUGS2012
ICAT Data Service

Why?
- There currently exists variety of bespoke data services with their own interfaces
- IDS aims to provide a common interface

Capabilities
- Allows uploading and downloading
- Uses access permissions from ICAT
- Writes metadata to ICAT
ICAT Data Service

Access
• Using TopCAT or Mantid
• Using IDS API directly

Authentication
• Uses an ICAT session ID

Parameters
• Data referenced using investigation, data set or data file IDs
DLS Data Service
DLS Data Service

- An existing data service currently in production

- RESTful web service interface

- Built in JAVA

- Uses custom storage plugin to talk to CASTOR tape storage

- Only used for downloading
DLS Data Service

- Implemented the download part of the IDS specification
  - prepareData
  - getStatus
  - getData

- ZIP Store is where data file package up into ZIP files for download
DLS Data Service

- Flexible design allows for use with ‘offline’ storage systems where there may be a delay in retrieving the data.

Diagram:

1. Request Data
   - prepareData
2. Status
   - getStatus
3. Download Data
   - getData
Reference Implementation
Reference Implementation

- Based on the DLS implementation
- Online storage (disk only) plugin
- Initially implements download part of the IDS specification
- Compatible with ICAT >= 4.2
ZIP Store

• Obstacles
  – Heavy usage
  – Large files

• Scheduled and dynamic cleanup

• Cleanup algorithms
  – First in first out
  – Largest first
  – Download flags
Road Map

• Updated DLS data service to be released within the coming months

• Initial release of the IDS reference implementation
  – reuse the DLS data service code
  – repackaged and rebranded
  – covering the download part of the IDS specification
  – will only include online storage (disk only) plugin

• Released in parallel with a JAVA IDS client
Road Map

• Full implementation of the IDS specification
  – Upload and download

• Further developments
  – ZIP store and cache improvements
  – Diagnostics
Links

• IDS Project Home

• IDS Specification

• NOBUGS2012 - Data download and upload
Summary

- IDS will provide common interface to data services
- The interface allows flexibility with different types of data stores
- Reference implementation based on existing DLS data service production code
- Online (disk storage) storage plugin will be provided
- Individual facilities will need to write their own plugins to interact with their data stores