



# ICAT Data Service (IDS)

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# Outline

- ICAT Data Service (IDS)
- DLS Data Service
- Reference Implementation
- Road Map
- Links
- Summary



# ICAT Data Service



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# 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

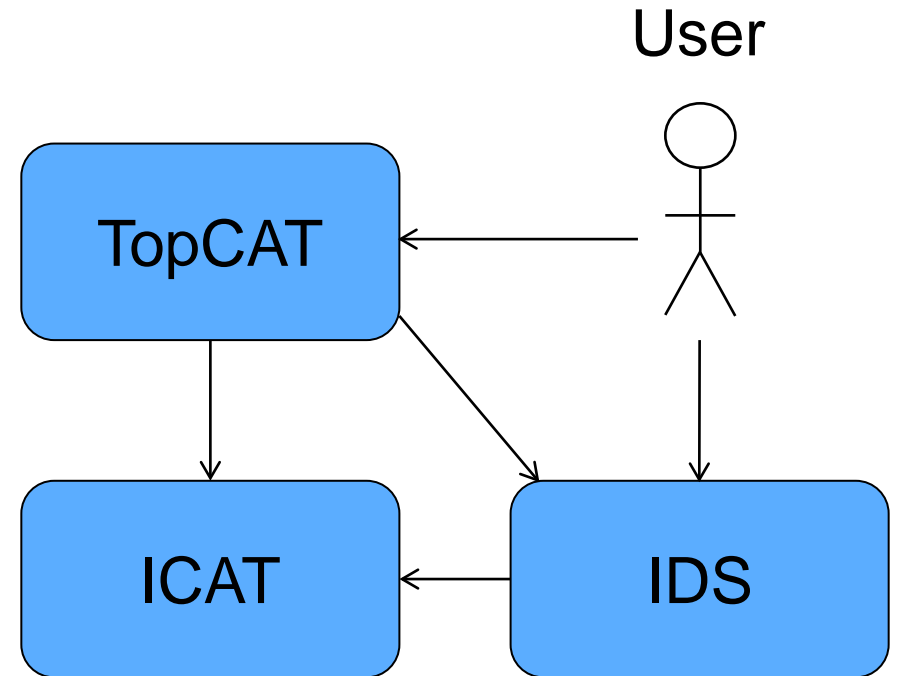
- Using TopCAT or Mantid
- Using IDS API directly

## Authentication

- Uses an ICAT session ID

## Parameters

- Data referenced using investigation, data set or data file IDs



# DLS Data Service



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# DLS Data Service

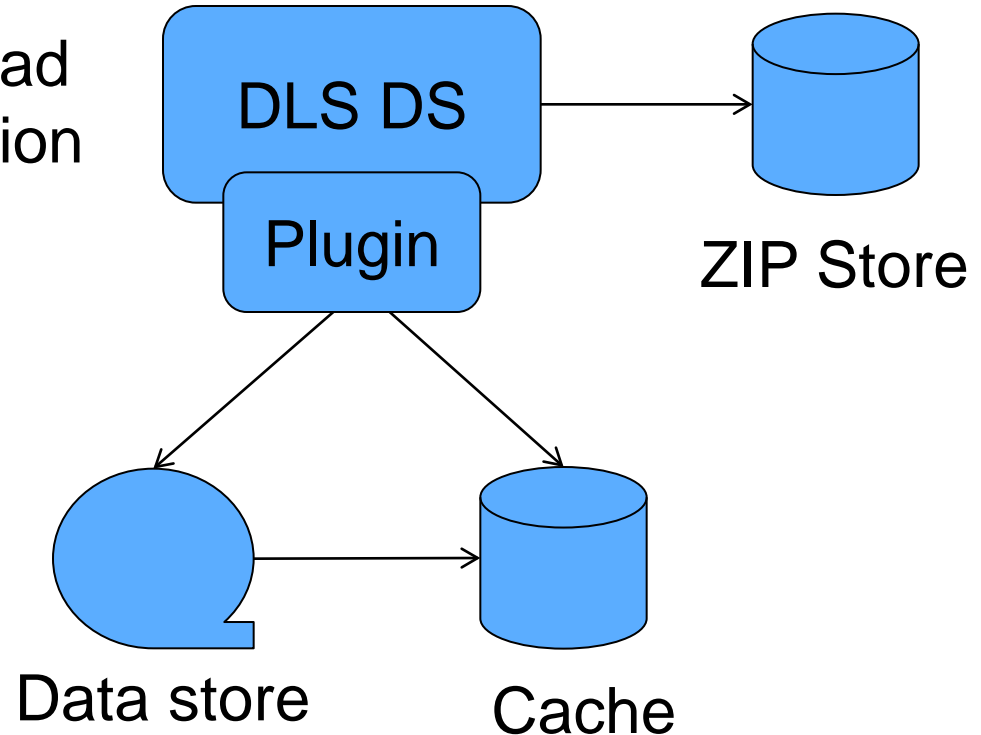
- An existing data service currently in production
- RESTful web service interface
- Built in JAVA
- Uses custom storage plugin to talk to CASTOR tape storage
- Only used for downloading





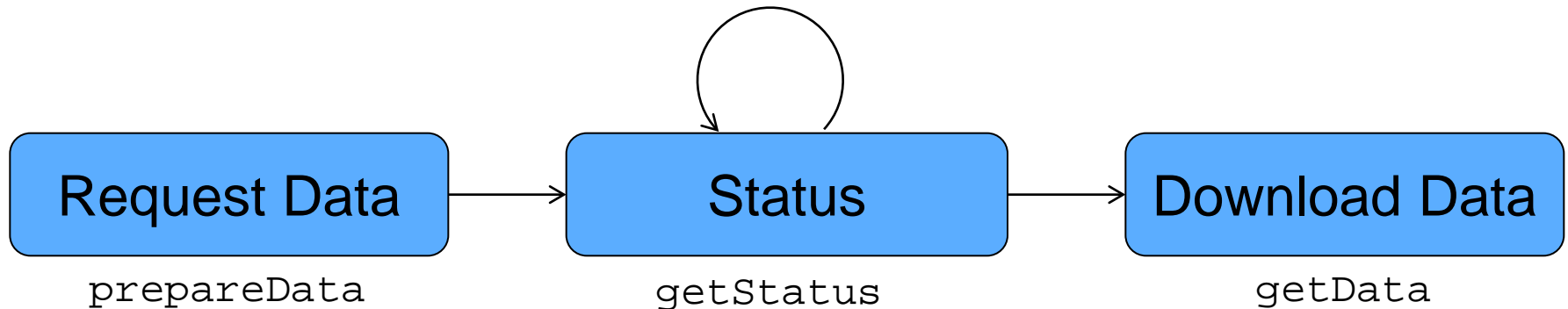
# DLS Data Service

- 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



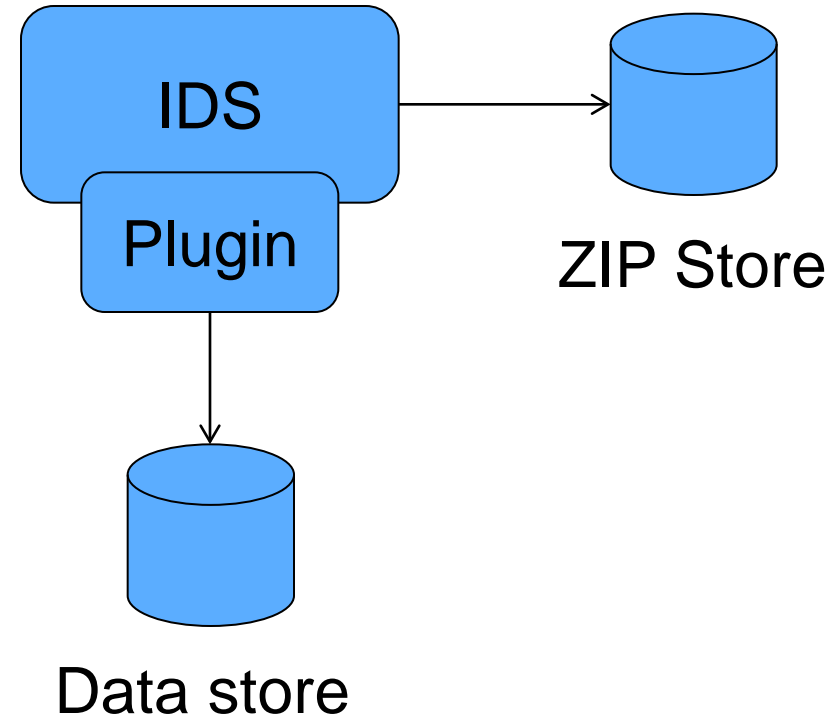
# Reference Implementation



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# Reference Implementation

- Based on the DLS implementation
- Online storage (disk only) plugin
- Initially implements download part of the IDS specification
- Compatible with ICAT  $\geq 4.2$



# 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
  - <http://code.google.com/p/icat-data-service/>
- IDS Specification
  - <http://code.google.com/p/icat-data-service/wiki/IDSMain?tm=6>
- NOBUGS2012 - Data download and upload
  - [http://icatproject.googlecode.com/svn/meetings/NOBUGS2012Talks/NOBUGS\\_2012\\_data\\_download.pdf](http://icatproject.googlecode.com/svn/meetings/NOBUGS2012Talks/NOBUGS_2012_data_download.pdf)





# 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

