ICAT Job Portal

a generic job submission system
built on a scientific data catalog

1 April 2015

Brian Ritchie, Steve Fisher
Rutherford Appleton Laboratory - STFC
Overview

• Configure and submit jobs to process selected datasets/datafiles on one or more batch servers
• Search for datasets/datafiles using ICAT/IDS
• Submit single job for all selected datasets/datafiles, or separate jobs for each
• Monitor progress of jobs and inspect output
Architecture

• Central IJP server
  – Web application
  – GUI – based on GWT (but moving to AngularJS)
  – Command-line interface

• One or more “batch connectors”
  – One per supported batch system (Platform LSF, Torque, unix batch)
Architecture

User’s PC
- Web browser
- CLI

IJP Server
- IJP web app

Batch System 1
- IJP batch connector 1
- Batch server 1
  - submit batch job
  - batch server magic
- Worker Node 1  ...  Worker Node n

... and so on...

Batch System N
- IJP batch connector N
- Batch server N
  - submit batch job
  - batch server magic
- Worker Node 1  ...  Worker Node n
Job submission

• Central server gets estimates from each batch connector
  – Chooses one of the best
• Batch connector submits job to its batch system
  – Job is passed ICAT/IDS session/urls and dataset/file IDs
  – Job scripts written by facilities
• Batch connector monitors submitted jobs
  – Queue status, standard/error output
• Central server monitors batch connectors
• Central server holds job status and output
  – Until user deletes the job
Job Types

- Part of the IJP configuration
- Job Type specifies:
  - Program (job script) to run
  - Dataset types for which the job can be run
  - Whether job accepts datasets, datafiles or both
  - Whether each job can take multiple datasets/datafiles
  - Other job parameters / options
Demo system

• Self-contained “IJP-in-a-box”
• Local ICAT and IDS installations
• Batch connector uses local unix batch system
Status and next steps

• Snapshot release
  – http://icatproject.org/releases/snapshot-releases/
  – http://icatproject.org/user-documentation/the-icat-job-portal/

• Platform LSF batch connector exists, running on SCARF, but not yet fully functional

• Interactive sessions not yet supported

• Batch connector estimates are wildly optimistic

• Replace GWT GUI with AngularJS
  – In harmony with TopCAT