ICAT Job Portal

a generic job submission system built on a scientific data catalog

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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
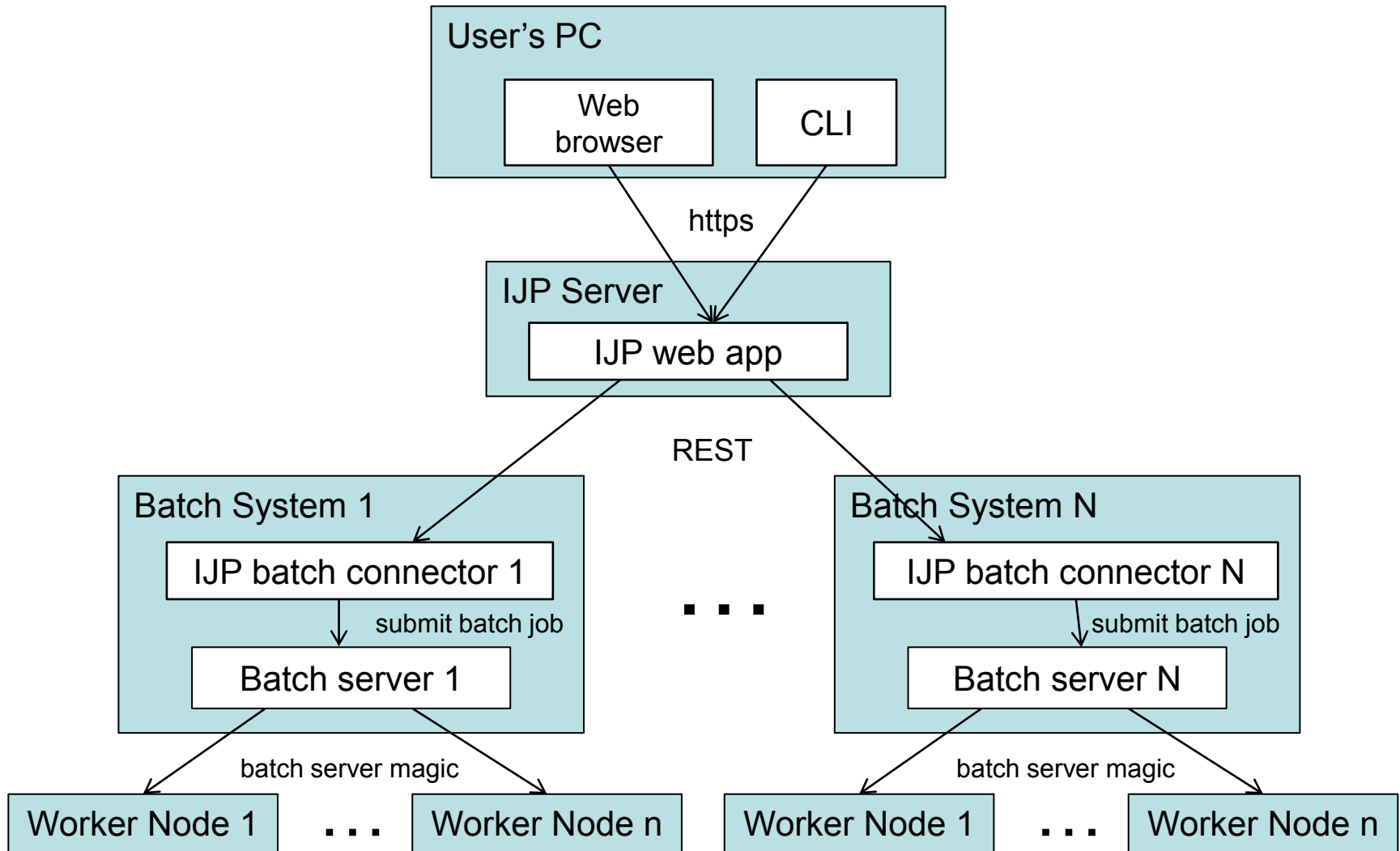
- Monitor progress of jobs and inspect output

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Architecture

- Central IJP server
  - Web application
  - GUI – based on GWT (but moving to AngularJS)
  - Command-line interface
- One or more "batch connectors"
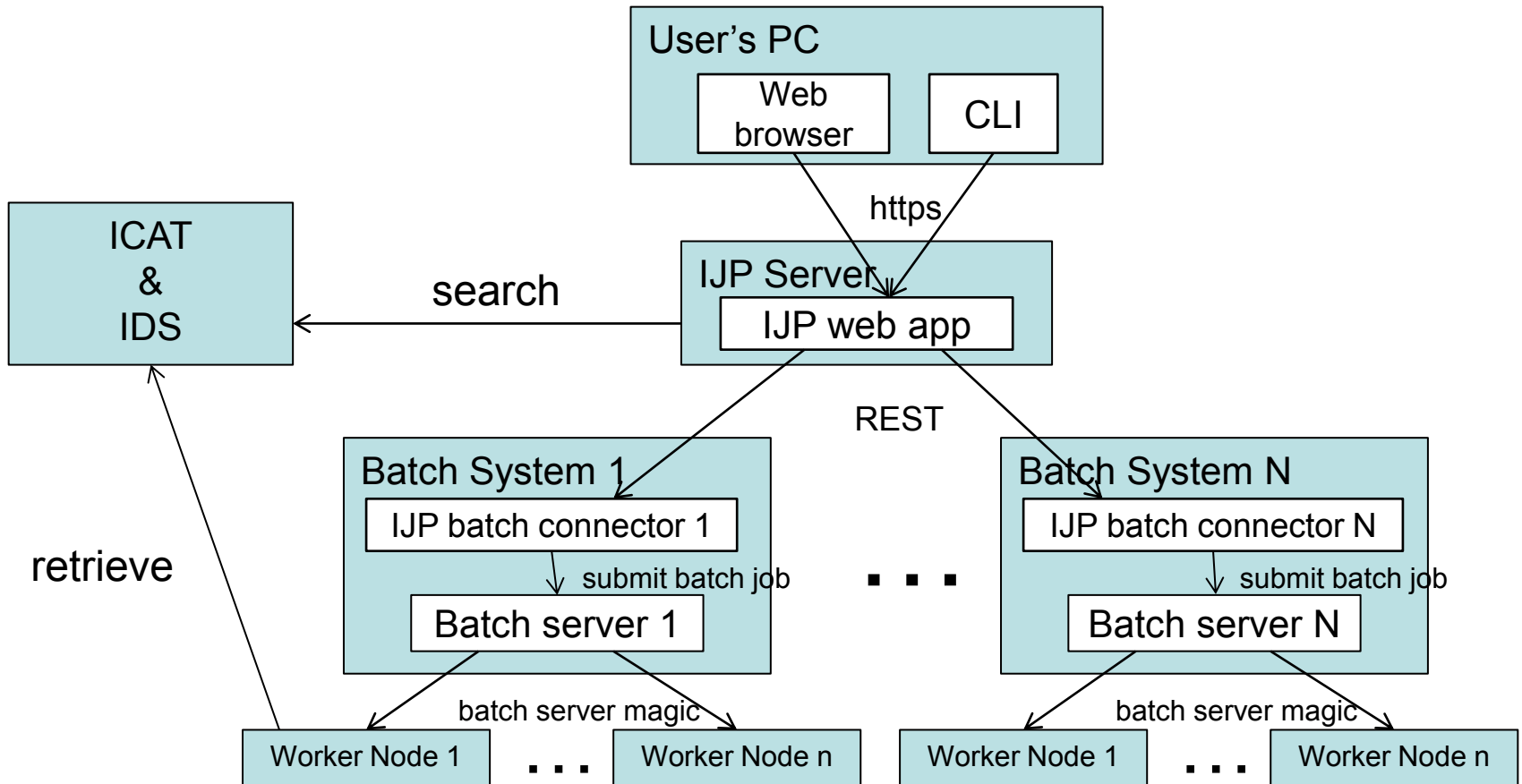 - One per supported batch system (Platform LSF, Torque, unix batch)

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Architecture

More architecture

User's PC
- Web browser
- CLI

https

ICAT & IDS

search

IJP Server
- IJP web app

REST

retrieve

Batch System 1
- IJP batch connector 1
  - submit batch job
- Batch server 1

. . .

Batch System N
- IJP batch connector N
  - submit batch job
- Batch server N

batch server magic

Worker Node 1 . . . Worker Node n

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

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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

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Demo system

- Self-contained "IJP-in-a-box"
- Local ICAT and IDS installations
- Batch connector uses local unix batch system

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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

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