Job Submission Frameworks: ATLAS

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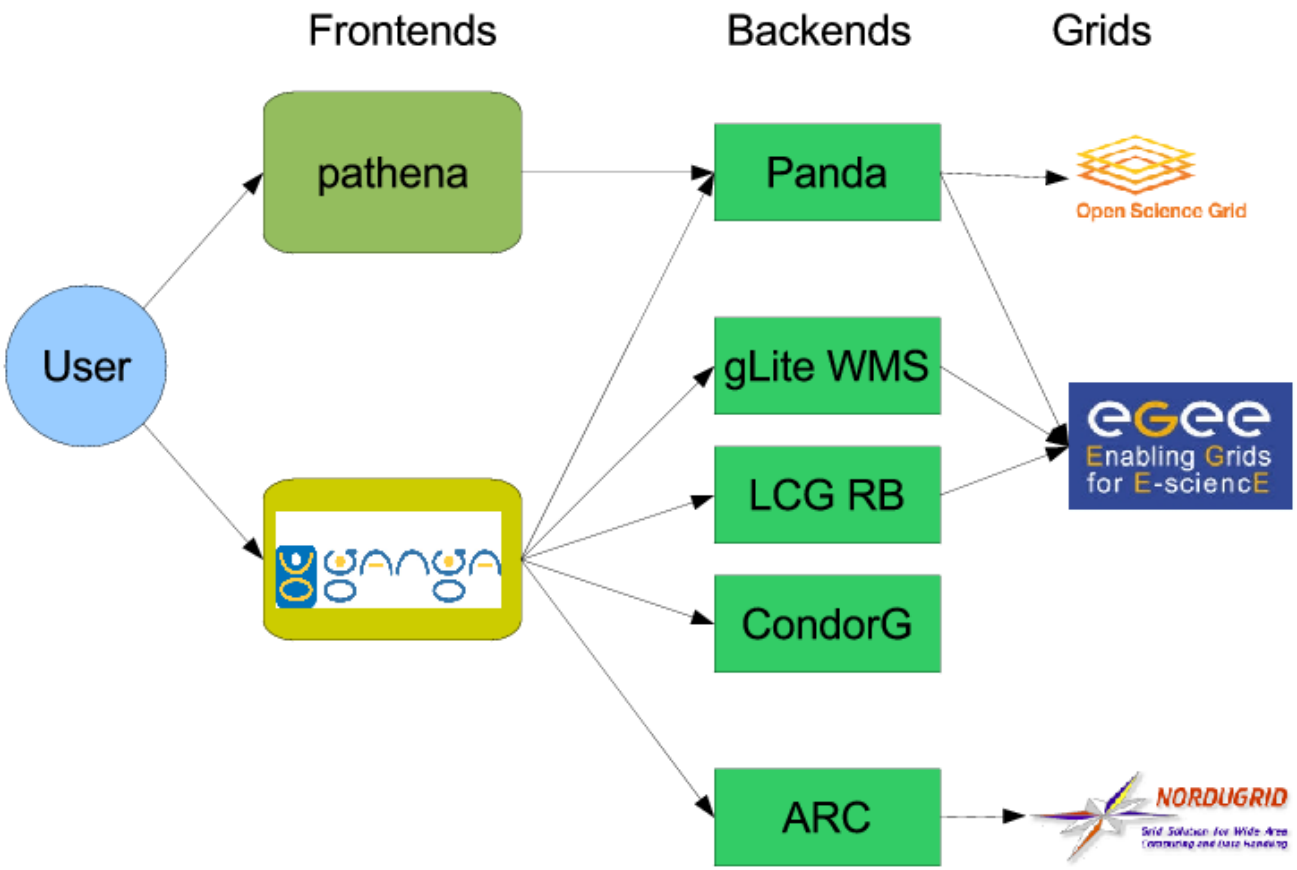
Distributed Analysis - Current Situation



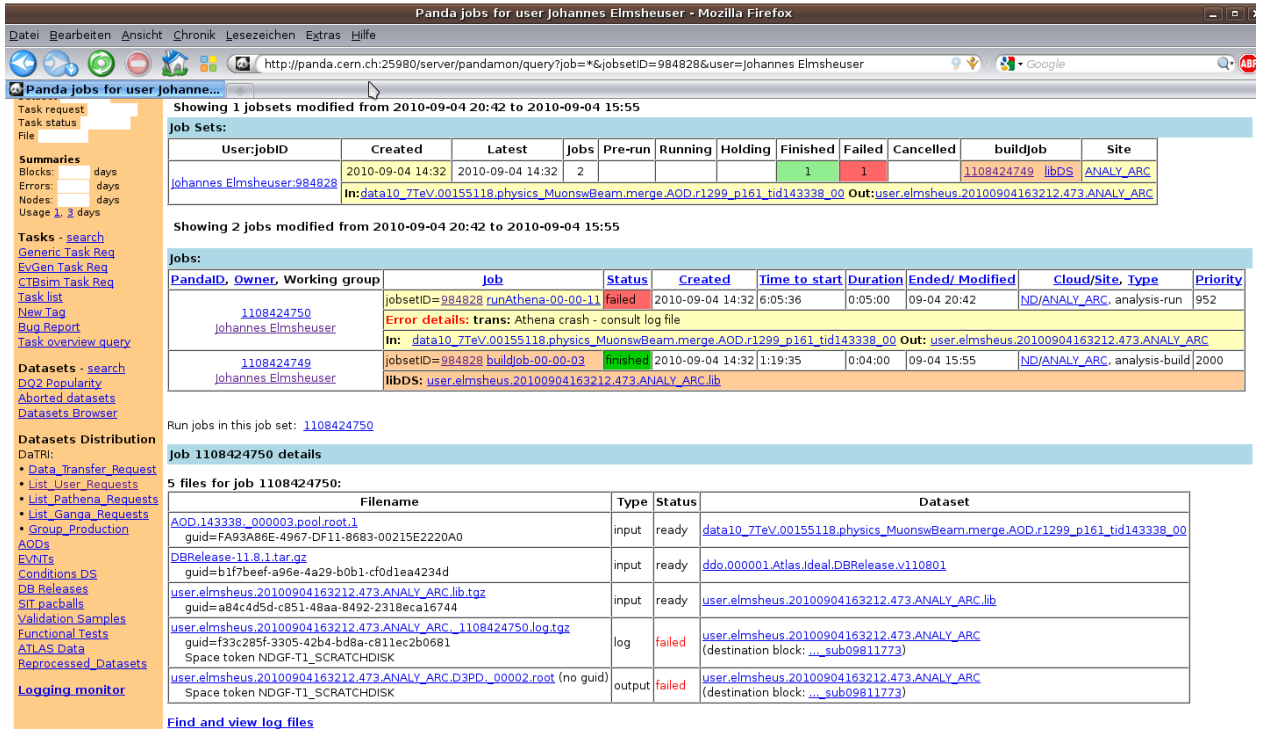
Data is centrally being distributed by DQ2 - Jobs go to data

Front-end: Panda Clients

Command line tools for submission to Panda (pilot system):

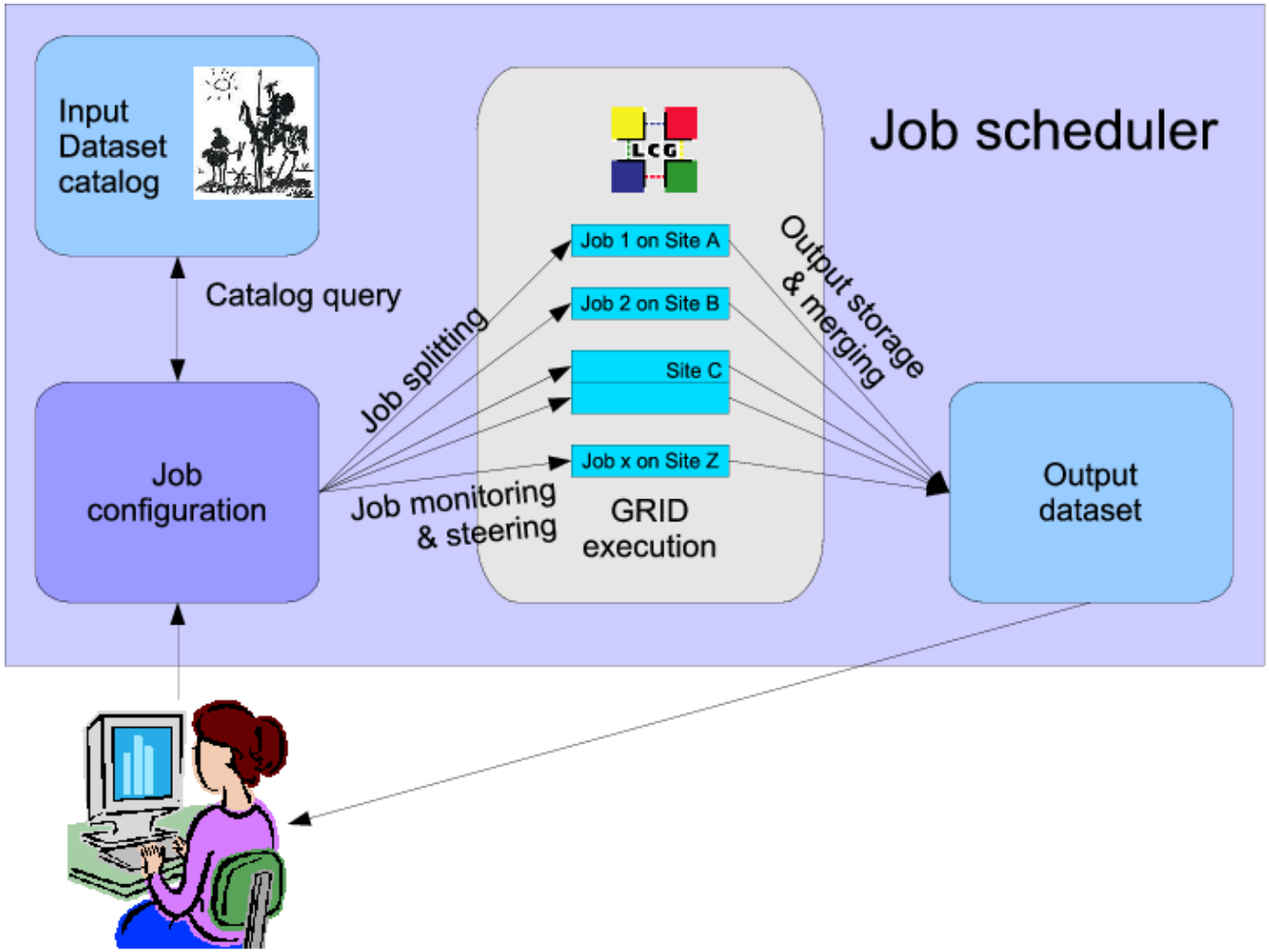
- `pathena`: Athena jobs
- `prun`: ROOT/general jobs
- `psequencer`: Analysis chain
- `pbook`: Bookkeeping

Web based monitoring:



Distributed Analysis

Job scheduler/manager: GANGA

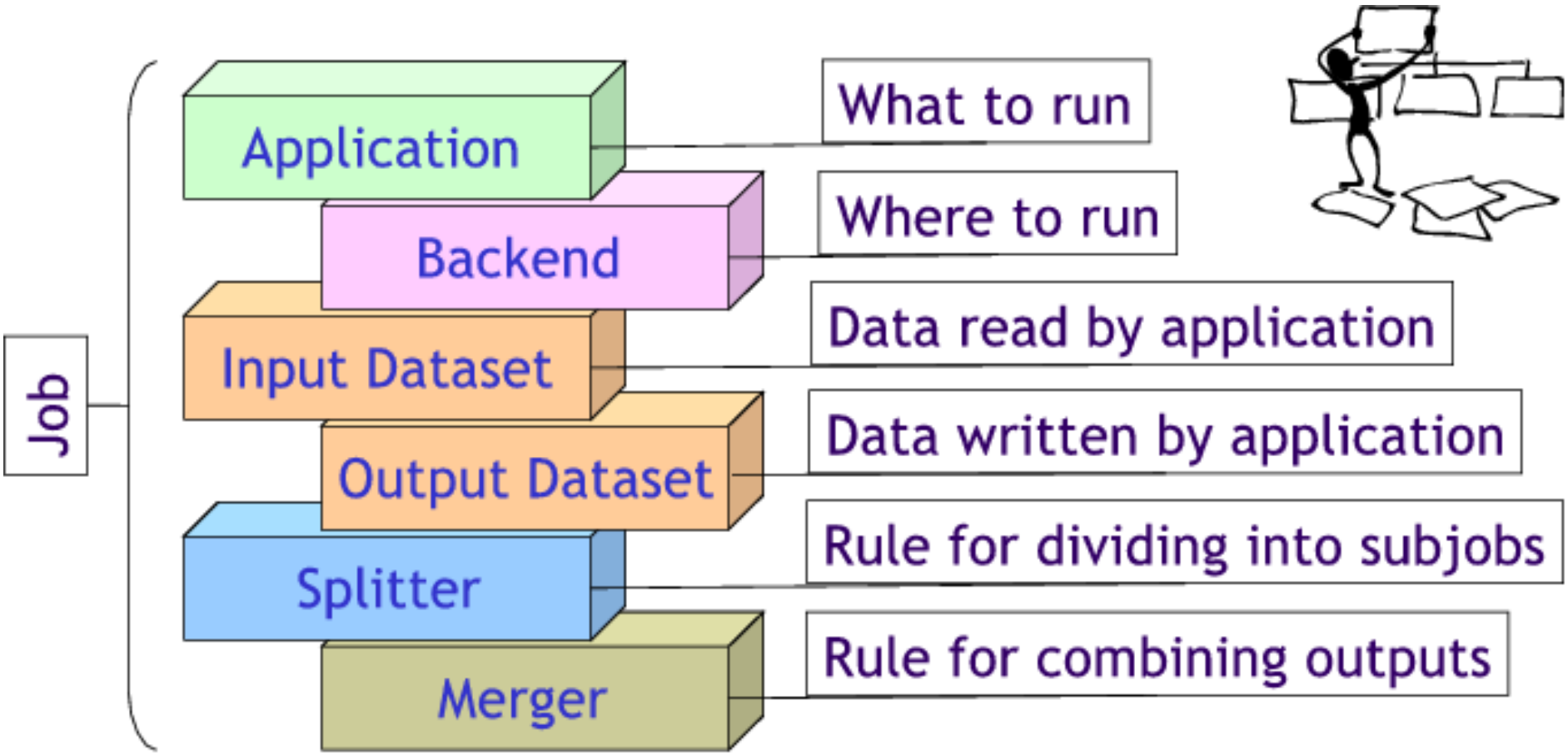


Front-end Client: GANGA

- A user-friendly job definition and management tool.
- Allows simple switching between testing on a local batch system and large-scale data processing on distributed resources (Grid)
- Developed in the context of ATLAS and LHCb :
  - For ATLAS, have built-in support for applications based on Athena framework, for Production System JobTransforms, and for DQ2 data-management system
- Component architecture readily allows extension
- Python framework
- GPL License (also commercial usage) and D-Grid partcipation

GANGA Job Abstraction

- GANGA simplifies running of ATLAS (and LHCb) applications on a variety of Grid and non-Grid back-ends



Job definition using ATLAS software

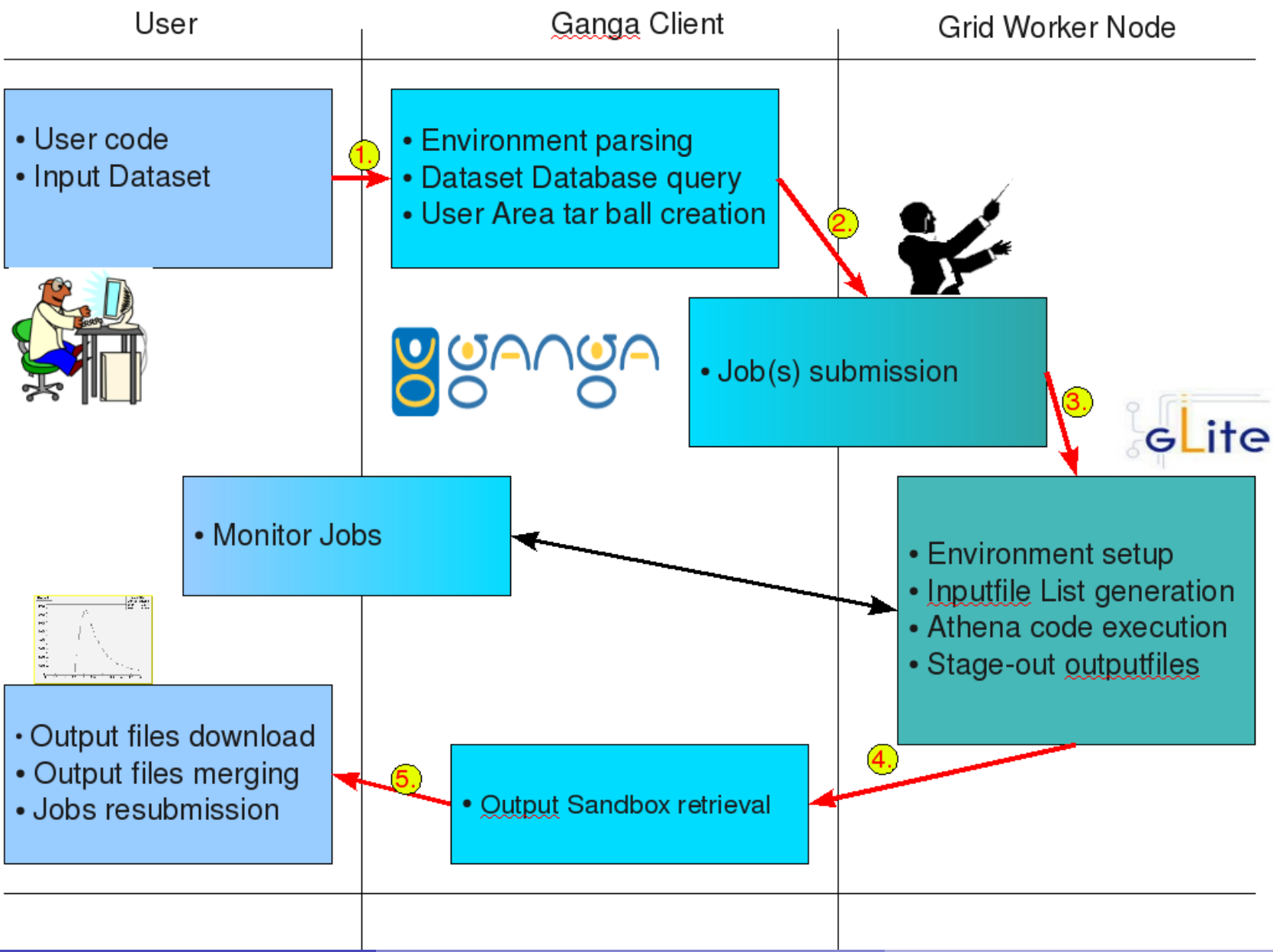
GANGA offers three ways of user interaction:

- Shell command line
- Interactive IPython shell
- Graphical User Interface

Job definition at command line for GRID submission:

```
ganga athena
  --inDS fdr08_run2.0052283.physics_Muon.merge.AOD.o3_f8_m10
  --outputdata AnalysisSkeleton.aan.root
  --split 3
  --lcg --cloud DE
  AnalysisSkeleton_topOptions.py
```

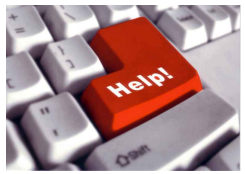
Job work-flow: Athena on LCG back-end



Current user problems and Support

Frequently asked questions or problems:

- There is a problem with special user code configuration
- The job had problems with accessing the input data file (copy-to-scratch, dcap/rfio/xrootd or FileStager)

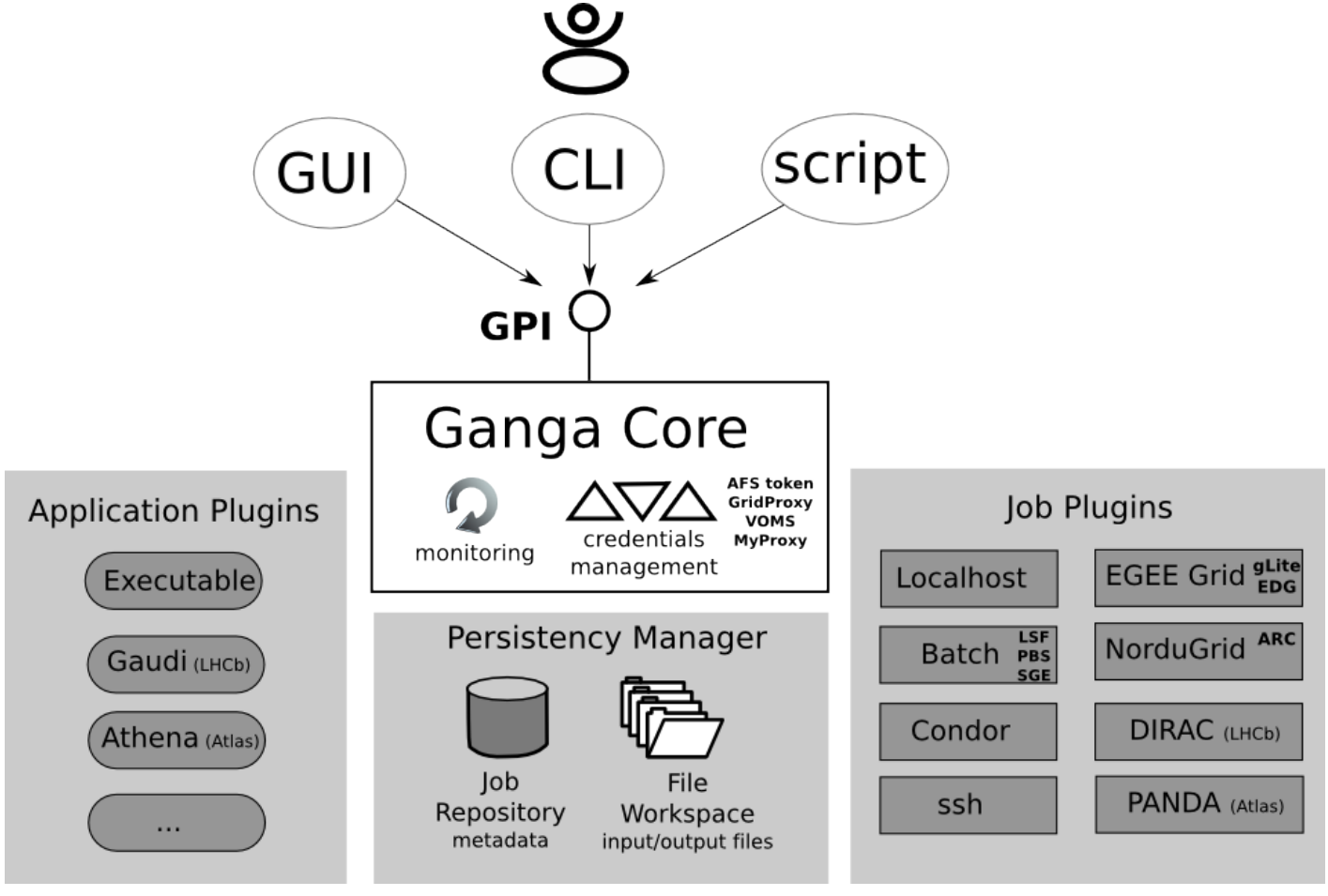


Support:

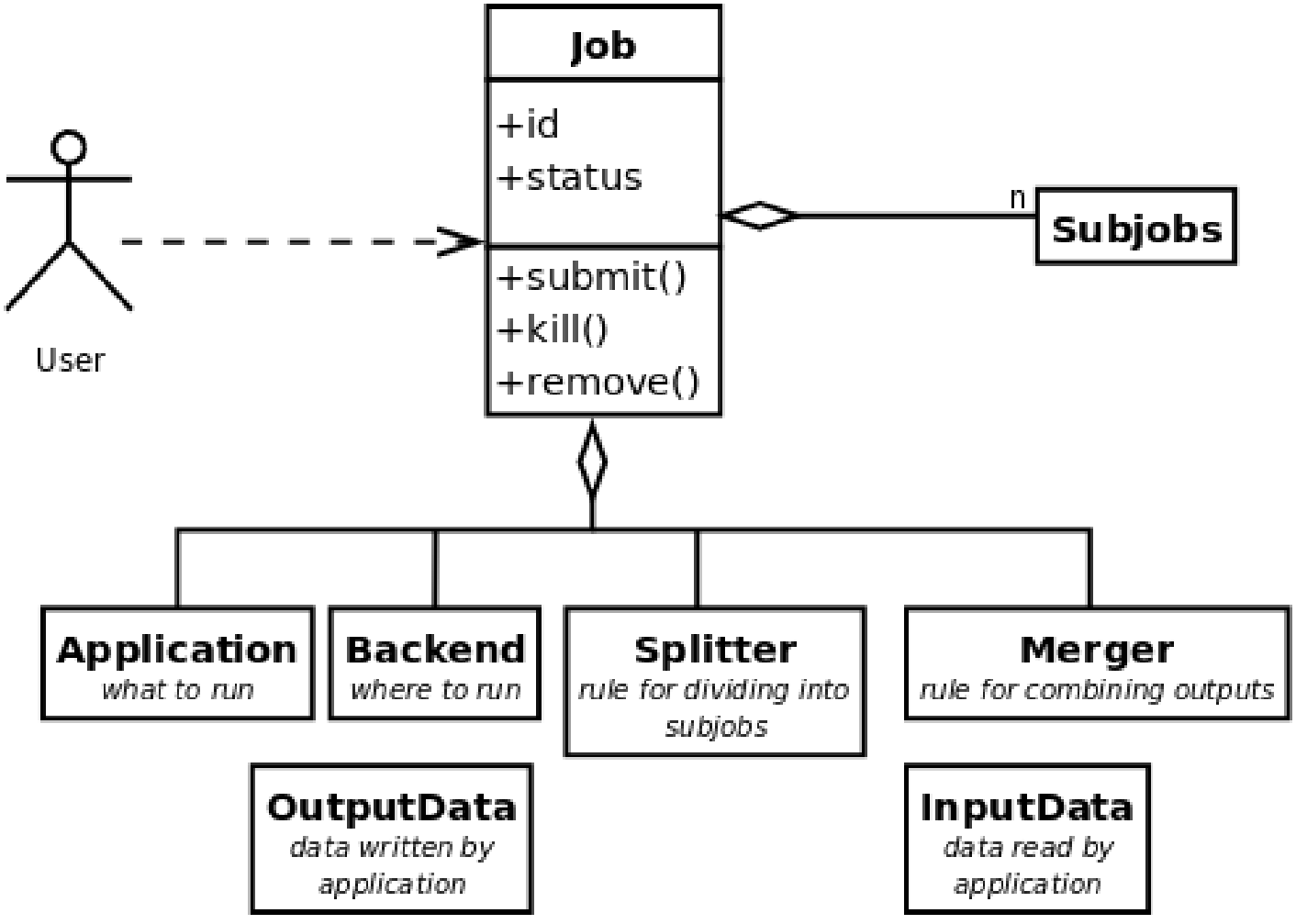
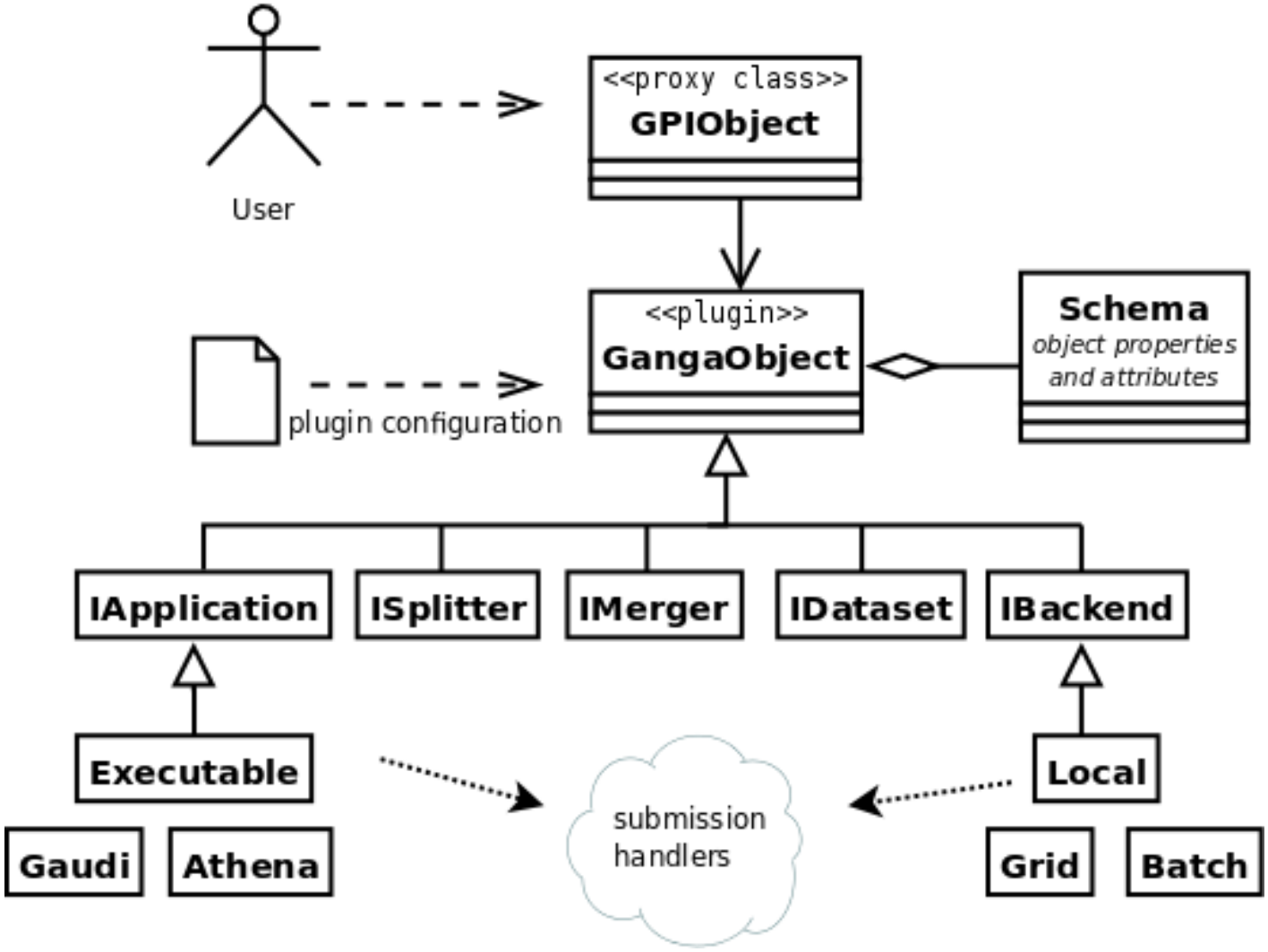
- Started ATLAS wide user support mailing list for DA
- Shifters in EU and US time zone
- Hoping for user2user support
- Has developed to one of the busiest mailing lists in ATLAS

BACKUP

Ganga Architecture



Ganga Job Components



Ganga Objects