Enabling Grids for E-sciencE

Summary of Day 2

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Information Society

Applications on EGEE

- **Domains:**
  - **High-Energy Physics**: LHC, Tevatron, HERA, …
  - **Biology**: Medical Images, Bioinformatics, Drug Discovery
  - **Earth Science**: Hydrology, Pollution, Climate, Geophysics, …
  - **Astrophysics**: Planck, MAGIC
  - **Fusion**
  - **Computational Chemistry**
  - **Related Projects**: Finance, Digital Libraries, …
  - **New areas**: nanotechnology, …

- **Application classes**
  - **Simulation**
  - **Bulk Processing**
  - **Responsive Apps.**
  - **Workflow**
  - **Parallel Jobs**
  - **Legacy Applications**

EGEE Data services - file services

- **Grid file concept: Write-once, read-many**
- **Storage element: physical location of files**
- **File catalog: logical hierarchy of grid files**
- **Logical file name (→ GUID → SURL → TURL)**
- **File replicas:**
  - Keep computation close to data

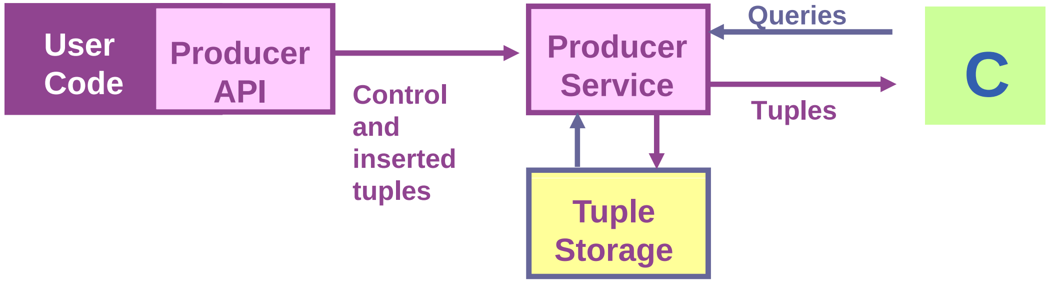
- **File manager tools:**
  - lfc-* command line clients → catalog manipulation
  - lcg-* command line clients → storage + catalog manipulation
  - GFAL API → access remote content without creating local file (GFAL C API today, GFAL Java API tomorrow)

Reusable examples

- **4 examples**
  - Writing the results of the job from the CO to the SE using lcg-* utils
    - Large files
  - Cause a job to run on a CE close to the SE that holds a named file
    - Balancing between data transfer and execution
  - Use a script to cause multiple jobs to run and monitor
    - Parametric study
  - LFC commands to control access to files
    - Collaborative work by the sharing of data

R-GMA

- Relational database
- To mediate between the application and the end user
- Application – push, user – pull model
- Typical use-case



GANGA

- **Higher-level workload manager**
- **Turning the UI into an object-oriented environment**
- **Interoperable with different middleware technologies**
  - Homogenizing grid user interfaces