Contribution ID: **178** Type: **On-line Demo**

Ganga – or how I lost the fear of running my app on the grid

Describe the scientific/technical community and the scientific/technical activity using (planning to use) the EGEE infrastructure. A high-level description is needed (neither a detailed specialist report nor a list of references).

The computational and storage capability of the Grid are attracting several research communities, also beyond HEP. Ganga is a lightweight Grid job management tool developed at CERN. It is a key component in the Distributed Data Analysis for ATLAS and LHCb. Ganga's open and general framework allows to plug-in applications, which has attracted users from other domains outside HEP. In addition, Ganga interfaces to a variety of Grid and non-Grid backends using the same, simple end-user interface.

Report on the experience (or the proposed activity). It would be very important to mention key services which are essential for the success of your activity on the EGEE infrastructure.

From January to August 2007 Ganga has been used by around 850 users (500 ATLAS, 150 LHCb, 200 other user communities) and has been installed locally in more than 50 sites around the world. Recently also the educative aspect of Ganga has been recognized and Ganga has become a part of the official EGEE tutorials. Contrary to other portals or tools, Ganga is not limited to specific VOs or infrastructures allowing the new user to immediately use the full EGEE infrastructure.

Describe the added value of the Grid for the scientific/technical activity you (plan to) do on the Grid. This should include the scale of the activity and of the potential user community and the relevance for other scientific or business applications

Ganga has already gained widespread use, the incomplete list of applications using Ganga include:
- Image processing and classification (developed by Cambridge Ontology Ltd.)
- Theoretical physics (Lattice QCD, Feynman-loop evaluation),
- Bio-informatics (Avian Flu Data Challange)
- Geant4 (Monte Carlo package)
- HEP data analysis (ATLAS, LHCb)

All these communities have different goals and requirements and the main challenge is the creation of a standard and general software infrastructure for the immersion of these communities onto the Grid. This general infrastructure is effectively "shielding" the applications from the details of the Grid. Finally, it is flexible and general enough to match the requirements of the different productions without including mayor changes in the design of the tool.

Ganga supports a large number of backends to which jobs be submitted too without the underlying knowledge of each of these backends. This allows users to use more than one computational resource available to them.

The incomplete list of supported backends includes:
- EGEE gLite middleware
- NorduGrid ARC middleware
- Condor and Cronus (Condor/G)
- Various batch systems (LSF,PBS,SGE)
- DIRAC (LHCb production system)
- PANDA (ATLAS production system)

Abstracts for online demonstrations must provide a summary of the demo content. Places for demos are limited and this summary will be used as part of the selection procedure. Please include the visual impact of the demo and highlight any specific requirements (e.g. network connection). In general, a successful demo is expected to have some supporting material (poster) and be capable of running on a single screen or projector.

We will show how an application is gridified and how a user can immediately profit from the Grid using Ganga. We demonstrate application cases outside of the initial scope of High Energy Physics in which the tool has been developed. The Grid added values include:
- easier transition to the Grid environment for the end-users
- integration of Grid and local resources which is required in many scientific activities
- education and dissemination
- technology exchange across different application domains

The demo and poster will show the ease of this transition from the traditional submission, running on single machines or a local batch cluster to running on the full EGEE infrastructure. Using a concrete example from Lattice QCD, we will show how the application was girdified and how subsequently 30 CPU year have been harvested in 1 week of running the application on the Grid.

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Track Classification: Demo and Poster session