

Job management and control in Earth Science

Wednesday 9 May 2007 17:30 (20 minutes)

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).

This work is a part of DEGREE project and is focused on requirements of Earth Science applications on job management. Earth Science community covers a wide range of applications from space industry to meteorology, hydrology, seismology, geology and environmental applications. The community consists of research institutes, European organizations and industries, and actively participate on EGEE I and EGEE II projects.

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.

The requirements of job management and control in Earth Science communities can be classified into following areas: workflow management, fault tolerance, near-realtime job execution and job monitoring. For workflow management, although a built-in workflow manager in gLite and several independent workflow managers exist, ES still needs an upper layer defined as an 'intelligent assistant' interface, including knowledge representation and reasoning tools, to facilitate scientific workflows for complex applications. Fault tolerance and near-realtime job execution are very important for several applications in Earth Science. ES application also require more detail and up-to-date information about job running on the Grid.

With a forward look to future evolution, discuss the issues you have encountered (or that you expect) in using the EGEE infrastructure. Wherever possible, point out the experience limitations (both in terms of existing services or missing functionality)

The discussion would be useful for detailing requirements of ES applications:

- Fault tolerance: guaranty that the job will be successfully executed. If a fault occurs, more information about the reasons and status of job at

the moment
are required for debugging
- Real-time and near-realtime job executions for some groups of
interactive and
critical applications

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

The work in WP3 in DEGREE project is focused on analyzing requirements of ES applications on job management and control, identifying the missing functionalities of available middleware and tools and preparing test cases for assessing usability of the middleware and tools from the view of ES applications. It will deliver the requirements on job management of the wide application range in Earth Science community to middleware developers, interact with them using concrete use cases from applications, provides test suites for testing functionality of the middleware according to the requirements and motivate the research and developments in Grid middleware

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Track Classification: Experience with application domains –setting up and production