

GridWay as a Tool for Porting Applications to the EGEE Infrastructure

Wednesday, 9 May 2007 19:30 (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).

The GridWay Metascheduler is a Globus project that performs job execution management and resource brokering, allowing unattended, reliable, and efficient execution of jobs, job arrays, and workflows on heterogeneous and dynamic Grids. GridWay is completely functional on EGEE, being able to interface with its computing, file transferring and information services. The demonstration will mainly show the functionality provided by GridWay to port scientific production codes to EGEE.

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 demonstration will show the main functionality provided by GridWay, focusing on its support for the execution of typical execution profiles, namely: embarrassingly distributed, master-worker and workflow. GridWay is being successfully used in the NA4 Fusion activities and is being evaluated in other VOs, such as BioMed.

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)

GridWay provides a lighter-weight alternative to the resource brokers available in EGEE (gLite-WMS and LCG-RB), offering additional application porting functionality and higher performance for given execution profiles. GridWay exhibits shorter scheduling latencies as it reduces the number of submission stages and provides mechanisms, such as opportunistic migration and

performance slowdown detection, that improve the usage of the underlying resources.

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

GridWay provides the following benefits to the different stakeholders involved in a Grid environment. For project and infrastructure directors, GridWay is a community project, adhering to Globus philosophy and guidelines for collaborative development. For system integrators, GridWay is open-source software, released under Apache license v2.0. For system managers, GridWay gives a scheduling framework similar to that found on local DRM systems, supporting resource accounting and the definition of scheduling policies, with minimum installation requirements, being compatible with a wide variety of platforms. For application developers, GridWay implements the OGF standard DRMAA API (C and JAVA bindings), assuring compatibility of applications with LRM systems that implement the standard, such as SGE, Condor, Torque... For end users, GridWay provides a LRM-like CLI for submitting, monitoring, synchronizing and controlling jobs.

Primary authors: Mr VAZQUEZ BLANCO, Constantino (Universidad Complutense de Madrid); Prof. HUEDO CUESTA, Eduardo (Universidad Complutense de Madrid); Prof. MARTIN LLORENTE, Ignacio (Universidad Complutense de Madrid); Mr HERRERA SANZ, Jose (Universidad Complutense de Madrid); Mr VAZQUEZ POLETTI, Jose Luis (Universidad Complutense de Madrid); Mrs LEAL ALGARA, Katia (Universidad Rey Juan Carlos); Prof. SANTIAGO MONTERO, Ruben (Universidad Complutense de Madrid)

Presenter: Mr VAZQUEZ BLANCO, Constantino (Universidad Complutense de Madrid)

Session Classification: Poster and Demo Session