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Demonstration of the P-GRADE portal

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The P-GRADE portal plays more and more important role in the EGEE community. After its successful demos in the previous EGEE conferences (Athens and Pisa) the representatives of several EGEE VOs have approached us with the request to support their users by the P-GRADE portal that is already the official portal of two EGEE VOs: VOCE (Virtual Organization Central Europe) and HunGrid (Hungarian VO of EGEE). Besides, P-GRADE portal is the official portal of SEEGRID which is a 100% EGEE-based Grid infrastructure serving all the countries of the South-East European region (even those countries that were not members of EGEE-1). After the Pisa demo the EGRID VO established a P-GRADE portal to support their activity and the biomed community showed interest to connect the portal to their workflow management engine. Besides the EGEE community, the portal is successfully used as service for the UK National Grid Service (NGS) and it was also successfully connected to the GridLab testbed as well as to the Hungarian ClusterGrid. After its successful demonstration at the Supercomputing'05 exhibition representatives of the US Open Science Grid also expressed their interest to connect the portal to their Grid.

Why is P-GRADE portal so successful? The main reason is that it is a generic workflow-oriented portal that can support all the important features the typical end-users would like to have:

1. Hidden low-level Grid details but at the same time enabling the access of any important feature of the underlying Grid

2. Easy porting of the applications to the Grid

3. User-friendly, graphical environment to control and observe the execution of the Grid application

4. Enabling the usage of MPI programs in the Grid

5. Enabling the usage of legacy codes in the Grid

6. Developing and executing workflow applications in the Grid

7. Combining MPI and legacy programs in workflows

8. Developing and executing parametric study applications (both at job and workflow level) in the Grid

9. Providing parallel execution mechanisms for the workflows at various levels a. intra-job b. inter-job c. pipe-line d. multi-thread

10. Supporting multi-Grid access mechanism and inter-Grid parallelism

11. Providing a secure and robust Grid application development and execution service for end-users (including certificate management, quota management and resource management)

12. Providing user-centric error messages and workflow recovery mechanism in case of erroneous job and workflow execution.

13. Providing autonomous error correction facilities

14. Supporting collaborative workflow development and execution

15. Tailoring the portal to specific user needs

The current version of P-GRADE portal (version 2.3) can provide features 1-4, 6, 9/a, 9/b,10-12, 15. The UK NGS extension of the portal can provide features 5 and 7. Feature 14 is already prototyped and demonstrated at the Supercomputing'05 exhibition. This feature will be available as service by November 2006. Features 8, 9/c and 9/d are under development as a joint work with the bioscience EGEE community and will be available in version 3.0 by April 2006. Version 3.0 will also support feature 13.

P-GRADE portal is based on the JSR168 compliant GridSphere 2 framework and hence it supports the easy extension and tailoring of the portal according to specific user needs. There are two examples for such extension of the portal. For the UK NGS, University of Westminster developed and added a new portlet that supports the definition and invocation of legacy code services. For the EGRID community, researchers of the Abdus Salam International Centre for Theoretical Physics have developed and now add a new portlet that enables file transfer among Grid computational and storage resources. In fact the further development of the portal is going on as a joint activity of several universities and institutes in Europe. Besides the above mentioned two collaborating partners, Univ. of Reading contributes to the creation of the collaborative version of the portal while CNRS collaborates with SZTAKI in creating the parametric study version of the portal. The Boskovic research institute in Zagrab developes specific application oriented portlets.

The goal of the demonstration of the P-GRADE portal is to demonstrate the features mentioned above. We shall use four portal installations during the demonstration. The VOCE portal (version 2.3) that runs as a service for VOCE will be used to demonstrate the robustness and scalability of the P-GRADE portal as a VO service. This demo tries to convince the audience that the current version of P-GRADE portal is robust and scalable and hence it can be used for any VO of EGEE as a stable service for end-users. This portal will be used to demonstrate features 1-4, 6, 9/a, 9/b,10-12.

The UK NGS portal (version 2.2) that runs as a service for UK NGS will be used to demonstrate how the portal can be extended with legacy code services as well as with application-specific portlets. Moreover we shall demonstrate the multi-Grid access mechanism of the portal showing that both the UK NGS and the HunGrid (EGEE) sites can be accessed by the same portal within a workflow in a simultaneous way realizing Grid interoperability and multi-Grid parallelism. This portal will be used to demonstrate features 5, 7, 10. Two experimental portals (prototypes) will also be demonstrated to show the future features of the portal (features 8, 9/c, 9/d and 14).

We hope that by continuing the successful series of portal demonstrations more and more EGEE user community will recognize the obvious advantages of using the portal instead of the low-level command-line user interface. The mass usage of Grid technology cannot be achieved by low-level commands, only high-level, graphical user interfaces can attract and convince the end-users that Grid is usable for them. P-GRADE portal is a step towards this direction.

Summary

The current and new features of the P-GRADE portal will be presented. The current features are already built in to those portal releases that work as production services for several EGEE related VO (VOCE, HunGrid, EGRID) and SEEGRID as well as for other type of Grids like the UK NGS. The new features are under preparation and demonstrated as prototype systems. They will be put into service during this year.

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