



Contribution ID: 136

Type: On-line Demo

Grid-DB Management in gLite based production Grids with the GRelC Data Access Service

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 activity aims at providing an advanced grid database management service (GRelC DAS) tightly coupled with the gLite middleware, the EGEE architecture and the GILDA t-Infrastructure. The target community includes scientists/VOs belonging to different domains within the EGEE collaboration that need for their applications to transparently, efficiently and securely access huge and distributed DBs. The GRelC DAS is a GSI and VOMS enabled grid service providing advanced database management features

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 GRelC DAS, is a data grid access service developed by the GRelC Team (SPACI Consortium and Univ. of Salento). Currently, it is tested on the GILDA t-Infrastructure and used for training activities on grid-database management. The GRelC DAS is a GSI/VOMS enabled web service addressing extreme performance, interoperability and security. It provides a uniform access interface to relational and non-relational (i.e. XML db) data sources. The GRelC DAS supports both basic and advanced functionalities. The aim of this service is to efficiently, securely and transparently manage databases on the grid across VOs, with regard to emerging and consolidated grid standards and specifications as well as production grid middleware (gLite). Currently it has been extended with additional functionalities such as asynchronous queries, it delivers resultsets by streaming and compressing data, it can be managed and accessed via a web interface (GRelC Portal) or a graphical console management (XGRelC).

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 Grid could allow intensive data mining applications on databases (exploiting and leveraging the GRelC DAS) on hundreds/thousands of machines. Working intensively in a grid environment with databases new communities could be attracted due to the high number of computational resources. Moreover, solutions based on database replication could allow workload management and distribution, able to serve a huge load of user requests (queries) with regard to classical systems/approaches/environments. Due to (i) the transversal role of the GRelC DAS, (ii) extreme performance and (iii) advanced delivery mechanisms implemented (streaming, chunking, compression and prefetching), many experiments and Virtual Organizations within the EGEE

project could benefit from it (bioinformatics, astrophysics, financial, etc.). The grid could also become a big “repository” containing many databases to be accessed, integrated, federated, etc.

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.

The demo will focus on several parts and it will show how the GRelC DAS provides a strong data virtualization layer compliant with gLite. We will show how a grid-database can be imported, managed and accessed in grid with the GRelC DAS by using: (i) the command line interface, (ii) a graphical console named XGRelC and finally (iii) the GRelC Portal. Network connection is required in order to remotely manage databases that are currently deployed on the GILDA t-Infrastructure. We will show how authentication can leverage VOMS extensions and how query submission can be easily carried out on widely distributed databases. During the demo we will also show some examples of query submission through the GRelC Portal, a Web interface including all of the key features provided by this grid service. Query demo will include: synchronous and asynchronous query submission and examples of queries submitted (as a job) to a Broker through a GRelC DAS enabled User Interface.

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Track Classification: Demo and Poster session