



Contribution ID: 22

Type: Poster

CMCC grid metadata handling system

Tuesday, 23 September 2008 16:06 (0 minutes)

Describe the activity, tool or service using or enhancing the EGEE infrastructure or results. A high-level description is needed here (Neither a detailed specialist report nor a list of references is required).

What we propose is the Grid Metadata Handling System developed at the Euro-Mediterranean Centre for Climate Change (CMCC). The proposed architecture focusing on metadata management and access leverages the GRelC DAIS distributed and P2P-based data grid solution.

The GRelC DAIS is WS-I based, GSI and VOMS enabled, compatible with Globus and gLite grid middle-ware/environments. It aims at transparently and securely integrating heterogeneous, distributed and geographically spread grid data sources.

Report on the impact of the activity, tool or service. This should include a description of how grid technology enabled or enhanced the result, or how you have enabled or enhanced the infrastructure for other users.

The CMCC Metadata Handling System is (from the data grid perspective) a key element to discover, manage and access huge and distributed amount of climate data/metadata. For metadata management centralized solutions are usually proposed but at such large scale (such as at CMCC) distributed solutions better fulfil scalability requirements. Moreover, the proposed gLite compliant solution, based on P2P protocols and services (GRelC DAIS), strongly addresses availability, scalability, robustness and efficiency. The Grid Metadata Handling System is easily accessible via the CMCC Data Distribution Center, a data grid portal solution which enables search and discovery of metadata through a user-friendly access interface.

The proposed grid technology solution enables scientists and researchers at CMCC to transparently and efficiently access distributed and widespread climate data/metadata. Performance and scalability tests demonstrated the validity of the proposed grid enabled approach.

Describe the added value of the grid for your activity, or the value your tool or service adds for other grid users. This should include the scale of the activity and of the potential user community, and the relevance for other scientific or business applications.

Centralized solutions for metadata management are not feasible and are not able to address availability, scalability, robustness and efficiency at such large scale (potentially hundreds of users at CMCC and in the future external scientists and researchers). The CMCC Grid Metadata Handling System we propose is able to provide both access to and integration of metadata stored in different and widespread data sources. Such a technological solution for distributed metadata management is (i) fully compatible with gLite, (ii) entirely relies on GRelC DAIS for metadata access and integration (iii) is strongly coupled with the gLite-based CMCC data grid part leveraging storage elements, SRM, VOMS, and LFC, (iv) supports role-based management (based on VOMS),

which increases flexibility and scalability (v) is full GSI enabled and (vi) is based on P2P grid protocols/services, fully addressing interoperability, data integration and transparency.

Primary authors: Mr NEGRO, Alessandro (University of Salento); Prof. ALOISIO, Giovanni (SPACI Consortium & University of Salento); Mr VADACCA, Salvatore (Euro-Mediterranean Centre for Climate Change); Dr FIORE, Sandro (SPACI Consortium & University of Salento)

Presenters: Mr NEGRO, Alessandro (University of Salento); Mr VADACCA, Salvatore (Euro-Mediterranean Centre for Climate Change); Dr FIORE, Sandro (SPACI Consortium & University of Salento)

Session Classification: Demos and Posters

Track Classification: Poster