

OGF Grid Interoperation Now Demonstrations at SC07

Many Grid projects have begun to offer production services to end-users during the past several years with an increasing number of application projects that require access to a wide variety of resources and services in multiple Grids. The purpose of the Grid Interoperation Now (GIN) Community Group of the Open Grid Forum (OGF) is to organize, manage and demonstrate a set of interoperation efforts among production Grid projects and e-Science infrastructures using computational or storage-related resources in multiple Grids. Interoperation is specifically defined as what needs to be done to get production Grids to work together as a fast short-term achievement using as much existing technologies as available today. Hence, this is not the perfect solution and different than interoperability that is defined as the native ability of Grids and Grid technologies to interact directly via common open standards in the near future.

GIN implements interoperation specific areas. First, authorization and identity management (GIN-AUTH) deals with resource sharing among members of the GIN Virtual Organization (VO). Second, the data management and movement (GIN-DATA) area is working on the interoperation of different data management technologies currently in use of multiple e-Science infrastructures. These include the Storage Resource Broker (SRB), Storage Resource Managers (SRM) and GridFTP. Third, the job description and submission (GIN-JOBS) area focuses on job management across different Grid technologies and middlewares used in production. One of the most important areas is the information services and schema (GIN-INFO) area, because the efforts conducted in this area basically provide the base for cross-Grid interoperation taking up-to-date information into account. These interoperations rely on information models such as Common Information Model (CIM) and Grid Laboratory Uniform Environment (GLUE) or information systems such as Berkeley Database Information Index (BDII) and Monitoring and Discovery Services (MDS). Finally, the operations experience of pilot test applications (GIN-OPS) for cross-Grid operations works on different applications that require resources from multiple Grid infrastructures.

For more information, visit <https://forge.gridforum.org/sf/wiki/do/viewPage/projects.gin/wiki/HomePage>

DEMONSTRATIONS

SRB/SRM Island Interoperabilities

EGEE - Enabling Grids for e-Science Booth #2523

This demo will show FTS transferring files between an SRM and an SRB using OGF's GridFTP specification as the file transfer protocol. There are three related ways to accomplish this. Using a GridFTP client to transfer data from one to the other, using SRM level data transfer tools such as FTS from gLite or using higher levels of data replication tools like lcg-utils, also from gLite. They have one thing in common: SRB must be endowed with a GridFTP interface which is able to accept certificates and map them into the relevant account. The demonstrations show solutions for such ways realizing the SRB/SRM island interoperability. Contact: Alex Sim, Jens Jensen or Mike Wan

Information Services

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This demonstration focuses on information system interoperability. An attempt was made to translate information from all the existing production Grid infrastructures in order to populate a single information resource. The resource chosen was a Berkeley Database Information Index (BDII) and the common format used was the Glue Schema version 1.2. The result is a BDII that contains information from 9 production grid infrastructures (EGEE, OSG, NDGF, Naregi, Teragrid, Pragma, DEISA, NGS, APAC). This information is used to show the location of the computing centres in Google Earth and the current Grid landscape for the production Grids. This investigation demonstrated that to have interoperability the information content and schema must be in agreement. As a result the Glue Schema activity is now an OGF working group and is defining this common schema for Grid computing. Contact: Laurence Field

OGSA-RUS based Accounting Information Exchange between gLite (DGAS), Globus (SGAS), and UNICORE

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OMII – Europe provide components for e-Infrastructures in key areas of the middleware solutions UNICORE, gLite and Globus. One particular task in OMII-Europe works on the interoperability between accounting infrastructures in these systems. DGAS is the accounting system of gLite used within EGEE and is currently augmented with an OGF OGSA - Resource Usage Service (RUS) compliant interface. SGAS is the accounting system of the Swedish Grid and Globus Toolkits (Tech Preview) and is also currently augmented with an OGSA-RUS interface. The new Web service-based UNICORE 6 (UNICORE 5 used in DEISA, UNICORE 6 as its successor may be used soon in DEISA) has an accounting system that is also compliant with OGSA-RUS. This demonstration will show the exchange of accounting information that is compliant with the OGF Usage Record Format (URF) between DGAS, SGAS and UNICORE. For instance, a SGAS client is used to extract usage records compliant with the OGF Usage Record Format (URF) standard from a DGAS server. Contact: Morris Riedel, Gilbert Netzer or Michele Pace

GIN Portals

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Hungarian Grid Competence Centre Booth #182

These demonstrations use two portal technologies: P-Grade and GridSphere. P-GRADE Portal (Parallel Grid Run-time and Application Development Environment) is a service rich graphical environment for the development, execution and monitoring of data-driven grid applications. P-GRADE Portal is already used by users and application developers of several national (UK NGS, HunGrid, Turkish Grid, etc.) and international grid based virtual organizations (EGEE, SEE-GRID, etc.). The demonstration introduces the most important features and typical use cases of the environment as well as the developer alliance which is behind the P-GRADE Portal efforts. The GridSphere portals demonstrations show how a guest user can request an account on a GridSphere portal, in this case a preview instance of the OMII-Europe Gateway, and after obtaining account immediately execute one or two jobs on the resources on the configured Grid, in this case the OMII-Europe Evaluation Infrastructure. Security and automated registration with Grid middleware via Account Request and Account Manager portlets functionality; support for GSI credential management (automated GSI cert generation and/or delegation by MyProxy) automated registration support for GT4 and automated registration support for UNICORE 6; and VOMS proxy support will be demonstrated. Contact: Peter Kacsuk or Michael Russell

UNICORE and gLite Interoperation

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This is a demonstration of an outcome of the EGEE-II project, SA3: Interoperability of UNICORE and gLite, joint work of CERN and Forschungszentrum Jülich. These demonstrations show the interoperation of the gLite and UNICORE 5 production Grid middleware. A user builds a job on the gLite User Interface and submits it through the gLite Workload Manager to an interoperation Computing Element. On this Computing Element the job is forwarded to the UNICORE Grid, passing the UNICORE Gateway, UNICORE Network Job Supervisor (NJS) and being executed on the UNICORE Target System. The authentication at the UNICORE Gateway and authorization on the UNICORE NJS is done with the user's proxy credentials. The UNICORE Target System still needs gLite Worker Node capabilities for VOMS- and data-management. Contact: Morris Riedel, Daniel Mallmann

DEISA and Australian Grid Interoperation

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This demonstration consists of the processing of a small workflow employing the NAMD molecular dynamics suite. Several DEISA sites (currently, CINECA and LRZ) are planned. Jobs will be formulated using OGF's JSDL specification. Within the workflow a number of compute intensive jobs are planned to be submitted to DEISA sites with the help of the DESHL UNICORE command line interface. At the same time a similar number of jobs will be submitted via WS-GRAM or GRAM to the AU Grid and executed primarily at Monash. Output from the Australian jobs will be moved to the DEISA GPFS filesystem via OGF's GridFTP and post-processed at CINECA. These results again could be distributed again to a place still to be determined and/or added to some Bioinformatics archive. Contact: Andrea Vanni, Graham Jenkins or Michael Rambadt

VOMS-enabled and OGSA-BES based Job Submits between UNICORE and gLite

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CREAM-BES is an OGF OGSA-BES-compliant service for gLite and work together with the new SAML-compliant VOMS server of OMII-Europe. UNICORE provides also an OGSA-BES-compliant service and also works together with the new SAML-compliant VOMS server developed by OMII-Europe. This demonstration will use one client to submit jobs to both of these Grid middleware systems without changing the security setup or the job description language. This was not possible before and is a real success story coming out of OMII-Europe. Hence, there are components from OMII-Europe that provide technical interoperability between EGEE (through gLite) and DEISA (through UNICORE) in the near future. Contact: Morris Riedel, Valerio Venturi or Moreno Marzolla

WS-DAIR interface for the gLite AMGA Metadata Catalogue

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The gLite-AMGA metadata catalogue, developed within the EGEE project, provides access to relational data on the Grid and is widely used in the scientific Grid community. Features include secure, GSI-enabled access, a fine-grained access control, support for Virtual Organizations as well as the possibility to replicate or federate metadata on the Grid. This demonstration will show the results of work on a WS-DAIR compatible interface to AMGA, to implement the OGF's standard for relational database access on the Grid. Adopting this standard will allow AMGA to be used as a part of the OGF Open Grid Service Architecture (OGSA). Contact: Birger Koblit

GridFTP2

NorduGrid Collaboration Booth #173

OGF GFD.47 introduced the GridFTP v2 protocol in 2005. A subset of the GridFTP2 protocol is now implemented in dCache and Globus C and Java client libraries. It is currently used in production at NDGF. Contact: Anders Rhod Gregersen