The US Federation

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Overview

- **US institutions –**
  - University of Chicago (I. Foster)
  - University of Southern California (C. Kesselman)
  - University of Wisconsin-Madison (M. Livny)
- **Funding (year 1) –**
  - $200K from the NSF Middleware Imitative (NMI) via the GRIDS center
  - $250K from the Particle and Nuclear Astrophysics program at the NSF
  - $97K from the DOE-LHC Research Program

gLite

- **Integral part of the gLite technical process**
  - Contributed to the formulation of the gLite technical effort
  - Participation in the monthly meeting of the gLite design team
  - Participation in “focused” meetings of the design team (Data Management, Account management and Authentication)
  - Review architecture documents
- **Operate one out of the two gLite prototype sites**
- **Facilitate exchange of concepts, principals and implementation details between EGEE and OSG**
  - Joint membership in the design teams of the two grids
  - Formal and informal exchanges of design principals and development plans and schedules

University of Chicago

- **Dynamic accounts service**
  - GT4-based service for creation, lifetime management, access control of dynamically created Unix accounts
  - EGEE using with GT2 GRAM; adaptation to GT4 GRAM easy
  - Integration with LCMAPS and VOMS security services from EGEE
  - Tested on gLite testbed; scheduled for 1st release
- **GRAM4 design & implementation**
  - Control of resource usage on head node, and other benefits
  - Also evaluated as gLite SetUID service
- **New GridFTP implementation**
  - Visit to CERN to discuss status & inclusion in EGEE software
- **GT4 development and evaluation**
  - Frequent contact with EGEE integration team; visits to CERN
- **Grid Security Infrastructure enhancements**
  - Many, some have made their way into EGEE software

University of Southern California

- **Developed a Globus-based POOL FileCatalog using Globus Replica Location Service (RLS) + minor enhancements**
  - Unit, system and performance tested at Fermi Lab
  - Used in test environment with ORCA application
  - Early performance tests show up to 800/sec file registrations and up to 400/sec file lookups
  - Currently adapting to new interfaces exposed by upcoming release of POOL – eliminate unused metadata interfaces
- **Near-term plans: enhance the Globus File Catalog to support a distributed backend**
- **Long-term plans: add complimentary Publishing Service (based on LIGO LDR) to replicate data files among sites**
- **Deployment of Globus RLS on Wisconsin EGEE testbed**
  - Currently: Uses Globus RLS for the GLite replica catalog
  - Future: Working to replace the GLite file catalog

University of Wisconsin-Madison

- **Compute Element –**
  - Collaborated with the gLite team on adding PBS and LSF interfaces to Condor-G
  - Developed Condor-C according to meet gLite requirements
  - Collaborated with the gLite team on interfacing the WMS with Condor-C
- **Data Management**
  - Supported the evaluation and usage of Stork
- **Prototype**
  - Operated one of the two nodes of the testbed
  - Deployed a second VO on the UW node
  - Participated in the weekly eXtented Integration Meeting
- **Virtual Data Toolkit (VDT)**
  - Worked closely with EGEE deployment to meet their requirements and incorporate their enhancements

Observations

- Effective exchange of ideas, requirements, solutions and technologies
- Coordinated development of new capabilities
- Open communication channels
- Joint deployment and testing of middleware
- Early detection of differences and disagreements

gLite is not "just" a software stack, it is a "new" framework for international collaborative middleware development. Much has been accomplished in the first year. However, this is "just" the first step.