DataTAG Contributing to LCG-0 Pilot Startup
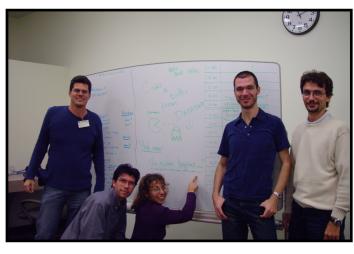
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Abstract

The DataTAG project has contributed to the creation of the middleware distribution constituting the base of the LCG-0 pilot. This distribution has demonstrated the possibility of building an EDG release based on iVDGL/VDT, integrating the GLUE schema and early components of the EDG middleware.

On February 28th 2003, the LCG Grid Deployment Group has announced the availability of the first release of the LCG-0 Pilot software to be used by LCG early deployment sites in order to start building the LCG infrastructure and exercise the Grid deployment process.
This release of the software has also been used to test the feasibility of a middleware based on components coming from the iVDGL-VDT distribution and from the EDG middleware and it runs on Linux RedHat 7.3 with version 2.95.2 of the gcc compiler.

The great experience gained during the effort of setting up the WorldGrid testbed together with the American companion project iVDGL, to test interoperability solutions between two different Grid Infrastructures such as EDG and iVDGL/VDT and the success of the demonstrations carried out at IST2002 in Copenhagen and SuperComputing 2002 in Baltimore, has allowed DataTAG to lead the effort of creating the middleware distribution constituting the base of LCG-0 Pilot.

During the week of January 20th 2003, 5 people from the DataTAG WP4 Interoperability Team have met at CERN together with representatives of the VDT team to work closely with the LCG Deployment Group in order to provide a middleware solution which integrates most of the features already experimented with in the WorldGrid testbed, together with some early integration of new components part of the EDG release 2.0 due to come by the end of April 2003.

Among the features supported by the LCG-0 Pilot, the middleware integrates the first release of the *GLUE schema*. Through this schema Grid resources, their status and monitoring information are published to the Information Service for use by the matchmaking mechanism of the EDG Resource Broker, the monitoring systems and end-user applications. DataTAG WP4 has participated in the effort of defining common resource schema together with iVDGL in the context of the GLUE program. At CERN the DataTAG WP4 team has extended the default schema included in VDT to include new descriptions needed for the new edt-monitor monitoring package based on Nagios.

The EDG 1.4 *Resource Broker* has also been modified to make it GLUE-schema aware. EDG will adopt the GLUE schema with the new release of the software due at the end of April 2003. The experience gained exercising the matchmaking mechanism of this release of the Resource Broker that takes advantage of the new GLUE schema will be fed back to EDG for the future release.

Together with the Resource Broker, another component of the EDG WorkLoad Management has been readapted: the *Job Description Language* (JDL). Through the new JDL, more possibilities are given to the user to specify Requirements that need to be satisfied in order for the job to run correctly.

The DataTAG version of the EDG *Data Management Tools* contains support for the old Globus Replica Management Tools as well as for the new Replica Location Service, designed in a joint project by EDG and Globus. This new interface has allowed the LCG Grid Deployment Group to exercise those components before the deployment in EDG, execute stress tests and find potential problems for a production environment.

DataTAG is also participating in a joint project with LCG for the design and

implementation of a new *Grid monitoring tool* based on Nagios to identify deployment problems and general Grid malfunctioning sites or components. Such tools should be used at operation centers for problems spotting. The edt-monitor tool will be deployed on LCG-0 Pilot only for testing purposes. A production release will be available for the LCG-1 Prototype Service.

DataTAG is planning on demonstrating the functionality provided by the LCG-0 release together with an early integration of the Virtual Organization Management Services (VOMS) at the first project review that has taken place the 19th of March 2003.

For more information on the DataTAG project see:
http://www.datatag.org

For more information on the DataTAG/WorldGrid project see:
http://datatag-demo.pi.infn.it

Other references:
http://lcg.web.cern.ch
http://eu-datagrid.web.cern.ch
http://www.ivdgl.org

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