Grids: More than just an infrastructure

Istanbul, 26th September 2008

Enabling Grids for E-sciencE (EGEE) is holding its 5th annual conference this week in Istanbul and it is the breadth of research areas using EGEE that keeps the collaboration vibrant. At each meeting more and more new work is unveiled and this year was no different, with researchers from 50 countries around the world highlighting their latest research in the conference's demonstrations and poster sessions.

EGEE is committed to attracting as many research areas to use grid technologies as possible. In the last 4 years it has been primarily a science grid with applications ranging from particle physics to geology. This year, however, the Italian project ArchaeoGRID demonstrated how the Grid can be used to research the social sciences. The team used the Grid to combine research from across the social sciences to study the rise and fall of societies through the ages, the historical factors that led to global change and even the human effect on the environment.

Climate change is one of the most important issues being researched in modern science and ArchaeoGRID is not the only project investigating this problem using grid technology. EGEE's Earth Sciences Cluster has used Grid services to store, mine and visualise environmental data. The group are already working on seismic and space weather modelling, as well as studying the relationships between regional climate and vegetation change. The ArcheoGRID and Earth Sciences Cluster projects demonstrate not only how different the approaches to solving a single problem can be but also the flexibility of EGEE, supporting both these widely differing areas of research while contributing to the global warming debate.

One of the major driving forces behind the development of the Grid is the Worldwide LHC Computing Grid, WLCG. With the start-up of the Large Hadron Collider, the world's most powerful particle accelerator on 10th September, EGEE is facing its greatest scientific challenge yet. Some 15 Petabytes of data will be generated by the LHC's giant detectors every year, and the Grid will run up to 300,000 executed programs, or jobs per day. Other physics experiments across the globe, which are already capturing data and regularly producing results, also use the EGEE infrastructure. These include the two main Tevatron experiments at Fermi National Accelerator Laboratory, Illinois, US (CDF and DZero), the BaBar experiment, at the Stanford Linear Accelerator Center, California, US and the H1 and ZEUS experiments located at the electron-proton collider HERA at DESY in Hamburg, Germany.

One of the greatest EGEE success stories has been the WISDOM project, a collaboration of eight core institutions in five countries, that has helped to fast-track the development of new drugs to fight malaria and avian flu. This year the people who make up the WISDOM project are using their grid experiences to create a development environment for the entire bio-informatics community. Initiatives such as these demonstrate how the EGEE infrastructure has matured, becoming an integral part of everyday research that will work to accelerate research into many more cures.

The medical community has been interested in grids for a while, not just for their ability to provide a massive amount of processing power but for EGEE's expertise in storage, data delivery and digital security research. A European-wide infrastructure that allows transparent access to medical data without compromising the patients' personal information is the holy grail for hospitals and medical professionals. The Medical Data Manager has been designed by EGEE to interface with the standard systems used by hospitals and medics across the globe. Doctors will be able to study medical images and case notes from anywhere in the world, while maintaining individual anonymity and ensuring only relevant information is made available to authorised users. EGEE grid technologies have the potential to globalise medical research and transform patient care.

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Notes for Editors

The Enabling Grids for E-sciencE (EGEE) project is co-funded by the European Commission. The project aims to provide researchers in both academia and industry with access to major computing resources, independent of their geographic location.

EGEE's main aims are:

1. To build a secure, reliable and robust grid infrastructure
2. To supply a computing resource specifically intended to be used by many different scientific disciplines
3. To attract, engage and support a wide range of users from science and industry, and provide them with extensive technical and training support.

For more information see **http://www.eu-egee.org/** or contact Catherine Gater, EGEE Dissemination, Outreach and Communications Manager, on + 41 22 767 41 76 or email Catherine.Gater@cern.ch.

For conference details visit **http://egee08.eu-egee.org/**

Follow the EGEE conference live via the EGEE'08 GridCast at http://gridtalk-project.blogspot.com/

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Photos and images available.

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