JRA4 – NETWORK SERVICES DEVELOPMENT

The Enabling Grids for E-sciencE (EGEE) project aims to provide a production-quality infrastructure integrating a large number of software components provided by different, geographically distributed organisations. The fifth framework Grid projects, notably the EU DataGrid project (EDG), have defined and deployed the latest generation of Grid software.

Building on this work and the experience acquired, EGEE provides to the Grid applications an environment based on production quality software and facilities available around the clock. The highest priority is to deliver a system with high quality characteristics. Quality assurance is therefore a crucial part of EGEE.

The Network Services Development activity has three sub-activities: network resource allocation/reservation; network performance measurement; and promotion of IPv6 uptake.

These sub-activities are aimed at the evolution of research-level techniques into production-level Grid services. This requires development of software currently available to implement appropriate interfaces, followed by deployment across a very important engagement between EGEE and the GÉANT/NREN network. The activities also ensure a very important engagement between EGEE and the GÉANT/NREN providers, which is essential to develop the ways of working required for the symbiosis of Grid and Network infrastructures in the future.

The objectives of the Network Services Development team include:

- To develop interfaces to the network control plane to allow Grid middleware to make immediate and advance reservations of network connectivity specified in terms of bandwidth, duration and quality of service. A preliminary specification of interfaces was produced in September 2004;
- To develop services that provide access to standardised network performance characteristics, and to compose higher-level services that provide end-to-end measurements of the network for the purposes of application performance determination, fault identification and diagnosis, resource allocation and Service Level Agreements (SLA) adherence monitoring. A prototype of standardised network measurement interfaces is planned for December 2004;
- To study the benefits and availability of IPv6 in the context of EGEE and to promote best practices to smooth the introduction of IPv6 as the default production protocol. The team has initiated contact with 6NET to take forward the promotion of IPv6 within EGEE.

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