

Synergies between Service Grids and Desktop Grids

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Service Grids (SG) are more flexible and can accommodate a broader variety of applications than Desktop Grids, however, their setup and maintenance require more efforts, highly skilled IT specialist, and dedicated resources. On the other hand, Desktop Grids are currently restricted solely to a subclass of compute-intensive applications but these easy-to-scale systems are able to collect 1-2 orders of magnitude more compute power by utilizing the involved spare and volunteer IT resources at a fraction of the cost. Making a bridge between these two types of Grid systems will enable the users to transparently execute applications on any arbitrary platform involved in the new infrastructure. Taking the advantages of both approaches the EDGeS infrastructure represent a major step towards a European wide scientific grid where extremely large number of resources could be integrated to support grand-challenge scientific and other applications.

The objective of the EU FP7 EDGeS project is to integrate (gLite based) service grids and (BOINC and XtremWeb based) desktop grids into a large scientific e-Infrastructure.

The talk first gives an overview of the objectives and technical challenges of the EDGeS project. Then it shows the organization of the Generic Grid-Grid (3G) bridge that is a generic grid service enabling the interconnection of various service grids and desktop grids. The talk will give details on the structure of the BOINC->EGEE bridge and the EGEE->BOINC bridge that are both based on the usage of 3G Bridge. Finally, the talk summarizes the main features and services of the EDGeS production infrastructure that connects currently 6 different desktop grids (univ. level, company level, city level, country level and fully international) to the EDGeS VO of EGEE. The solution can be followed in other continents, too where both gLite and BOINC based grids are available