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Grid Interoperability: Joining Grid Information Systems

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A Grid is defined as being “coordinated resource sharing and problem solving in dynamic, multi-institutional virtual organizations”. Over recent years a number of grid projects, many of which have a strong regional presence, have emerged to help coordinate institutions and enable grids. Today, we face a situation where a number of grid projects exist, most of which have slightly different middleware. Grid interoperation is trying to bridge these differences and enable virtual organizations to access resources at the institutions independent of the grid project affiliation.

Grid interoperation is usually a bilateral activity between two grid infrastructures. Recently within the Open Grid Forum, the Grid Interoperability Now (GIN) Community Group is trying to build upon these bilateral activities. The GIN group is a focal point where all the infrastructures can come together to share ideas and experiences on grid interoperation. It is hoped that each bilateral activity will bring us one step closer to the overall goal of a uniform grid landscape.

A fundamental aspect of a grid is the information system, which is used to find available grid services. As different grids use different information systems, interoperation between these systems is crucial for grid interoperability. This paper describes the work carried out between a number of grid projects to overcome these differences. It focuses on the different techniques used and highlights the important areas for future standardization.

Summary

The work carried out between large grid projects (EGEE, NDGF, OSG, Teragrid, PRAGMA, NAREGI) to reach interoperation between their information systems is described. The different information systems are presented, techniques used to overcome the differences between the grid projects are explained and important aspects for future standardization are identified.

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