Abstract

The University of Edinburgh has a significant interest in mass storage systems as it is one of the core groups tasked with the roll out of storage software for the UK’s particle physics grid, GridPP. We present the results of a development project to provide software interfaces between the SESAM Storage Resource Broker, the EU Data Grid and the Storage Resource Manager. This project was undertaken in association with the eScience group at the National eScience Centre, the Universities of Bristol and Glasgow, Rutherford Appleton Laboratory and the San Diego Supercomputing Center.

Introduction

This paper presents the background and current status of the SHR2SRB project. This project is an attempt to address the need to provide a Storage Resource Manager (SRM) compliant interface to existing distributed data storage solutions, specifically the Storage Resource Broker (SRB) from SESAM. SRM is fast becoming the de facto standard for providing access to data storage facilities on the Grid and as such, the work which has been conducted by other groups in the past few years will be negated, unless there is a way of providing an SRM interface into them.

Existing software

The SESAM Storage Resource Broker (SRB) provides access to multiple data systems including file systems, databases and mass storage systems. Metadata on resources, data, and users, is contained in a central relational database called the Metadata Catalog or MCAT, shown in Figure 1. SRB has been in use at various sites in the UK since the start of the eScience programme in 2001 and UK sites have developed expertise in it and have forged strong links with the development team.

The Storage Resource Manager is a community based standard for providing Grid access to data resources. While there are several implementations of the standard in existence now, there is no single group which is responsible for its development and deployment. This offers the advantage of wide support for the protocol but has the disadvantage that incompatibilities may exist between different implementations. Metadata in SRM is left to the individual developers and groups to deal with to allow optimisation for the problem being addressed.

Conclusions and Future Plans

The SHR2SRB project has shown that there is interest in ensuring that the development work which has been conducted by various groups over the past three years is not lost as new and emerging standards appear. SRM is gaining popularity as an interface to resources but does not match the functionality which the SRB system currently has deployed. Our plans for the SHR2SRB project are to move it past its current development phase and into production use at various sites.

Acknowledgements

We would like to thank the EPSRC, the UK Department of Trade and Industry, Research Councils UK (RCUK) for funding the following: IST-2000-26539 (DASoP) and the GridPP programme, the Rutherford Appleton Laboratory for the GridPP infrastructure, the University of Edinburgh and the EPSRC for the GridPP Centre of Excellence.

References and Links

GridPP:  
http://www.gridpp.ac.uk

Data Grid:  
http://www.ed.ac.uk/infrastructure/infrastructure-data-grid

ScotGrid:  
http://www.scotgrid.org.uk

Acknowledgements

We wish to thank the EPSRC, the UK Department of Trade and Industry, Research Councils UK (RCUK), and the GridPP programme for the funding we received. The GridPP infrastructure was provided by the University of Edinburgh and the EPSRC for the GridPP Centre of Excellence.