Grid Interoperation: SRM-iRODS interface Development

The common concerns of large-scale scientific projects are for immediate sharing and discovery of data among collaborating researchers and to provide reference collections for long-term preservation to enable future research. Because of the challenges in integrating data from diverse projects a coherent open repository framework is necessary. iRODS is one that has already been used for digital library applications, persistent archiving, and real-time data systems, where management policies are characterized in terms of rules and state information. Storage Resource Manager (SRM) is based on a common interface specification, which is a widely adopted interface to the storage management system of production grids currently. With the heterogeneity of Grid, the best way to share data is to integrate data sources through SRM, a uniform interface with dynamic space and file management. In ASGC, The standard SRM services for iRODS were developed to make the popular iRODS data grid system interoperable with the gLite infrastructure and support the SRM services for iRODS, such as space reservation and VO support etc. Other than the basic directory, permission and data access functions, user authorization, web service interface…etc. had been implemented. In the first phase, targeted use cases are to: 1) Make iRods an archival system of gLite-based e-Infrastructure, 2) Support flexible lifetime policy for files - volatile, durable, and permanent, and 3) Impose the VO-based resource policy and security control to iRods as the Grid infrastructure. In this project, we built on a GridFTP server, an AMGA Server developed for iRODS, to make an iRODS look like a Classic Storage Element. This allowed the gLite tools to transfer files between SRMsand iRODS. On another words, the gLite is able to take advantage of iRODS federation among different administrative zones. Roadmap of this project is to implement the SRM functions for iRods based on SRM v2.2 at the first phase.

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