Contribution ID: **116**   Type: **oral presentation**

Enabling Grid features in dCache

Tuesday, 14 February 2006 16:40 (20 minutes)

dCache collaboration actively works on the implementation and improvement of the features and the grid support of dCache storage. It has delivered Storage Resource Managers (SRM) interface, GridFtp server, Resilient Manager and Interactive Web Monitoring tools. SRMs are middleware components whose function is to provide dynamic space allocation and file management of shared storage components on the Grid. SRMs support protocol negotiation and a reliable replication mechanism. The SRM standard allows independent institutions to implement their own SRMs, thus allowing for a uniform access to heterogeneous storage elements. Fermilab has implemented SRM interface v1.1 for dCache and now actively pursues SRM v2.1 implementation. GridFtp is a standard grid data transfer protocol, which supports GSI authentication, control channel encryption, data channel authentication, and extended block mode parallel transfers. We have implemented and continue to improve the GridFtp server in dCache. Resilient Manager is a top-level service in dCache, which is used to create a more reliable and highly available data storage out of the commodity disk nodes, which are part of dCache. New interactive web-based monitoring tools will dramatically improve the understanding of a complex distributed system like dCache by both administrators and users. The monitoring includes a variety of plots and bar diagrams graphically representing the state and history of the dCache system. I will discuss these features and the benefits derived from them to Grid Storage Community.

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Session Classification: Grid Middleware and e-Infrastructure Operation

Track Classification: Grid middleware and e-Infrastructure operation