CHEP'07
VICTORIA, BC

Contribution ID: **440**   Type: **poster**

Towards the Integration of StoRM on Amazon Simple Storage Service (S3)

Wednesday 5 September 2007 08:00 (20 minutes)

In Grid systems, a core resource being shared among geographically-dispersed communities of users is the storage. For this resource, a standard interface specification (Storage Resource Management or SRM) was defined and is being evolved in the context of the Open Grid Forum. By implementing this interface, all storage resources part of a Grid could be managed in an homogenous fashion. In this work, we consider the extension of StoRM (STOrage Resource Manager, an implementation of SRM v2.2) in order to integrate a new type of storage resource: the Amazon Simple Storage Service (S3). Amazon S3 is a simple Web services interface offering access to the same highly scalable, reliable, fast, inexpensive data storage infrastructure that Amazon uses to run its own global network of Web sites. By performing this integration, we offer to the Grid community the capability to manage and access an incredible amount of storage resources freeing them from considering the costs associated with server maintenance, or whether they have enough storage available. The characteristics of StoRM are suitable for a smooth integration with Amazon S3. In particular, StoRM is designed to be easily adapted to the underlying storage resource via a plug-in mechanism, therefore a new plugin for integration with the Amazon S3 Web Service will be written. As regards the access policies, StoRM translates the Grid authorization rules into the Amazon S3 ones and applies them to the Amazon Web Services identity.

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Session Classification: Poster 2

Track Classification: Grid middleware and tools