20th International Conference on Computing in High Energy and Nuclear Physics (CHEP2013)

Contribution ID: **243** Type: **Poster presentation**

The DMLite Rucio Plugin: ATLAS data in a filesystem

Monday, October 14, 2013 3:00 PM (45 minutes)

Rucio is the next-generation data management system supporting ATLAS physics workflows in the coming decade. Historically, clients interacted with the data management system via specialised tools, but in Rucio additional methods are provided. To support filesystem-like interaction with all ATLAS data a plugin to the DMLite software stack has been developed. It is possible to mount Rucio as a filesystem, and execute regular filesystem operations in a POSIX fashion. This is exposed via various protocols like HTTP/WebDAV or NFS, which then removes any dependency on Rucio for client software. The main challenge for this work is the mapping of the set-like ATLAS namespace into a hierarchical filesystem, whilst preserving the high performance features of the former. This includes listing and searching for data, creation of files, datasets and containers, and the aggregation of existing data - all within POSIX directories with potentially millions of entries. This contribution will detail the design and implementation of the plugin, and demonstrate how physicist can interact with ATLAS data via commonly available and standard tools. Furthermore, an evaluation of the performance characteristics is given, to show that this approach can scale to the requirements of ATLAS physics analysis.

Primary author: LASSNIG, Mario (CERN)

Co-authors: ALVAREZ AYLLON, Alejandro (CERN); VAN DONGEN, Daan (C); CALFAYAN, Philippe (Ludwig-Maximilians-Univ. Muenchen (DE)); BRITO DA ROCHA, Ricardo (CERN)

Presenter: LASSNIG, Mario (CERN)

Session Classification: Poster presentations

Track Classification: Data Stores, Data Bases, and Storage Systems