

BaBar DataGrid using Storage Resource Broker

The BaBar experiment at the Stanford Linear Accelerator Center studies electron-positron collisions at asymmetric energies as a way to investigate properties of interactions that produce B mesons. Measurements of the characteristics of how a fundamental symmetry (CP) is violated in these interactions may ultimately lead to an understanding of why the observed universe is dominated by matter over antimatter.

Through participation in the Particle Physics Data Grid, BaBar has been using the Storage Resource Broker (SRB V3) in production for bulk data distribution from SLAC since late last year. Since that time more than 160,000 files corresponding to approximately 60TB of experimental data have been stored in the SRB and distributed to France (CCIN2P3). There have been over 1.5million SRB operations (queries, registration of new files, etc) performed on the metadata catalog (MCAT) during the data taking year by the small number of users (typically 5-6) taking part in the distribution of bulk data. The distributed data has been used extensively for data analysis at CCIN2P3 since May.

SRB V3 has the capability to couple separate metadata catalogs together in a federation (called zoned MCAT) and this is being evaluated and tested for usage in BaBar. It is planned to combine the SRB installations at SLAC and CCIN2P3 in this zoned MCAT mode for the coming run. This use of SRB is providing a significant improvement to the reliability and level of effort required to distribute BaBar data from SLAC to other centers for data analysis by the scientists.

URL's:

BaBar - www.slac.stanford.edu/BFROOT/

PPDG – www.ppdg.net

SRB – www.sdsc.edu/DICE/SRB