

The SAM-Grid / LCG interoperability system: a bridge between two Grids

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The SAM-Grid system is an integrated data, job, and information management infrastructure. The SAM-Grid addresses the distributed computing needs of the experiments of RunII at Fermilab. The system typically relies on SAM-Grid services deployed at the remote facilities in order to manage the computing resources. Such deployment requires special agreements with each resource provider and it is a labor intensive process. On the other hand, the DZero VO has also access to computing resources through the LCG infrastructure. In this context, resource sharing agreements and the deployment of standard middleware are negotiated within the framework of the EGEE project.

The SAM-Grid / LCG interoperability project was started to let DZero users retain the user-friendliness of the SAM-Grid interface, allowing, at the same time, access to the LCG pool of resources. This “bridging” between grids is beneficial for both the SAM-Grid and LCG, since it minimizes the deployment efforts of the SAM-Grid team and exercises the LCG computing infrastructure with data intensive production applications of a running experiment.

The interoperability system is centered around job “forwarding” nodes, which receive jobs prepared by the SAM-Grid and submit them to LCG. This paper discusses the architecture of the system and how it addresses inherent issues of service accessibility and scalability. The paper also presents the operational and support challenges that arise to operate the system in production.

Primary authors: BARANOVSKI, Andrii (Fermilab); GABRIELE, Garzoglio (FERMI NATIONAL ACCELERATOR LABORATORY); MHASHILKAR, Parag (Fermilab)

Co-authors: RAJENDRA, Anoop (University of Texas at Arlington); REDDY, Sudhamsh (University of Texas at Arlington); KURCA, Tibor (CCIN2P3); HARENBERG, Torsten (University of Wuppertal)

Presenter: GABRIELE, Garzoglio (FERMI NATIONAL ACCELERATOR LABORATORY)

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