Contribution ID: **169**   Type: **Poster**

The CMS Data Transfer System: scaling up to a reliable LHC scenario

Describe the scientific/technical community and the scientific/technical activity using (planning to use) the EGEE infrastructure. A high-level description is needed (neither a detailed specialist report nor a list of references).

The CMS experiment needs to sustain uninterrupted high reliability, high
throughput and very diverse data transfer activities as the LHC operations start. PhEDEx, the CMS data transfer system, is responsible for the full range of the transfer needs of the experiment. At the infraestructural level, PhEDEx interacts with the local storage, grid file transfer services, the CMS dataset bookkeeping system, the dataset location system and a site-local file catalogue.

Report on the experience (or the proposed activity). It would be very important to mention key services which are essential for the success of your activity on the EGEE infrastructure.

As said, we have sustained production transfers exceeding 1 PB/month for several months and have demonstrated core system capacity several orders of magnitude above expected LHC levels.

The Phedex application is build on top of key services like, for example, the grid file transfer service (FTS). In the poster we will also cover some of the new modifications included in Phedex in order to accomodate to recent FTS 2.0 release.

Describe the added value of the Grid for the scientific/technical activity you (plan to) do on the Grid. This should include the scale of the activity and of the potential user community and the relevance for other scientific or business applications

Phedex provides an interface for CMS and site data managers to manage and monitor data placement decisions, schedules transfer requests for execution, and dispatches file transfers to underlying grid file and storage management services.

In order to produce the system with confirmed capability to meet the objectives, the PhEDEx data transfer system has undergone rigourous development and numerous demanding scale tests. We have sustained production transfers exceeding 1 PB/month for several months and have demonstrated core system capacity several orders of magnitude above expected LHC levels.

We describe the level of scalability reached, and how we got there, with focus on the main insights into developing a robust, lock-free and scalable distributed database application, the validation stress test methods we have used, and the development and testing tools we found practically useful. We expect sharing this to be useful for developers building robust applications on Data management

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