

An http data-federation eco-system with caching functionality using DPM and Dynafed

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The implementation of Cache Systems in the computing model of HEP experiments enables to accelerate access to hot data sets by scientists, opening new scenarios of data distribution and enable to exploit the paradigm of storage-less sites.

In this work, we present a study for the creation of an http data-federation eco-system with caching functionality. By exploiting the volatile-pool concept introduced in the last version of Disk Pool Manager, we created a code plugged in the logic of a DPM Storage, able to simulate the cache behaviour. Then we used Dynafed as light federation system to aggregate a set of standard Grid Storages with the cache system. With the designed setup, clients asking for a file present on the Data-Grid, but located closer to the cache rather than to physical location of the file, are automatically redirected to the cache thanks to the action of the geo-plugin run by Dynafed.

As proof of the concept, we tested the whole system in a controlled environment within the Belle II computing infrastructure using a set of files located in production Storage Elements. Preliminary results demonstrate the proper functionality of the logic and encourage continuing the work.

Primary authors: MICHELINO, Davide (Universita e INFN, Napoli (IT)); PARDI, Silvio (INFN); SPISSO, Bernardino (INFN); RUSSO, Guido (Universita e sezione INFN di Napoli (IT))

Presenter: PARDI, Silvio (INFN)

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