

WLCG Demonstrator

WLCG storage, Cloud Resources and volatile storage into
HTTP/WebDAV-based regional federations

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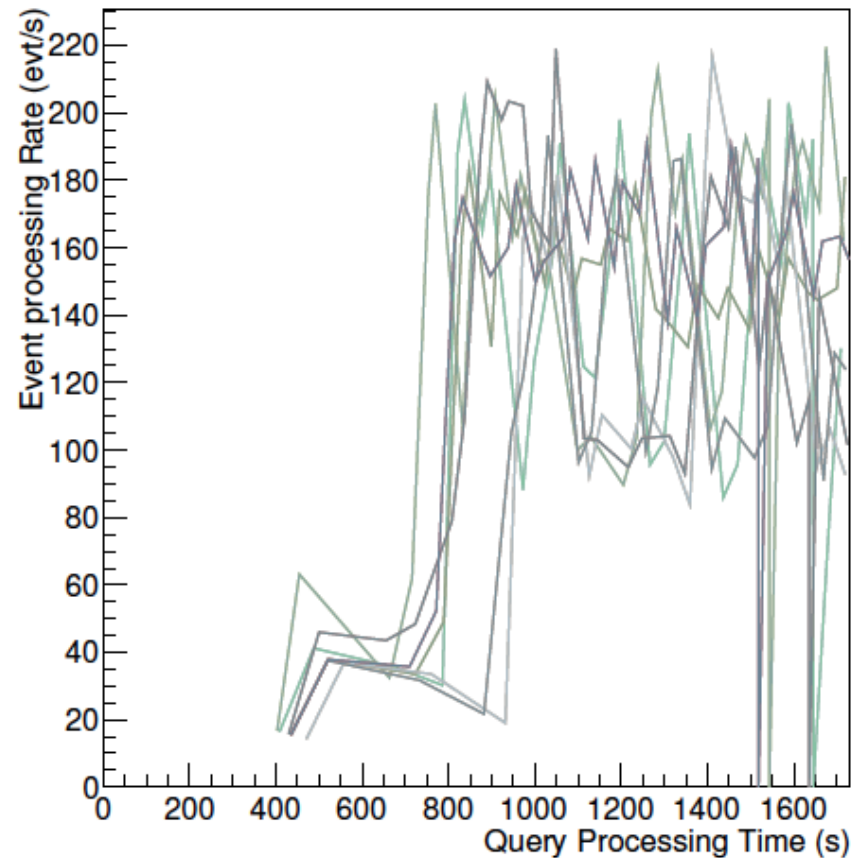


- The input data access of a PROOF based analysis using the HTTPS/WebDav access for DPM was tested.
- The input dataset accessed through the Dynamic Federation with HTTP/WebDav, with the federator server located at DESY.
- PROOF-based analysis run on a PROOF cluster setup with PoD/PanDA, to **test the fallback mechanism of the Dynamic Federation**, using another server from the Federation when the original one goes down.
- The input dataset was stored both in the DPM SEs at Frascati and Naples ATLAS Tier2.
- During the tests the network connections of the PROOF cluster nodes were checked, with a focus on those towards the SEs and the federator.

DynaFed behaves as expected



- The first PROOF task was launched while both SEs were up and the federator effectively redirected the workers to the closer Frascati SE, as expected.
- The task was launched a second time after bringing down the Frascati SE; the federator then redirected the workers to the Naples SE.
- After two minutes of task execution, Frascati SE was silently enabled again.
- In about 5 minutes the workers stopped accessing data from Naples and went back to Frascati.
- The transition phase, with the related boost of the rate of processed events is visible in the plot, where a delay can be observed as expected from the DynaFed behavior.



Future plans with DynaFed in Italy



- A Dynamic Federation will be set up, installing a federator test server for ATLAS in Italy
- Several ATLAS sites (different SRM: DPM and StoRM) will be involved, starting with Frascati, Napoli, Roma and CNAF.
- At the state of the art, the DynaFed cannot be tested using ATLAS Panda jobs, a custom setup for interactive job submission will be used.
- Functionality and performance tests will be accomplished.
- Comparison between FAX and DynaFed will be performed.

Elastic extensions of the CNAF T1



- Currently working with different cloud providers in order to test dynamic, elastic extensions for the INFN-T1
 - The main problem is represented by the storage access
- Different Cloud providers and/or external resource owners involved
 - Aruba
 - CloudItalia
 - Unicredit
 - Microsoft
 - \$20K grant now in place, collaboration starting now
 - ...

Elastic extensions of the CNAF T1: storage access



- Different possibilities of data access
 - GPFS over WAN
 - Needs a performant AFM cache
 - Already in place between CNAF and Bari, but needs some tuning for clouds
 - Storage federations
 - Xrootd and Https/WebDAV
 - Caching solutions like Xrootd caching, Varnish + WebDAV or DPM in caching mode
- Testing plans for the next months
 - We plan to use the different testbeds like the ones with Microsoft and CloudItalia to test both the direct access of storage federations with caching and the use of DPM in caching mode
 - We also plan to evaluate the full in-cloud DPM setup or the hybrid situation with the DPM head node in INFN and the DPM pools in the cloud, possible with the testing version of DPM and DOME