

WLCG DOMA Project: French View

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Introduction

- France is motivated to participate to the WLCG DOMA project but is expecting the kick-off meeting to help identify more precisely the possible concrete contributions
 - Several sites involved actively in the DPM community
 - Next LCG France meeting end of June: an opportunity to discuss the kick-off meeting outcome
- GRIF is a single distributed grid site, not a federation, and may benefit from the data-lake ideas internally
 - A good testbed
- LCG France has closed relationships with RENATER (NREN)
 - Could help a detailed troubleshooting
 - May also allow experiment related to the advanced/fancy network configurations

GRIF Use Case

- GRIF is made of 5 sub-sites in 4 geographical locations
 - 3 locations part of University Paris Saclay, a 5 km square area, with an upcoming (Fall 2018) 100G connection between them
- Original goal was to offer unified resources to VOs but it was not possible to keep a high availability of the whole site
 - 2 years ago, started to unify compute resources in a global HTCondor pool (currently 2 sub-sites) but not done for storage so far
 - Already have a good/positive experience of running jobs in one subsite with the storage in another subsite (CMS & LHCb)
 - This fragmented storage has been an issue with ATLAS because the same space tokens were present on every sub-site and is the reason why GRIF is not a nucleus ATLAS site, despite its global size
- Good experience to serving storage with https/WebDav
 - Non LHC VO with high request rate (50 Hz sustained)

GRIF Storage Possible Future Directions

- Several plans discussed in the last year to unify the storage
 - A non-grid ongoing project started this year by the same sites: deployment of a distributed Ceph infrastructure between the 3 UPSaclay locations
- DPM à la HTCondor: redundant master with disk servers distributed across subsites
 - At least 2 master needed to be resilient to a site failure (e.g. power outage)
 - Naples exploring a similar approach
 - Some developments may be needed in DPM...
- Use Ceph for the grid storage
 - DPM in front of the distributed Ceph used to provide block devices
 - Pure Ceph storage with the necessary gateway, based on RAL Echo service

Other Possible French Activities

- “Diskless” compute sites using remote data on a long distance
 - Some of the smaller T2s may be interested not to provide all the required storage for a VO
 - CCIN2P3 and the largest T2s may be the data warehouse for these sites
 - Impact of caching strategy/technologies
- CCIN2P3 provides a large tape capacity via HPSS, configured in particular as a dCache backend
 - May participate to activities related to tiered storage in WLCG DOMA
- Usability of the new architecture for astro-particles VOs
 - Several French sites involved in CTA and Belle II computing
- France (CCIN2P3 + LAPP) involved in the submitted ESCAPE European project
 - WLCG + France involvement strongly connected to the “Data-lake” activity