

LISA data analysis

Context

- LISA is a large ESA mission, to be launched in 2030's
- The distributed data processing center (DDPC) is under French responsibility
- APC is the leading lab of this component in coordination with CNES :
→ ~ 5 FTE in phase A including 2 FTE of IT people

The LISA computing model

- A distributed DPC : several data centers, a single software environment
- Constraints on CPU more stringent than those on I/O and storage (TBC)
- R&D within ComputeOps
- Simulation and data analysis (da) pipelines already available to test a prototype
- a proto-DDPC is needed now to support sim and da in the instrumental design

LISA @ CCIN2P3

| Activity | Usage | Comments |
|-----------|--|--|
| Computing | < 1e6 HS06.h used in 2018 > 1e6 HS06.h used in Jan. 2019 | Setting up singularity jobs MPI/singularity working |
| Services | GitLab since 2015 Atrium since 2016, ~ 1000 external accounts | APIrest + home made webapp. |

What we need

- **Coordination :**

- involving the CCIN2P3 in the computing model design activity to insure that the targeted infrastructure matches the existing facilities
- the cost will be then reduced and resources mutualized.
- LISA is a large ESA mission, with a high visibility.
- first simulations and pipelines ready to test a prototype of the computing model
- a WG is under construction now, it's a good time to join

- **Authentication/authorization :**

- how to go towards a single login for all services, synchronized with the LISA consortium repository ?
- same to access computing facilities ?
- with 1000 LISA users already using Atrium and GitLab, it is essential for the mission to ease the access to those services.
- an LDAP repository will be made available by the PI lab this year.

- **Costing :**

- Before the adoption (2024) we will need a costing model of our CPU + services usage.
- We would like to take benefit of our early involvement to get a precise costing model
- The costing model is necessary to secure the French responsibility, and to discuss and dispatch the load with other partners.
- There are already a handful of other countries interested in contributing to the DDPC (hardware and/or software).