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INFN Pisa scientific computation environment (GRID HPC and Interactive analysis)

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The INFN-Pisa Tier2 infrastructure is described, optimized not only for GRID CPU and Storage access, but also for a more interactive use of the resources in order to provide good solutions for the final data analysis step. The Data Center, equipped with about 5000 production cores, permits the use of modern analysis techniques realized via advanced statistical tools (like RooFit and RooStat) implemented in multi core systems.

In particular a POSIX file storage access integrated with standard srm access is provided. Therefore the unified storage infrastructure is described, based on GPFS and Xrootd, used both for SRM data repository and interactive POSIX access. Such a common infrastructure allows a transparent access to the Tier2 data to the users for their interactive analysis.

The organization of a specialized many cores CPU facility devoted to interactive analysis is also described along with the login mechanism integrated with the INFN-AAI (National INFN Infrastructure) to extend the site access and use to a geographical distributed community.

Such infrastructure is used also for a national computing facility in use to the INFN theoretical community, it enables a synergic use of computing and storage resources. Our Center initially developed for the HEP community is now growing and includes also HPC resources fully integrated. In recent years has been installed and managed a cluster facility (1000 cores, parallel use via InfiniBand connections) and we are now updating this facility that will provide resources for all the intermediate level HPC computing needs of the theoretical national INFN community.

Summary

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