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Distributed data analysis system for CMD-3 detector

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Abstract content

The architecture and the implementation of the distributed data analysis system for CMD-3 detector is presented. The system effectively uses available heterogeneous resources for data storing and processing. Two type of the resources are used: local computing cluster, dedicated to CMD-3 data storage and processing, and dynamically allocated resources of supercomputers at BINP, SSCC and NUSC. A uniform data processing cloud, a CMD-3 Cloud, with transparent user access and HTCondor as the batch system is organized over available set of different resources. Dedicated level of software, Large File Catalog (LFC), is used for data storage and access. The local cluster nodes are used as the main repository for detector data. Additional storage at BINP supercomputer is used for data caching and as temporal working space. LFC provides universal interface for data access, using XROOTD or SSH as transport protocol. If neccessary, the management level of the CMD-3 Cloud system dynamically allocates resources at supercomputers with the help of virtualization technology. The system is fully implemented and operational.

Summary

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