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Integration of A Supercomputing Center in LHAASO Distributed Computing System

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LHAASO experiment is a new generation multi-component experiment designed to study cosmic rays and gamma-ray astronomy. The data volume from LHAASO are currently reaching to ~40PB and ~11PB of new data will be generated every year in the future. Such scale of data needs a big scale of computing resources to process. For LHAASO experiment, there are several types of computing sites to join the LHAASO distributed computing system, that a supercomputing center is one of them. To adding a supercomputing center, several components are developed: 1. a site job agent based on HTCCondor is deployed in front of the batch system of the site; 2. two proxy services are respectively responsible to job schedule and data transfer from central side to the site across the firewall of supercomputing center; 3. a service synchronizes the necessary data to a shared filesystem of the site, including the software. 4. job running environment is wrapped inside a container. The services have been deployed in a Chengdu Supercomputing Center and the test results indicate an acceptable performance on job schedule (thousands of jobs) and data transfer (tens of TB).

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