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Dataset-based High-Level Data Transfer System in BESDIRAC

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Data Transfer is an essential part in grid. In the BESIII experiment, the result of Monte Carlo Simulation should be transferred back from other sites to IHEP and the DST files for physics analysis should be transferred from IHEP to other sites. A robust transfer system should make sure all data are transferred correctly.

DIRAC consists of cooperation distributed services and light-weight agents delivering the workload to the Grid Resources. We reuse the most basic functionalities supplied by DIRAC. BESDIRAC is an extension to DIRAC for BES specified. In BESDIRAC, a Dataset-based Data Transfer System is developed. In this paper, we present the design of this system and its implementation details. A Transfer Request Service is used for creating and monitoring

the transfer requests. A Transfer Agent is used for transferring data from one SE to another.

For flexibility and reuse of the current low-level transfer systems, we have designed a transfer worker factory to create transfer workers with different protocols. A transfer worker is the wrapper of the low-level file transfer commands. The Transfer Agent uses the Async I/O to manage the transfer workers.

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