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Storage Resource Manager version 2.2: design, implementation, and testing experience

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Storage Services are crucial components of the Worldwide LHC Computing Grid (WLCG) infrastructure spanning more than 200 sites and serving computing and storage resources to the High Energy Physics LHC communities. Up to tens of Petabytes of data are collected every year by the 4 LHC experiments at CERN. To process these large data volumes it is important to establish a protocol and a very efficient interface to the various storage solutions adopted by the WLCG sites. In this work we report on the experience acquired during the definition of the Storage Resource Manager v2.2 protocol. In particular, we focus on the study performed to enhance the interface and make it suitable for use by the WLCG communities. At the moment 5 different storage solutions implement the SRM 2.2 interface: BeStMan (LBNL), CASTOR (CERN, RAL, and INFN), dCache (DESY and FNAL), DPM (CERN), and StoRM (INFN and ICTP). After a detailed inside review of the protocol, various test suites have been written identifying the most effective set of tests: the S2 test suite from CERN and the SRM-Tester test suite from LBNL. Such test suites have helped verifying the consistency and coherence of the proposed protocol and validating existing implementations. We conclude our work describing the results achieved.

Summary

SRM 2.2 definition and testing experience

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