

The ALICE Online Data Storage System

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The ALICE (A Large Ion Collider Experiment) Data Acquisition (DAQ) system has the unprecedented requirement to ensure a very high volume, sustained data stream between the ALICE Detector and the Permanent Data Storage (PDS) system which is used as main data repository for Event processing and Offline Computing. The key component to accomplish this task is the Transient Data Storage System (TDS), a set of data storage elements with its associated hardware and software components, which supports raw data collection, its conversion into a format suitable for subsequent high-level analysis, the storage of the result using highly parallelized architectures, its access via a cluster file system capable of creating high-speed partitions via its affinity feature, and its transfer to the final destination via dedicated data links.

We describe the methods and the components used to validate, test, implement, operate, and monitor the ALICE Online Data Storage system and the way it has been used in the early days of commissioning and operation for the ALICE Detector. We will also introduce the future developments needed from next year, when the ALICE Data Acquisition System will shift its requirements from those associated to the test and commissioning phase to those imposed by long-duration data taking periods alternated by shorter validation and maintenance tasks which will be needed to adequately operate the ALICE Experiment.

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