

Improvements to the LHCb software performance testing infrastructure using message queues and big data technologies

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Software is an essential component of the experiments in High Energy Physics. Due to the fact that it is upgraded on relatively short timescales, software provides flexibility, but at the same time is susceptible to issues introduced during development process, which enforces systematic testing. We present recent improvements to LHCbPR, the framework implemented at LHCb to measure physics and computational performance of complete applications. Such infrastructure is essential for keeping track of the optimisation activities related to the upgrade of computing systems which is crucial to meet the requirements of the LHCb detector upgrade for the next stage of data taking of the LHC. Latest developments in LHCbPR include application of messaging system to trigger the tests right after the corresponding software version is built within LHCb Nightly Builds infrastructure. We will also report on the investigation of using big data technologies in LHCbPR. We have found that using tools such as Apache Spark and Hadoop Distributed File System may significantly improve the functionality of the framework, providing an interactive exploration of the test results with efficient data filtering and flexible development of reports.

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