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The new ALICE DQM client: a web access to ROOT-based objects

A Large Ion Collider Experiment (ALICE) is the heavy-ion detector designed to study the physics of strongly interacting matter and the quark-gluon plasma at the CERN Large Hadron Collider (LHC). The online Data Quality Monitoring (DQM) plays an essential role in the experiment operation by providing shifters with immediate feedback on the data being recorded in order to quickly identify and overcome problems.

An immediate access to the DQM results is needed not only by shifters in the control room but also by detector experts worldwide.
As a consequence, a new web application has been developed to dynamically display and manipulate the ROOT-based objects produced by the DQM system in a flexible and user friendly interface.

This paper describes the architecture and design of the tool, its main features and the technologies that were used, both on the server and the client side. In particular, we detail how we took advantage of the most recent ROOT JavaScript I/O and web server library to give interactive access to ROOT objects stored in a database. We describe as well the use of modern web techniques and packages such as AJAX, DHTMLX and Jquery, which has been instrumental in the successful implementation of a reactive and efficient application.

We finally present the performance of this application under normal and peak load and how code quality was ensured. We conclude with a roadmap for future technical and functional developments.

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