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PROOF Analysis Framework (PAF)

The PROOF Analysis Framework (PAF) has been designed to improve the ability of the physicist to develop software for the final stages of an analysis where typically simple ROOT Trees are used and where the amount of data used is in the order of several terabytes. It hides the technicalities of dealing with PROOF leaving the scientist to concentrate on the analysis. PAF is capable of using available non specific resources on, for example, local batch systems, remote grid sites or clouds through the integration of other toolkit like PROOF Cluster or PoD. While it has been successfully used on LHC Run-1 data for some key analysis, including the H->WW dilepton channel, the higher instantaneous and integrated luminosity together with the increase of the center-of-mass energy foreseen for the LHC Run-2, which will increment the total size of the samples by a factor 6 to 20, will demand PAF to improve its scalability and to reduce the latencies as much as possible. In this paper we address the possible problems of processing such big data volumes with PAF and the solutions implemented to overcome them. We will also show the improvements in order to make PAF more modular and accessible to other communities.

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