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Enabling distributed analysis for ALICE Run 3

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The ALICE Collaboration has just finished a major detector upgrade which increases the data-taking rate capability by two orders of magnitude and will allow to collect unprecedented data samples. For example, the analysis input for 1 month of Pb-Pb collisions amounts to about 5 PB. In order to enable analysis on such large data samples, the ALICE distributed infrastructure was revised and dedicated tools for Run 3 analysis were created. These are firstly the O2 analysis framework which builds on a multi-process architecture exchanging a flat data format through shared memory implemented in C++. Secondly, the Hyperloop train system for distributed analysis on the Grid and on dedicated analysis facilities implemented in Java/Javascript/React. These systems have been commissioned with converted Run 2 data and with the recent LHC pilot beam and are ready for data analysis for the start of Run 3. The talk will discuss the requirements and the used concepts, providing details on the actual implementation. The status of the operation in particular with the LHC pilot beam will also be discussed.

In-person participation

Yes

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