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RNTuple - The Next Generation TTree

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The volume of generated data in upcoming HEP experiments, e.g. at the HL-LHC, is expected to increase by at least one order of magnitude. In order to retain the ability to analyse the influx of data, full exploitation of modern storage hardware and systems, such as low-latency high-bandwidth NVMe devices and distributed object stores, becomes critical.

To this end, the ROOT RNTuple I/O subsystem has been designed to address performance bottlenecks and shortcomings of ROOT's TTree. RNTuple provides a backwards-incompatible redesign of the TTree binary format and access API that evolves the ROOT event data I/O for the challenges of the upcoming decades. It focuses on a compact data format, on performance engineering for modern storage hardware, and on robust interfaces that are easy to use correctly.

In this contribution, we provide a brief introduction to RNTuple, giving some insights on its support for the Intel DAOS object store including the latest collected performance numbers.

Summary

In this contribution, we provide a brief introduction to RNTuple, giving some insights on its support for the Intel DAOS object store including the latest collected performance numbers.

Primary authors: BLOMER, Jakob (CERN); LOPEZ-GOMEZ, Javier (CERN)

Presenters: BLOMER, Jakob (CERN); LOPEZ-GOMEZ, Javier (CERN)

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