In-memory file merging aka PR1073

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ROOT IO Workshop

Motivation

- Stress testing and benchmarking TBufferMerger and TFileMerger
- We do not want to create millions files on disk to avoid damaging of the hardware

Implementation

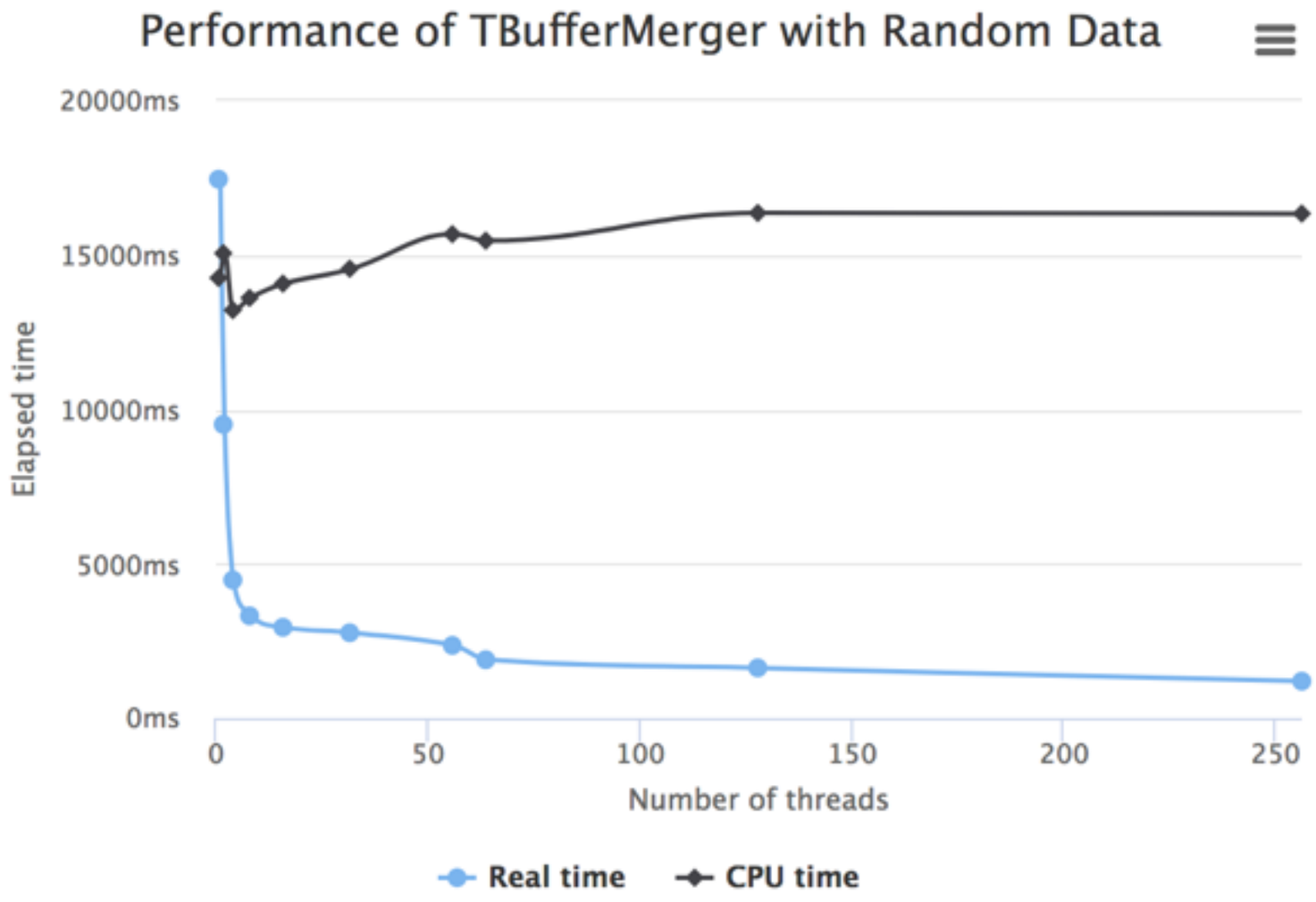
- TBufferMerger and TFileMerger's output files can be set to an externally created TFile.
- Still a few rough edges like TFileMerger::Merge will Close() and delete the output file. It is an issue if it was an externally provided in-memory file because the contents are gone.

Working In-memory

- TMemFile is a TFile residing in RAM. We can specialize it further to model certain hardware properties

- For example, one can model behavior of very fast, slow or broken drives to test and benchmark ROOT I/O

Example of an In-memory Benchmark



Benchmark from 01.08.2017 for the IPCC-ROOT Presentation

Future Directions

- Teach more ROOT I/O interfaces to work with externally created TFiles.

- It will help us write more benchmarks simulating various situations