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P2.034 Benchmarking high performance ITER CODAC data archiving system

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High-speed long pulse archiving systems are critically sensitive to the latencies produced by hardware and software along full archiving chain. Therefore, detailed studying of this phenomenon, estimating its impact on archiving process, correct selecting and commissioning of the hardware for archiving purpose, optimizing of archiving system configuration are indispensable steps to achieve stable loss-less data archiving.

The aim of this work is to present results of profiling tools development and investigation performed on ITER archiving system for DAN (Data Archiving Network), that includes data from diagnostics and fast control and with highest data archiving performance. Low invasive data collectors with millisecond resolution and ready to work in 10Gb data archiving network, have been developed as well as profiling data injectors. Processing and visualizing tools provides all required functionality for a conscientious study of disk/file system latencies and network performance with realistic estimations of minimal resources for loss-less archiving.

The work describes an efficient methodology of verifying suitability of given hardware for data archiving based on ITER CODAC technology, and also presents results of its application over a real data archiving infrastructure. They include observations of several phenomena, that were affecting real-time archiving and were detected on network and file storage system, and corrections on data archiving parameters to mitigate these phenomena.

Efficient methodology of verifying suitability of given hardware for DAN archiving purposes was developed.

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