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Perfmon2 - A leap forward in performance monitoring

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A new interface to the performance monitoring hardware of almost all supported hardware processors (AMD, IBM, INTEL, SUN, etc.) is in the process of being added to the Linux 2.6 kernel.

CERN openlab has participated in some of the development together with one of the key developers from HP labs.

In this talk we review the capabilities of this interface on relevant platforms, such as the recent Intel Core 2 based processors. Amongst other things, the interface enables a job profiling capability that is non-intrusive and can cover everything from a single process to an entire system. Dynamic libraries are also handled transparently, even if they are unloaded and reloaded –a key requirement for our applications. We review the design of this interface and we discuss how a test service has been established at CERN for analyzing the performance of the entire frameworks of the LHC experiments with an aim of allowing all developers to get control of the performance of their software. Finally we show some of the early results from this exciting new monitoring capability.

Summary

Review of a new performance monitoring interface in the Linux kernel and description of how this can help tune LHC software frameworks.

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