

Quote Sheet: National Instruments LabVIEW 8.5

"With LabVIEW and a PXI dualcore embedded controller, we are achieving a 5x speed savings versus our previous generation GPIB-racked instruments testing RF modules and cell phones. We were able to achieve significant performance gains by moving test systems from GPIB instrumentation onto the PXI platform, adding the multicore processor and by optimizing our software within LabVIEW to execute code in parallel processes instead of sequentially."

Mark Jewell, Business Development Manager – Wireless, AmFax

"We use a straight-forward multi-loop approach to harness the LabVIEW multithreaded architecture. So now that there are multiple cores to process those loops, we can get more channels and more real-time data acquisition and analysis. There was no need to rewrite our application for the new multi-core processing platforms; National Instruments did the work for us in the way they designed the LabVIEW software."

Scott A. Sirrine, Lead Product Engineer, Eaton Corporation

"In the first design stage of our control application programmed with LabVIEW, we have obtained a 20X processing speed-up on an octal-core processor machine over a single-core processor, while reaching our 1ms control loop rate requirement."

Dr. Louis Giannone, Lead Researcher, Max Planck Institute

"Our Advanced Concepts Group at NASA Ames Research Center has been using LabVIEW Real-Time and PXI real-time controllers for our Wind Tunnel Safety of Flight system for three years. We recently had our most complex test to date where we benchmarked LabVIEW 8.5 Real-Time with support for symmetric multiprocessing (SMP) on a PXI-8106RT controller based on the Intel Core 2 Duo processor. The results showed that the time critical loop in our application was reduced from 43% CPU load in our previous single-core system, to 30% load on one CPU of the PXI-8106RT with an entire core leftover for additional processing of non-critical tasks. This enabled our development team to maintain our control loop rate specifications while drastically reducing the overall CPU load of our system. The primary benefit of using LabVIEW 8.5 Real-Time and support for SMP was that, with the lower CPU load, we could add even more data acquisition channels and math computations to our LabVIEW Real-Time application and meet the added complexities of our next generation Wind Tunnel Safety of Flight system."

Kevin McDevitt, Advanced Concepts Group Leader, NASA Ames Research Center

"For the development of vision intelligence in our next generation autonomous vehicle for the DARPA Urban Grand Challenge, LabVIEW is implemented to allow for parallel processing of high-end vision algorithms, running on two quad-core HP servers that perform the primary perception in our vehicle. The ability for LabVIEW to multithread our application automatically, in addition to the optimizations we were able to perform in the language itself, has drastically reduced the development time of our system. While C++ developers are struggling with how to fully take advantage of multicore technology, LabVIEW has enabled us to do so without significant changes in the way we architect our code."

Michael Fleming, President, TORC Technologies

"As for multicore programming, LabVIEW is far ahead of the curve. Many tool vendors still have to take time to address and organize how they will achieve effective multicore programming in their environments. While these tool providers are still figuring it out, LabVIEW has already solved it."

Eric Heikkila, Embedded Systems Lead Analyst, VDC Corp.

"With LabVIEW Real-Time 8.5, we could increase our maximum loop rate by 40% by utilizing both processor cores, and still maintain usability in our normal priority tasks...."

Roy Krans, Product Group Manager, Wineman Technology, Inc.

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