

What's New in **LabVIEW 2011**

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LabVIEW 2011 Accelerates Productivity

The ultimate system design software for
measurement and control

Ultimate System Design Software



Accelerate Your Productivity



- Unique graphical programming environment
- Built-in, engineering-specific libraries
- Data analysis, visualization, and sharing

Innovate With Confidence



- World-class ecosystem of partners and technology alliances
- Global, active user community
- Consistent annual releases

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What is LabVIEW 2011 all About?

LabVIEW is the ultimate system design software for measurement and control. LabVIEW inspires problem-solving, accelerates productivity, and empowers innovation.

LabVIEW 2011 accelerates engineers' productivity.

It does this by delivering:

- Unrivaled hardware integration with multicore NI CompactRIO processors, industry's highest-performance vector signal analyzer, and single-slot NI CompactDAQ systems
- New UI libraries, math and signal processing IP, and advanced APIs for controlling asynchronous threads and deploying executables
- Integration of .m file structures and assemblies from the latest Microsoft .NET framework
- 13 new productivity-enhancing features driven by the LabVIEW community
- Enhanced stability to meet the needs of mission-critical applications
- In-product access to a community of add-on tools from companies who have standardized on LabVIEW

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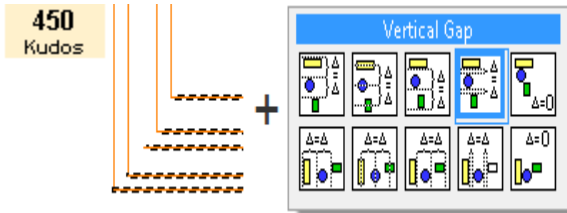
Engineering-Specific Libraries, User-Driven Features, Built-In APIs

ACCELERATE YOUR PRODUCTIVITY

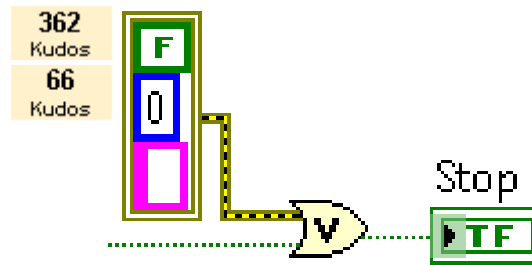
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Idea Exchange Features



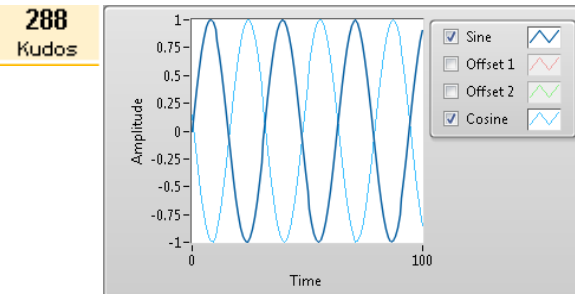
Distributed Tools Now Work on Wires



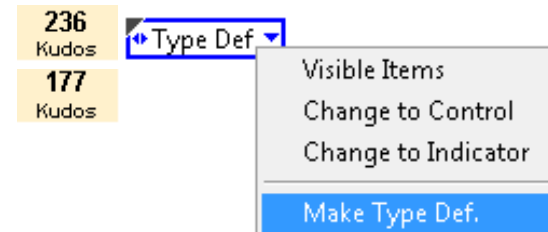
Boolean Function Accepts Error Cluster and Error Constant in Functions Palette



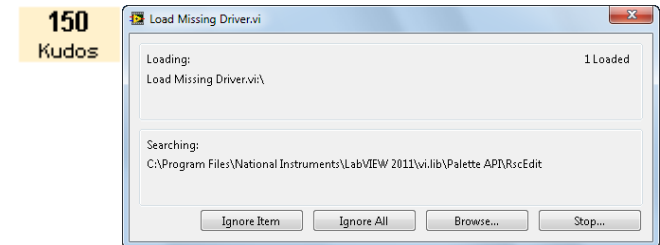
Connector Pane Always Visible on Front Panel



Plot Visible Checkbox on Legend



Indication That Constant is Linked to a Type Def and Create Type Def From Block Diagram



Ignore All Missing SubVI Button



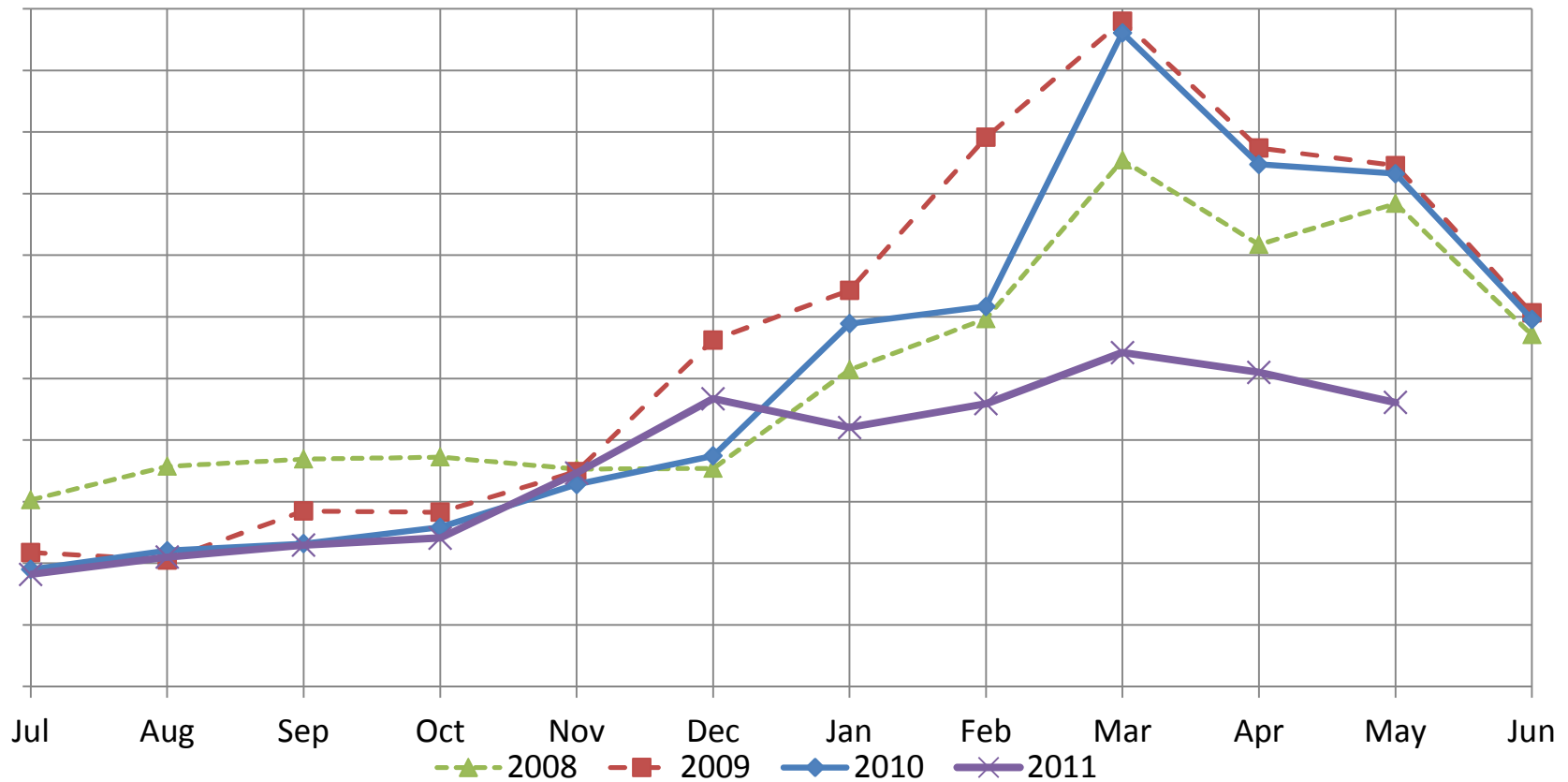
LabVIEW Stability and Performance Improvements

MEETING THE NEEDS OF MISSION-CRITICAL APPLICATIONS

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Pre-Release CAR Inflow Per Month



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Quoting the Pessimists

“In fact, the transition of the older code was so smooth that I was first in doubt that I had a real beta. I am very glad that this time the efforts were focused on stability. For the way I use LabVIEW, reliability is more important than new features. The positive experience with the beta indicates that LabVIEW 2011 will indeed be a stable release.”

– Urs Lauterburg, Physics, University of Bern, Switzerland

“I’m really encouraged by this release – it was a good time to stop and concentrate on stability, and I think it’s hit the mark. I upgraded our VIE Hardware Explorer and two plug-ins (NI-DC Power and a panel from a live project) and found no real issues.”

– Christopher Relf, VI Engineering, USA

“I’m sorry, this beta was too good for my program, the only bugs found were bugs I introduced myself!”

– Albert Geven, Phillips Research, Netherlands

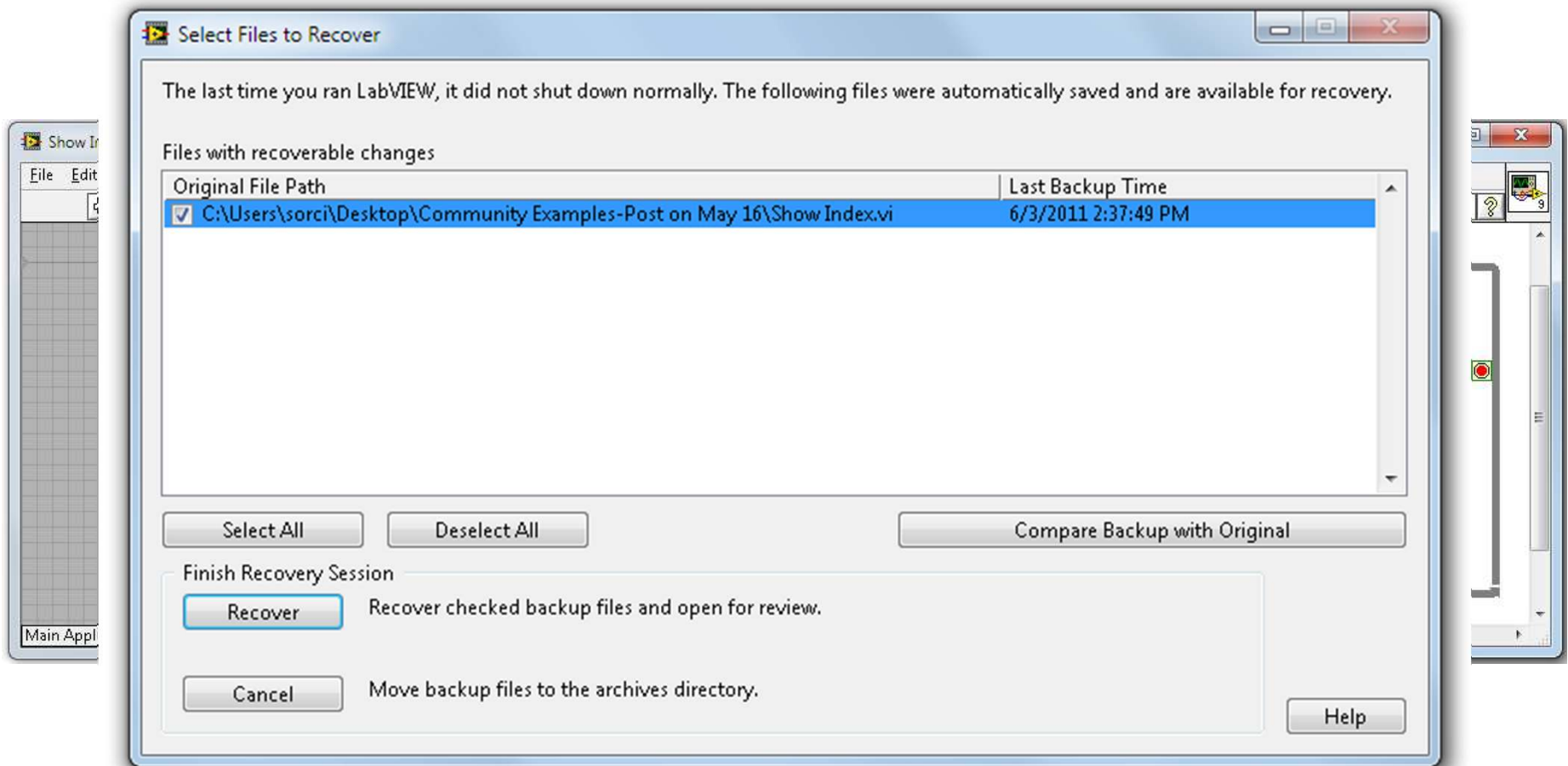
“The beta seems very stable. One needs to squeeze pretty hard to get some bugs out and most are cosmetic.”

– Christian Altenbach, Jules Stein Eye Institute at UCLA, USA

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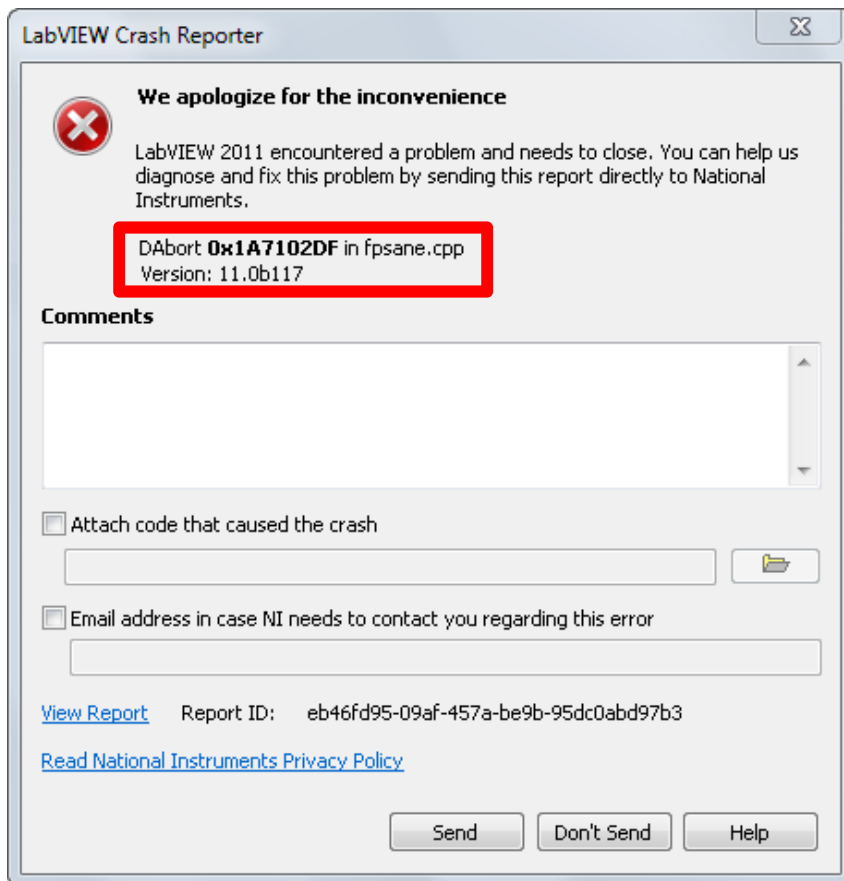
Error Reporting



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NI Error Reporter Service



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Launch Time Benchmarks

LabVIEW Launch Time

- Decreased footprint of nine processes to improve cold launch of LabVIEW

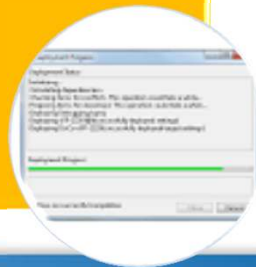
Feature	Cold Launch Time	Cold Launch Improvement (%)	Warm Launch Time	Warm Launch Improvement (%)
Icon Editor	1.7 s	86	16 ms	73
LabVIEW Example Finder	6.7 s	56	2.0 s	35
Waveform Graph Property Page	4.3 s	26	1.0 s	0



Performance Improvements

- Faster application deployment
 - Behind-the-scenes object caching
 - Selective file transfers
 - Improved Packed Project Library deployment

LabVIEW
Real-Time



- Edit-time
 - Loading, editing, wiring FPGA nodes
 - Up to 3x improvement
- Compile time
 - Up to 5x faster

LabVIEW
FPGA



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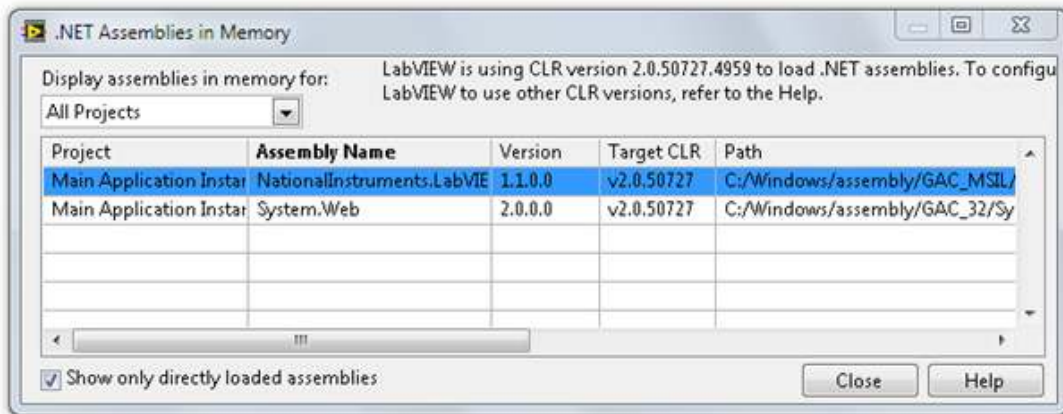
Improved .NET and .m File Integration

REUSE EXISTING EXTERNAL CODE

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Integrate With External Code

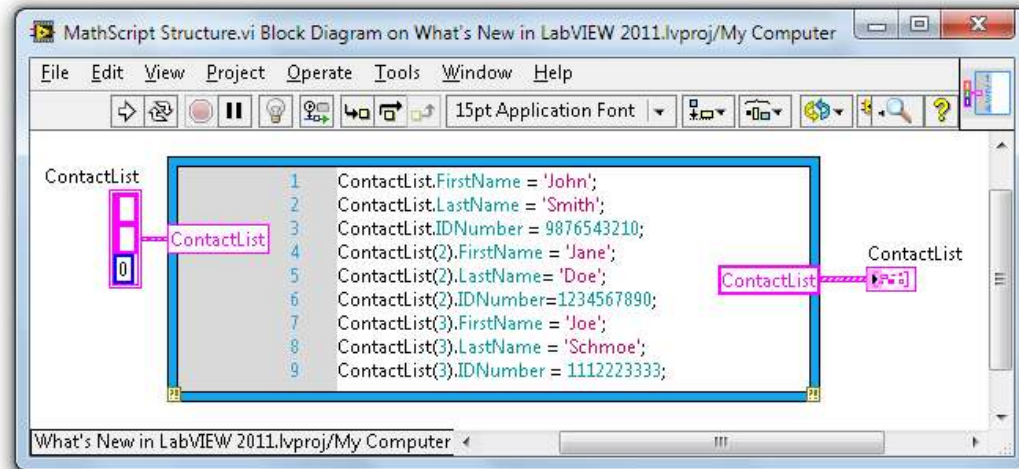


Microsoft .NET

- Configure LabVIEW to load CLR 4.0
- Debugging for assemblies in memory

Custom .m File

- Support for structures



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Search for LabVIEW Add-Ons

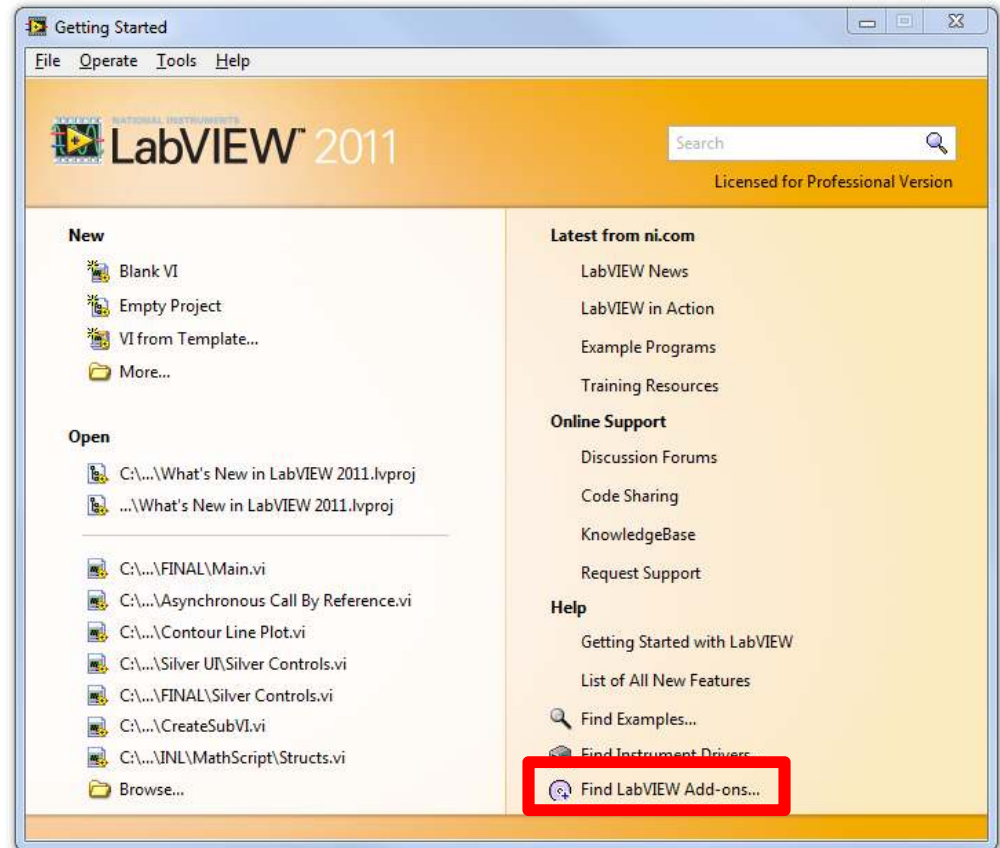
FIND AND INSTALL 3RD PARTY IP

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Find LabVIEW Add-Ons

- Find toolkits and third-party add-ons
- Download and install instantly



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Add-On Examples

- Create and distribute multilanguage LabVIEW applications



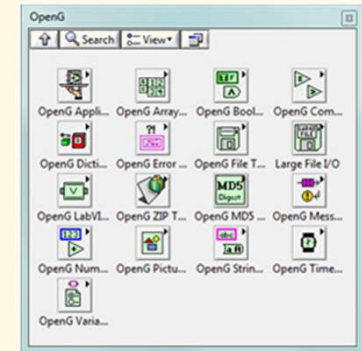
**S.E.A LTK LabVIEW
Localization Toolkit**

- Directly control robots from DENSO, KUKA, and Mitsubishi



**ImagingLab
Robotics Library**

- Use hundreds of free, reusable VIs from the OpenG Community



OpenG Libraries



LabVIEW Modules

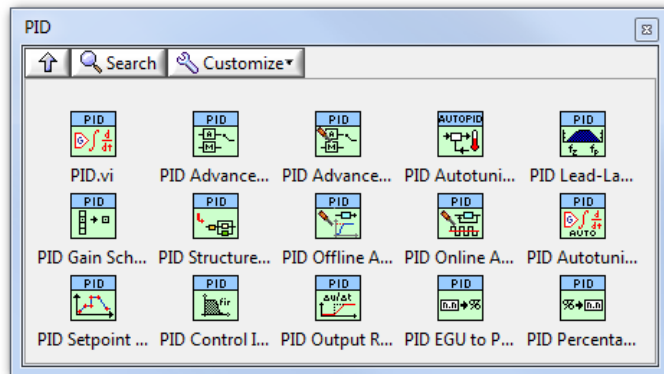
NEW FUNCTIONALITY

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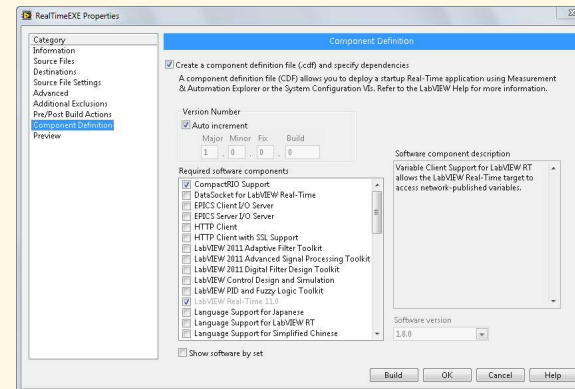
LabVIEW Real-Time Module

- API to create EPICS clients I/O servers
- PID autotuning VIs



Additional Functionality

- Deploy real-time executables as versioned components
- Create custom deployment utilities



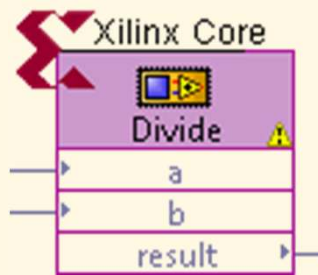
Advanced Deployment Improvements

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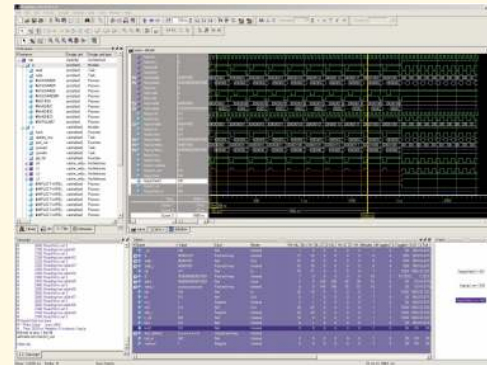
LabVIEW FPGA Module

- 57 high-performance analysis functions
- ni.com/ipnet



New IP

- Support for Xilinx ISim
- Enhancements to Mentor Graphics ModelSim



**Cycle-Accurate
Simulators**

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Combine LabVIEW With New Hardware to Push the Limits of Your Applications

HIGH-PERFORMANCE AT LOW COST

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New NI RIO Hardware

- RIO architecture
 - Spartan-6 FPGA
 - 400 MHz PowerPC/VxWorks
- Smallest form factor
- Open architecture through the new RIO Mezzanine Card (RMC)

NI sbRIO-96xx

Lowest Cost

NI Single-Board RIO

- RIO architecture
 - Spartan-6 FPGA
 - Dual-core x86 processor
- Windows Embedded or RT OS
- Integrated HMI and connectivity
- Rich processor I/O

NI cRIO-908x

Highest Performance

NI CompactRIO

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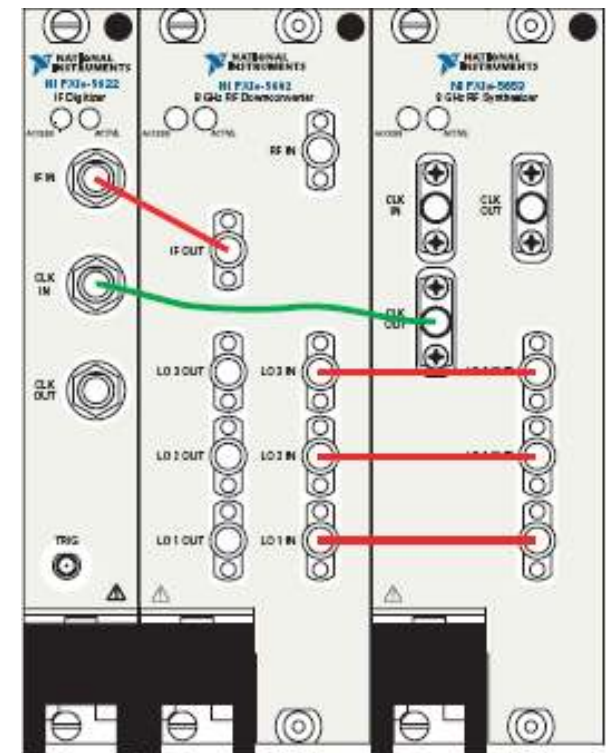
14 GHz Vector Signal Analyzer

• Specifications

- Frequency Range: 20 Hz to 14 GHz
- Analysis bandwidth: 25/50 MHz with DDC
- Noise Floor : <-154 dBm/Hz (<-165 dBm/Hz)
- IP3: $>+24$ dBm (700 MHz to 3.6 GHz)
- Phase Noise: -129 dBc/Hz (800 MHz at 10 kHz offset)
- Form Factor: PXI Express (x4), seven slots

• Features

- RF list mode
- Multichannel receiver architecture
- High-speed data streaming and peer-to-peer streaming



NI PXIe-5622 NI PXIe-5605 NI PXIe-5653
Digitizer Downconverter Local Oscillator



New Lowest Cost NI CompactDAQ



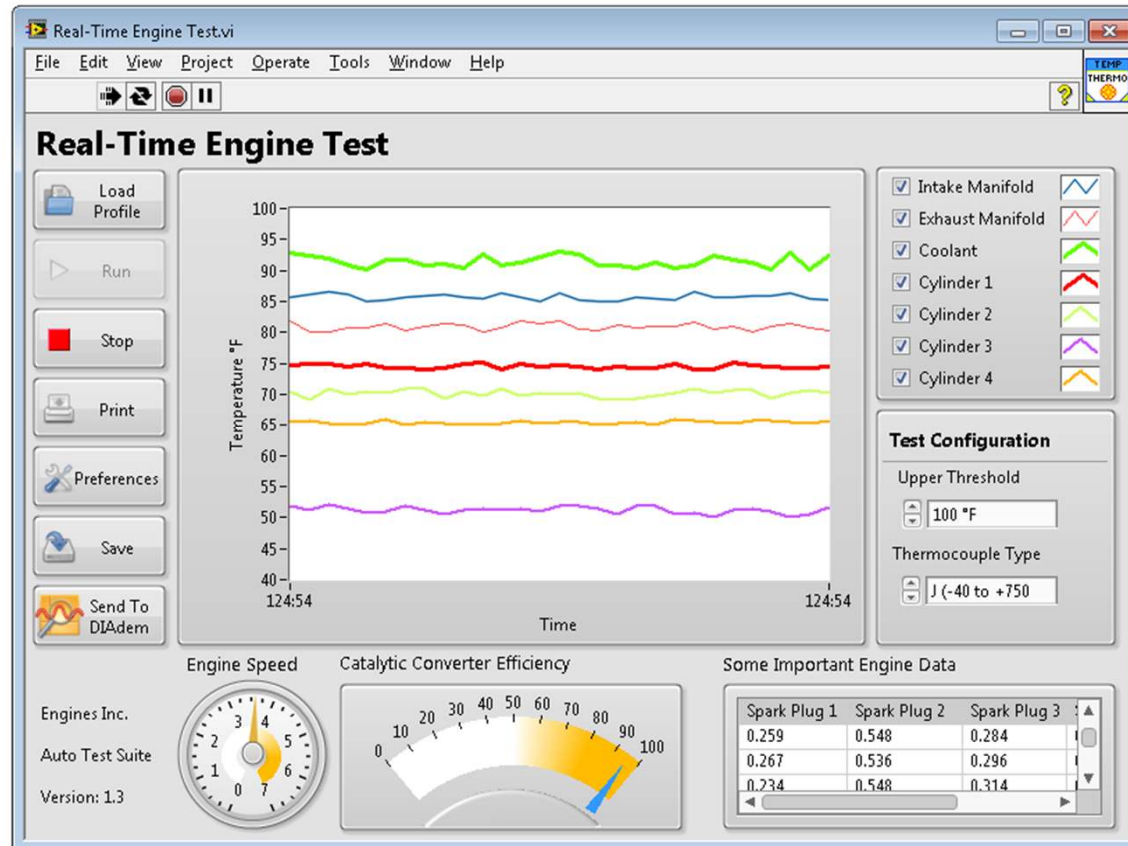
- Three new 1-slot chassis offer USB, Ethernet, and 802.11 Wi-Fi compatibility
- Support for over 50 electrical and sensor measurement modules
- Ideal design for portable and distributed measurement applications

Now use the same code for 1-, 4-, and 8-slot chassis over USB, Ethernet, and Wi-Fi

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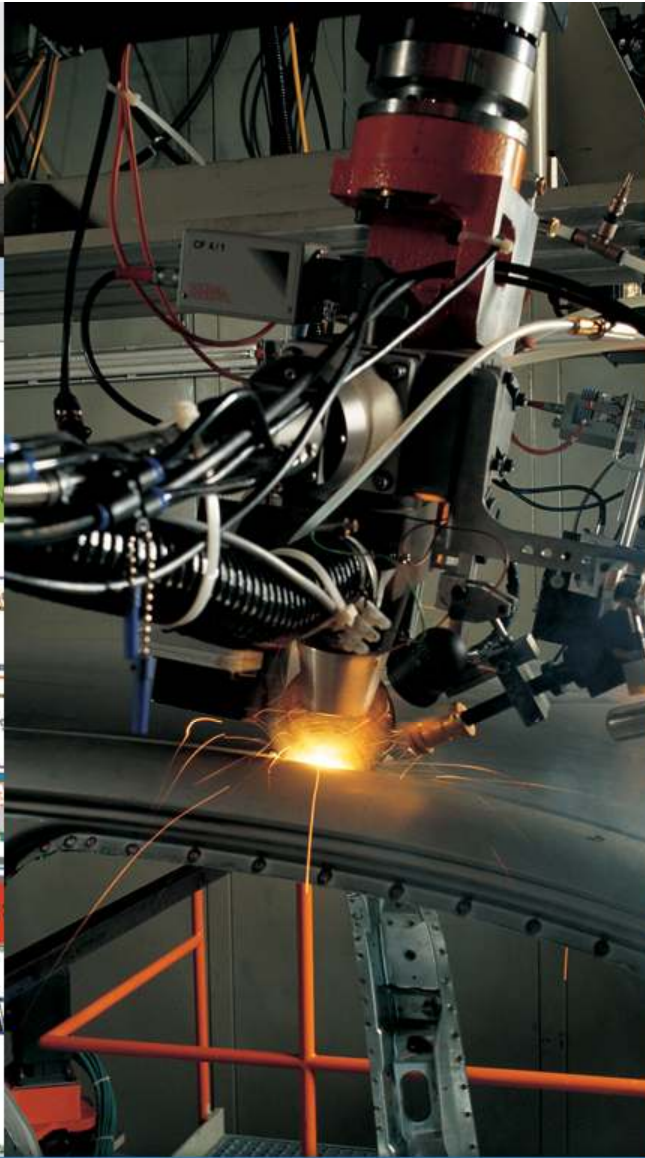
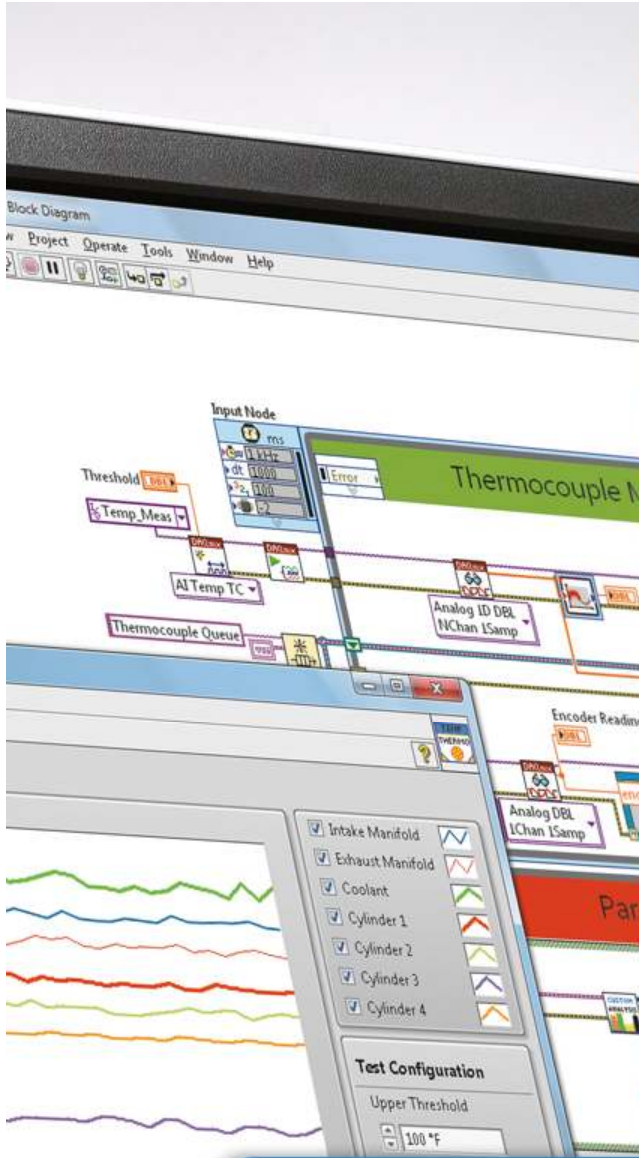
LabVIEW 2011



<http://www.ni.com/labview/whatsnew>

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