

What's New in LabVIEW 2009

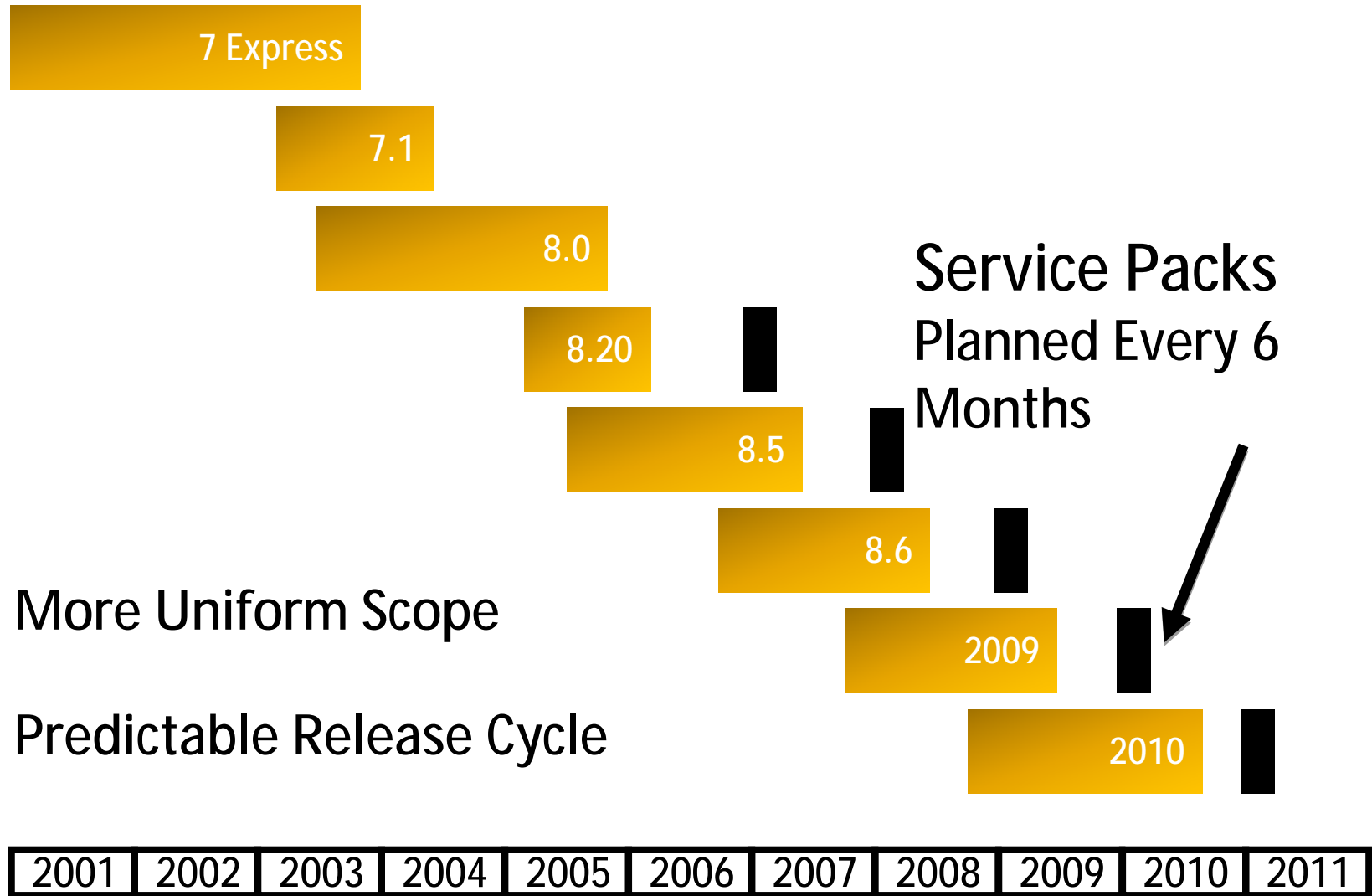
Robert Berger
National Instruments



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LabVIEW™ 2009

Transition to Uniform Releases



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Features in LabVIEW 2009

- Development Environment Enhancements
- Language and Performance Improvements
- LabVIEW MathScript RT Module
- Data Management and Visualization
- Software Engineering Tools
- LabVIEW Community



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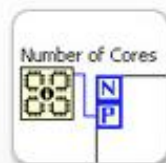
LabVIEW™ 2009

LabVIEW 2009 New Features Demo



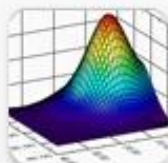
VI Snippets Tool

Drag and drop graphical code as images to create working block diagrams.



Parallel For Loops

Improve performance through automatic multithreading of for loops.



3D Math Plots

Take advantage of 11 new 3D graphs for visualizing data.



Enhanced Icon Editor

Develop layered VI icons with integrated templates, glyphs, and text editing.



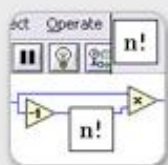
Partial Diagram Cleanup

Automatically arrange portions of code with improved block diagram cleanup tool.



Probe Watch Window

Simplify debugging by managing all LabVIEW probes in one global window.



VI Recursion

Develop in LabVIEW using native recursion.



LabVIEW MathScript RT Module

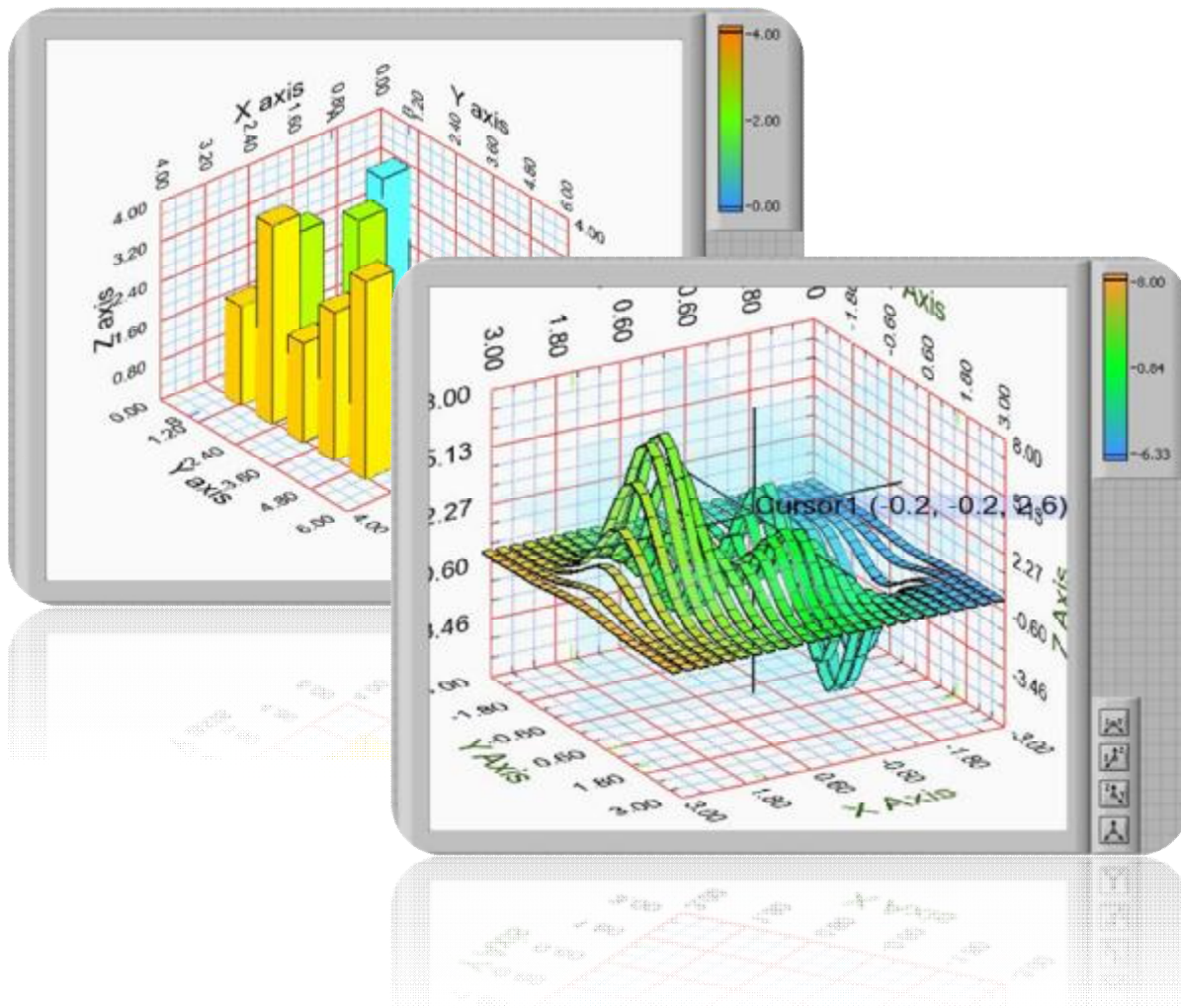
Deploy your custom .m files to real-time hardware.



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Math Plots and Properties



New 3D Plots

- Contour
- Mesh
- Quiver
- Stem
- Surface
- Comet
- Pie
- Scatter
- Ribbon
- Waterfall
- Bar

New 2D Plots

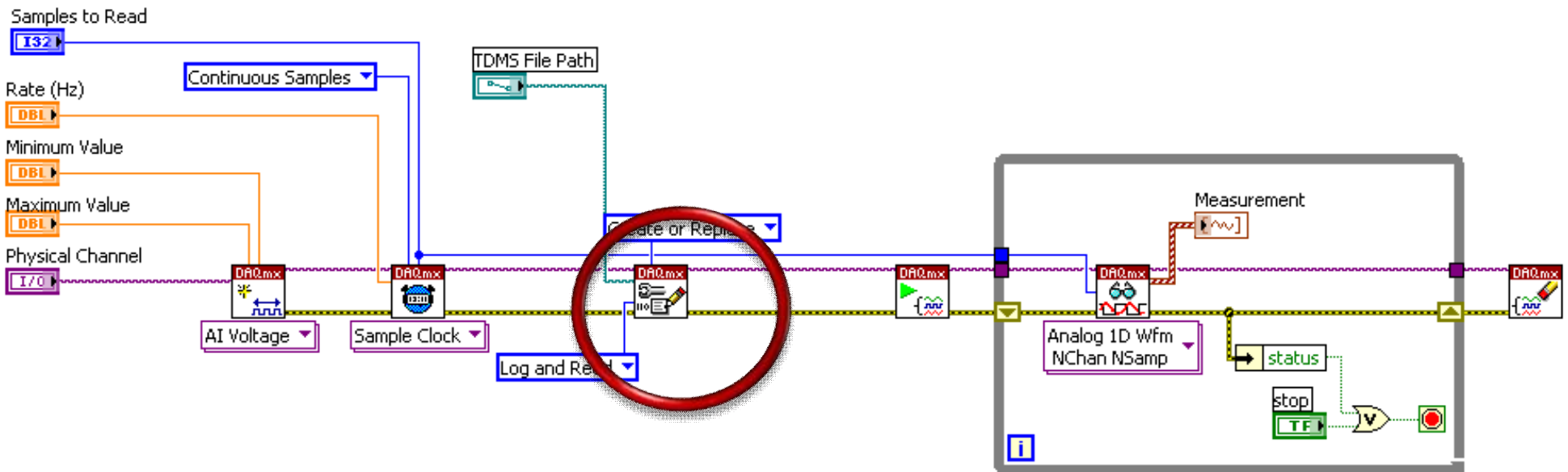
- Compass
- Feather
- Errorbar
- Plotmatrix





TDMS

- 4X speed improvement using TDMS API
- No *EASIER* or *FASTER* way to write data in DAQmx
 - Direct integration with NI-DAQmx driver



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New Features

SOFTWARE ENGINEERING TOOLS



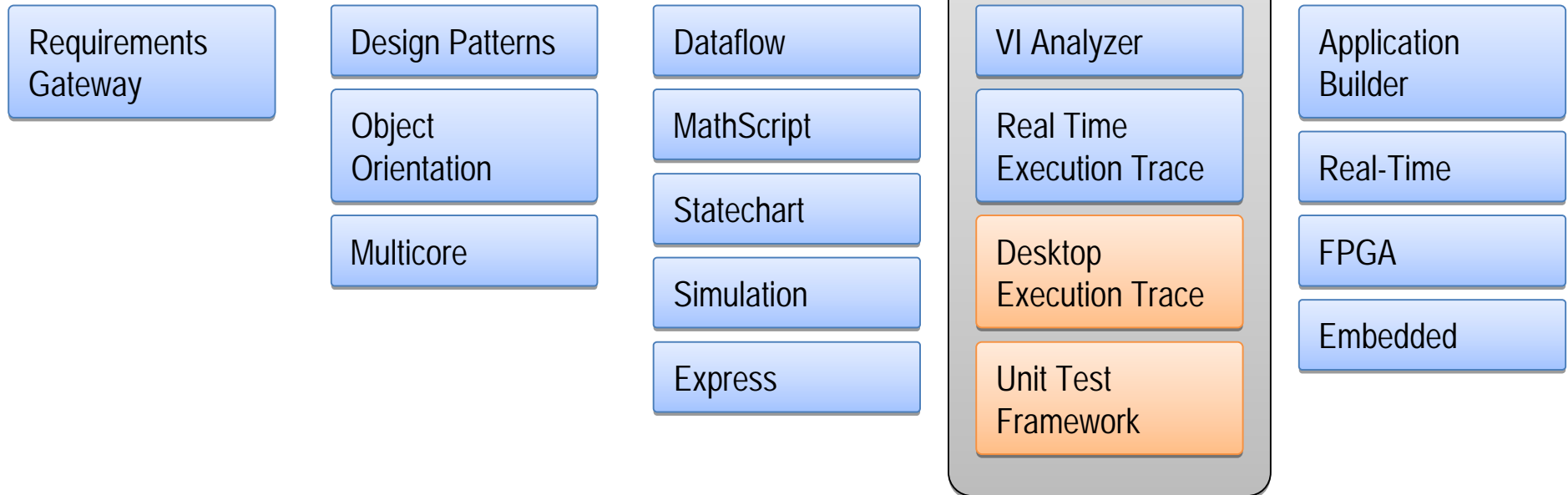
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The Software Engineering Process



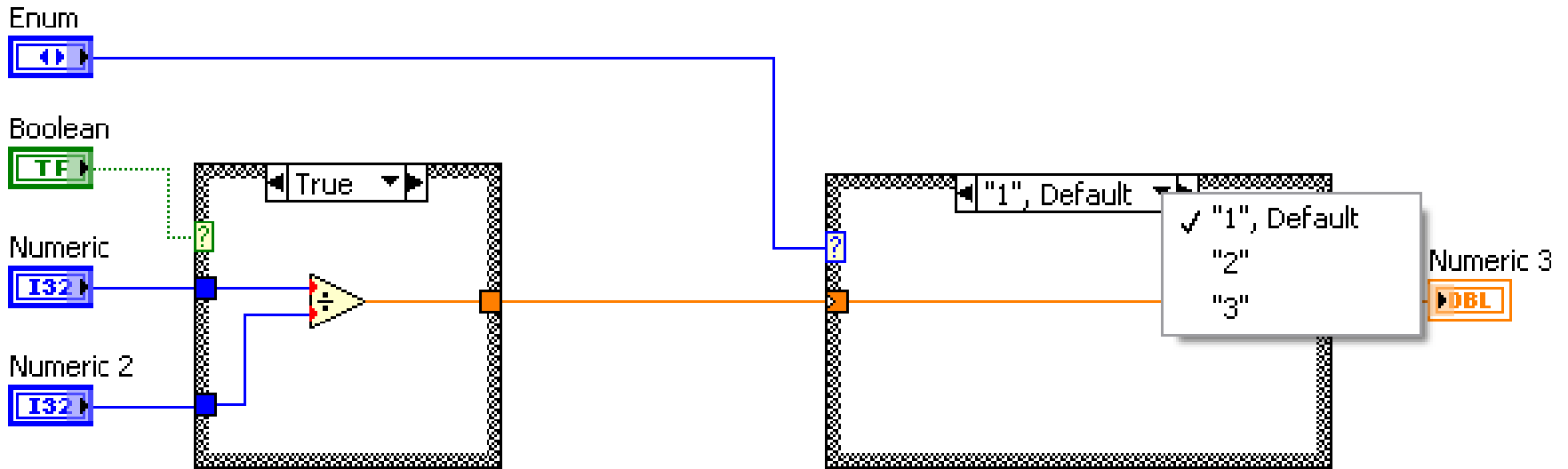
Software Engineering Tools and Best Practices



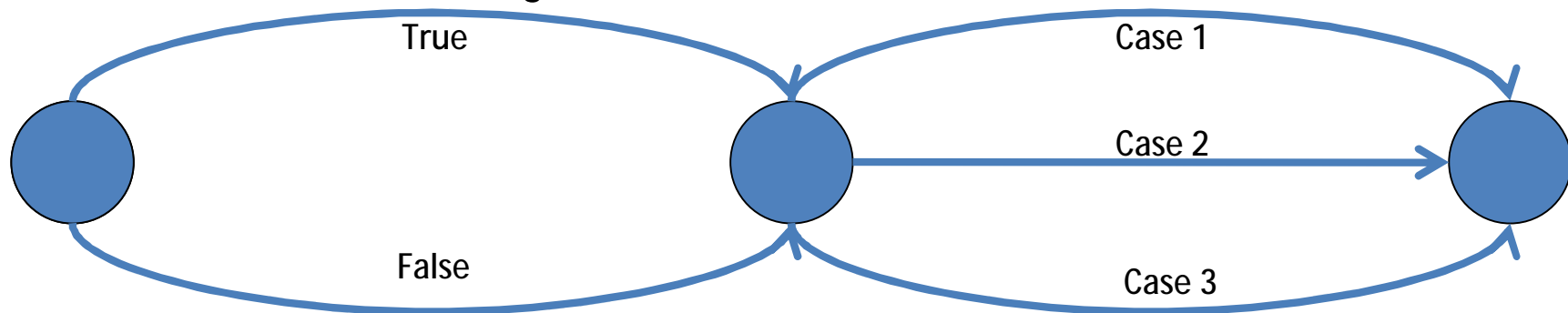
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VI Analyzer Code Complexity Metrics

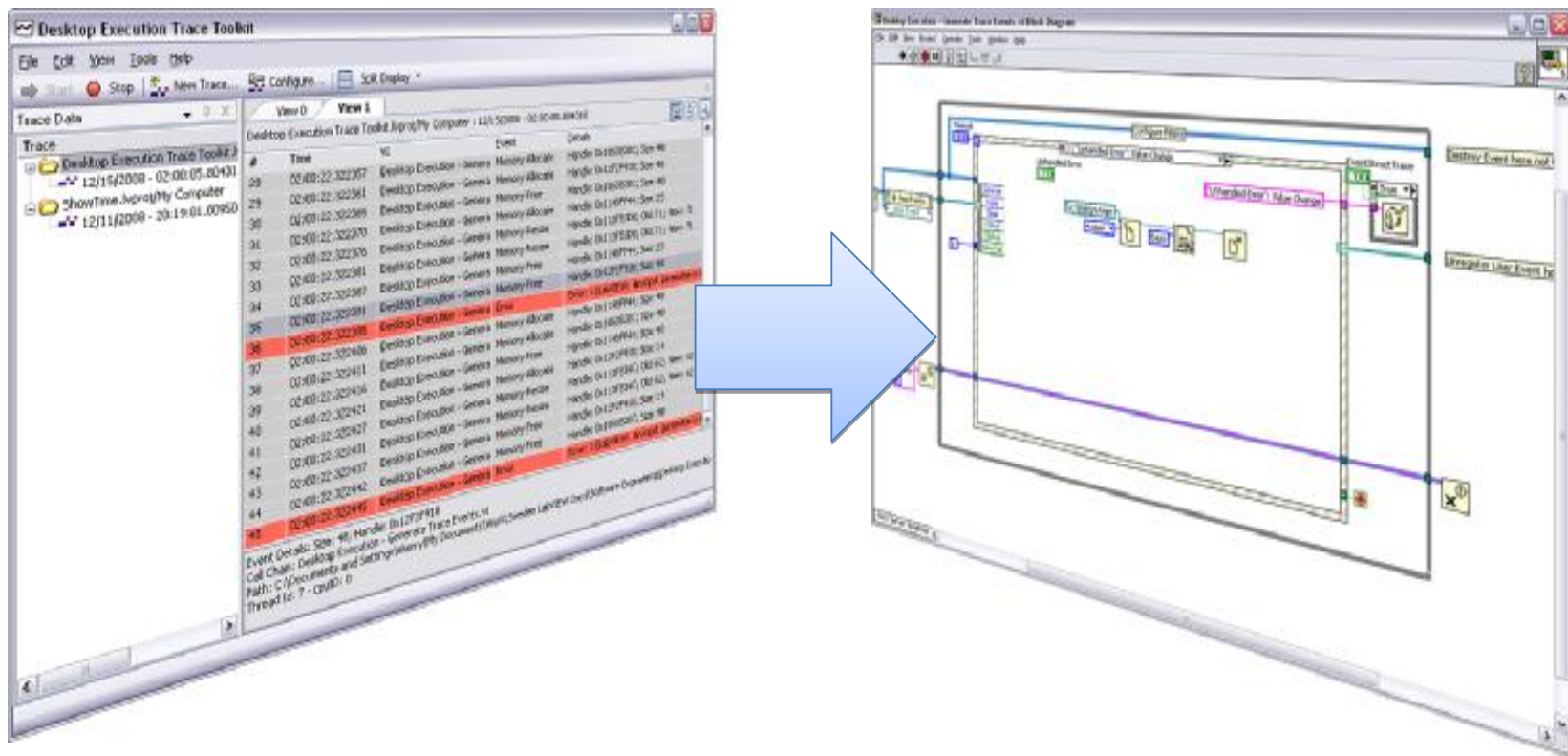


Edges = 5 Nodes = 3 Paths = 1



Cyclomatic complexity: $5 - 3 + 2(1) = 4$

LabVIEW Desktop Execution Trace Toolkit



Profile LabVIEW applications at run time with

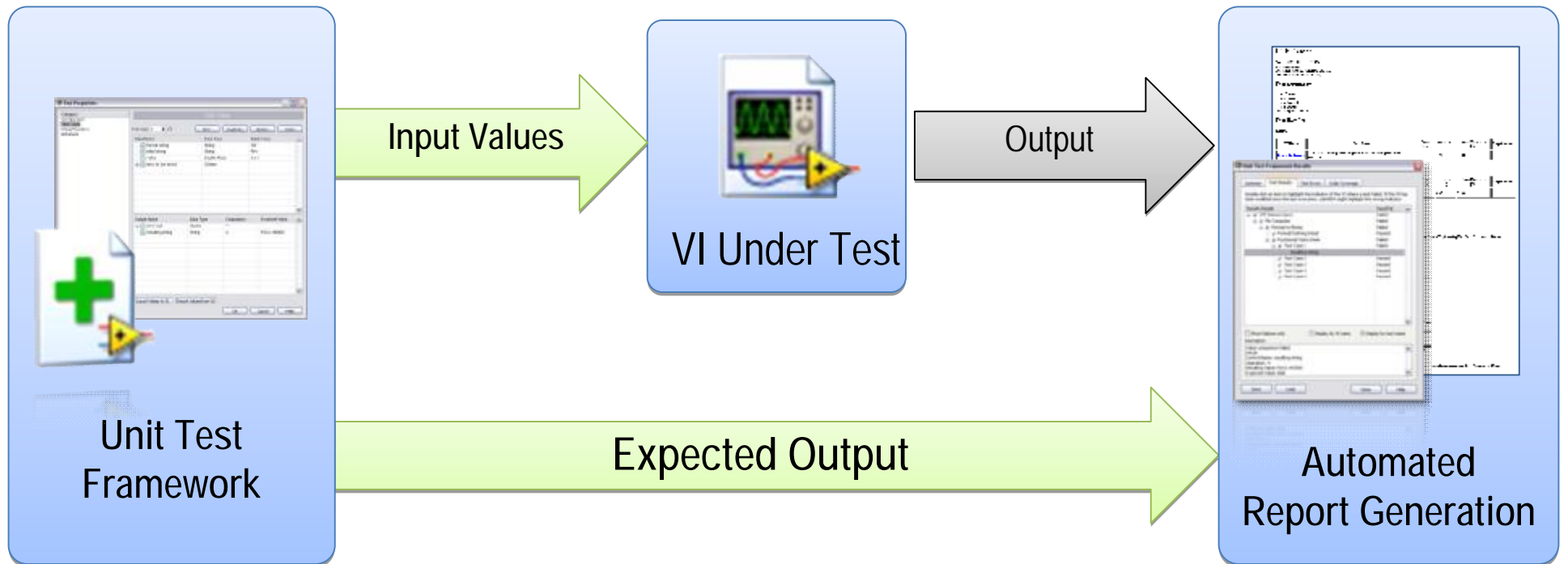
Dynamic Code Analysis



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LabVIEW Unit Test Framework



Test vector = Input value(s) + Expected output(s)



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New Features

LABVIEW COMMUNITY



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Simplified Code Sharing

The screenshot shows the NI Code Exchange website. At the top left is the National Instruments logo and a 'NIWeek 09' badge. To the right are links for 'Cart | Help' and a search bar. Below this is a navigation menu with categories like 'Products & Services', 'Solutions', 'Support', 'NI Developer Zone', 'Academic', 'Events', and 'Company'. A 'United States' location selector is on the far right. On the left side, there are two filter sections: 'Content Type' with 'Examples (6939)' and sub-categories 'Drivers and Updates (2560)' and 'Instrument Drivers (4324)'; and 'Product' with a list of software products and their counts, such as 'NI Circuit Design Software (43)', 'LabView (490)', and 'Measurement Studio (54)'. The main content area features a large banner for 'NI Code Exchange' with the text 'Download and share example programs, instrument drivers and other software IP for LabVIEW, LabWindows/CVI, and Measurement Studio for Visual Studio.' Below the banner are two buttons: 'Search Example Programs' and 'Add Your Program'. At the bottom of the main area, there is a section for 'Example Programs' with a pagination control showing '1-10 of 26154' results and a 'Next' button.

ni.com/code

LabVIEW Idea Exchange

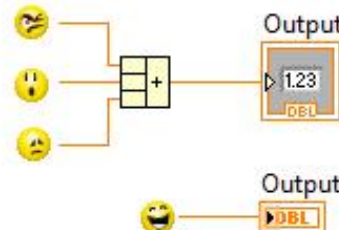
41 **Allow the Distribute Tool to work on Wires**

19 **Why is there no function to reverse "Index & Bundle Cluster Array"**

32 **Allow a quick "Timing Probe" for Timing Metrics**

23 **Default Option: Do NOT Place Front Panel Terminal as Icon**
Labels: Installation & Upgrade UI & Usability Status: New
by mechelecengr 06-15

The default LabVIEW environment option should not show terminals as an icon.



The diagram illustrates two LabVIEW configurations. The top configuration shows three terminals (represented by smiley face icons) connected to a cluster block, which is then connected to an add block (+). The output of the add block is connected to a numeric display showing the value 1.23. The bottom configuration shows a single terminal with a smiley face icon connected to a numeric display with a DBL label.

Vote on a Future LabVIEW Feature



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LabVIEW Scripting



LabVIEW Scripting

LabVIEW Scripting (VI Scripting) enables you to write a LabVIEW program that can generate and inspect LabVIEW code. It allows you to create new VIs, Front Panel controls, Block Diagram objects and wires as well as traverse diagram object hierarchies and modify code.

Download

Discuss

Visit ni.com/labs to download

- Automate repetitive programming tasks
- Develop new features



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5 Other Cool Features

1. SSL for Web Services
2. Generate .NET Interop Assemblies
3. Object-Oriented Programming Enhancements
4. Improvements to Curve-Fitting VIs
5. New Partial Differential Equation Palette

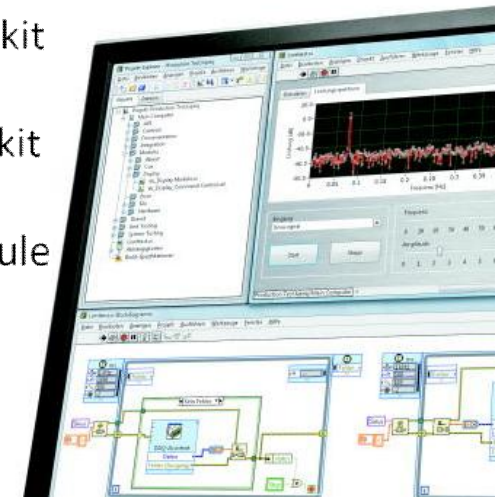
Try the entire LabVIEW Platform

Evaluate fully-functional 30-day trials of LabVIEW and over 25 add-on products, including...

LabVIEW Development System
LabVIEW SignalExpress
Adaptive Filter Toolkit
Advanced Signal Processing Toolkit
Control Design and Simulation Module
Database Connectivity Toolkit
DataFinder Toolkit
Datalogging and Supervisory Control Module
Desktop Execution Trace Toolkit
Digital Filter Design Toolkit
FPGA Module
Internet Toolkit
MathScript RT Module
Microprocessor SDK
Mobile Module
NI Motion Assistant
PID Control Toolkit

Real-Time Execution Trace Toolkit
Real-Time Module
Report Generation Toolkit for Microsoft Office
Simulation Interface Toolkit
SoftMotion Module
Sound and Vibration Suite
Statechart Module
System Identification Toolkit
Touch Panel Module
Unit Test Framework Toolkit
VI Analyzer Toolkit
Vision Development Module

Also includes...
NI Device Drivers



ni.com/trylabview

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Customer Resources



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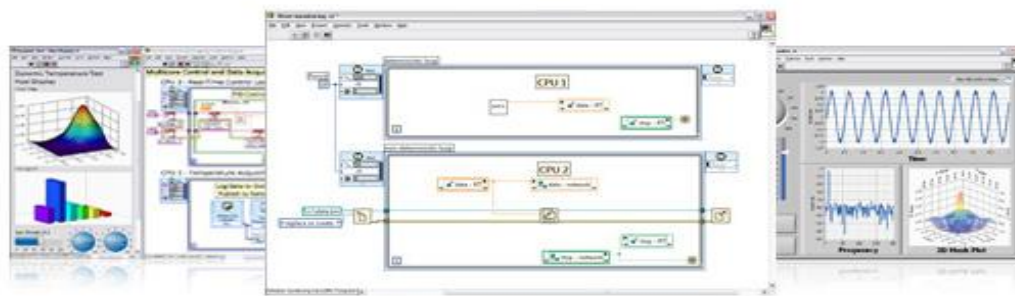
Do More with NI LabVIEW 2009

Designed to enhance the productivity of new and long-time users, LabVIEW 2009 gives you the ability to create code from VI Snippet images, globally manage probes, visualize data on new 3D graphs, parallelize individual iterations of for loops, reduce memory usage with data value references, and more.

 See the new features video



Take Advantage of Next-Generation Technologies



In addition to providing increased performance for parallel program and field-programmable gate arrays (FPGAs), LabVIEW 2009 provides new technologies and simplifies real-time math by streamlining math deployment to deterministic hardware.

LabVIEW 2009 for Your Application

From acquiring data with measurement hardware to deploying an embedded design to automating a production test system, LabVIEW provides a rapid and cost-effective solution. To learn about using LabVIEW to enhance your productivity and make your job easier, browse the LabVIEW applications below.

- [Acquiring Data and Processing Signals](#)
- [Instrument Control](#)
- [Automating Test and Validation Systems](#)

ni.com/labview/whatsnew

[See New Features](#)

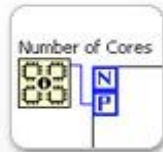
[View all Applications](#)

New Features in LabVIEW 2009



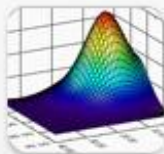
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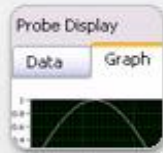
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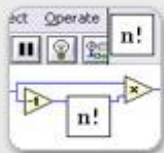
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Deploy your custom .m files to real-time hardware.



See the Features in Action

Watch Webcast

Upgrade to LabVIEW 2009

Get It Now

ni.com/labview/whatsnew/features

Browse Features

By Category

By Product

Since LabVIEW 7.1

Development Environment Enhancements

Enhanced Block Diagram Clean-Up Tool

Language and Performance Improvements

Friends of Libraries in Community Scope

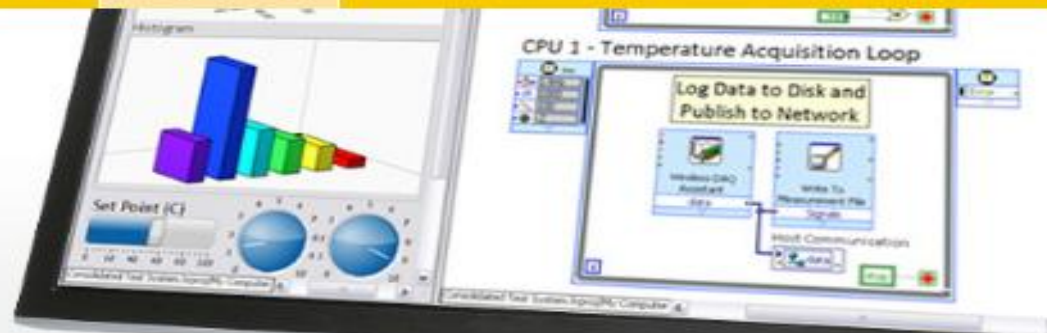
Mathematics

Fixed-Point Casting Functions

[What is LabVIEW?](#)

Upgrade to LabVIEW 2009

Free for SSP Customers,
See Your Options Below



The annual [release cycle](#) of NI LabVIEW ensures that you have access to all the latest features and improvements in LabVIEW when you are ready to upgrade. Membership in the Standard Service Program (SSP) entitles you to free upgrades and software updates as they become available. Find more information and resources below about upgrading to LabVIEW 2009.

Get Your Copy of LabVIEW 2009 Now

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Renew

[Buy LabVIEW 2009](#)

Get everything you need to start developing applications right away, including a free SSP subscription.

Purchase

Call NI at (800) 531-5066 or have NI call you.

Upgrade Resources

[LabVIEW Upgrade Notes](#)

Find details on all new features and changes in LabVIEW 2009.

[Best-Practices for Upgrading](#)

Read step-by-step instructions on how to upgrade your LabVIEW applications properly.

[LabVIEW Life Cycle Policy](#)

Learn when you can expect updates and newer versions of LabVIEW.

[Support Resources](#)

Find bug fixes, known issues, and compatible software.

[LabVIEW Release Notes](#)

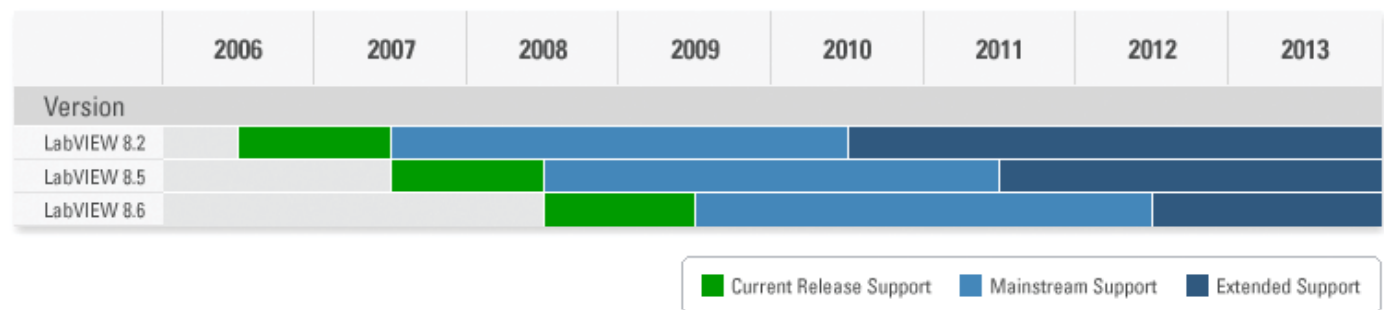
Review system requirements and installation instructions.

Note: NI Software Main
South Amer

ni.com/labview/whatsnew/upgrade

LabVIEW Life Cycle Policy

LabVIEW Life Cycle Policy Phases



The LabVIEW Life Cycle Policy encompasses three phases with varying support levels and timelines.

LabVIEW Life Cycle Policy

	One Year from Product Release Date	Four Years from Product Release Date	Ongoing
Technical Support			
Online technical support, including: knowledge-base, online forums, white papers, NI Developer Zone, and more	✓	✓	✓
Access to paid technical support programs, including: Support-Only and Standard Service Program (SSP)	✓	✓	— ²
Hardware Support¹			
Current device driver distributions continue to install support	✓	✓	— ²

ni.com/labview/product_lifecycle.htm

LabVIEW service packs/maintenance releases (scheduled updates and fixes)	✓	—	—
Purchase			
Product Available for Purchase	✓	✓ (upon request)	— ²

LabVIEW Operating System Support

	2005 8.0	2006 8.0.1 8.2	2007 8.2.1 8.5	2008 8.5.1 8.6	2009 8.6.1	2010
Windows						
Windows NT	Supported			Not Supported		
Windows 2000	Supported					Not Supported
Windows XP (32-bit)	Supported					
Windows Vista 32	Not Supported			Supported		
Windows Vista 64 ¹	Not Supported			Supported		
Windows 7	Not Supported					Supported
Mac OS X						
PowerPC Processors	Supported			Not Supported		
Intel Processors	Not Supported			Supported		
Linux						
Red Hat Enterprise Linux	Supported					
SUSE Linux	Supported					
Mandrake/Mandriva Linux	Supported					Not Supported
Sun Solaris						
SPARC 32-bit	Supported			Not Supported		

ni.com/labview/os_support.htm

(S and toolkits as well as NI drivers)
(and toolkits and NI drivers supported)



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