What’s New in LabVIEW 2009

Robert Berger
National Instruments
Transition to **Uniform Releases**

- More Uniform Scope
- Predictable Release Cycle

**Service Packs**

Planned Every 6 Months

- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011

*LabVIEW™ 2009*
Features in **LabVIEW 2009**

- Development Environment Enhancements
- Language and Performance Improvements
- LabVIEW MathScript RT Module
- Data Management and Visualization
- Software Engineering Tools
- LabVIEW Community
LabVIEW 2009 New Features Demo

- **VI Snippets Tool**: Drag and drop graphical code as images to create working block diagrams.
- **3D Math Plots**: Take advantage of 11 new 3D graphs for visualizing data.
- **Partial Diagram Cleanup**: Automatically arrange portions of code with improved block diagram cleanup tool.
- **VI Recursion**: Develop in LabVIEW using native recursion.
- **Parallel For Loops**: Improve performance through automatic multithreading of for loops.
- **Enhanced Icon Editor**: Develop layered VI icons with integrated templates, glyphs, and text editing.
- **Probe Watch Window**: Simplify debugging by managing all LabVIEW probes in one global window.
- **LabVIEW MathScript RT Module**: Deploy your custom .m files to real-time hardware.
Math Plots and Properties

New 3D Plots
- Contour
- Mesh
- Quiver
- Stem
- Surface
- Comet

New 2D Plots
- Compass
- Errorbar
- Feather
- Plotmatrix

LabVIEW™ 2009
TDMS

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

SOFTWARE ENGINEERING TOOLS
The Software Engineering Process

Software Engineering Tools and Best Practices

Requirements Gathering
- Requirements Gateway
- Design Patterns
- Object Orientation
- Multicore

Application Architecture

Development
- Dataflow
- MathScript
- Statechart
- Simulation
- Express

Debugging & Testing
- VI Analyzer
- Real Time Execution Trace
- Desktop Execution Trace
- Unit Test Framework

Deployment
- Application Builder
- Real-Time
- FPGA
- Embedded
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
LabVIEW Unit Test Framework

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

LABVIEW COMMUNITY
Simplified Code Sharing

NI Code Exchange
Download and share example programs, instrument drivers and other software IP for LabVIEW, LabWindows/CVI, and Measurement Studio for Visual Studio.

Example Programs
1-10 of 26154. Show 10, 20, 30 results per page.
LabVIEW Idea Exchange

Allow the Distribute Tool to work on Wires

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

Allow a quick "Timing Probe" for Timing Metrics

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.
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.

Visit [ni.com/labs](http://ni.com/labs) to download

- Automate repetitive programming tasks
- Develop new features
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
LabVIEW 2009
Customer Resources
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 programs and field-programmable gate arrays (FPGAs), LabVIEW 2009 provides 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
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  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**
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  Develop layered VI icons with integrated templates, glyphs, and text editing.

- **Partial Diagram Cleanup**
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- **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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See the Features in Action

Watch Webcast

Upgrade to LabVIEW 2009

Get It Now

ni.com/labview/whatsnew/features
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

Upgrade for Free with SSP
Standard Service Program (SSP) members can upgrade to LabVIEW 2009 for free.

Renew Expired SSP and Save 50%
Re-activate your subscription to SSP and get 50% off the price of LabVIEW.

Buy LabVIEW 2009
Get everything you need to start developing applications right away, including a free SSP subscription.

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 America
# LabVIEW Life Cycle Policy

## LabVIEW Life Cycle Policy Phases

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

### LabVIEW Life Cycle Policy

<table>
<thead>
<tr>
<th>Technical Support</th>
<th>One Year from Product Release Date</th>
<th>Four Years from Product Release Date</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online technical support, including knowledge-base, online forums, white papers, NI Developer Zone, and more</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Access to paid technical support programs, including: Support-only and Standard Service Program (SSP)</td>
<td>✓</td>
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</table>

### Hardware Support

| Current device driver distributions continue to install support | ✓ | ✓ | _² |

### Ongoing Support

| LabVIEW service packs/maintenance releases (scheduled updates and fixes) | ✓ | ❌ | ❌ |
| Purchase | ✓ | ❌ | ❌ |

[1] The LabVIEW Life Cycle Policy does not explicitly define hardware support beyond the initial installation period.

[2] The support timeline for ongoing services is not explicitly stated beyond the initial period.

[ni.com/labview/product_lifecycle.htm](ni.com/labview/product_lifecycle.htm)
## LabVIEW Operating System Support

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<th>2006 (8.0.1)</th>
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*ni.com/labview/os_support.htm*