

# LabVIEW™ Release Notes

## LabVIEW 2009

These release notes contain installation instructions for LabVIEW and system requirements for the LabVIEW software.

If you are upgrading from a previous version of LabVIEW, read the *LabVIEW Upgrade Notes* included with the upgrade package before you install LabVIEW 2009. You must consider several issues before you convert VIs for use in LabVIEW 2009.

Read the *System Requirements* section of this document before you install LabVIEW and then follow the instructions in the *Installing LabVIEW 2009* section. After you install LabVIEW, read the *Where to Go from Here* section for information about getting started with and using LabVIEW.

## Contents

---

System Requirements .....	2
Installing LabVIEW 2009.....	5
Windows .....	5
Mac OS .....	6
Linux .....	7
Installing LabVIEW Add-Ons .....	8
Installing the Application Builder.....	8
Activating the LabVIEW License (Windows).....	9
Evaluating LabVIEW, Modules, or Toolkits.....	9
Single-Seat and Volume Licensing.....	10
Installing and Configuring Hardware .....	10
Windows .....	10
Mac OS .....	10
Linux.....	11
Where to Go from Here .....	11
LabVIEW Quick Reference Card.....	11
ni.com .....	11

# System Requirements

Table 1 describes the system requirements you need to run LabVIEW 2009.

**Table 1.** System Requirements for LabVIEW 2009

Platform	Media and System Requirements	Important Notes
All platforms	<p>LabVIEW requires a minimum of 256 MB of RAM, but National Instruments recommends 1 GB of RAM or higher.</p> <p>LabVIEW requires a screen resolution of at least 1,024 × 768 pixels.</p> <p>When you deploy a LabVIEW-built application, the LabVIEW Run-Time Engine requires a minimum of 64 MB of RAM and a screen resolution of 800 × 600 pixels for applications that require a screen, but National Instruments recommends 256 MB of RAM or higher and a screen resolution of 1,024 × 768 pixels or higher.</p>	<p>LabVIEW and the <i>LabVIEW Help</i> contain 16-bit color graphics. LabVIEW requires a minimum color palette setting of 16-bit color.</p> <p>You must have Adobe Reader 6.0.1 or later to view or search PDF versions of all LabVIEW manuals.</p> <p>LabVIEW uses a directory for storing temporary files. National Instruments recommends that you have several megabytes of disk space available for this temporary directory. You can view or change the temporary directory by selecting <b>Tools» Options</b> and selecting <b>Paths</b> from the <b>Category</b> list. If LabVIEW aborts unexpectedly, it can leave files in the temporary directory. Remove old files from this directory to free disk space.</p> <p><b>(Windows)</b> The default temporary directory is the system temporary directory, such as C:\Documents and Settings\User\Local Settings\Temp.</p> <p><b>(Mac OS)</b> Mac OS X 10.4.x uses /var/tmp/ folders. 501/TemporaryItems, where 501 is a unique number for each login, and Mac OS X 10.5.x uses /private/var/ folders/xxx/xxx/TemporaryItems, where xxx is a secure, random name for each login.</p> <p><b>(Linux)</b> The default temporary directory is /tmp.</p>

**Table 1.** System Requirements for LabVIEW 2009 (Continued)

Platform	Media and System Requirements	Important Notes
Windows Vista/XP/2000	<p>LabVIEW requires a minimum of a Pentium III or greater or Celeron 866 MHz or equivalent processor, but National Instruments recommends at least a Pentium 4/M or equivalent processor. National Instruments recommends that you have at least 1.6 GB of disk space for the complete LabVIEW installation.</p> <p>When you deploy a LabVIEW-built application, the LabVIEW Run-Time Engine requires a minimum of a Pentium 200 MHz or equivalent processor, but National Instruments recommends a Pentium III or higher or Celeron 600 MHz or equivalent processor. The LabVIEW Run-Time Engine for controlling an application or front panel remotely requires at least 92 MB of disk space. The LabVIEW Run-Time Engine you include in a LabVIEW-built installer requires at least 191 MB of disk space. However, if you include any additional National Instruments installers in the LabVIEW-built installer you will require additional disk space.</p>	<p>LabVIEW does not support Windows NT/Me/98/95, any of the Windows Server editions, or Windows XP x64. However, LabVIEW does support Windows Vista (64-bit version).</p> <p>To use LabVIEW or the LabVIEW Run-Time Engine with Windows 2000, you must have Windows 2000 Service Pack 3 or later.</p> <p>To use the <i>LabVIEW Help</i>, the Measurement &amp; Automation Explorer (MAX) interactive help system, and the NI Example Finder, you must have Microsoft Internet Explorer 5.0 or later.</p> <p>To view and control a front panel remotely using Internet Explorer, National Instruments recommends that you have Internet Explorer 5.5 Service Pack 2 or later.</p> <p>You must have the .NET Framework 2.0 or later to use .NET functions and applications.</p>
Mac OS	<p>LabVIEW requires Mac OS X 10.4.0 or later.</p> <p>This version of LabVIEW supports only Macintosh computers with Intel processors. LabVIEW does not support PowerPC processors.</p> <p>National Instruments recommends that you have at least 563 MB of disk space for the minimum LabVIEW installation or 1.2 GB of disk space for the complete LabVIEW installation.</p> <p>The LabVIEW Application Builder requires XCode 2.4.1 or later.</p>	<p>National Instruments recommends that you use Firefox 1.0.2 or later or Safari 1.3.2 or later to view the <i>LabVIEW Help</i>.</p>

**Table 1.** System Requirements for LabVIEW 2009 (Continued)

<b>Platform</b>	<b>Media and System Requirements</b>	<b>Important Notes</b>
Linux	<p>LabVIEW runs on Linux for Intel x86 processors with kernel version 2.2.x, 2.4.x, or 2.6.x.</p> <p>LabVIEW requires a minimum of a Pentium III or Celeron 866 MHz or equivalent processor, but National Instruments recommends a Pentium 4/M or equivalent processor.</p> <p>LabVIEW requires an X Window System server, such as XFree86 or X11R6.org.</p> <p>National Instruments recommends that you have at least 630 MB of disk space for the minimum LabVIEW installation, 835 MB disk space for the complete LabVIEW installation, or 947 MB disk space for the complete LabVIEW installation with drivers.</p> <p>LabVIEW is fully supported on Red Hat Enterprise Linux WS 4 or later and openSUSE 10.3 or later.</p> <p>LabVIEW can run without hardware driver support on any other distributions that provide GNU C Library (<code>glibc</code>, also known as <code>libc.so.6</code>) version 2.2.4 or later.</p>	<p>National Instruments recommends that you use Firefox 1.0.2 or later or Mozilla 1.2 or later to view the <i>LabVIEW Help</i>.</p> <p>LabVIEW requires GNU C Library version 2.2.4 or later. Most Linux vendors offer an updated <code>glibc rpm</code> for common Linux distributions on their Web sites.</p>

# Installing LabVIEW 2009

---

Refer to the National Instruments Web site at [ni.com/support](http://ni.com/support) if you encounter errors during installation.

## Windows

The LabVIEW Platform DVDs include LabVIEW and the following modules and toolkits.

### Data Management and Reporting

- Database Connectivity Toolkit
- DataFinder Toolkit
- Internet Toolkit
- Report Generation Toolkit for Microsoft Office

### Embedded

- FPGA Module
- Microprocessor SDK
- Mobile Module
- Real-Time Execution Trace Toolkit
- Real-Time Module

### Image Acquisition and Image Processing

- Vision Development Module

### Industrial Monitoring

- Datalogging and Supervisory Control Module
- Touch Panel Module

### Interactive Datalogging and Measurements

- LabVIEW SignalExpress

### Motion Control

- NI Motion Assistant
- NI SoftMotion Module

### Signal Processing, Analysis, and Math

- Adaptive Filter Toolkit
- Advanced Signal Processing Toolkit
- Digital Filter Design Toolkit
- MathScript RT Module
- Sound and Vibration

### Simulation and Control

- Control Design and Simulation Module
- PID and Fuzzy Logic Toolkit
- Simulation Interface Toolkit
- System Identification Toolkit

### Software Development and Deployment

- Desktop Execution Trace Toolkit
- Statechart Module
- Unit Test Framework Toolkit
- VI Analyzer Toolkit

If you purchased any of these add-ons, you can install them using the LabVIEW Platform DVDs. If you want to evaluate any of these add-ons before purchasing them, you can install these add-ons from the LabVIEW Platform DVDs and try them for free for 30 days.

Complete the following steps to install LabVIEW for Windows.

1. Log on as an administrator or as a user with administrator privileges.
2. Disable any automatic virus detection programs before you install. Some virus detection programs interfere with installation.
3. Insert the LabVIEW Platform DVD Disc 1.
4. In the **Product List**, select all the products you want to install licensed versions of or that you want to install for evaluation. Select **Install** to minimize user interaction. Selecting **Custom install** opens additional dialog boxes that require your input.



**Note** Some LabVIEW products have additional system requirements. As you select each product in the **Product List**, verify that the computer on which you are installing meets any additional requirements listed in the description field at the bottom of the window.

5. Enter serial numbers from the software kits to install licensed versions. Leave the **Serial Number** field blank to evaluate the product. You can find the serial number on the Certificate of Ownership in the software kit. If your software kit does not include a Certificate of Ownership, you can find the serial number on the product packing slip or on the shipping label.



**Note** If you have purchased the version of a product you want to install, you can use serial numbers from a previous version of the product to install and activate it.

6. Follow the instructions on the screen to finish installing and activating LabVIEW and any module or toolkit that you selected.
7. (Optional) Follow the instructions on the screen to install device drivers for National Instruments products. Refer to the *Installing and Configuring Hardware* section of this document for more information.
8. (Optional) Install any LabVIEW add-ons not found on the LabVIEW Platform DVDs. Refer to the *Installing LabVIEW Add-Ons* section of this document for more information.
9. After installation, enable any virus detection programs you disabled.
10. (Optional) Install and configure National Instruments hardware. Refer to the *Installing and Configuring Hardware* section of this document for more information.
11. Refer to the *Where to Go from Here* section of this document for more information about getting started with and using LabVIEW.



**Note** If you have Windows XP Service Pack 2 installed or you use Windows Vista, a **Security Alert** dialog box appears when you launch LabVIEW or the NI Example Finder for the first time. If you select the **Keep blocking this program** option, the LabVIEW VI Server, LabVIEW Web Server, and any server written in LabVIEW cannot accept incoming connections from a remote computer. Select the **Unblock this program, despite the security risk** option to configure your computer to launch LabVIEW without any changes in functionality. Refer to the National Instruments Web site at [ni.com/info](http://ni.com/info) and enter the info code `expm69` for more information about correcting this problem.

To modify the current LabVIEW installation or to uninstall LabVIEW 2009, select **National Instruments Software** in the Add/Remove Programs applet in the Control Panel. When you modify the installation, a list of National Instruments software appears. Select a product in the list to add or remove individual components or to uninstall the product. Select multiple products to remove by pressing the <Shift> or <Ctrl> key while you select them. Click the **Uninstall** button to remove all the products you selected.

## Mac OS

Complete the following steps to install LabVIEW for Mac OS.

1. Disable any automatic virus detection programs before you install. Some virus detection programs may interfere with the installation program.
2. Insert the LabVIEW 2009 installation CD.
3. Run the appropriate installation program.

The following types of installations of LabVIEW 2009 are available:

- **Easy Install**—Installs all LabVIEW 2009 files, including LabVIEW, NI-488.2 drivers, and NI-VISA drivers. This is the default installation for LabVIEW.
- **Custom Install**—If you select this option, you select the files to install. To select a custom installation, click the **Customize** button on the **Installation Type** page. You must select the **LabVIEW 2009** component to install the core set of LabVIEW files necessary for running LabVIEW 2009.

4. Follow the instructions that appear on the screen.
5. After installation, enable any virus detection programs you disabled.
6. (Optional) Install LabVIEW add-ons. Refer to the [Installing LabVIEW Add-Ons](#) section of this document for more information.
7. (Optional) Install and configure National Instruments hardware. Refer to the [Installing and Configuring Hardware](#) section of this document for more information.
8. Refer to the [Where to Go from Here](#) section of this document for more information about getting started with and using LabVIEW.

You cannot install LabVIEW into a non-default location, but you can move the `LabVIEW 2009` directory after you install. If you move the `LabVIEW 2009` directory to a non-default location, LabVIEW does not uninstall and remove the directory unless you move the `LabVIEW 2009` directory back to the default location.

To uninstall LabVIEW 2009, run the `Uninstall.sh` shell script file on the installation CD from a Terminal shell. The script prompts you to remove the files necessary to uninstall LabVIEW. If you want to keep any files you modified or added to the `LabVIEW 2009` directory, save those files in another location before uninstalling LabVIEW 2009.

## Linux

Complete the following steps to install LabVIEW for Linux.

1. Log into the system as `root`.
2. Insert the LabVIEW 2009 installation CD. Use `mount /mnt/cdrom` to mount the CD. On some systems, the CD mounts automatically.
3. To change the current directory to the mounted CD, enter the following command:  

```
cd /mnt/cdrom
```
4. To run the installation script, enter the following command:  

```
sh ./INSTALL
```
5. (Optional) Install LabVIEW add-ons. Refer to the [Installing LabVIEW Add-Ons](#) section of this document for more information.
6. (Optional) Install and configure National Instruments hardware. Refer to the [Installing and Configuring Hardware](#) section of this document for more information.
7. Refer to the [Where to Go from Here](#) section of this document for more information about getting started with and using LabVIEW.

The `INSTALL` script installs LabVIEW in the `/usr/local` directory. The script also optionally runs the installation scripts for the NI-VISA and NI-488.2 drivers. The `INSTALL` script uses `rpm` to install on systems that support the `.rpm` format or to extract the `rpm` archives directly on other systems. You also can install the files manually by using `rpm`—or a GUI `rpm`-based install tool—on Red Hat or other `rpm`-based systems or on systems without `rpm` by using the utilities in the `bin` directory on the LabVIEW installation CD.

If you installed Netscape, Mozilla, or Firefox in the default location, the LabVIEW installation program automatically installs the browser plug-in so you can view and control front panels remotely using a Web browser. Otherwise, you can install the browser plug-in manually by installing the LabVIEW Run-Time Engine and then copying `/usr/local/lib/LabVIEW-2009/LV90NPlugin.so` to the browser plug-in directory such as `/usr/lib/netscape/plugins`, `/usr/lib/mozilla/plugins`, or `/usr/lib/firefox/plugins`.

Refer to the `README.html` or `README.txt` documents in `/mnt/cdrom` for custom installation instructions and other information.

## Common LabVIEW Launch Errors on Linux

The following table lists common errors that might occur when you launch LabVIEW for Linux.

Error	Possible Cause and Solution
<b>Xlib: connection to :0.0 refused by server</b>	<b>Possible Cause</b> —You are trying to run LabVIEW as a user who does not have permission to open a window on the display server. You typically receive these errors after you run the <code>su</code> command to temporarily become a different user, such as <code>root</code> (superuser). <b>Solution</b> —Exit the <code>su</code> command and launch LabVIEW as the login user or use the <code>xhost</code> or <code>xauth</code> commands to grant permission to open a window on the display server.
<b>client is not authorized to connect to server</b>	
<b>internal error during connection authorization check</b>	

Refer to the National Instruments Web site at [ni.com/support](http://ni.com/support) for information about other errors that might occur when you launch LabVIEW for Linux.

## Installing LabVIEW Add-Ons

Some versions of toolkits that are not found on the LabVIEW Platform DVDs do not work with LabVIEW 2009. Installing an incompatible toolkit might cause some features in the toolkit or LabVIEW to behave incorrectly. Installing modules and toolkits from the LabVIEW Platform DVDs ensures compatibility with LabVIEW 2009. Use the instructions in this section only to install add-ons not available on the LabVIEW Platform DVDs.

Complete the following steps to install LabVIEW add-ons.

1. Refer to the National Instruments Web site at [ni.com/info](http://ni.com/info) and enter the info code `compat` to determine if your LabVIEW add-on is compatible with the current version of LabVIEW.
2. Disable any automatic virus detection programs before you install. Some virus detection programs interfere with the installation program.
3. Insert the LabVIEW add-on installation CD and follow the instructions that appear on the screen.
4. After installation, enable any virus detection programs you disabled.

Refer to the National Instruments Web site at [ni.com/labview/family](http://ni.com/labview/family) for more information about National Instruments add-ons.

## Installing the Application Builder

**(Windows)** LabVIEW installs the Application Builder when you install LabVIEW. If you activate the LabVIEW Professional Development System, you automatically activate the Application Builder. If you activate the LabVIEW Base Package or Full Development System, you must purchase and activate the Application Builder separately.

**(Mac OS and Linux)** LabVIEW installs the Application Builder when you install the LabVIEW Professional Development System. If you install the LabVIEW Full or Base Development System, you must purchase the Application Builder separately.

Refer to the National Instruments Web site at [ni.com/info](http://ni.com/info) and enter the info code `exd8yy` to access the Upgrade Advisor and purchase the Application Builder.



## Activating the LabVIEW License (Windows)

---



**Note (Mac OS and Linux)** LabVIEW does not require activation.

National Instruments uses activation to better support evaluation of our software, to enable additional software features, and to support license management in large organizations. To find out more about National Instruments software licensing, visit the National Instruments Web site at [ni.com/activate](http://ni.com/activate) to find frequently asked questions, resources, and technical support.

You can activate licenses you have purchased for LabVIEW, modules, and toolkits during installation. If you do not activate a valid license for LabVIEW or any modules or toolkits that you install, the unlicensed product operates in evaluation mode. After you install the product, the evaluation begins the first time you launch the product and lasts 30 consecutive days. When the evaluation period expires, you must activate a valid license to continue using the product.

To activate the product license, use the serial number you received on the Certificate of Ownership included in the software kit. If your software kit does not include a Certificate of Ownership, you can find the serial number on the product packing slip or on the shipping label. If you have purchased the version of a product you want to activate, you also can use serial numbers from a previous version of the product to activate it. You can activate the LabVIEW license in any of the following ways:

- During installation, enter the serial number when prompted and complete the installation and activation process.
- After you launch LabVIEW in evaluation mode, click the **Activate Products** button in the **LabVIEW** dialog box.
- Select **Help»Activate LabVIEW Components** while LabVIEW is running in evaluation mode or select **Start»All Programs»National Instruments»NI License Manager** to launch NI License Manager. The license activation does not take effect until you restart LabVIEW.

If you do not activate LabVIEW, modules, or toolkits during installation, LabVIEW prompts you to activate when you launch LabVIEW. After you activate the licenses for all LabVIEW products you installed, you no longer see this prompt.

## Evaluating LabVIEW, Modules, or Toolkits

You can access all the tools, VIs and functions, help, and examples available to the LabVIEW Professional Development System and most modules or toolkits in a free 30-day evaluation mode.

After the evaluation period for a module or toolkit expires, you are no longer able to perform the following actions:

- Run VIs from the module or toolkit.
- Run VIs that use VIs from the module or toolkit.
- Build VIs that use VIs from the module or toolkit into an executable or shared library.
- Access menus, tools, or palettes installed by the module or toolkit.

When you install a module or toolkit for evaluation, you install the help for the module or toolkit. The help for the module or toolkit remains installed after the 30-day evaluation period. Also, the NI Example Finder displays all module or toolkit examples after the 30-day evaluation period. You must uninstall the module or toolkit to remove the help and examples.

If you run LabVIEW in evaluation mode, you receive functionality of the Professional Development System. If you then purchase and activate a LabVIEW license, you receive full functionality of the development system you purchase. For example, if you create a VI using features that are only available in the Professional Development System and then you purchase and activate the Full Development System, the VI you created using the Professional Development System will be broken.

## Single-Seat and Volume Licensing

LabVIEW supports both single-seat and volume licenses. Single-seat licensing is the use of LabVIEW by an individual user. Single-seat licenses may be used on one computer by many users or by one user on up to three computers. Volume licensing is available if you purchase five or more seats of the same product and requires a volume licensing agreement and additional volume licensing software. Each seat using LabVIEW must have a valid license from a license server. Refer to the National Instruments Web site at [ni.com/license](http://ni.com/license) for more information about single-seat and volume licensing.

## Installing and Configuring Hardware

---

After you install LabVIEW software, you can install the drivers you need to use National Instruments hardware. All National Instruments devices include the drivers you need to use the device. The drivers packaged with LabVIEW and those packaged with the devices might be different versions. LabVIEW works best with the latest available drivers that support the devices in your system. If you are using NI-DAQ 7.0 or later, refer to the *NI-DAQ Readme* for more information about which driver version to use with the data acquisition devices in your system.



**Note** National Instruments periodically updates device drivers. Refer to the National Instruments Web site at [ni.com/info](http://ni.com/info) and enter the info code `exycckh` to download the latest drivers.

Install and configure National Instruments hardware after you install the drivers for those devices.

## Windows

The NI Device Drivers media includes the drivers and other software you need to use all National Instruments hardware. Use MAX to confirm that LabVIEW recognizes the device, to configure accessories and device settings, and to run test panels to test device functionality, such as the ability to acquire and generate signals. Launch MAX by selecting **Start»All Programs»National Instruments»Measurement & Automation** or by double-clicking the **Measurement & Automation** icon on the desktop.

Refer to installation instructions packaged with your device to install and configure your National Instruments device.

## Mac OS

The LabVIEW installation program installs the NI-VISA driver and the NI-488.2 driver for the GPIB interface by default.



**Note (Mac OS)** LabVIEW does not currently support the full NI-DAQmx driver software. NI-DAQmx Base offers a subset of NI-DAQmx functionality on Mac OS. Refer to the National Instruments Web Site at [ni.com/info](http://ni.com/info) and enter the info code `exf8fb` to download NI-DAQmx Base.

## Linux

The LabVIEW installation program prompts you to choose the NI-VISA and NI-488.2 drivers for the GPIB interface you are using. After you make a selection, LabVIEW installs those drivers automatically.



**Note** LabVIEW does not support the GPIB-1014 series (VME) devices or the original GPIB-SCSI box. LabVIEW does support the GPIB-SCSI-A box.

NI-DAQmx for Linux supports several National Instruments PXI, PCI, and SCXI data acquisition devices. Refer to the *NI-DAQmx Readme for Linux* for a complete list of supported devices. After you install the NI-DAQmx for Linux driver, refer to the *NI-DAQmx for Linux Configuration Guide* at `/usr/local/natinst/nidaqmx/docs/ConfigurationGuide.html` for information about testing and configuring a National Instruments DAQ device.

NI-DAQmx Base for Linux supports several National Instruments USB data acquisition devices. Refer to the *Readme for NI-DAQmx Base* for a complete list of supported devices. Documentation for the driver installs in the `/usr/local/natinst/nidaqmxbase/documentation` directory. Refer to the *LabVIEW Help* for more information about NI-DAQmx Base.

## Where to Go from Here

---

Refer to the following resources for more information about LabVIEW, including new features and upgrade issues, programming concepts and step-by-step procedures, and known issues.

### LabVIEW Quick Reference Card

The *LabVIEW Quick Reference Card* directs you to resources to use during each phase of using LabVIEW—from installation through advanced development. This document references the *Getting Started with LabVIEW* manual, the *LabVIEW Upgrade Notes*, the *LabVIEW Help*, and other printed resources related to LabVIEW.

### ni.com

Refer to [ni.com/labviewzone](http://ni.com/labviewzone) for Web resources that include example VIs and discussion forums.

National Instruments, NI, ni.com, and LabVIEW are trademarks of National Instruments Corporation. Refer to the *Terms of Use* section on [ni.com/legal](http://ni.com/legal) for more information about National Instruments trademarks. Other product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering National Instruments products/technology, refer to the appropriate location: **Help»Patents** in your software, the `patents.txt` file on your media, or the *National Instruments Patent Notice* at [ni.com/patents](http://ni.com/patents). For copyright notices, conditions, and disclaimers, including information regarding certain third-party components used in LabVIEW, refer to the *Copyright* topic in the *LabVIEW Help*.