

LabVIEW™ Real-Time Module Release and Upgrade Notes

Version 8.2

This document provides installation instructions, system requirements, descriptions of examples, and descriptions of the new features for version 8.2 of the LabVIEW Real-Time Module.

Refer to the *Getting Started with the LabVIEW Real-Time Module* manual for exercises you can complete to familiarize yourself with the Real-Time Module.

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System Requirements

Table 1 describes the system requirements to run version 8.2 of the Real-Time Module. The Real-Time Module system requirements are in addition to the LabVIEW system requirements listed in the *LabVIEW Release Notes*.

Table 1. System Requirements for the Real-Time Module 8.2

Platform	Media and System Requirements	Important Notes
Windows 2000/XP	<p>National Instruments recommends that you have at least 210 MB of disk space for the minimum Real-Time Module installation or 750 MB of disk space for the complete Real-Time Module installation, which includes the Real-Time and Embedded drivers from the National Instruments Device Drivers CD.</p> <p>(RTX) You must install Service Pack 2 for Windows XP.</p>	<p>LabVIEW does not support Windows NT/Me/9x.</p> <p>You might need more memory than the LabVIEW-recommended minimum of 128 MB of RAM depending on the size of the application you design in LabVIEW on the host computer.</p> <p>To use the <i>LabVIEW Help</i>, the NI Measurement & 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 the front panel of a VI running on an RT target remotely using a Web browser, National Instruments recommends Internet Explorer 5.5 with Service Pack 2 or later.</p>

Installing the Real-Time Module 8.2

This section includes information about installing the Real-Time Module on a development, or host, computer.



Note You must install LabVIEW 8.2 before attempting to install the Real-Time Module 8.2. Refer to the *LabVIEW Release Notes* for the LabVIEW installation instructions.

Complete the following steps to install the LabVIEW Real-Time Module on the host computer.

1. Disable any automatic virus detection programs before you install. Some virus detection programs interfere with the installation program.
2. Log on as an administrator or as a user with administrator privileges.
3. **(RTX)** Install the Ardenne RTX 6.1 Runtime and restart the computer. Refer to the Ardenne RTX 6.1 documentation for information about installing and configuring the RTX 6.1 Runtime on the host computer.

4. Insert the LabVIEW Real-Time Module installation CD into the CD-ROM drive. The LabVIEW Real-Time Module installation program runs automatically.
5. Follow the instructions that appear on the screen.
6. Install the Real-Time and Embedded drivers and any other drivers that you require from the National Instruments Device Driver CD.

RT Target Configuration

Use MAX to configure RT targets and to install software and drivers on targets.

- **Networked RT Targets**—Refer to the *Remote Systems* section of the *Measurement & Automation Explorer Help*, available by selecting **Help»MAX Help** from MAX, for information about configuring networked RT targets.
- **Desktop PC Targets**—Refer to the *Using Desktop PCs as RT Targets with the LabVIEW Real-Time Module* document for information about configuring a desktop PC as a networked RT target. You can access the document from Windows by selecting to install the Real-Time Module documentation when you install the Real-Time Module. Select **Start»All Programs»National Instruments»LabVIEW 8.2»Manuals** to open the `labview\manuals` directory and then double-click `RT_Using_PC_as_RT_Target.pdf` to open the document.



Note RTX targets do not require configuration.

New Real-Time Module 8.2 Features

The Real-Time Module includes the following new features. Refer to the *LabVIEW Help* for more information about the following new features.

Real-Time FIFO Functions

The new Real-Time FIFO functions, located on the **Real-Time VIs»Real-Time FIFO Functions** palette, offer improved performance over the Real-Time FIFO VIs and include added functionality for reading from and writing to a Real-Time FIFO.

USB Storage Device Support

The Real-Time Module includes support for USB storage devices, such as thumb drives and external USB hard drives, for RT targets that have onboard USB hardware. Connect an external USB storage device to a USB port of an RT target and then access the device from VIs running on the RT target.

Utility USB Drive for Booting and Configuring Desktop PCs

Use a utility USB drive to boot and configure a desktop PC as an RT target for the LabVIEW Real-Time Module. A utility USB drive provides the following features:

- Boot using software installed on the hard disk of the desktop PC.
- Boot into safe mode.
- Reset the network configuration of the desktop PC.
- Clear the password of the desktop PC.
- Disable a LabVIEW Real-Time start-up application.
- Format the hard disk of the desktop PC.

Refer to the *Measurement & Automation Explorer Help* for information about creating a utility USB drive.

Host Environment Properties Page

Use the **Host Environment Properties** page of the **Real-Time Target Properties** dialog box to enable polling the status of the connection with RT targets. If you enable polling of the connection, LabVIEW returns an error dialog if the connection with the RT target becomes unstable or lost. You also can use the **Host Environment Properties** page of the **Real-Time Target Properties** dialog box to configure the settings for polling the connection.

Error Logging Enhancements

The **RT Target Errors** dialog box displays LabVIEW errors, real-time operating system errors, and crash logs for an RT target. Right-click an RT target in the **Project Explorer** window and select **Utilities»View Error Log** from the shortcut menu to view the error logs of the target using the **RT Target Errors** dialog box.

Version 8.2 of the Real-Time Module supports the following additional features for the **RT Target Errors** dialog box:

- The dialog box reports when RT system components fail to load or start, such as stand-alone applications set as startup applications not loading or drivers not initializing when the target starts.

- The dialog box returns improved descriptions for all error messages that include LabVIEW error codes.
- The dialog box reports an error when the RT target fails to initialize the network connection when the RT target boots.
- The dialog box reports memory management errors.

Real-Time Module Examples

Use the NI Example Finder, available by selecting **Help»Find Examples** from LabVIEW, to browse or search for example VIs. You also can access the example VIs from the `labview\examples\Real-Time` directory. The Real-Time Module includes examples of multithreaded communication, network communication, and shared memory access.

- **Multithreaded Communication**—Example VIs that use functional global variables, Real-Time FIFO functions, and shared variables to communicate between the sections of a multithreaded application.
- **Network Communication**—Example VIs that use shared variables, TCP, UDP, and the VI Server to communicate between the host computer and an RT target.
- **Shared Memory**—Example VIs that use the Real-Time Shared Memory VIs to communicate between a host computer and an RTX target.

Known Issues with the Real-Time Module 8.2

Refer to the `readme_RT.html` file on the LabVIEW Real-Time Module 8.2 installation CD for information about known issues with the Real-Time Module 8.2.

You also can launch the `readme_RT.html` file from Windows after you install the Real-Time Module. Complete the following steps to access the `readme_RT.html` file from Windows.

1. Select **Start»All Programs»National Instruments»LabVIEW 8.2»Readme** to open the `labview\readme` directory.

The `labview\readme` directory contains the HTML readme files for LabVIEW, the LabVIEW modules, and add-ons installed on the computer.

2. Double-click `readme_RT.html` to open the *LabVIEW Real-Time Module Readme*.

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