

RELEASE AND UPGRADE NOTES

LabVIEW™ Real-Time Module

Version 2014

This document provides system requirements, installation instructions, descriptions of new features, and information about upgrade and compatibility issues for the LabVIEW 2014 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.



Tip Refer to the *Real-Time Module Best Practices* book in the *LabVIEW Help* for programming recommendations on designing, developing, and deploying applications with the LabVIEW Real-Time Module. Select **Real-Time Module» Real-Time Module Best Practices** on the **Contents** tab of the *LabVIEW Help* to display this book.

Contents

System Requirements	2
Installing the LabVIEW 2014 Real-Time Module	2
Installing Japanese and Simplified Chinese Languages	3
Activating the Real-Time Module	3
Configuring Real-Time Targets	3
New Features	4
Embedded User Interface on RT Targets	4
Real-Time Trace Viewer	4
Establishing Modbus Communication Using Modbus VIs	4
Ethernet over USB	4
USB 3.0 Support	5
Intel® Atom™ Dual Core Processor Support on NI Linux Real-Time Targets	5
12-Core CPU Support on Phar Lap ETS Targets	5
Upgrade and Compatibility Issues	5
Known Issues with the Real-Time Module	5
Where to Go from Here	5
Related Documentation and Examples	5
NI Website	6
Support	6

System Requirements

In addition to the LabVIEW system requirements listed in the *LabVIEW Readme*, the LabVIEW 2014 Real-Time Module has the following requirements:

- LabVIEW 2014 Full or Professional Development System (32-bit)
- At least 200 MB of disk space in addition to the LabVIEW-recommended minimum.
- RT target hardware and driver software.
- One of the following operating systems for application development:
 - Windows 8 (32-bit)
 - Windows 8 (64-bit with 32-bit LabVIEW installed)
 - Windows 7 (32-bit)
 - Windows 7 (64-bit with 32-bit LabVIEW installed)
 - Windows Server 2003 R2 (32-bit)
 - Windows Server 2008 R2 (64-bit with 32-bit LabVIEW installed)
 - Windows Vista (32-bit)
 - Windows Vista (64-bit with 32-bit LabVIEW installed)
 - Windows XP Pro (Service Pack 3)



Note You might need more memory than the LabVIEW-recommended minimum depending on the size of the application you design in LabVIEW on the host computer.

Installing the LabVIEW 2014 Real-Time Module

Complete the following steps to install LabVIEW and the Real-Time Module on a development computer:

1. Log in to the development computer as an administrator or as a user with administrative privileges.
2. Insert the LabVIEW 2014 Platform media.



Note To request or download additional media, refer to the National Instruments website. If you purchased this product with an NI Software Suite or NI Product Bundle, use the installation media that shipped with your purchase to install this product.

3. Follow the instructions on the screen to install software in the following order:
 - a. LabVIEW
 - b. Real-Time Module
 - c. Device Drivers



Note Refer to your hardware-specific documentation for information about installing the appropriate device drivers.

The Real-Time Module installs the following real-time operating systems (RTOSes). Refer to the specific RT target hardware documentation for information about which RTOS your RT target uses.

- NI Linux Real-Time
- Phar Lap ETS
- VxWorks

Installing Japanese and Simplified Chinese Languages

After you install the Real-Time Module on your development computer, you can complete the following steps to install and use Japanese and Simplified Chinese languages on an RT target:

1. Use the LabVIEW Real-Time Software Wizard in NI Measurement & Automation Explorer (NI MAX) to install the **Language Support for Japanese** or **Language Support for Simplified Chinese** software component on the RT target. Refer to the *Measurement & Automation Explorer Help* for information about the LabVIEW Real-Time Software Wizard.
2. Open the **System Settings** tab and select **Japanese or Simplified Chinese** as the **Locale**.



Note You cannot use Japanese or Simplified Chinese characters in directory names or file names on the RT target.

Activating the Real-Time Module

The Real-Time Module relies on licensing activation. When the evaluation period expires, you must activate a valid Real-Time Module license to continue using the Real-Time Module. You must create an ni.com User Profile to activate your software.

You can use the NI License Manager, available by selecting **Start»All Programs»National Instruments»NI License Manager**, to activate National Instruments products. **(Windows 8)** Click **NI Launcher** and select **NI License Manager** in the window that appears.

Refer to the *National Instruments License Manager Help*, available by selecting **Help»Contents** in the NI License Manager, for information about activating NI products.

Configuring Real-Time Targets

Use NI MAX to configure RT targets and to install software and drivers on targets. You can install NI MAX from the LabVIEW Platform media.

- **Networked RT Targets**—Refer to the **MAX Remote Systems Help** book in 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. Open the `labview\manuals` directory and double-click `RT_Using_PC_as_RT_Target.pdf` to open the document.



Note If you install NI Web-based Configuration & Monitoring on an RT target, you can use a web browser to perform common monitoring and configuration tasks on the target. Select **Fundamentals»Working with Projects and Targets»How-To»Monitoring and Configuring a Remote Device from a Web Browser** on the **Contents** tab in the *LabVIEW Help* for information about NI Web-based Configuration & Monitoring.

New Features

The LabVIEW 2014 Real-Time Module includes the following new features. Refer to the *LabVIEW Help*, available by selecting **Help»LabVIEW Help**, for more information about these features.

Embedded User Interface on RT Targets

The LabVIEW 2014 Real-Time Module includes support for an embedded UI on select NI Linux Real-Time targets. The embedded UI provides a graphical working environment with advanced display capabilities. For example, you can connect a display device to the RT target using a DisplayPort connection, and then display the front panel of a VI running on the RT target. In contrast, other RT targets run headless, with only a basic console output display.

Real-Time Trace Viewer

The LabVIEW 2014 Real-Time Module includes the Real-Time Trace Viewer. Prior releases of the LabVIEW Real-Time Module packaged the Real-Time Trace Viewer as a separate toolkit (Real-Time Execution Trace Toolkit). You can use the Real-Time Trace Viewer to capture the timing and execution data of VI and thread events for applications running on an RT target. The Real-Time Trace Viewer displays the timing and event data, or trace session, on the host computer. In LabVIEW, select **Tools»Real-Time Module»Trace Viewer** to display the Real-Time Trace Viewer.

Establishing Modbus Communication Using Modbus VIs

The LabVIEW 2014 Real-Time Module includes the Modbus palette, available on the Data Communication palette. You can use the Modbus VIs to build control systems with specific performance and rate requirements. By using the Modbus VIs, you can control the requests that Modbus masters generate, determine when to send these requests, and operate on the responses that you receive from Modbus slaves.

Ethernet over USB

The LabVIEW 2014 Real-Time Module includes support for connecting myRIO and select NI Linux Real-Time targets to your host computer using a USB device connection. The USB connection is an alternative to an Ethernet connection, allowing you to configure, develop for, and deploy to your RT target using a virtual Ethernet port over USB.

USB 3.0 Support

The LabVIEW 2014 Real-Time Module includes support for USB 3.0 on select NI Linux Real-Time targets. You can connect compatible devices such as USB 3.0 cameras to your RT target to benefit from increased streaming speeds and higher simultaneous device connections.

Intel® Atom™ Dual Core Processor Support on NI Linux Real-Time Targets

The LabVIEW 2014 Real-Time Module includes support for new NI Linux Real-Time targets equipped with Intel x64 processors. These RT targets support the embedded UI and provide additional memory to better handle data-intensive applications.

12-Core CPU Support on Phar Lap ETS Targets

The LabVIEW 2014 Real-Time Module includes support for CPUs with up to 12 cores on Phar Lap ETS targets. Previously, these targets only supported CPUs with up to eight cores.

Upgrade and Compatibility Issues

You might encounter compatibility issues when upgrading to the LabVIEW 2014 Real-Time Module from the LabVIEW 2013 Real-Time Module. Refer to previous versions of the *LabVIEW Real-Time Module Release and Upgrade Notes*, available on ni.com/manuals, for changes in previous versions of the Real-Time Module.

Known Issues with the Real-Time Module

Refer to the National Instruments website at ni.com/info and enter the Info Code LVRT2014KIL to access the known issues for the LabVIEW 2014 Real-Time Module.

Where to Go from Here

National Instruments provides many resources to help you succeed with your NI products. Use the following resources as you start exploring LabVIEW and the Real-Time Module.

Related Documentation and Examples

Use the following resources to learn more about using LabVIEW and the Real-Time Module:

- **LabVIEW Help**—Available by selecting **Help»LabVIEW Help** in LabVIEW. Browse the **Real-Time Module** book in the **Contents** tab for an overview of the Real-Time Module.
- **Context Help Window**—Available by selecting **Help»Show Context Help**. Context help provides brief descriptions of VIs, functions, and dialog boxes. Context help for most VIs and functions include a link to the complete reference for a VI or function.

- **Hardware-Specific Documentation**—Some RT targets provide printed documentation as well as content in the *LabVIEW Help*. Use the hardware documentation for information about using the RT target with LabVIEW and for information about hardware specifications.
- **Examples**—Use the NI Example Finder, available by selecting **Help»Find Examples** from LabVIEW, to browse or search for RT example VIs. You also can access example VIs from the `labview\examples\Real-Time Module` directory.

NI Website

Refer to ni.com/info and enter the Info Code `rtinfo` for the latest articles, examples, and support information for the Real-Time Module.

Refer to ni.com/info and enter the Info Code `rttrn` to access online training for the Real-Time Module.

Support

The National Instruments website is your complete resource for technical support. At ni.com/support you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

Visit ni.com/services for NI Factory Installation Services, repairs, extended warranty, and other services.

Visit ni.com/register to register your National Instruments product. Product registration facilitates technical support and ensures that you receive important information updates from NI.

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