

LabSocket – Additional Details

Comparison of LabSocket Versions

LabSocket software is available in several versions. The original version, named LabSocket for Windows, or simply “LabSocket”, is designed for access to VIs on Windows platforms. This version supports synchronization of front panel element values and, for several elements, other properties, such as visibility and disabled state. It also supports a “Basic” mapping mode in which one or more browsers connect to a single instance of a Target VI; and, a “MultiClient” mapping mode in which each browser connects to a unique instance of a Target VI.

LabSocket-Embedded or “LabSocket-E” is a new version that is designed to access VIs on National Instruments Real-Time controllers such as CompactRIO, Single-Board RIO, myRIO and PXI devices. LabSocket-E only synchronizes the values of front panel elements and operates only in Basic client mapping mode.

LabSocket-E Student and Home Edition is similar to LabSocket-E but also supports Raspberry Pi 2 and 3 devices in addition to NI real-time controllers. This low-cost version is intended for academic and non-commercial use only.

A detailed comparison of all LabSocket versions is shown in Table 1.

Table1. Comparison of LabSocket and LabSocket-E Software

	LabSocket for Windows ("LabSocket")	LabSocket-Embedded ("LabSocket-E")	LabSocket-E Student and Home Edition	Comments
LabVIEW Version	LabVIEW 2014+ 32-bit		<ul style="list-style-type: none"> • LabVIEW 2014+ 32-bit for use with NI real-time platforms • LabVIEW 2014 32-bit or LabVIEW Home for use with Raspberry Pi devices 	
Development Platform OS	Windows 7 or later			
Execution Platform OS	Windows 7 or later (1)	NI Linux Real-Time, VxWorks, Phar Lap	NI Linux Real-Time, VxWorks, Phar Lap, Debian	Debian OS is used on Raspberry Pi 2 and 3 devices
User Authentication Mechanism	Yes	No		LabSocket can optionally use an LDAP server for user authentication
Browser to VI Mapping	Basic and MultiClient (1)	Basic		<ul style="list-style-type: none"> • Basic Mapping - One or more browsers connect to single instance of Target VI. • MultiClient Mapping - Each browser connects to unique instance of Target VI
Synchronization	Values and for several elements, other properties (eg. visibility, disabled state)	Values only		
#LS_image preprocessor tag support	Yes	Only on cRIO-903x with embedded UI on		#LS_image preprocessor tag allows any Front Panel element to be reproduced as an image in the browser
Developer Customization	Insert arbitrary JavaScript into browser client via API			
Architecture	Requires LabSocket Server software to host HTTP server and message broker	Direct connection between browser and RT platform		LabSocket-E does not require the use of the LabSocket Server software.
Licensing	<ul style="list-style-type: none"> • One license per development platform. • Create an unlimited number of executables 	<ul style="list-style-type: none"> • One license per development platform • Deploy to an unlimited number of RT targets 	<ul style="list-style-type: none"> • One license per development platform • Deploy to an unlimited number of RT targets or RPi devices • For academic and non-commercial applications only 	
Price (USD)	2950.00	1950.00	49.50	

1) LabSocket is also compatible with cRIO-903x controllers in headless mode with embedded UI on and with Basic mapping

LabSocket Server

A key component of LabSocket for Windows is the "LabSocket Server" software that acts as a bridge between LabVIEW and a browser. This software consists primarily of an industry standard message broker and HTTP server. It is provided at no charge for both evaluation and commercial applications. **LabSocket Server software is not required for LabSocket-E or LabSocket-E Student and Home Edition.**

The two main physical implementations of this software are:

- Virtual Machine (Most popular): A pre-configured VirtualBox Virtual Machine (VM) is available for use with evaluation and commercial versions of the LabSocket software. The use of a VM enables the entire LabSocket system to be easily set up within a customer LAN and assures customers complete control and ownership of the system and their data. The VM is available for free and can be downloaded via the Download section of the LabSocket page on the LabVIEW Tools Network.
- labsocket.com Cloud Server: This option is available for free for use with the LabSocket evaluation software.

Commercial users can also use one of the following two LabSocket Server implementations. Please contact BML to request these options:

- Customer Cloud Server: A pre-configured cloud server instance that contains the LabSocket Server software can be leased for the exclusive use of each customer.
- Native Operation: In this case, free detailed instructions are provided for setting up the individual LabSocket Server components directly on a customer platform (Windows, Mac or Linux).

User Authentication

LabSocket for Windows includes a user authentication mechanism option that can limit remote access to the Target VI to authorized users only. The user authentication mechanism can validate users against credentials stored in a text file or can optionally be configured to interface to an LDAP server. A VM containing an OpenLDAP server may be purchased separately from BML.

Development Platforms and Executables

LabSocket for Windows and LabSocket-Embedded may be installed on one (1) physical developer platform. Executable applications and real-time applications that incorporate the LabSocket software may be deployed on an unlimited number of platforms. Full licensing terms may be found in the Help menu after installation.

Customization and Source Code

Customization of the system can be implemented upon request. Simple changes can be added at no cost while more complex changes may require a customization fee.

The LabSocket for Windows and LabSocket-Embedded source code is also available for purchase.

Support Information

LabSocket is supported by the third-party provider, Bergmans Mechatronics LLC, and not by National Instruments. For technical support with this product or purchasing information, contact Bergmans Mechatronics LLC at:

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