
Release Notes

Keysight IO Libraries Suite 2024 Update 2

Notices

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Regulatory Compliance

This product has been designed and tested in accordance with accepted industry standards, and has been supplied in a safe condition. To review the Declaration of Conformity, go to <http://www.keysight.com/go/conformity>.

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Safety Notices

A CAUTION notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

A WARNING notice denotes a hazard. It calls attention to an operating procedure,

practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

The following safety precautions should be observed before using this product and any associated instrumentation.

This product is intended for use by qualified personnel who recognize shock hazards and are familiar with the safety precautions required to avoid possible injury. Read and follow all installation, operation, and maintenance information carefully before using the product.

If this product is not used as specified, the protection provided by the equipment could be impaired. This product must be used in a normal condition (in which all means for protection are intact) only.

The types of product users are:

- Responsible body is the individual or group responsible for the use and maintenance of equipment, for ensuring that the equipment is operated within its specifications and operating limits, and for ensuring operators are adequately trained.
- Operators use the product for its intended function. They must be trained in electrical safety procedures and proper use of the instrument. They must be protected from electric shock and contact with hazardous live circuits.
- Maintenance personnel perform routine procedures on the product to keep it operating properly (for example, setting the line voltage or replacing consumable materials). Maintenance procedures are described in the user documentation. The procedures explicitly state if the operator may perform them. Otherwise, they should be performed only by service personnel.

- Service personnel are trained to work on live circuits, perform safe installations, and repair products. Only properly trained service personnel may perform installation and service procedures.

Operator is responsible to maintain safe operating conditions. To ensure safe operating conditions, modules should not be operated beyond the full temperature range specified in the Environmental and physical specification. Exceeding safe operating conditions can result in shorter lifespans, improper module performance and user safety issues. When the modules are in use and operation within the specified full temperature range is not maintained, module surface temperatures may exceed safe handling conditions which can cause discomfort or burns if touched. In the event of a module exceeding the full temperature range, always allow the module to cool before touching or removing modules from chassis.

Keysight products are designed for use with electrical signals that are rated Measurement Category I and Measurement Category II, as described in the International Electrotechnical Commission (IEC) Standard IEC 60664. Most measurement, control, and data I/O signals are Measurement Category I and must not be directly connected to mains voltage or to voltage sources with high transient over-voltages. Measurement Category II connections require protection for high transient over-voltages often associated with local AC mains connections. Assume all measurement, control, and data I/O connections are for connection to Category I sources unless otherwise marked or described in the user documentation.

Exercise extreme caution when a shock hazard is present. Lethal voltage may be present on cable connector jacks or test fixtures. The

American National Standards Institute (ANSI) states that a shock hazard exists when voltage levels greater than 30V RMS, 42.4V peak, or 60VDC are present. A good safety practice is to expect that hazardous voltage is present in any unknown circuit before measuring.

Operators of this product must be protected from electric shock at all times. The responsible body must ensure that operators are prevented access and/or insulated from every connection point. In some cases, connections must be exposed to potential human contact. Product operators in these circumstances must be trained to protect themselves from the risk of electric shock. If the circuit is capable of operating at or above 1000V, no conductive part of the circuit may be exposed.

Do not connect switching cards directly to unlimited power circuits. They are intended to be used with impedance-limited sources. NEVER connect switching cards directly to AC mains. When connecting sources to switching cards, install protective devices to limit fault current and voltage to the card.

Before operating an instrument, ensure that the line cord is connected to a properly-grounded power receptacle. Inspect the connecting cables, test leads, and jumpers for possible wear, cracks, or breaks before each use.

When installing equipment where access to the main power cord is restricted, such as rack mounting, a separate main input power disconnect device must be provided in close proximity to the equipment and within easy reach of the operator.

For maximum safety, do not touch the product, test cables, or any other instruments while power is applied to the circuit under test. ALWAYS remove power from the entire test system and discharge any

capacitors before: connecting or disconnecting cables or jumpers, installing or removing switching cards, or making internal changes, such as installing or removing jumpers.

Do not touch any object that could provide a current path to the common side of the circuit under test or power line (earth) ground. Always make measurements with dry hands while standing on a dry, insulated surface capable of withstanding the voltage being measured.

The instrument and accessories must be used in accordance with its specifications and operating instructions, or the safety of the equipment may be impaired.

Do not exceed the maximum signal levels of the instruments and accessories, as defined in the specifications and operating information, and as shown on the instrument or test fixture panels, or switching card.

When fuses are used in a product, replace with the same type and rating for continued protection against fire hazard.

Chassis connections must only be used as shield connections for measuring circuits, NOT as safety earth ground connections.

If you are using a test fixture, keep the lid closed while power is applied to the device under test. Safe operation requires the use of a lid interlock.

Instrumentation and accessories shall not be connected to humans.

Before performing any maintenance, disconnect the line cord and all test cables.

To maintain protection from electric shock and fire, replacement components in mains circuits – including the power transformer, test leads, and input jacks – must be purchased from Keysight. Standard fuses with applicable national safety approvals may be

used if the rating and type are the same. Other components that are not safety-related may be purchased from other suppliers as long as they are equivalent to the original component (note that selected parts should be purchased only through Keysight to maintain accuracy and functionality of the product). If you are unsure about the applicability of a replacement component, call an Keysight office for information.

No operator serviceable parts inside. Refer servicing to qualified personnel. To prevent electrical shock do not remove covers. For continued protection against fire hazard, replace fuse with same type and rating.

PRODUCT MARKINGS:



The CE mark is a registered trademark of the European Community.



Australian Communication and Media Authority mark to indicate regulatory compliance as a registered supplier.



This symbol indicates product compliance with the Canadian Interference-Causing Equipment Standard (ICES-001). It also identifies the product is an Industrial Scientific and Medical Group 1 Class A product (CISPR 11, Clause 4).



South Korean Class A EMC Declaration. This equipment is Class A suitable for professional use and is for use in electromagnetic environments outside of the home. A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용 (A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.



This product complies with the WEEE Directive marketing requirement. The affixed product label (above) indicates that you must not discard this electrical/electronic product in domestic household waste.

Product Category: With reference to the

equipment types in the WEEE directive Annex 1, this product is classified as “Monitoring and Control instrumentation” product. Do not dispose in domestic household waste. To return unwanted products, contact your local Keysight office, or for more information see <http://about.keysight.com/en/companyinfo/environment/takeback.shtml>.



This symbol indicates the instrument is sensitive to electrostatic discharge (ESD). ESD can damage the highly sensitive components in your instrument. ESD damage is most likely to occur as the module is being installed or when cables are connected or disconnected. Protect the circuits from ESD damage by wearing a grounding strap that provides a high resistance path to ground. Alternatively, ground yourself to discharge any built-up static charge by touching the outer shell of any grounded instrument chassis before touching the port connectors.



This symbol on an instrument means caution, risk of danger. You should refer to the operating instructions located in the user documentation in all cases where the symbol is marked on the instrument.



This symbol indicates the time period during which no hazardous or toxic substance elements are expected to leak or deteriorate during normal use. Forty years is the expected useful life of the product.

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Keysight IO Libraries Suite 2024 Update 2(for Windows)

What is the Keysight IO Libraries Suite?

The Keysight IO Libraries Suite is a collection of libraries and utility programs. The IO libraries (SICL, VISA, VISA.NET, and VISA.COM) enable instrument communication for a variety of development environments (Keysight VEE Pro, Microsoft Visual Studio, etc.) that are compatible with GPIB, USB, LAN, RS-232, PXI, AXIe, and VXI test instruments from a variety of manufacturers. Several utility programs help you quickly and easily connect your instruments to your PC.

Establishing communication between your instruments and your PC is as easy as 1, 2, 3:

1. Install the IO Libraries Suite: Get all the software you need to connect instruments to your PC via GPIB, USB, LAN, and other standard interfaces.
2. Install Instrument Software and Connect Your Instruments: Install any software and drivers with your instruments. Connect cables and apply power.
3. Run Keysight Connection Expert to Identify and Communicate with Instruments: See connected instruments, send commands to your instruments, and configure the settings.

What's New in Keysight IO Libraries Suite 2024 Update 2

Reporting a Product Cybersecurity Issue

Keysight is committed to cybersecurity. Ensure your products are secure by following best practices, including keeping Windows updated, using firewalls, and maintaining up-to-date antivirus software. Report any suspected vulnerabilities or cybersecurity issues related to Keysight products through the appropriate channels:

- [Product Cybersecurity Information](#)
- [Responsible Disclosure](#)
- [Report a Cybersecurity Issue](#)

Enhancement(s):

- Improved PXI enumeration times on large systems. Systems with multiple chassis, like the six-chassis setup, will now complete PXI enumeration more efficiently, reducing delays caused by repetitive device enumeration during initialization.
- Added checks for prerequisites in the main IO Libraries Suite (IOLS) installer. This ensures that all necessary dependencies are installed before the main software.

Defect Fix(es):

- Fixed an issue where reinstalling the IO Libraries Suite (IOLS) could disrupt other Keysight software, such as the Trigger Manager. The installer now ensures that only IOLS-specific registry entries are updated, preventing the reset of unrelated Keysight Technologies registry entries.

Windows on ARM Not Supported

This release does not include support for Windows on ARM platforms.

Getting Started

System Requirements

Keysight has tested IO Libraries Suite 2024 Update 2 on the following system configurations. The product should run on any x86 or x64 (except Itanium) processor. Note that performance may be impacted with less powerful systems.

#	Operating System	Processor Speed	Available Memory (Limited RAM on older PCs can cause longer installation times)	Available Disk Space (Minimum disk space required for installation may be higher than actual space utilized)	Minimum Display
1	Windows 11 (64-bit): <ul style="list-style-type: none"> • Home • Pro • Enterprise 	1 GHz 64-bit (x64) <i>No support for Itanium64 or Windows 11 RT</i>	1 GB minimum	2.5 GB hard disk space: <ul style="list-style-type: none"> • 2 GB for Microsoft .NET Framework 4.6 • 100 MB for Keysight IO Libraries Suite 	1024x768, 96, or 120 DPI
2	Windows 10 (64-bit): <ul style="list-style-type: none"> • Home • Pro • Enterprise 	1 GHz 64-bit (x64) <i>No support for Itanium64 or Windows 10 RT</i>	1 GB minimum	2.5 GB hard disk space: <ul style="list-style-type: none"> • 2 GB for Microsoft .NET Framework 4.6 • 100 MB for Keysight IO Libraries Suite 	1024x768, 96, or 120 DPI

3	Windows Server <ul style="list-style-type: none"> Windows Server 2016 (64-bit)/ Windows Server 2012 (64-bit, Standard) Windows Server 2019 (64-bit, Standard) Windows Server 2022 (64-bit, Standard) 	1.4 GHz (x64 processor) 1.3 GHz (Dual Core) <i>No support for Itanium64</i>	1 GB minimum	2.5 GB hard disk space: <ul style="list-style-type: none"> 2 GB for Microsoft .NET Framework 4.6 100 MB for Keysight IO Libraries Suite 	1024x768, 96, or 120 DPI
4	Windows Server 2008 R2 SP1 (64-bit): <ul style="list-style-type: none"> Standard Enterprise 	1.4 GHz (x64 processor) 1.3 GHz (Dual Core) <i>No support for Itanium64</i>	1 GB minimum	1.5 GB hard disk space: <ul style="list-style-type: none"> 1 GB for Microsoft .NET Framework 4.6 100 MB for Keysight IO Libraries Suite 	1024x768, 96, or 120 DPI

Other Requirements

Windows Server version 2012 R2 requires Windows update 2919355 *before* Keysight IO Libraries can be properly installed.

Licensing

See the [License Grant License](#) at the end of this file to determine whether you are licensed to install this software.

Support for Older Operating Systems

Keysight recommends you use the current version of the IO Libraries Suite. It supports the newest interfaces and operating systems and has the most advanced features. If you need to install an earlier

version to support an older interface or operating system, go to [IO Libraries Suite](#) to locate legacy versions.

Installing the Software

IO Libraries Suite installation process has undergone a major change. Now there will be 2 installers:

- **Prerequisites Installer:** installs all the necessary dependencies and components that the Keysight IO Libraries Suite requires to function correctly. This might include libraries, drivers, and other software components essential for running the main software.
- **Main Installer:** installs the primary Keysight IO Libraries Suite software itself. This is the core application that users interact with for their tasks.

The separate installers allow for more modular installation and easier management of dependencies, potentially reducing the overall installation size and improving flexibility.

To install Keysight IO Libraries Suite:

1. Download the Prerequisites installer and Main installer from www.keysight.com.
2. Disconnect any USB instruments, USB/GPIB converters, PXI and AXIe chassis, and FireWire (IEEE 1394)/VXI interfaces connected to your PC.
3. Close all applications running on the PC.
4. Install the software:
Start with the prerequisites installer and then proceed with the main installer.

Step-by-Step Installation

Run the executable for each installer and follow the interactive steps to complete the prerequisites installer first, then the main installer.

Silent Installation

For detailed options, refer to the [IO Libraries Suite: Silent Installation guide](#)

5. Re-connect any devices that you disconnected before installation.

Uninstallation

- Prerequisites cannot be uninstalled except via the Control Panel.
- Prerequisites uninstaller is located in `C:\Program Files\Keysight\IO Libraries Suite Prerequisites\uninstall` but it only removes itself and its registry entry.
- The main product uninstaller is in `C:\Program Files\Keysight\IO Libraries Suite\uninstall`, but use the Control Panel for a clean uninstallation.

Known Issues

- **Missing Components in VISA COM Applications**

Ivi.Visa.Interop.dll is missing in the 32-bit VISA COM applications. The workaround to fix the issue is as follows:

- Install .NET Framework 3.5
You can install .NET Framework 3.5 using the IO Libraries Suite installer with the net35 directive. For example: **IOLibSuite_version.exe /s /z"typical;net35"**
- Uninstall VISA shared component
- Repair IO Library Suite to install VISA shared component

Another way to fix the issue is as follows:

- Open Visual Studio developer command window with elevated privilege
- Change to *C:\Program Files (x86)\IVI Foundation\VISA\VisaCom\Primary Interop Assemblies*
- Run "IviPiaRegistration.bat"

- **Known Issue with Delinea Tool Interference**

We've identified issues when installing or upgrading IO Libraries Suite (IOLS) on systems where the Delinea tool is used. These issues may include failures during installation or upgrading certain IOLS components.

Action Required: If you encounter problems with IOLS installation or upgrades while using Delinea, please get in touch with Keysight Support for assistance.

Feature Obsolescence Note

Here is the list of features no longer supported in IO Libraries Suite 2024 and later versions:

Feature	Details
VXI Interface	IO Libraries Suite 2024 and later versions will no longer support VXI on Windows 8 or 11.
Operating System Support	IO Libraries Suite 2024 and later versions will no longer support the following operating systems: <ul style="list-style-type: none"> • Windows 7 • Windows 8 and 8.1 • Windows 10 32-bit.
IO Libraries Suite Upgrade	Upgrades from IO Libraries Suite 18.0 or earlier versions will not be possible with the upcoming release of the IO Libraries Suite.
.NET Framework 3.5 Install	Installing .NET Framework 3.5 as a part of IO Libraries is no longer supported.

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