

NI-IMAQ FOR WINDOWS 95/NT

NI-IMAQ for Windows 95/NT is the imaging acquisition software for all National Instruments IMAQ devices. The NI-IMAQ software is compatible with Windows 95 and Windows NT 4.0 or later.

These release notes describe how to install your NI-IMAQ software. Also included is information about upgrading from NI-IMAQ 1.x to NI-IMAQ 2.0. Please also see the `readme.txt` file included with your software for the most up-to-date information about this release of NI-IMAQ.

NI-IMAQ Documentation

Your NI-IMAQ software documentation is online. Refer to the *About the Online Manual Set* section later in these notes for more information about using the online manuals.

Software Components

Your NI-IMAQ software kit contains the following components:

- NI-IMAQ device driver software
- NI-IMAQ Microsoft Visual C/C++, Borland, Watcom, and Symantec import libraries
- NI-IMAQ VIs for G
- IMAQ Configuration Utility
- Windows 95/NT installer
- NI-IMAQ sample code
- Online documentation

Installation Procedures

Insert the NI-IMAQ CD into your drive. An autorun screen will appear, as shown in Figure 1. The autorun screen will allow you to install NI-IMAQ, install evaluation versions of IMAQ Vision, and view online documentation.

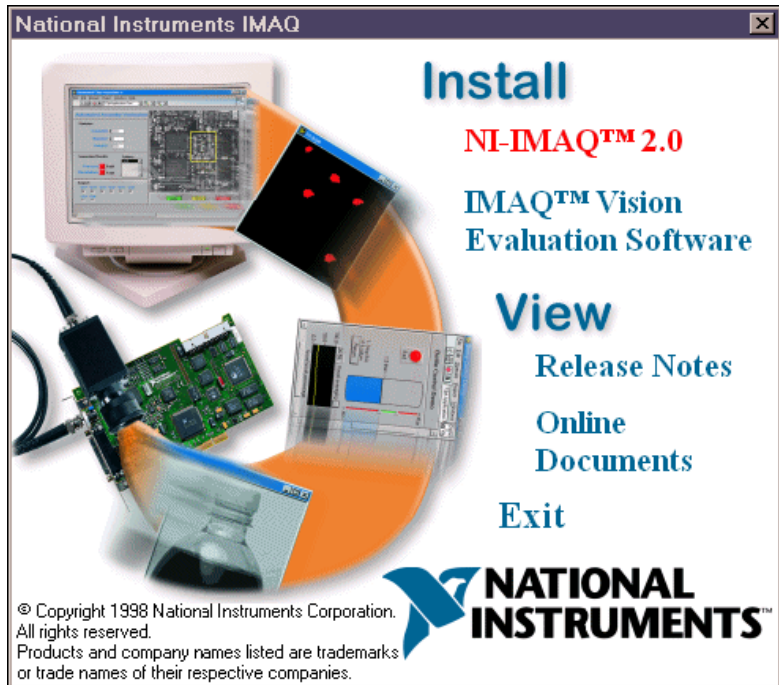


Figure 1. Initial Installer Screen

Click on **Install»NI-IMAQ 2.0** to launch the NI-IMAQ 2.0 installer and follow the instructions on the installation screens. You must install NI-IMAQ before installing your IMAQ hardware device.



Note

You must have administrator access in Windows NT to perform the installation.

The **Install»IMAQ Vision Evaluation Software** option allows you to install evaluation versions of IMAQ Vision for LabVIEW, BridgeVIEW, LabWindows/CVI, and ComponentWorks. IMAQ Vision adds high-level machine vision and image processing functions to your application development environment.

The **View»Release Notes** and **View»Online Documents** options allow you to view the online documentation for NI-IMAQ 2.0 and your IMAQ device. These documents are provided in Adobe Acrobat portable document format (pdf). If you do not have Acrobat Reader installed on your system, you will be prompted to install it using the installer provided on the CD.

IMAQ Hardware Configuration

Configure and test your IMAQ hardware by running the IMAQ Configuration Utility. Refer to the setup and test document for your device and the IMAQ Configuration Utility online help for configuration, installation, and testing instructions.

NI-IMAQ 1.x and LabVIEW/BridgeVIEW Compatibility

The NI-IMAQ VIs have changed to increase ease of use and to add more functionality. The following changes have been made:

- All VIs now have a **IMAQ Refnum In** and **IMAQ Refnum Out** parameter. This is similar to the **TaskID** input/output used with the data acquisition VIs.
- The underscore has been removed from all VI names.
- Low-level acquisition VIs have been added. These VIs add more functionality such as asynchronous acquisitions, accessing buffers during acquisition, and ring acquisitions.
- Signal I/O VIs have been added. These VIs allow you to control trigger lines, generate specific timing pulses, and wait for a hardware event.

High Level VI Changes

IMAQ_Grab is now two VIs—IMAQ Grab Setup and IMAQ Grab Acquire. IMAQ Grab Setup starts the grab acquisition. IMAQ Grab Acquire returns a copy of the image currently in the buffer. You can use IMAQ Close to stop the hardware acquisition.

IMAQ Sequence does not have a mode input, which required that you call the VI four times to perform a sequence acquisition. Instead, call IMAQ Sequence once to set up the acquisition, perform the acquisition, and return the acquired images.

IMAQ_1408 Setup Analog has been removed. IMAQ_1408 Setup Analog allowed the white and black reference levels to be set in volts. Use the IMAQ Attribute VI to achieve the same functionality. The **White Reference Level** and **Black Reference Level** attributes in NI-IMAQ 2.0 are now set in volts instead of steps.

IMAQ_Snap Async has been removed because the functionality is now provided in IMAQ Snap. IMAQ Snap is now asynchronous so that you can use it with triggering.

IMAQ_Wait for Event has been changed to IMAQ Wait Signal. The IMAQ Wait Signal VI has the same functionality available as IMAQ_Wait for Event with additions for the IMAQ PCI-1424.

IMAQ_Trigger Control has been replaced by three VIs. IMAQ Trigger Configure configures trigger lines to allow an acquisition to start on a trigger. IMAQ Trigger Drive drives a trigger line with a specified signal. IMAQ Trigger Read reads the current value of a trigger line.

IMAQ_Trigger RTSI Map has been removed. The mapping of RTSI lines is now handled internally by NI-IMAQ. If you specify a RTSI line when using the trigger VIs, NI-IMAQ internally maps the RTSI line on the RTSI bus to a RTSI trigger line on the IMAQ board.

IMAQ_Info has been removed. The same functionality is available with IMAQ Attribute.

IMAQ_Channel has been removed. The acquisition VIs now have a channel input which allows you to select a channel on the IMAQ board.

Compatibility VIs

All of the NI-IMAQ 1.5 VIs are available as compatibility VIs. They are installed in the `vi.lib/addons/imaq` directory; however, they do not appear on the **imaqview** palette. These VIs allow you to load and run existing IMAQ applications without changing your code. You should replace your NI-IMAQ 1.5 VIs with NI-IMAQ 2.0 VIs at your earliest convenience, because the compatibility VIs will not be included in future NI-IMAQ releases.

NI-IMAQ provides a tool that will convert some of the NI-IMAQ 1.x VIs to 2.0 VIs. Using this tool, you can convert the following VIs:

- IMAQ_Snap to IMAQ Snap
- IMAQ_Snap Async to IMAQ Snap
- IMAQ_Init to IMAQ Init
- IMAQ_Close to IMAQ Close
- IMAQ_Attribute to IMAQ Attribute
- IMAQ_StillColor Attribute to IMAQ StillColor Attribute
- IMAQ_StillColor Setup to IMAQ StillColor Setup

To use the conversion tool, launch `lvimaq.exe`, which is located in the `<ni-imaq>/G compatibility` directory. This will launch a special version of LabVIEW that contains the conversion tool. Load your IMAQ application. As your application loads, the appropriate NI-IMAQ VIs will be converted. After your VI loads, save it. You can now load the VI into LabVIEW or BridgeVIEW and convert the VIs that were not converted.



Note

This conversion tool will only work with LabVIEW 5.x or BridgeVIEW 2.x VIs. If you have an earlier version of LabVIEW or BridgeVIEW, do not use this tool.

The following table describes the corresponding NI-IMAQ 2.0 VI for each NI-IMAQ 1.x VI.

Table 1. NI-IMAQ VI Equivalents

NI-IMAQ 1.x VI	NI-IMAQ 2.0
IMAQ_Snap	IMAQ Snap
IMAQ_Grab	IMAQ Grab Setup, IMAQ Grab Acquire
IMAQ_Sequence	IMAQ Sequence
IMAQ_Init	IMAQ Init
IMAQ_Close	IMAQ Close
IMAQ_Attribute	IMAQ Attribute
IMAQ_1408 Setup Analog	Removed (same functionality is available with IMAQ Attribute)
IMAQ_Snap Async	Removed (IMAQ Snap provides the same functionality)
IMAQ_Wait for event	IMAQ Wait Signal
IMAQ_Trigger Control	IMAQ Trigger Configure replaces starting an acquisition on a trigger IMAQ Trigger Drive replaces driving trigger lines IMAQ Trigger Read replaces reading trigger lines
IMAQ_Trigger RTSI Map	Removed (VIs will perform this functionality internally)

Table 1. NI-IMAQ VI Equivalents (Continued)

NI-IMAQ 1.x VI	NI-IMAQ 2.0
IMAQ_Info	Removed (same functionality is available with IMAQ Attribute)
IMAQ_Channel	Removed (acquisition VIs now have channel input)

NI-IMAQ 1.x and Driver Compatibility

The following changes have been made to the driver.

- Functions
 - `imgSessionSetTrigger` has been replaced with `imgSessionTriggerConfigure` and `imgSessionTriggerDrive`. `imgSessionTriggerConfigure` configures a trigger to start an acquisition. `imgSessionTriggerDrive` drives a trigger with a specified signal. `imgSessionSetTrigger` is still supported; however, you should use the new trigger functions.
 - `imgSessionSaveBuffer` has been replaced with `imgSessionSaveBufferEx`, which takes a buffer pointer instead of a buffer number to determine which buffer to save to file.
- Camera attributes
 - The camera attributes allow you to control camera functions, such as integration time and pixel binning, directly from NI-IMAQ with the IMAQ PCI-1424. Consult the *Camera Attributes* section in the *NI-IMAQ User Manual* for more information.
- Attributes
 - `IMG_ATTR_WHITE_REF`, `IMG_ATTR_BLACK_REF`, and `IMG_ATTR_GAIN` have been replaced by `IMG_ATTR_BLACK_REF_VOLT` and `IMG_ATTR_WHITE_REF_VOLT`. This allows you to set the black and white reference in volts instead of steps.
 - `IMG_ATTR_LUT` is now a session attribute instead of an interface attribute.
 - `IMG_ATTR_FRAME_FIELD` is now a session attribute instead of an interface attribute.
 - `IMG_ATTR_INTERFACE_TYPE` has been removed.

About the Online Manual Set

The complete IMAQ hardware and software documentation set ships with your software as Adobe Acrobat portable document format (PDF) files. The NI-IMAQ CD includes these files, as follows:

- *Setup and Test the IMAQ PCI/PXI-1408*
- *Setup and Test the IMAQ PCI-1424*
- *NI-IMAQ Function Reference Manual*
- *NI-IMAQ User Manual*
- *NI-IMAQ VI Reference Manual*
- *IMAQ PCI/PXI-1408 User Manual*
- *IMAQ PCI-1424 User Manual*
- *NI-IMAQ 2.0 for Windows 95/NT Release Notes*
- *IMAQ 2504 Cable Installation Guide*
- *IMAQ A2514 Cable Installation Guide*
- *IMAQ D100 Camera Cable Installation Guide*
- *IMAQ D100100 Cable Installation Guide*
- *IMAQ D100DAL Cable Installation Guide*
- *IMAQ Memory Module Installation Guide*

To view one of these documents, double-click on the `DocList.pdf` file, located in the `Documents` folder on your NI-IMAQ CD. Click on any document name to launch the document you want to view.



Note

If you do not already have Acrobat Reader installed on your system, the installer will create a new directory, <target install dir>\ACROREAD, and insert the Adobe Acrobat Installer into it. Run this installer before viewing your online documentation. You must have Acrobat Reader 3.0 or later installed to use the online documentation.

Using the NI-IMAQ Online Manual Set

The NI-IMAQ online and pdf software documentation also is installed onto your hard drive along with the NI-IMAQ software.

To view the online help, click the **Start** button on the taskbar, point to **Start>Programs>National Instruments IMAQ** and choose either **NI-IMAQ Function Help** or **NI-IMAQ VI Help**.

To view the pdf documents, click the **Start** button on the taskbar, point to **Start>Programs>National Instruments IMAQ>Documentation**, and choose the appropriate document. This will automatically launch the

Acrobat Reader and open the selected PDF file. You can assemble your own printed manuals by printing either the entire documentation set or only the sections relevant to your application.

Click on any entry in the table of contents to jump directly to that page. You can jump to major sections within each document quickly and easily by clicking on the bookmarks.

When you choose the **View»Go To Page...** option or are printing pages, you must use the page numbers in the lower left corner of the Acrobat window, not the number displayed at the bottom center of each manual page or listed in the contents and index. The PDF files are electronic equivalents of printed manuals. However, unlike printed manuals, the PDF file assigns consecutive numbers to each page throughout the document and displays this page number. These numbers may not match those shown at the bottom center of each manual page.

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