IMAQ™ VISION FOR G

VERSION 4.1.1

IMAQ Vision for G adds multipurpose image processing and machine vision capabilities to LabVIEW and BridgeVIEW. These installation and release notes describe system requirements, provide installation instructions, and contain updated information for the *IMAQ Vision for G Reference Manual*.

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How to Proceed

Review the *Required System Configuration* section and then follow the instructions in the *Installation Instructions* section.

Special Note to Users Upgrading from a Previous Version

If you are upgrading from IMAQ Vision 4.01 or earlier, upgrade to LabVIEW 4.1, LabVIEW 4.1.1, or BridgeVIEW 1.0 before installing

IMAQ Vision. This enables the automatic update of your IMAQ Vision applications to the new release.

Required System Configuration

The IMAQ Vision for G 4.1.1 software is intended for use with LabVIEW versions 4.0 or later and BridgeVIEW version 1.0. The following sections describe the required system configurations for Windows NT/95/3.1 and Power Macintosh.

Windows NT/95/3.1

For Windows NT/95/3.1, IMAQ Vision for G 4.1.1 requires LabVIEW version 4.*x*, BridgeVIEW 1.0, or BridgeVIEW 1.0.1 for Windows NT/95/3.1. Consult the LabVIEW or BridgeVIEW release notes for the required system configuration for LabVIEW or BridgeVIEW.

For optimal performance while running IMAQ Vision for G, Windows NT/95/3.1 users should have at least 32 MB RAM.

Power Macintosh

For Power Macintosh, IMAQ Vision for G 4.1.1 requires LabVIEW version 4.*x* or BridgeVIEW 1.0 for Power Macintosh. Consult the LabVIEW or BridgeVIEW release notes for the required system configuration for LabVIEW or BridgeVIEW.

For optimal performance while running IMAQ Vision for G, Power Macintosh users should have at least 32 MB RAM.

Installation Instructions

This section contains instructions for installing IMAQ Vision 4.1.1 on Windows NT/95/3.1 and Power Macintosh.

Windows NT/95/3.1

1. Open the folder containing the version you want to install.
2. Launch `disk1\setup.exe` and choose your LabVIEW or BridgeVIEW folder.
3. Launch LabVIEW or BridgeVIEW.
4. To see the IMAQ Vision icon in your Functions palette, select **Edit»Select Palette Set»image**.

Power Macintosh

☞ **Note:** ***If you are updating from a previous version of IMAQ Vision, make a backup of your CVI Shared Libraries folder, which is located in* System Folder»Extensions.**

1. Open the **IMAQ Vision for Power Mac** folder.
2. Launch the IMAQ Vision for Power Mac installer and choose your LabVIEW or BridgeVIEW folder.
3. Launch LabVIEW or BridgeVIEW.
4. To see the IMAQ Vision icon in your Functions palette, select **Edit»Select Palette Set»image**.

Changes to IMAQ Vision VIs since Version 4.01

The prefix of all VI names has been changed from *Cvi* to *IMAQ*. LabVIEW and BridgeVIEW error clusters have been added to each VI, changing the connector layout of each VI.

☞ **Note:** ***LabVIEW 4.1.1 and later and BridgeVIEW 1.0.1 are equipped with a tool that automatically updates applications built using IMAQ Vision 4.01 and earlier to conform with IMAQ Vision 4.1.1. If you have a previous version of LabVIEW, upgrade to LabVIEW 4.1 before installing IMAQ Vision 4.1.1. During the installation, LabVIEW will upgrade to version 4.1.1 and BridgeVIEW will upgrade to version 1.0.1.***

☞ **Note:** ***To access the default error message dialog box of previous versions of IMAQ Vision, place the IMAQ Error VI in your application. Set the* Error Processing *parameter to* Dialog *and set the* Set Error Condition *input to* TRUE*.***

Some VIs and libraries have been moved to new locations. These changes are summarized below.

- The external library support (`extlibsp.llb`) library has been moved from the `vi.lib\image\io` folder to the `vi.lib\image` folder. The following VIs have been added to this library:
  - IMAQ ImageBorderSize retrieves the current border size of an image and sets it to a user-specified value.
  - IMAQ ImageBorderOperation specifies the pixel values in the border of an image.

- The library `cvisup.llb` that appeared as IMAQ Vision Additionals in LabVIEW has been dismantled. The VIs in this library have been moved to the following libraries:
  - IMAQ FillImage is now in the Tools (diverse) library (`tools3.llb`).
  - IMAQ Interlace is now in the External Library Support library (`extlibsp.llb`).
  - IMAQ Centroid is now in the Analysis library (`analysis.llb`).
  - IMAQ LinearAverages is now in the Analysis library (`analysis.llb`).
  - IMAQ Shift16To8 is now in the Convert library (`convert.llb`).
  - IMAQ Create&LockSpace is now in the Management library (`manage.llb`).

New VIs since Version 4.01

VIs for measurement and gauging applications have been added to IMAQ Vision. These VIs are grouped together in the Caliper Tools library (`measure.llb`). This new library includes the following VIs:

- IMAQ ROIProfile calculates the profile of the pixels along the boundary of an ROI descriptor.
- IMAQ Coordinate Reference builds a reference for any arbitrary coordinate system with respect to the image plane.
- IMAQ Transform ROI rotates and translates an ROI in an image by a specified amount.
- IMAQ Edge Tool finds edges along a path defined in the image.
- IMAQ Caliper Tool finds edge pairs along a specified path in the image.
- IMAQ Shape Match Tool finds objects in an image whose shape matches that of the object specified by a template.

The IMAQ Correlate VI, which does a normalized cross-correlation between a template and an image, has been added to the Filter library (`filter.llb`).

Additions to the Manual

The following changes have been included in the *IMAQ Vision for G Help* but not in the *IMAQ Vision for G Reference Manual*:

- Descriptions have been added for the all the Caliper Tool VIs, the IMAQ AddPictToWindow VI, and the IMAQ GetHostType VI.
- All illustrations of VIs have been updated to reflect changes in the connector patterns. The connectors corresponding to error clusters have been updated to the current standard.

Many of the parameters in both the Help file and the reference manual are not listed in the order in which they appear in the interface.

Adapting to LabVIEW 4.0 Changes

LabVIEW 4.0 has many new presentation and practical features. IMAQ Vision takes these into account by creating an Image Functions palette and an Image Control palette. When you install IMAQ Vision, an Image menu is added to the `LabVIEW\Menus` folder. To add the IMAQ Vision icon to the LabVIEW Functions palette, select **Edit» Select Palette Set»image**. After LabVIEW loads the palette, the IMAQ Vision icon appears, giving access to each library.

The Image Control palette gives access to the IMAQ Vision-specific controls and enumerated types. LabVIEW 4.0 also introduces connections setups, such as requested, recommended, and optional connections. Each VI input now has one of these attributes.

New VIs and Changes since the 4.0 Release

Since the 4.0 release, new VIs have been added to the Display library and the Concept Vi 4 Additionals library (`CVISUP4.llb`). You can find the following VIs in `CVISUP4.llb`:

- Cvi FillImage fills an image with a specified value.
- Cvi Interlace extracts odd and even fields from an interlaced image or builds an image using two field images.
- Cvi Centroid computes the energy center of the image.
- Cvi LinearAverage computes a mean line profile on the whole or a part of the image.

- Cvi Shift16To8 converts a 16-bit image to an 8-bit image by shifting bits (1 to 8).
- Cvi Create&LockSpace creates images whose maximum memory space stays permanently allocated. Using this VI, the pixel memory space allocated to an image can increase but never decreases. This mechanism guarantees that an image that has filled a certain amount of memory always can occupy the same space later, regardless of any memory fragmentation.

The external library support library (`EXTLIBSP.llb`) is a new library found in the I/O menu. This library offers functions that call Windows DLLs or Macintosh shared libraries. You can use these functions to write specific or nonstandard image grabber drivers.