Basler Components

Interfacing Basler GigE Vision Cameras with Cognex VisionPro 5.1 Software

APPLICATION NOTES

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BASLER

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1 Introduction

This document explains how to interface a Basler GigE Vision camera with the Cognex VisionPro 5.1 software package using a standard Gigabit Ethernet card.

2 Steps

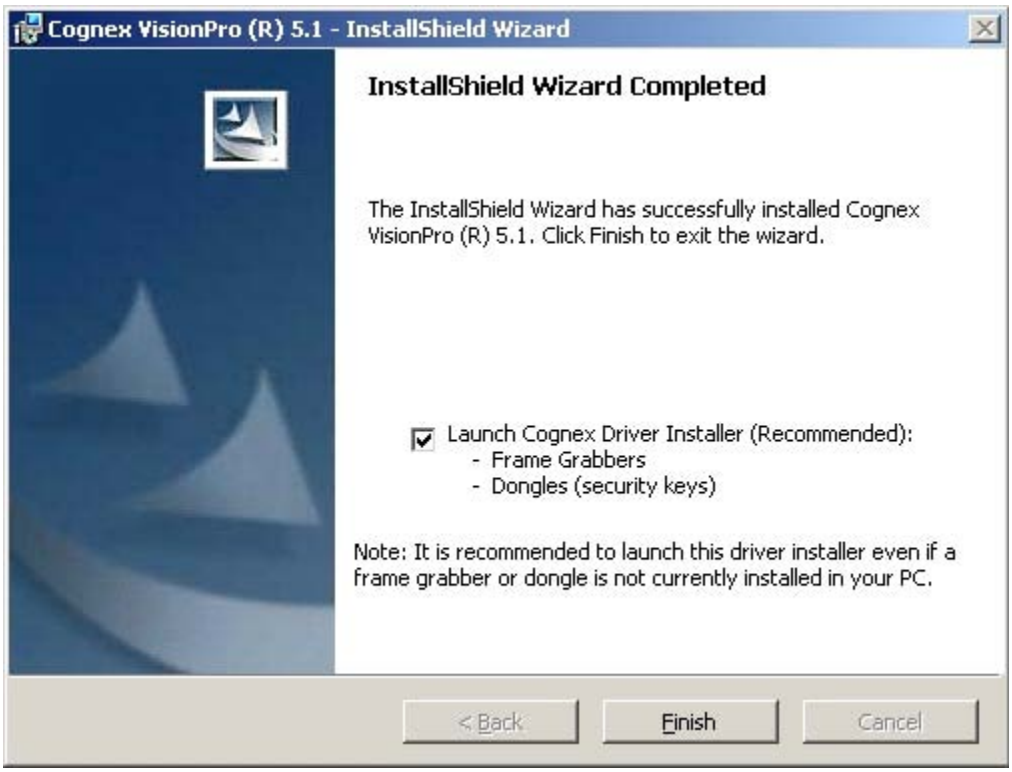
Step 1: Hardware requirements

In addition to the Basler camera and its power supply, you will need an Ethernet cable (Cat 6 or higher) and your PC must be equipped with a Gigabit Ethernet network adapter card (also called a Network Interface Controller or NIC).

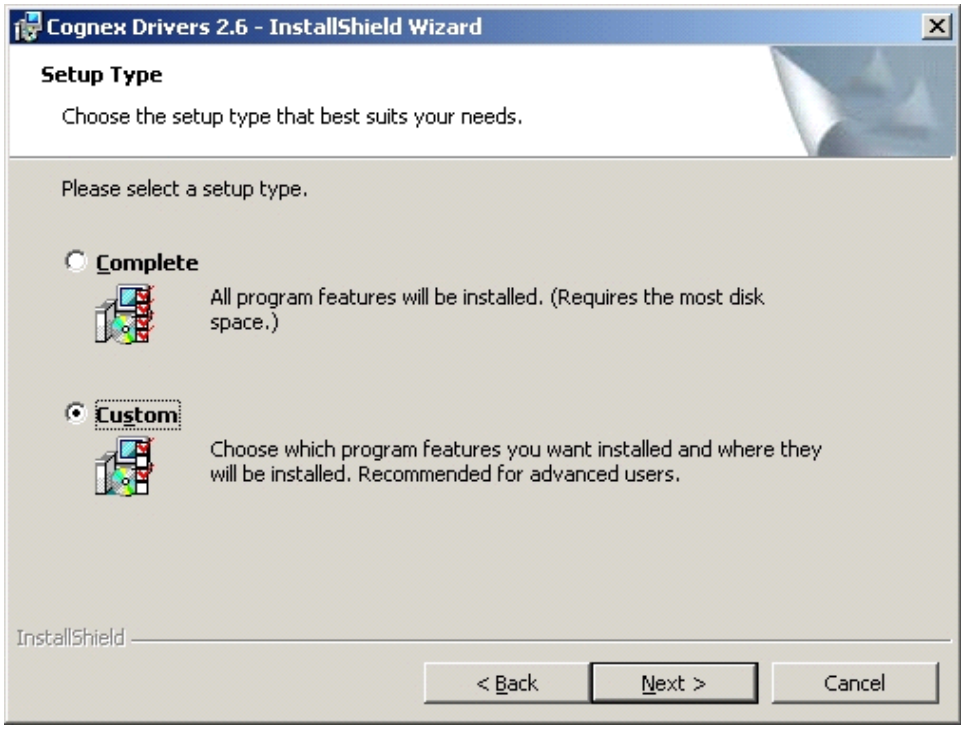
We strongly recommend using a network adapter from the Intel Pro 1000 family or an adapter with a comparable chipset. The drivers for your network adapter must be properly installed before you start installing your Cognex VisionPro software package.

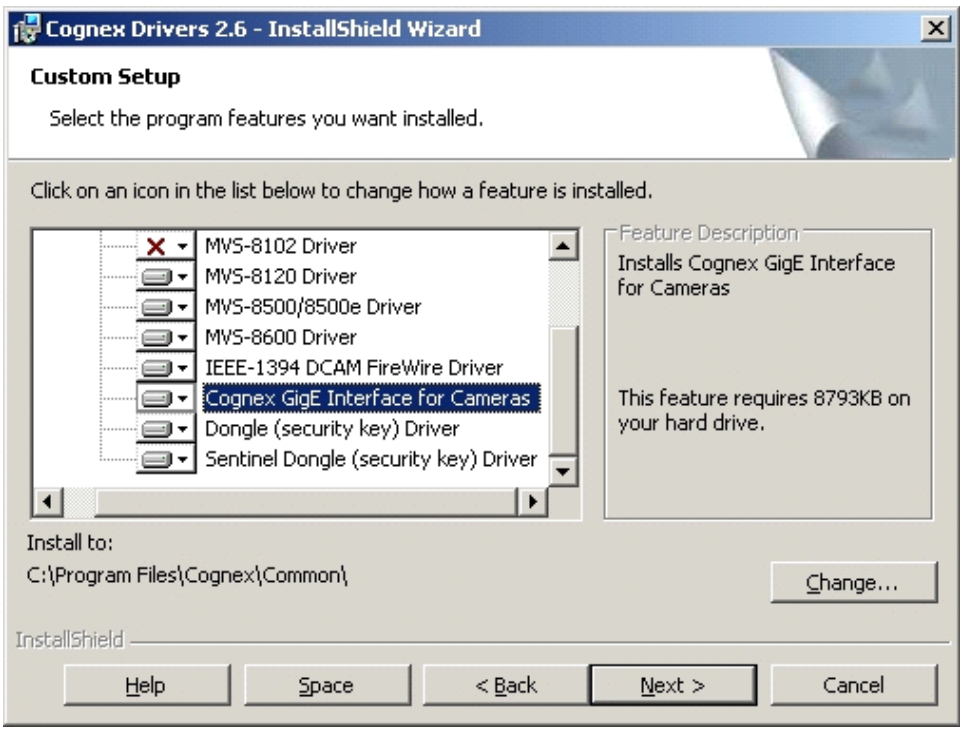
Step 2: Software installation tips

To ensure installation of the Cognex Drivers 2.6, the **Launch Cognex Driver Installer** box must be checked during the installation of the Cognex VisionPro software package as shown below:



If you decide to select the **Custom** setup type as shown in the first screen shot below, then you must make sure that the **Cognex GigE Interface for Cameras** driver is selected as shown in the second screen shot:

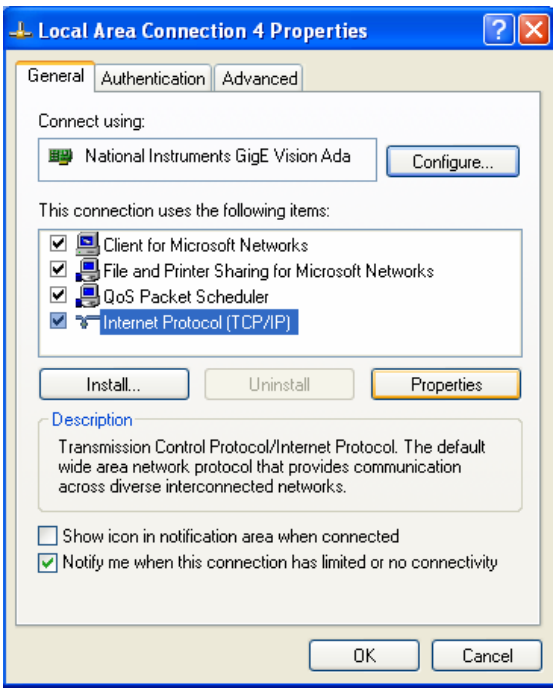




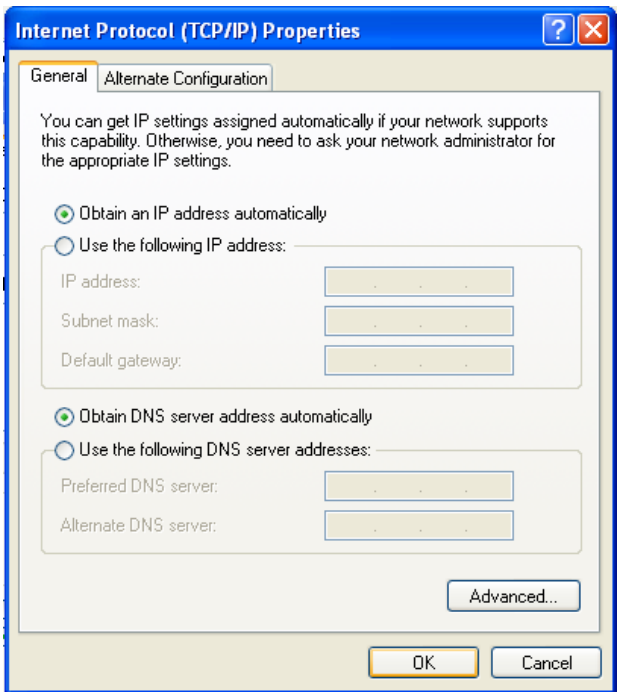
Step 3: Configuring the network adapter

Open a **Network Connections** window, right click on the name of the network adapter you want to configure, and select **Properties** from the drop down menu that appears. A **Properties** window will open as shown below.

By default, Basler GigE Vision cameras are configured to obtain an IP address automatically (i.e., not for a static IP address). We recommend that you also configure your network adapter to obtain an IP address automatically. To do this, select **Internet Protocol (TCP/IP)** and click the **Properties** button:



Select **Obtain an IP address automatically** as shown below and click the **OK** button to confirm:



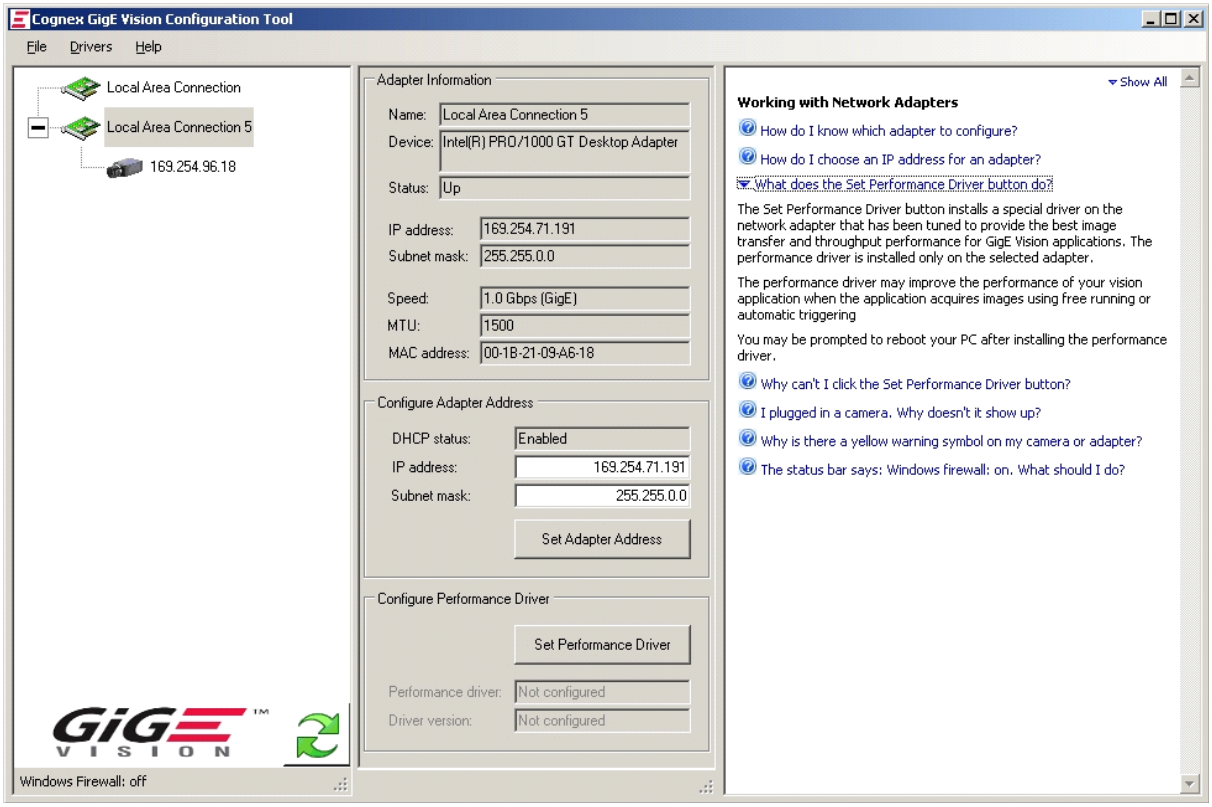
Of course, If your camera is configured for a static IP address and you know what the address is, you can also configure your network adapter to use a static IP address.

If you configure the network adapter to use a static IP address, make sure that the address for the network adapter is in the same subnet as the address for the camera.

Step 4: Using the Cognex GigE Vision Configuration Tool to Change the Network Adapter or the Camera IP Configuration

Once you have connected your camera to your PC, you should run the Cognex GigE Vision Configuration Tool. When the tool opens, you will see a list of all of your active local area network (LAN) connections displayed.

When you select the LAN connection that you would like to configure, you will see a configuration screen as shown below:

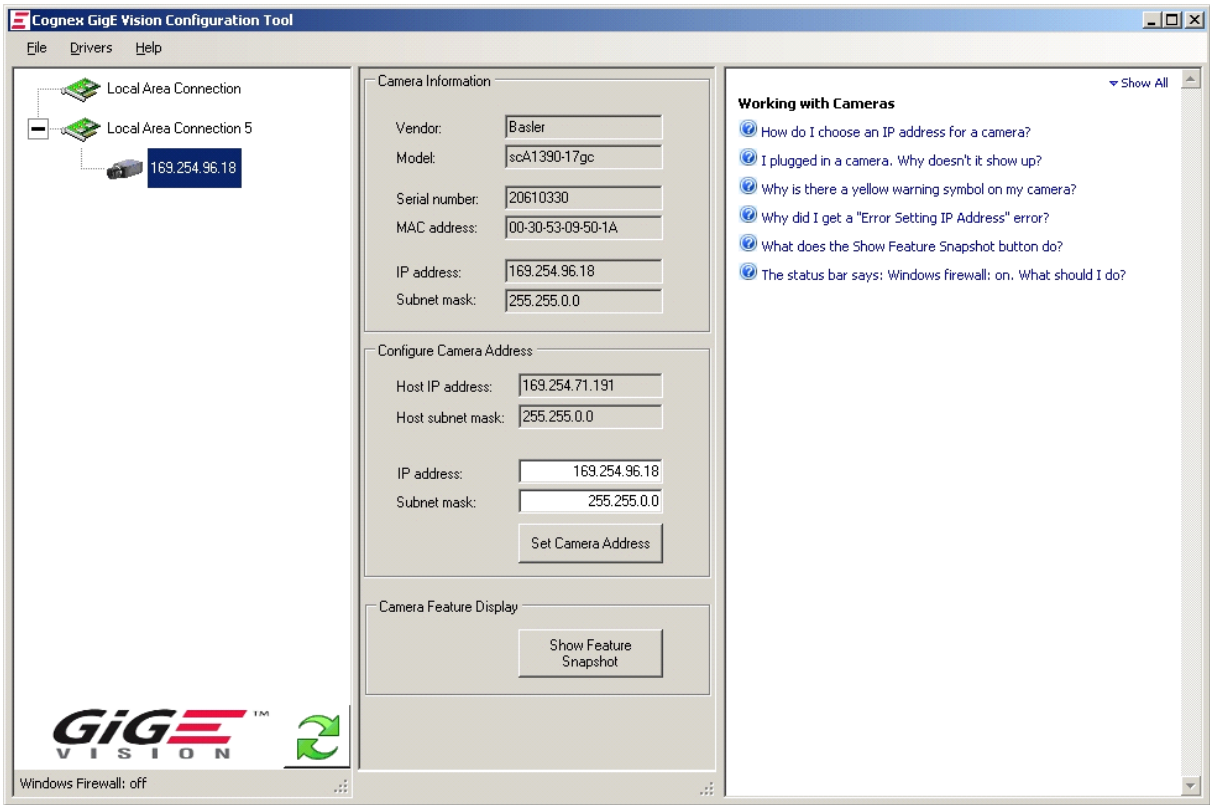


If desired, you can use this screen to change the selected network adapter's IP address and subnet mask.

You can also use it to install the Cognex Performance Driver for the selected network connection. Installing the performance driver will improve the performance of your vision application.

If you select your camera device as shown below, the screen will display the configuration of the selected camera. If desired, you can use the screen to change the IP address and the subnet mask of the camera.

Please keep in mind that the IP address for your camera and the IP address for the network adapter to which the camera is connected must be in the same subnet. Also, the camera and the network adapter to which the camera is connected must both have the same subnet mask.



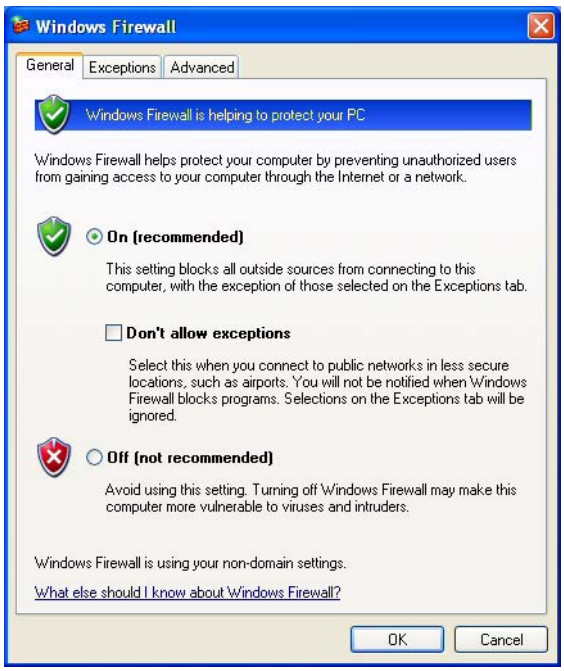
Step 5: Firewall Configuration

Any application using the GigE Vision network protocol must be able to accept data from the camera on several different UDP ports. On systems equipped with a firewall, you should disable the firewall for the network adapter to which your camera is connected.

If you are using the Windows Firewall on your system, you can disable the firewall on a specific network adapter by doing the following:

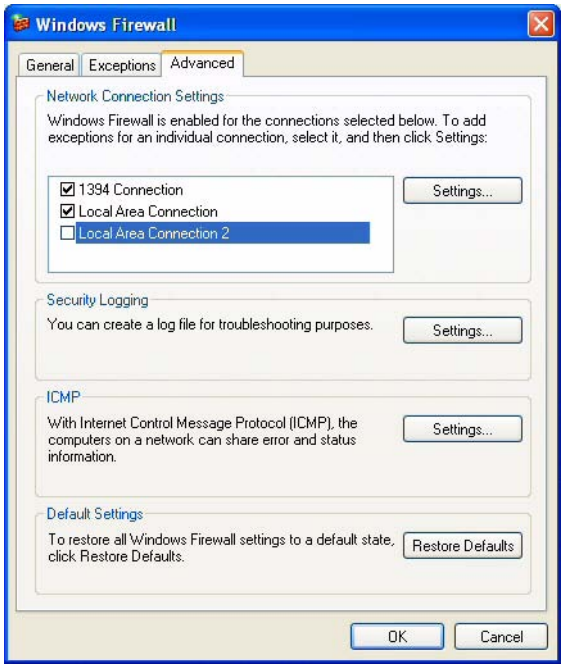
Click **Start**, click **Control Panel**, and double click **Windows Firewall**.

A **Windows Firewall** window will open as shown below. Click the **Advanced** tab.



A list of network adapter names will appear in the **Advanced** tab. Find the adapter to which your camera is connected and uncheck the box next to the adapter name.

For example, if your camera is connected to a network adapter named "Local Area Connection 2", you would uncheck the box next to this name as shown below.

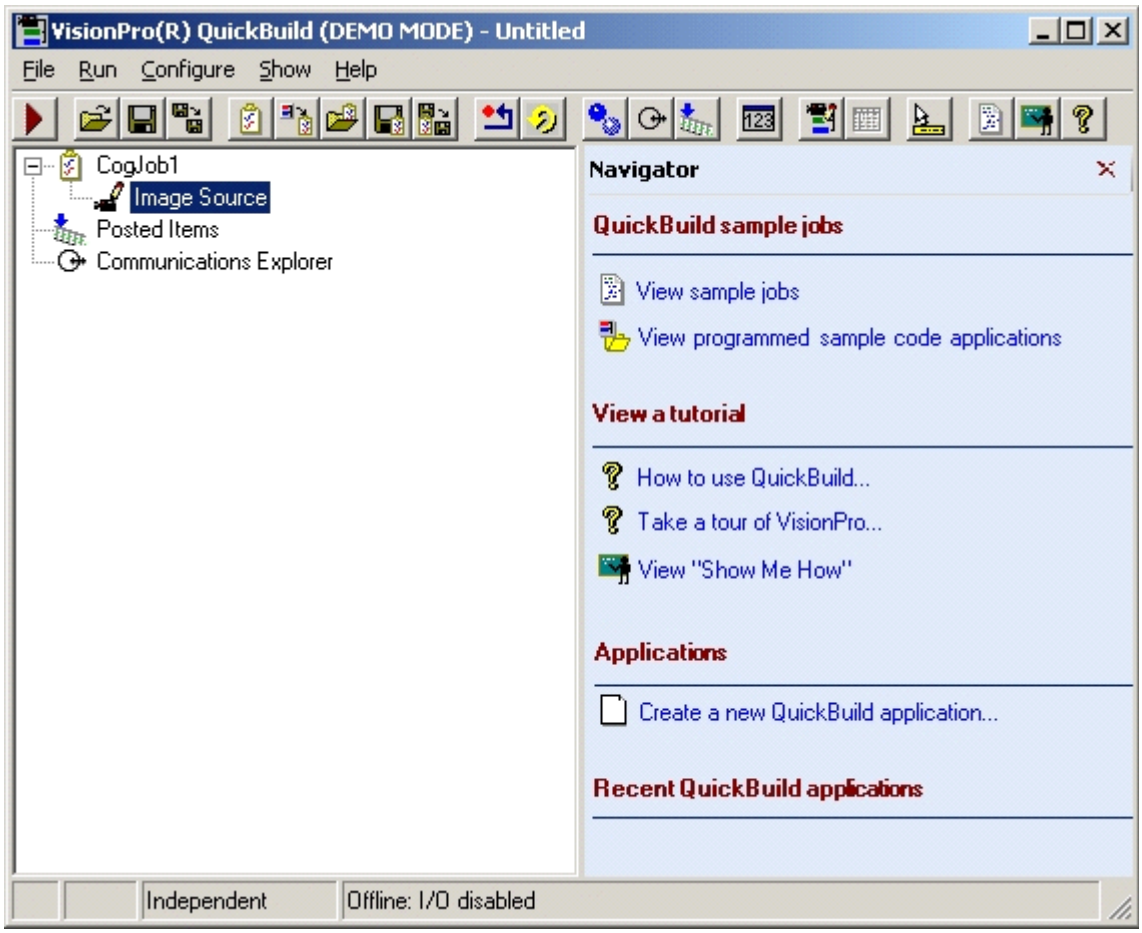


Click the **OK** button.

Step 6: Testing the Camera / Software Interface

You can easily perform a test for successful interfacing between VisionPro and a Basler GigE Vision camera using the VisionPro Quickbuild application.

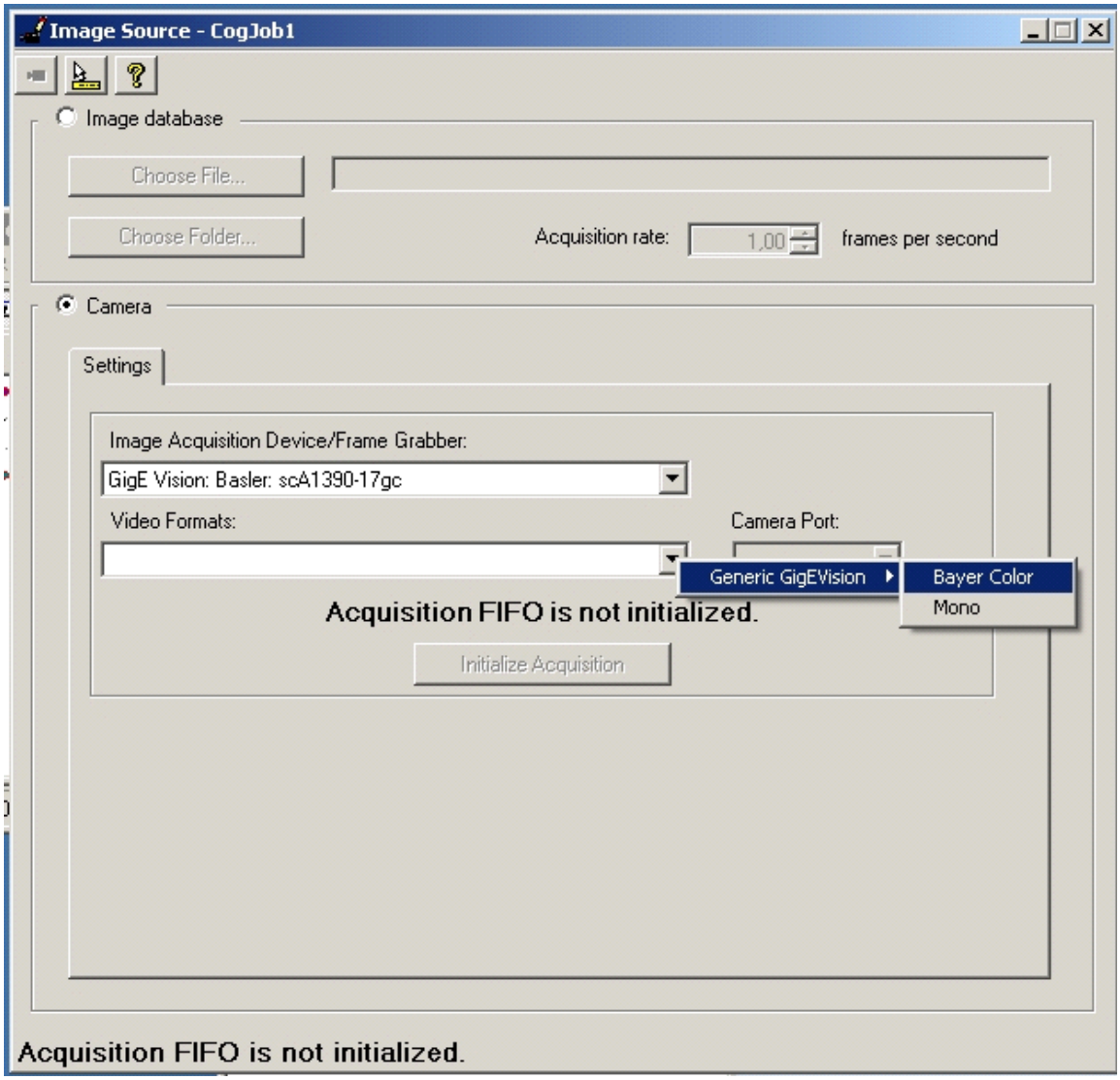
Start the VisionPro Quickbuild application and then double click on the **Image Source** item as shown below:



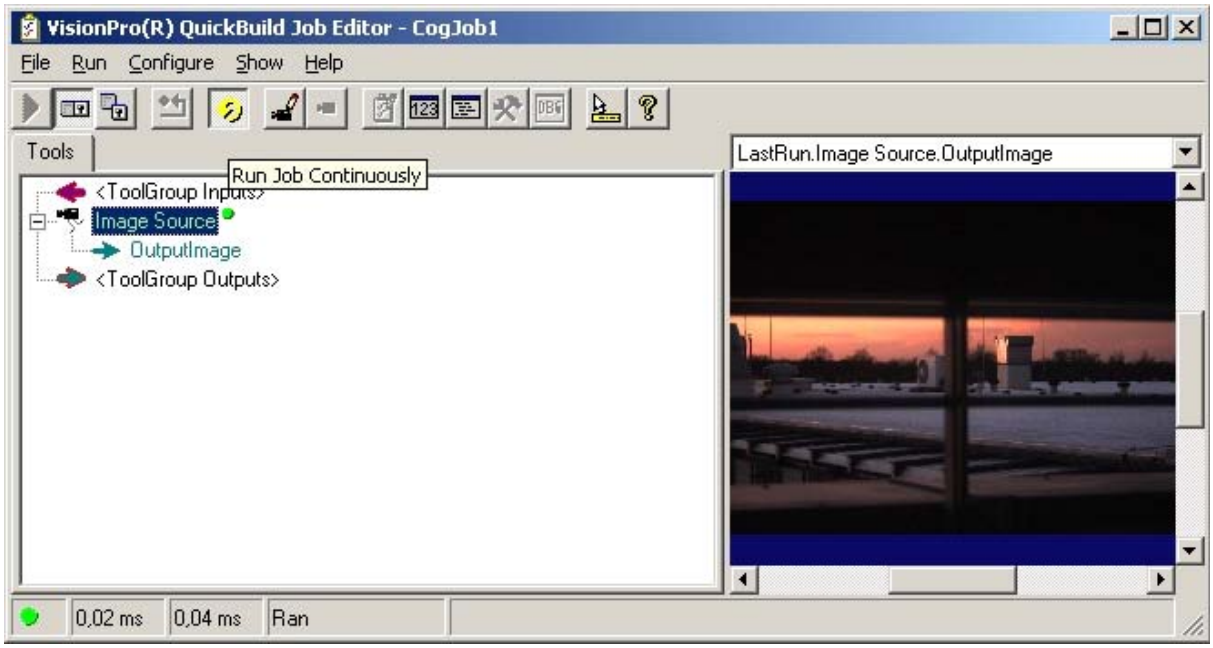
An **Image Source** dialog box will open as shown below. Select **Camera** as your source and then select your camera device name from the **Image Acquisition Device/Frame Grabber** drop down box.

If you click on the arrow next to the **Video Formats** drop down box, a menu will open. The menu will list the available video formats and will include formats such as **Bayer Color** and/or **Mono** for **Generic GigE-Vision** devices. Select the appropriate format.

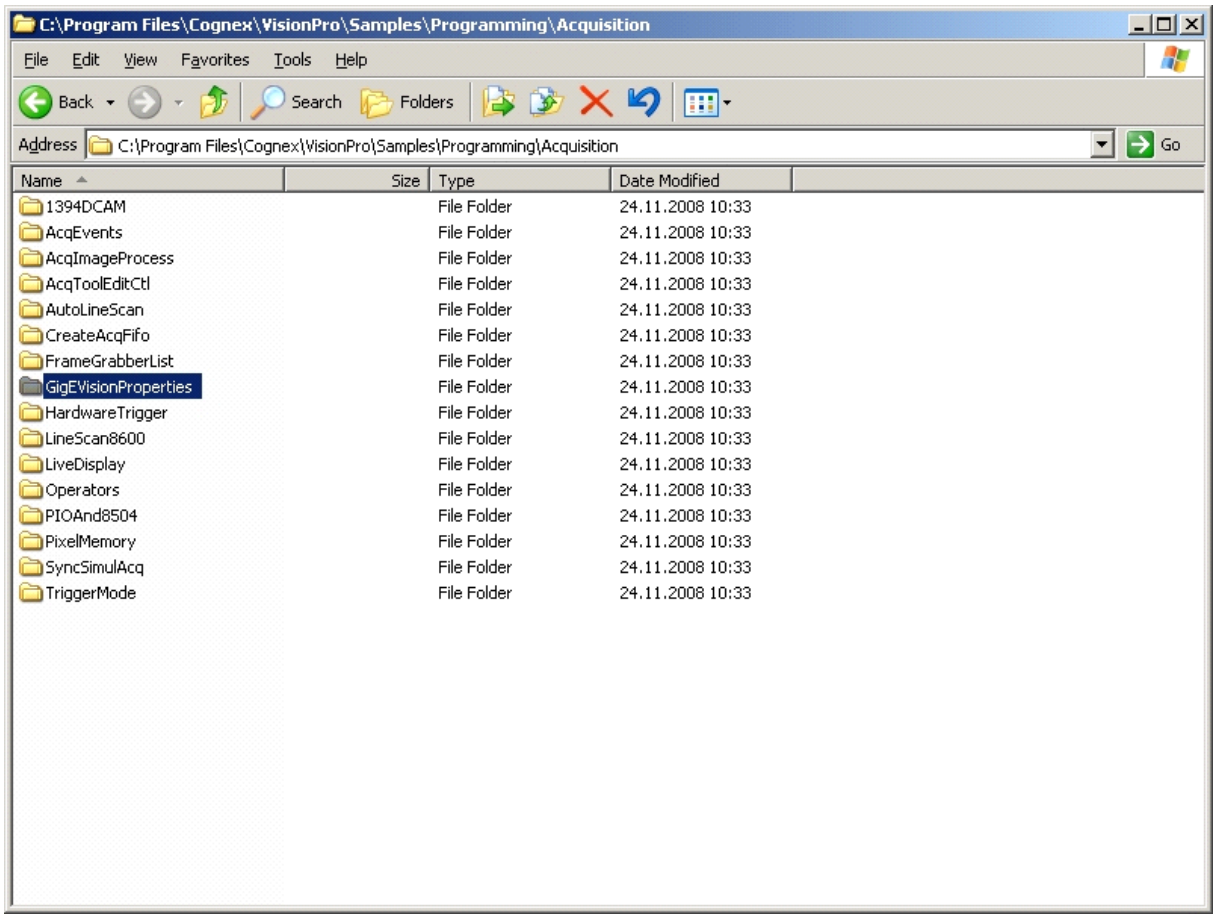
Finally, press the **Initialize Acquisition** button. Once the acquisition is initialized, you can close the dialog box (it can be opened again by double clicking **Image Source**).



You will return to the main Quickbuild screen. Press the **Run Job Continuously** button. You should now see a live image, as shown below:



VisionPro provides you with a large set of programming samples. Samples showing how to configure a GenICam compliant GigE Vision camera can be found in the **GigEVisionProperties** folder within the Cognex programming samples folder as shown below:



Revision History

Doc. ID Number	Date	Changes
AW00077601000	30 Dec2008	Initial release of this document.
AW00077602000	15 Jan 2009	Corrected the step numbering.