

# Basler Components



## Video Capture with the pylon DirectShow Filter and Basler Cameras

### APPLICATION NOTES

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# 1 Introduction

As a part of the pylon Driver Package (versions from 2.0 on), Basler provides a DirectShow filter. This filter can be used for video capture with a variety of freeware or commercial programs that support the Microsoft DirectShow/DirectX multimedia framework.

This application note describes a procedure for interfacing Basler's IEEE 1394 and GigE Vision cameras by means of the pylon DirectShow filter and the Virtual VCR freeware program in order to capture videos.

Virtual VCR is a DirectShow video capture application that lets you capture audio and video to your hard drive in the AVI file format. Virtual VCR requires that DirectX 8.1 or higher be installed on your computer.

## 2 Steps

### Step 1: Download Virtual VCR

The following download link provides access to both the application installer (EXE file) and the source code itself:

<http://virtualvcr.sourceforge.net/html/virtualvcr/download.php>

If you intend to capture videos directly, simply download and run the EXE file. If you intend to build and/or extend the source code, you should also download the source code.

## Step 2: Install the pylon DirectShow filter

To be able to operate a Basler camera with the Virtual VCR software, you must first install the Basler's DirectShow filter. The filter is part of the Basler pylon Driver Package. You can download the Basler pylon Driver Package at: <http://www.baslerweb.com>.

When you install the driver package on your computer, the DirectShow filter will be installed as part of the package.

## Step 3: Interface a Basler IEEE 1394 or GigE Vision camera and capture videos


You first have to realize the hardware and software installation for the camera(s) before interfacing it/them with the Virtual VCR software.

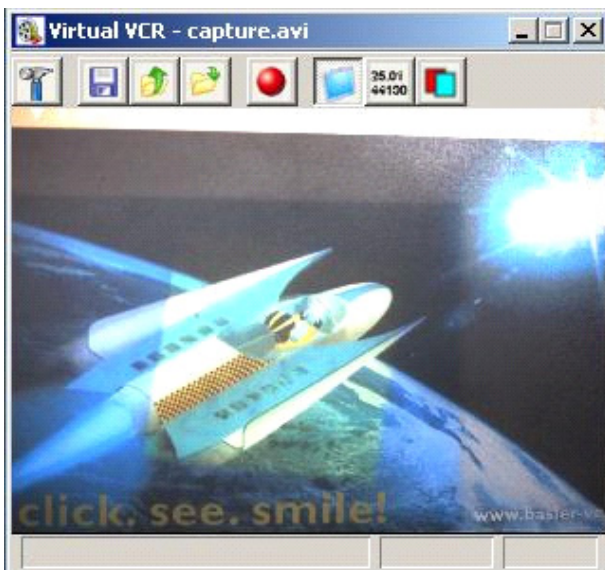
Refer to the document called "Installation and Setup Guide for Cameras Used with Basler's pylon API" for complete instructions on installing a camera and configuring the hardware and software with the Basler pylon software. You can download this document from:

[http://www.baslerweb.com/indizes/download\\_index\\_en\\_19627.html](http://www.baslerweb.com/indizes/download_index_en_19627.html)

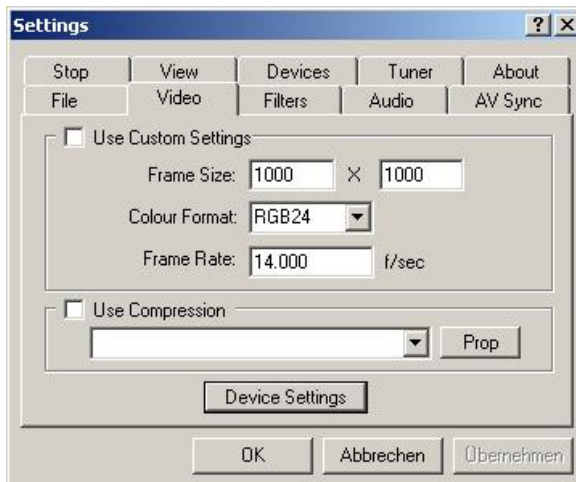
It is especially important for GigE Vision cameras that you configure the correct IP address with the **pylon IP Configuration Tool**.

After you have connected and configured the camera, you can start the Virtual VCR software.

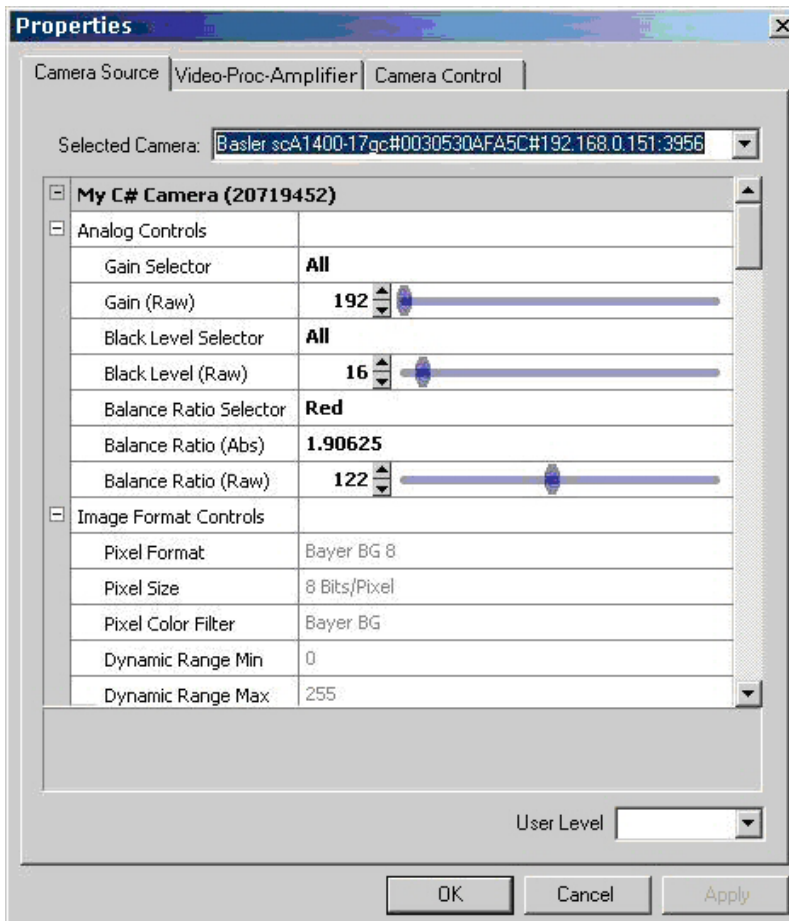
Normally, a live view from the camera will open immediately when you start the program. You may, however, need to click the **Toggle Preview** icon (  ) to start the live view:



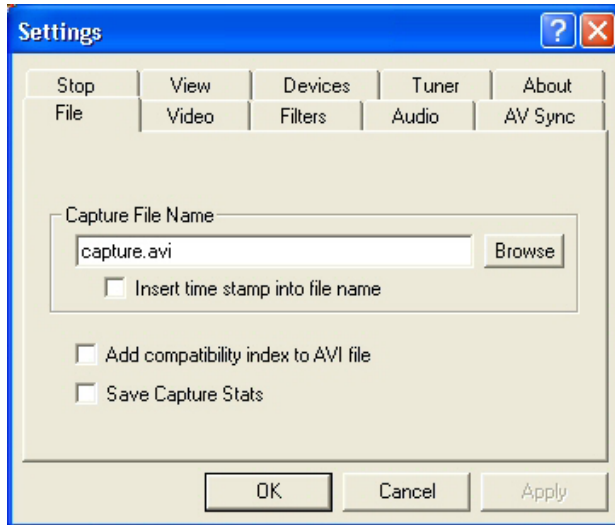
To set the Virtual VCR settings for the camera, click the **Settings** icon (  ) and select the **Video** tab:



Click the **Device Settings** button and the **Properties** window for the camera will open as shown below. You can now set all camera parameters to your desired values. When finished, click the **OK** button to confirm the camera settings.



By default, the file where images are captured will be named "Capture.avi" and it will be saved to **C:\Program Files\Virtual VCR**. To rename the capture file or to change the directory where the file will be saved, click on the **File** tab in the **Settings** window and make your changes. Click the **OK** button when you are finished making any changes.



You can now start capturing a video by clicking the Start Capture icon (  ).




## Step 4: Using Video Codecs for data compression

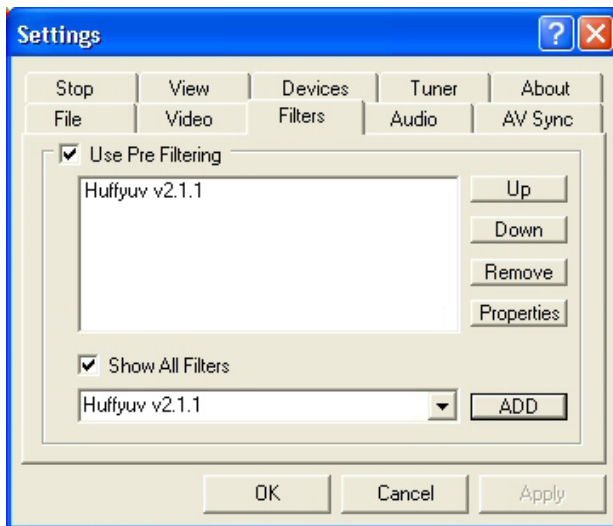
You can use a variety of video codecs to compress the captured video and save hard disk space. One very fast, lossless Win32 video codec is Huffiyuv. You can find this codec at:

<http://neuron2.net/www.math.berkeley.edu/benrg/huffyuv.html>

This codec is especially useful when capturing videos in YUV 422 image format (16Bits/Pixel), but can also be used for Mono8 (monochrome) or Bayer 8 Bit image formats (8Bits/Pixel). Once you have downloaded the pre-built DLL, you should unzip the downloaded file, right click on the "huffyuv.inf" file, and select **Install** from the drop down menu.

Click the **Settings** icon (  ) in Virtual VCR and select the **Filters** tab. Check the **Use Pre Filtering** box and the **Show All Filters** box. Select "Huffyuv v2.1.1" from the drop down menu and click the **ADD** button. Finally, click the **OK** button.

With these settings, any video you capture will be compressed using the Huffiyuv codec.



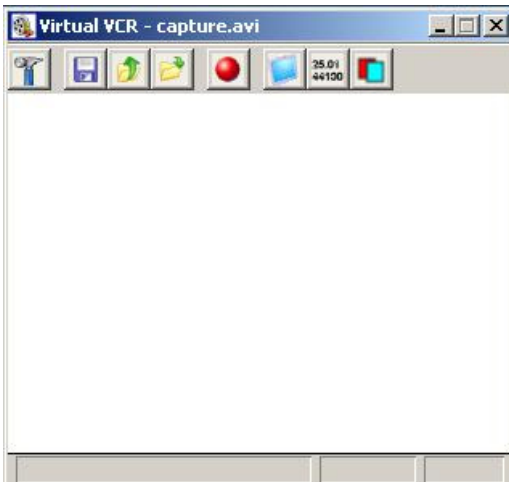
# 3 Troubleshooting


Under certain circumstances (especially if other DirectShow filters are also installed on the same system) you may get an error message when starting the Virtual VCR software:

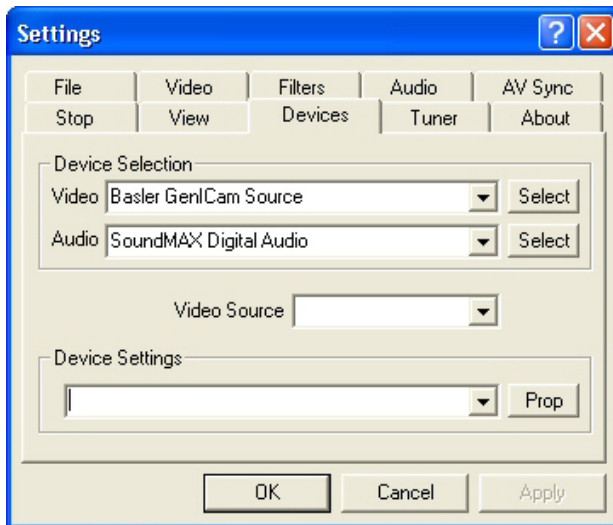


If so, click the **OK** button to resume.

You now see the Virtual VCR main interface:



Click the **Settings** icon (  ) and select the **Devices** tab:



Make sure that **Basler GenICam Source** appears in the **Video** drop down menu and then click the **Select** button.

In the **Device Settings** section of the window you will find the following entries in the drop down menu: **Audio Capture Filter**, **Video Capture Filter**, and **Video Capture Pin**. Select **Video Capture Filter** from the menu.

Click the **Prop** button. This will open the **Properties** window for the camera and will let you configure the camera if necessary.

Click the **OK** button on the **Properties** window and the **OK** button on the **Settings** window.

### Using the Smart Tee filter for previewing

Some video capture cards cannot capture and preview video above 288 (PAL) or 240 (NTSC) lines high. The Smart Tee filter can tap into the actual video stream and show a preview using the actual stream.

You can enable the Smart Tee filter using the procedure described earlier in Step 4.



## Revision History

Doc. ID Number	Date	Changes
AW00071601000	24 Jul 2008	Initial release of this document.
AW00071602000	30 Jul 2008	Updated contact addresses and phone numbers.
AW00071603000	20 Mar 2009	<ul style="list-style-type: none"><li>■ Replaced Basler pylon Runtime Package by Basler pylon Driver Package.</li><li>■ Adapted Introduction section.</li><li>■ Adapted note in step 3 concerning the configuration of the GigE cameras.</li><li>■ Corrected minor spelling mistakes.</li></ul>

