



Getting Started with FlyCapture 2.0 and Linux

Technical Application Note TAN2009003

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1.1. Subject

Technical Application Note (TAN2009003): Getting Started with FlyCapture 2.0 and Linux

1.2. Applicable Product(s)

- FlyCapture SDK Version 2.0

1.3. Application Note Description

With the release of version 2.0 of the FlyCapture SDK, users can program and operate Point Grey imaging cameras in a Linux environment. This Application Note explains the components and steps that are necessary to get started with FlyCapture 2.0 and Linux.

1.4. Intended Audience

This Technical Application Note is intended for users of Point Grey imaging cameras who want to program and operate cameras in a Linux environment.

1.5. Overview

The following topics are covered:

- [Supported Operating System](#)
- [Configuring the Operating System and Installing the Required Libraries](#)
- [Installing the FlyCapture SDK](#)
- [Running the FlyCap Demo Program](#)
- [Compiling the Examples](#)
- [Viewing Images and Videos](#)
- [Removing FlyCapture](#)
- [Additional Downloads and Support](#)

1.6. Supported Operating System

FlyCapture 2.0 is compatible with Ubuntu 8.04.

1.7. Configuring the Operating System and Installing the Required Libraries

For FlyCapture 2.0 to run on a Linux Ubuntu system, the following dependencies must be installed:

- libraw1394-8
- libgtkmm-2.4-dev
- libglademmm-2.4-dev
- libgtkglextmm-x11-dev (libgtkglextmm-x11-1.2-dev in Ubuntu 8.10 and up)
- libusb-1.0 (Only in Ubuntu 9.04 and up)

These libraries are usually packaged with Ubuntu distributions or updates. If they are not pre-installed, use the `apt-get` console command, as in the following example:

Ubuntu 9.04:

```
user$: sudo apt-get install libraw1394-8 libgtk2.0-0 libgtkmm-2.4-dev  
libglademmm-2.4-dev libgtkglextmm-x11-dev libusb-1.0
```

Ubuntu 8.10:

```
user$: sudo apt-get install libraw1394-8 libgtk2.0-0 libgtkmm-2.4-dev  
libglademmm-2.4-dev libgtkglextmm-x11-1.2-dev
```

Ubuntu 8.04:

```
user$: sudo apt-get install libraw1394-8 libgtk2.0-0 libgtkmm-2.4-dev  
libglademmm-2.4-dev libgtkglextmm-x11-dev
```

libusb-1.0 for distributions earlier than 9.04 can be obtained from the Point Grey downloads section. libusb-1.0 can be then be manually installed by double clicking the extracted .deb package and following the instructions.

After installing raw1394 you may need to add the raw1394 module to be loaded on start. To do this just add "raw1394" to the `/etc/modules` file.

1.8. Installing the FlyCapture SDK

To install the FlyCapture SDK, simply install the FlyCapture2 .deb files included with the SDK distribution. We provide an easy-to-use install script, named 'install_flycapture.sh'. You can run the script in the same directory in which you have unpacked the software, as in the following example:

```
user$ sudo sh install_flycapture.sh
```

This script installs all the flycapture libraries, example code, sample applications and documentation. Additionally, the install script prompts you to configure udev so that 1394 and usb devices can be used by a particular user. If you choose to configure 1394 and usb devices, the script changes permissions on the nodes by overwriting the default Ubuntu permissions and giving the user full read and write access to the device nodes. After running this script, everything should be installed and set up for use.

Finally, you must restart the machine for user permissions to take effect.

1.9. Running the FlyCap Demo Program

The FlyCap demo program can be run from the Ubuntu applications menu:

Applications -> Point Grey Research -> FlyCapture

1.10. Compiling the Examples

The FlyCapture SDK includes a number of example applications to help get you started in programming common API tasks. Example files are installed under `/usr/src/flycapture`. Normal users do not have write access to this location, so we suggest copying this folder and sub-folders to a location on your home directory. For example:

```
user$ cp -R /usr/src/flycapture ~
```

In order for the example binaries to copy to the correct location, you should also create a 'lib' folder and a 'bin' folder within the flycapture directory.

To compile the examples, install the GNU C++ (g++) compiler that is included with the build-essential package:

```
user$ sudo apt-get install build-essential
```

Some of the examples are GUI-based. The gtk and glade libraries are required to build these examples. These libraries should already be installed under Section 1.7. Note that the **FlyCaptureGUI** example must be built before the **FlyCap2** or **FlyCapture2GUITest** examples can be built.

To compile a specific example, run the makefile located in the example directory. Binaries are copied to the bin directory, and libraries are copied to the lib directory. For example:

```
user$ cd ~/flycapture/src/FlyCapture2Test
user$ make
```

1.11. Viewing Images and Videos

We suggest the following tools for image and video viewing. Point Grey does not officially endorse these tools.

For image viewing:

- [gimp](#)
- [ImageJ](#)

For video viewing:

- [VLC media player](#)

For working with Glade files:

- [Glade](#)

1.12. Removing FlyCapture

Use the uninstall script provided to remove the FlyCapture SDK, as in the following example:

```
user$: sudo sh remove flycapture
```

1.13. Additional Downloads and Support

Access more Technical Application Notes on the web at www.ptgrey.com/support/downloads.

Point Grey Research Inc. endeavors to provide the highest level of technical support possible to our customers. Most support resources can be accessed through the Product Support section of our website: www.ptgrey.com/support.

Creating a Customer Login Account

The first step in accessing our technical support resources is to obtain a Customer Login Account. This requires a valid name, e-mail address, and camera serial number. To apply for a Customer Login Account go to www.ptgrey.com/support/downloads/.

Knowledge Base

Our on-line knowledge base at www.ptgrey.com/support/kb/ contains answers to some of the most common support questions. It is constantly updated, expanded, and refined to ensure that our customers have access to the latest information.

Product Downloads

Customers with a Customer Login Account can access the latest software and firmware for their cameras from our downloads site at www.ptgrey.com/support/downloads. We encourage our customers to keep their software and firmware up-to-date by downloading and installing the latest versions.

Contacting Technical Support

Before contacting Technical Support, have you:

1. *Read the product documentation and user manual?*
2. *Searched the Knowledge Base?*
3. *Downloaded and installed the latest version of software and/or firmware?*

If you have done all the above and still can't find an answer to your question, contact our Technical Support team at www.ptgrey.com/support/contact/.