

# Kinect

## device

/etc/udev/rules.d/90-kinect2.rules

```
# ATTR{product}=="Kinect2"  
SUBSYSTEM=="usb", ATTR{idVendor}=="045e", ATTR{idProduct}=="02c4",  
MODE="0666"  
SUBSYSTEM=="usb", ATTR{idVendor}=="045e", ATTR{idProduct}=="02d8",  
MODE="0666"  
SUBSYSTEM=="usb", ATTR{idVendor}=="045e", ATTR{idProduct}=="02d9",  
MODE="0666"
```

```
sudo udevadm control --reload
```

On Ubuntu avoid autosuspend of USB. Add `usbcore.autosuspend=-1` to grub options

```
# check with  
grep . /sys/bus/usb/devices/*/power/autosuspend
```

To connect kinect I have to use proper USB 3.0 chipset like [this](#)

```
USB controller: Renesas Technology Corp. uPD720201 USB 3.0 Host Controller
```

## OpenCL

```
sudo apt-get install beignet beignet-dev opencl-headers
```

## libfreenect2 for CUDA

- [...leggi](#)

```
git clone https://github.com/xlz/libfreenect2.git  
sudo apt-get install -y build-essential libturbojpeg libtool autoconf  
libudev-dev cmake mesa-common-dev freeglut3-dev libxrandr-dev doxygen libxi-  
dev libjpeg-turbo8-dev  
cd libfreenect2/depends  
cp -r $path_of_gstjpeg_src/nv_headers .  
sh install_ubuntu.sh  
sudo ln -s /usr/lib/arm-linux-gnueabi/libturbojpeg.so.0.0.0 /usr/lib/arm-  
linux-gnueabi/libturbojpeg.so  
cd ../examples/protonect/  
mkdir build && cd build
```

```
cmake ..  
make  
../bin/Protonect
```

MAX/SOBUFFER\_LENGTH in usbfs.h caused issues. In the published version, the size is 49152 \* 128, the mPCIe card/Jetson didn't like that, but works when the size is **49152**.

## libfreenect2

```
cd /lab/kinect  
sudo apt-get install -y build-essential libturbojpeg libtool autoconf  
libudev-dev cmake \  
  freeglut3-dev libxrandr-dev doxygen libxi-dev libopencv-dev  
sudo ln -s /usr/lib/x86_64-linux-gnu/libturbojpeg.so.0 /usr/lib/x86_64-  
linux-gnu/libturbojpeg.so  
git clone https://github.com/OpenKinect/libfreenect2  
  
cd libfreenect2/depends  
./install_ubuntu.sh  
cd ../examples/protonect  
cmake -DENABLE_CXX11=ON  
make && sudo make install
```

Patch to avoid black screen

```
For example in Protonect.cpp:  
  
add an include after line 37  
  
#include <libfreenect2/packet_pipeline.h>  
  
change line 61 from  
  
libfreenect2::Freenect2Device *dev = freenect2.openDefaultDevice();  
  
to  
  
libfreenect2::Freenect2Device *dev = freenect2.openDefaultDevice(new  
libfreenect2::CpuPacketPipeline());
```

## References

- <http://www.morethantechnical.com/2012/12/07/resampling-smoothing-and-interest-points-of-curves-via-css-in-opencv-w-code/>
- <http://tiku.io/questions/1242558/matplotlib-contour-from-xyz-data-griddata-invalid-index>

# ROS

## Ubuntu 14.04

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu trusty main" >
/etc/apt/sources.list.d/ros-latest.list'
wget https://raw.githubusercontent.com/ros/rosdistro/master/ros.key -O - |
sudo apt-key add -
sudo apt-get update
```

```
sudo apt-get install ros-indigo-desktop-full
```

initialization

```
sudo rosdep init
rosdep update
```

activate on working shell

```
echo "source /opt/ros/indigo/setup.bash" >> ~/.bashrc
source ~/.bashrc
```

create workspace

```
mkdir -p /lab/catkin_ws/src
cd /lab/catkin_ws/src
catkin_init_workspace
cd ..
catkin_make
```

## iai\_kinect2

```
cd /lab/catkin_ws/src
git clone https://github.com/code-iai/iai_kinect2.git
cd iai_kinect2
rosdep install -r --from-paths .
cd /lab/catkin_ws
catkin_make -DCMAKE_BUILD_TYPE="Release"
```

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<https://wiki.csgalileo.org/> - Galileo Labs

Permanent link:  
<https://wiki.csgalileo.org/tips/sensors/kinectv2>

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