How to use Astra camera

Official website link：https://orbbec3d.com/develop/

Astra camera：https://github.com/orbbec/ros_astra_camera

Ordinary camera：https://github.com/bosch-ros-pkg/usb_cam.git

Linux environment

```
sudo apt-get install ros-melodic-serial ros-melodic-bfl ros-melodic-mbf-msgs ros-melodic-pointcloud-to-laserscan ros-melodic-astra-camera ros-melodic-astra-launch ros-melodic-rgbd-launch ros-melodic-libuvc-* ros-melodic-uvc-camera ros-melodic-usb-cam ros-melodic-ar-track-alvar ros-melodic-camera-calibration build-essential freeglut3 freeglut3-dev libsfml-dev
```

Create astra udev rule

```
cd ~/astra_ws/src
./create.sh
```

launch start up file

Launch file	Start the camera model
astra.launch	Astra,Astra S,Astra mini，Astra mini S
astraplus.launch	Astra plus
astrapro.launch	Astra pro
embedded_s.launch	Deeyea
dabai_u3.launch	Dabai
gemini.launch	Gemini

1、SDK usage（Linux)

- Dependent on the environment

```
sudo apt-get install build-essential freeglut3 freeglut3-dev libsfml-dev
```

- Camer SDK&Samples

```
tar -zxvf AstraSDK-v2.1.3-Ubuntu18.04-x86_64.tar.gz
cd AstraSDK-v2.1.3-Ubuntu18.04-x86_64.tar.gz
sudo sh ./install.sh
```

The output contains the following two lines.

Note: Delete install in the penultimate path:

```
export ASTRA_SDK_INCLUDE=/home/yahboom/astra/AstraSDK-v2.1.3-Ubuntu18.04-
x86_64/install/include
export ASTRA_SDK_LIB=/home/yahboom/astra/AstraSDK-v2.1.3-Ubuntu18.04-
x86_64/install/lib
```

After deleting install:

```
export ASTRA_SDK_INCLUDE=/home/yahboom/astra/AstraSDK-v2.1.3-Ubuntu18.04-
x86_64/include
export ASTRA_SDK_LIB=/home/yahboom/astra/AstraSDK-v2.1.3-Ubuntu18.04-x86_64/lib
```

Copy the output to the end of ~/.bashrc

```
gedit ~/.bashrc
source ~/.bashrc
```

The sample program is in the amples directory, which depends on the include and lib directories

- OpenNI camera test tool

Install OpenNI

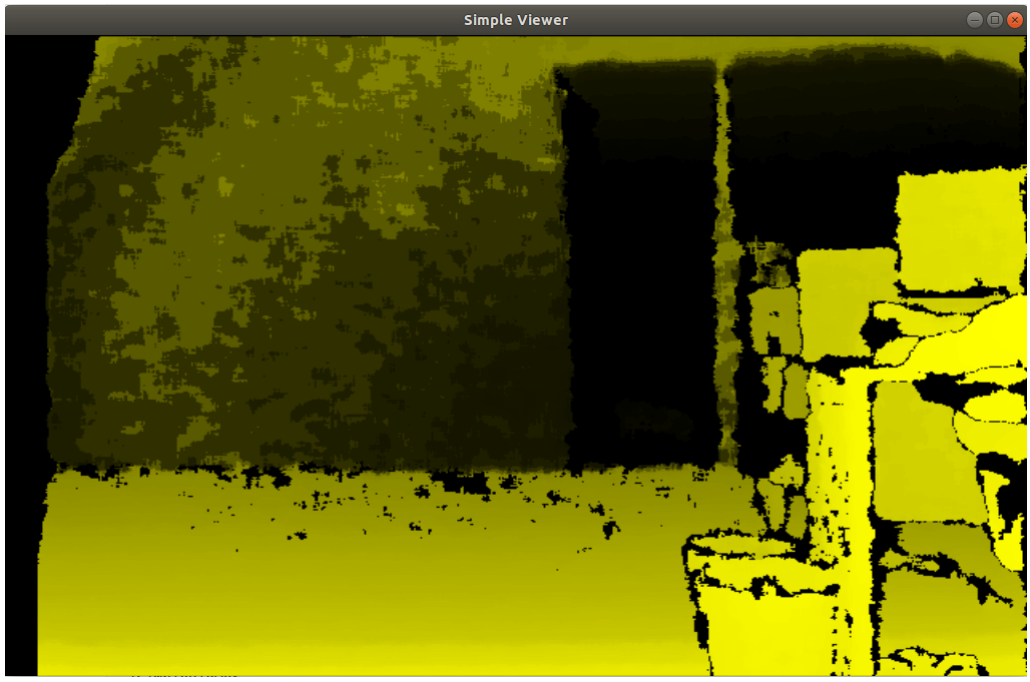
```
unzip OpenNI_2.3.0.55.zip
cd OpenNI_2.3.0.55/Linux/OpenNI-Linux-x64-2.3.0.55
chmod +x install.sh
sudo ./install.sh
```

Replug the device
Initialize the OpenNI environment

```
source OpenNIDevEnvironment
```

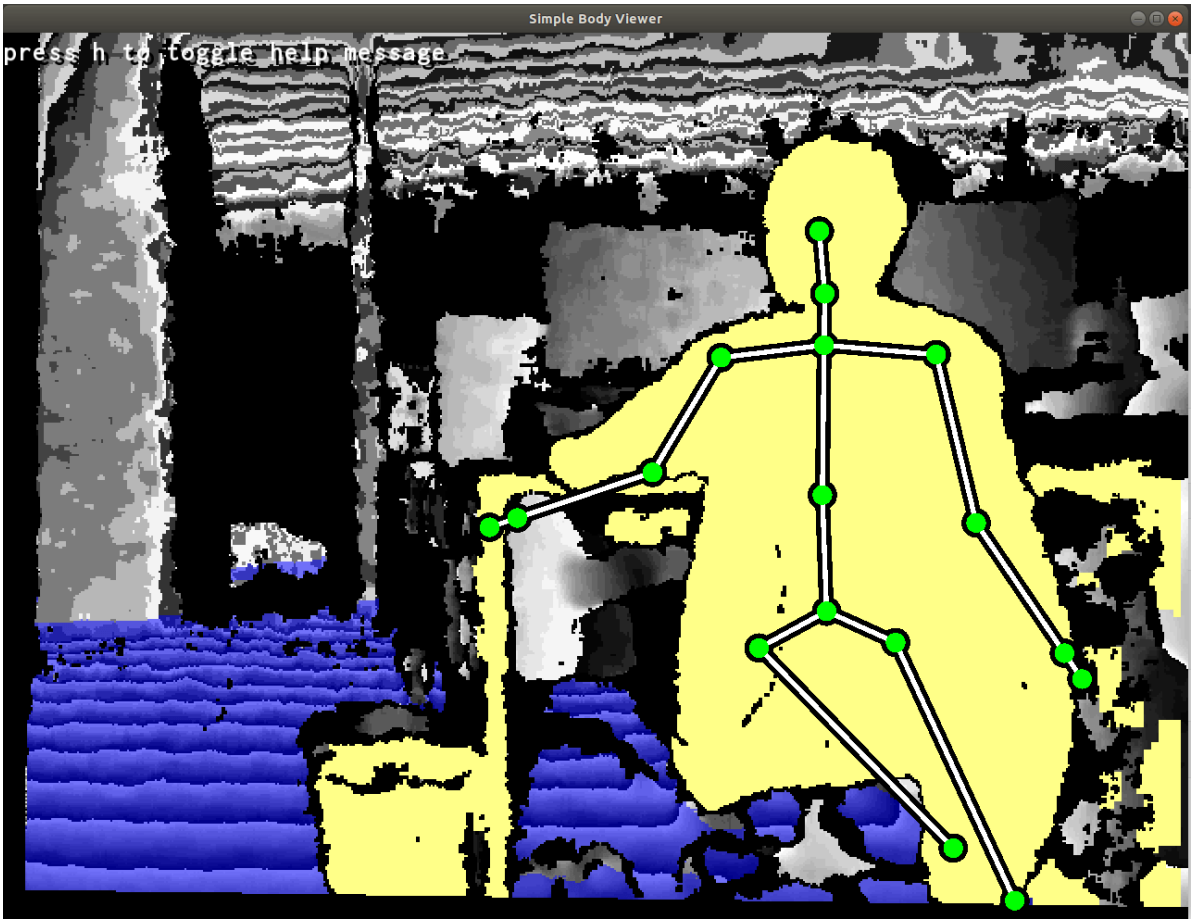
Compile and run

```
cd Samples/SimpleViewer
make
cd Bin/x64-Release
./SimpleViewer
```



- SFML effect demonstration

```
cd ~/astra、AstraSDK-v2.1.3-Ubuntu18.04-x86_64/bin/
./SimpleBodyViewer-SFML
```



2、Web monitoring

Environment setup

```
sudo apt-get install ros-melodic-async-web-server-cpp ros-melodic-web-video-
server ros-melodic-usb-cam
```

Start up web_video_server

```
rosrun web_video_server web_video_server
```

View

```
Local web browser view
http://localhost:8080/
Must be in the same local area network, other devices can view
http://192.168.2.103:8080/
(192.168.2.103 is the IP address of the master)
Note: It is recommended to use Google Chrome or mobile QQ browser, other browsers
may not be able to open the image
```