

# Kinect with ROS Tutorial

Jiseob Kim (jkim@bi.snu.ac.kr)

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# Kinect Review

**KINECT**<sup>™</sup>  
for  XBOX 360



- Motion sensing input device
- Sensors:
  - RGB camera (center)
  - Depth camera (left, right together)
  - Microphone array (side)
- SDK (Software Development Kit)
  - Provided by Microsoft, only for Windows
- OpenNI
  - SDK provided by manufacturer of Kinect.
  - **Ported to ROS!**

# CAUTION!

- Do not try to TILT OR MOVE Kinect too hard.
  - There is a motor in it. It is best to adjust manually by books or tripods.

# *openni\_kinect* stack

- Search *openni* to get to the page

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검색결과 약 15,600개 (0.22초)

 [ROS 3D Contest Entries](#)  
The results are in, check it out  
<http://www.ros.org/wiki/openni/Contests/ROS%203D/>

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openni\_kinect provides ROS drivers for Kinect or PrimeSense.  
[http://www.ros.org/wiki/openni\\_kinect](http://www.ros.org/wiki/openni_kinect)

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# *openni\_kinect* stack (cont.)

- To install the package, just use *apt-get*
  - You don't need to care about source based installation

## 3. Installation

cturtle

diamondback

electric

fuerte

### 3.1 Ubuntu installation

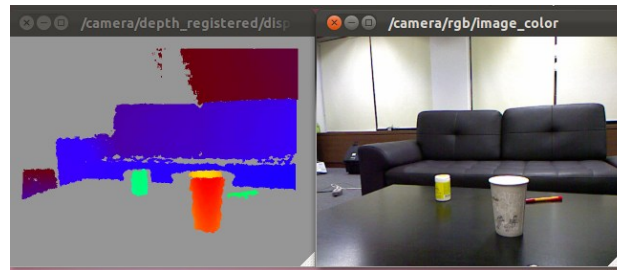
Make sure you have followed the setup instructions at [electric/Installation/Ubuntu](#). Then:

```
sudo apt-get install ros-electric-openni-kinect
```

- After the installation, You can find the packages:  
*openni\_launch*, *openni\_tracker*

# Packages

- You only use following
  - *openni\_launch*
  - *openni\_tracker*
- With *openni\_launch*, you can get the images from camera



- With *openni\_tracker*, you can get the skeleton (joint positions, joint angles)

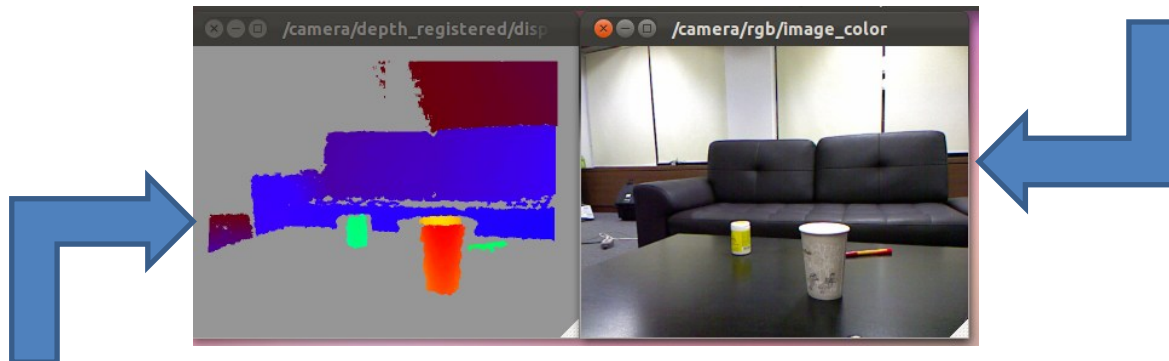
# *openni\_launch*

- Refer to the page:  
[http://www.ros.org/wiki/openni\\_launch](http://www.ros.org/wiki/openni_launch)
- First type this command to start the Kinect driver.

```
> roslaunch oppeni_launch oppeni.launch
```

- To watch the RGB image, type this command

```
> rosrn image_view image_view image:=/camera/rgb/image_color
```



- To watch the Depth image, type this command

```
> rosrn image_view disparity_view image:=/camera/depth_registered/disparity
```

# *openni\_launch* (cont.)

- Note:
  - It is possible to use *rviz* to visualize the images BUT it often conflict when you visualize the skeleton at the same time.

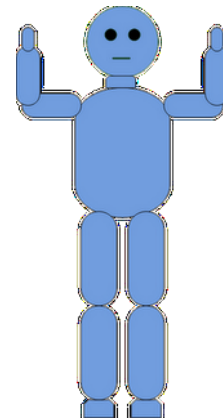


# *openni\_tracker*

- Refer to the page:  
[http://www.ros.org/wiki/openni\\_tracker](http://www.ros.org/wiki/openni_tracker)
- To start tracking, type this command

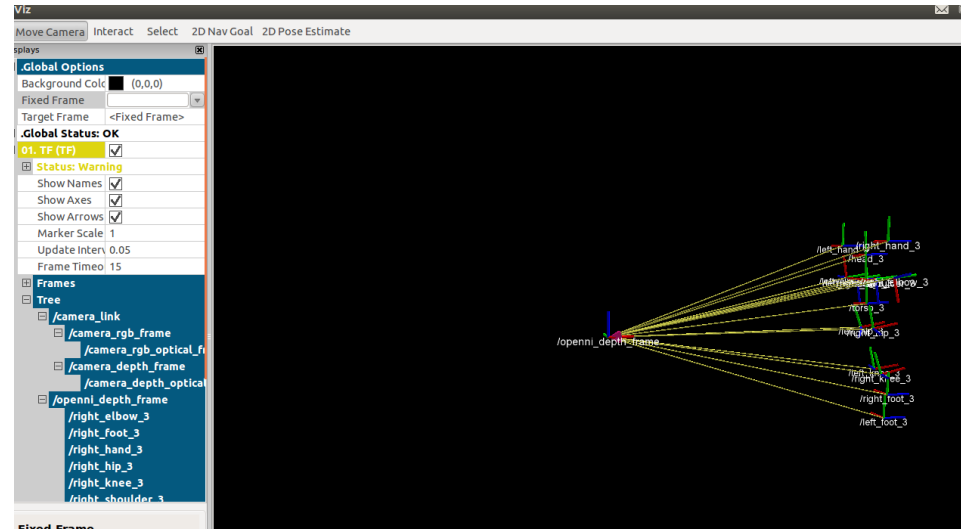
```
> rosrun oppenni_tracker oppenni_tracker
```

- On the terminal, you can see the status of tracking
- It will start calibration when you perform the surrender pose like following



# *openni\_tracker* (cont.)

- As soon as calibration is completed, *openni\_tracker* will generate the topic called *tf*
- You can use *rviz* to visualize the skeleton.
  - Add *tf* window
  - Choose *openni\_depth\_frame* as fixed frame



# Tips about *rviz*

- *rviz* is a good tool to visualize *topics* in ROS but it is very **unstable** and has **many bugs**.
- When you have some problem with starting *rviz*, try to remove files in `~/.rviz/` then restart the *rviz*

```
> cd ~/.rviz
> ls
config      display_config
> cp config config_bk
> cp display_config display_config_bk
> rm config
> rm display_config
> rosrun rviz rviz
```

# Tips about *rviz* (cont.)

- Sometimes, when you try to add a window in *rviz*, you may not get the list of window categories. Then, restart the *rviz*, it should work fine.