ROS Tools: RVIZ

ARRA / AR2A

Advancements for **R**obotics in **R**escue **A**pplications

March 13, 2016

Overview

ARRA/AR2A

What do we want?

- ARRA / AR2A aims to improve the current state of technology of robotics in rescue applications.

Who are we?

- A volunteer non-profit organisation of robotic enthusiasts.

How can you help?

- Check us out at `https://github.com/ar2a`

License information

Section 1

Introduction

RVIZ Introduction

Definition

rviz (ROS Visualization) is a 3D visualizer for displaying sensor data and state information from ROS. Using rviz, you can display live representations of sensor values coming over ROS Topics including camera data, infrared distance measurements, sonar data, and more.

RVIZ Prerequisites

- set up bash environment for ROS

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

  note: after "source" follows a normal space

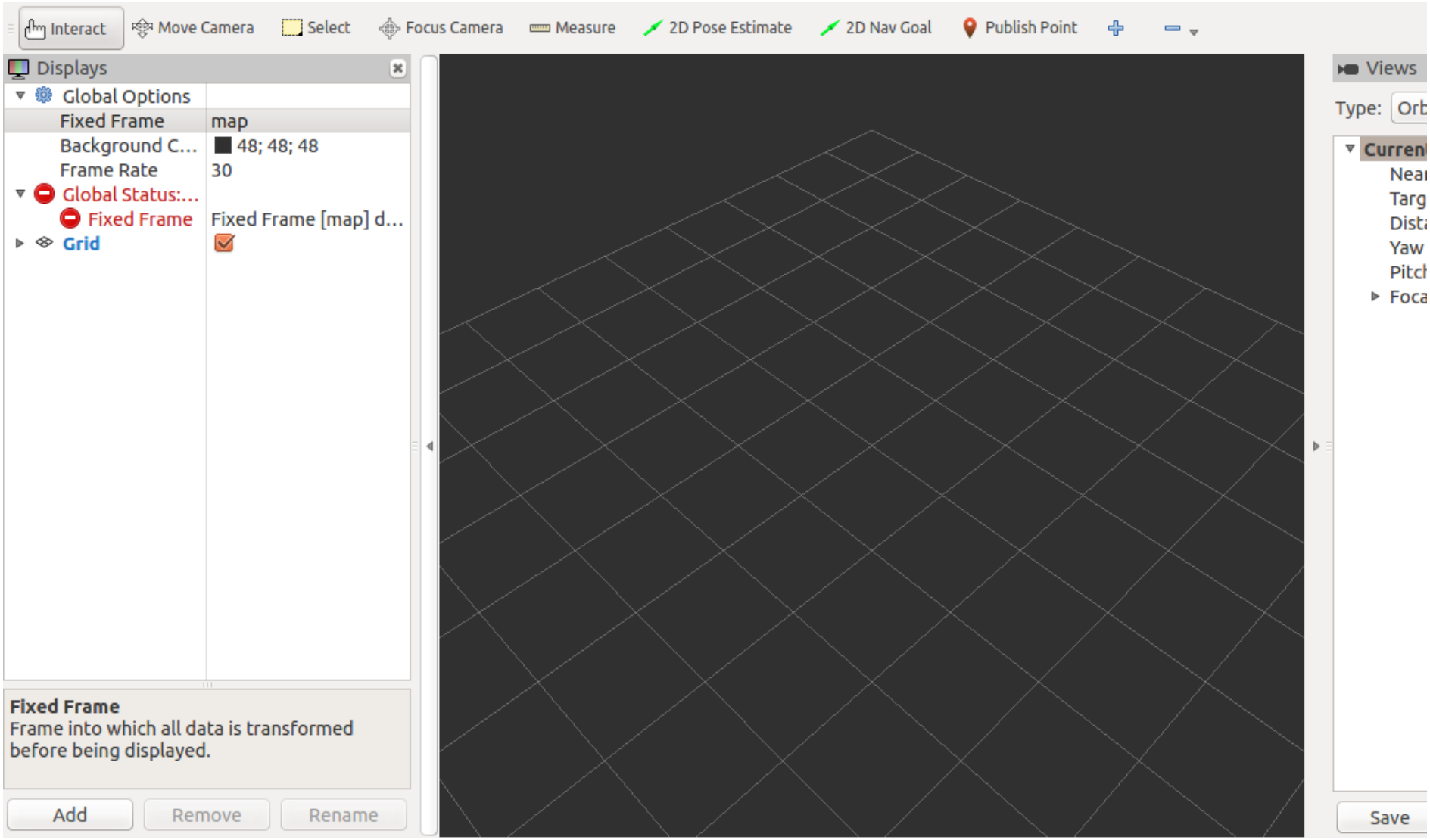
- start roscore

```
roscore
```

- start rviz

```
rosrun rviz rviz
```

RVIZ start screen



Section 2

RVIZ and Kinect

Freenect (Microsoft Kinect Driver)

- install freenect:

```
sudo apt-get install ros-indigo-freenect-stack
```

- establish connection to Kinect

```
roslaunch freenect_launch freenect.launch
```

RVIZ and KINECT Prerequisits

- after initializing bash environment, start roscore and rviz

```
roscore
rosrun rviz rviz
```

- establish connection to Kinect

```
roslaunch freenect_launch freenect.launch
```

RVIZ - Frames

- Choose a Fixed Frame - for example camera_depth_optical_frame

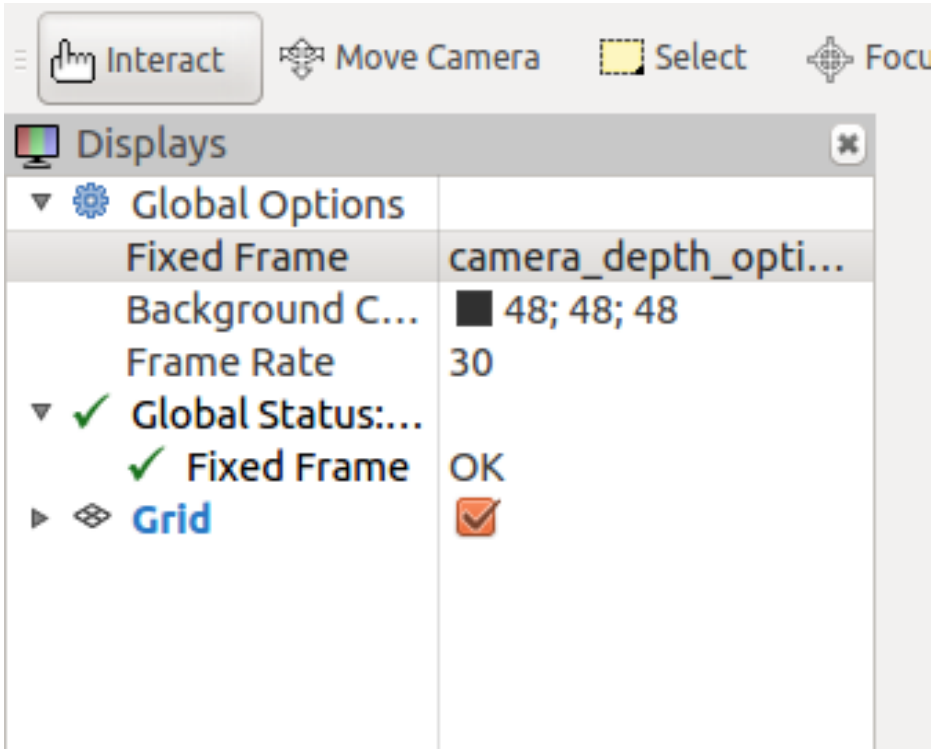


Figure: choose a Fixed Frame

RVIZ - Add an Image

- press button add - choose Image

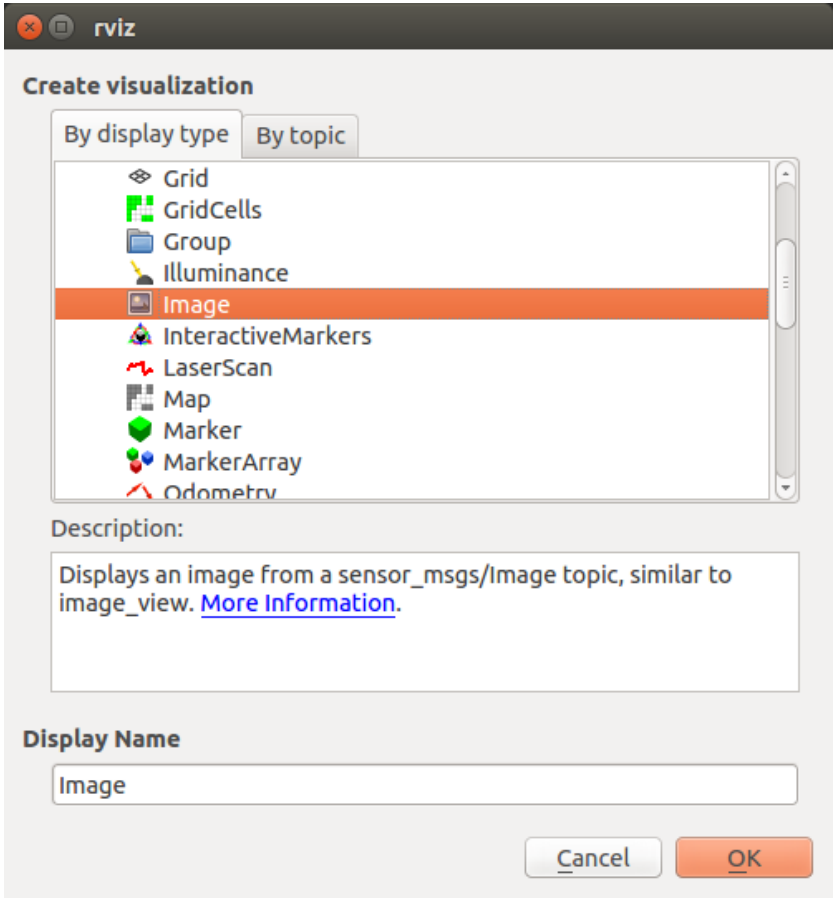


Figure: add image

Kinect - Add a topic for the image

- select an image topic - for example:
  - /camera/depth/XXX
  - /camera/rgb/XXX
  - /camera/ir/XXX

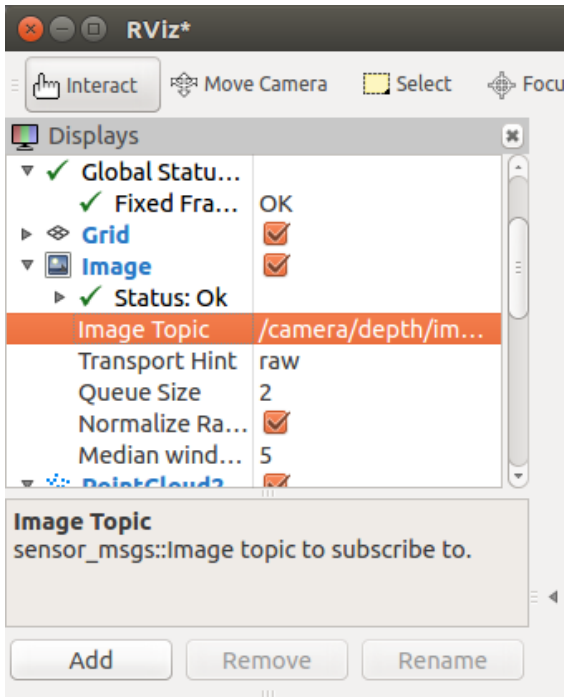


Figure: select image topic

Kinect - Add a PointCloud2

- Add PointCloud2

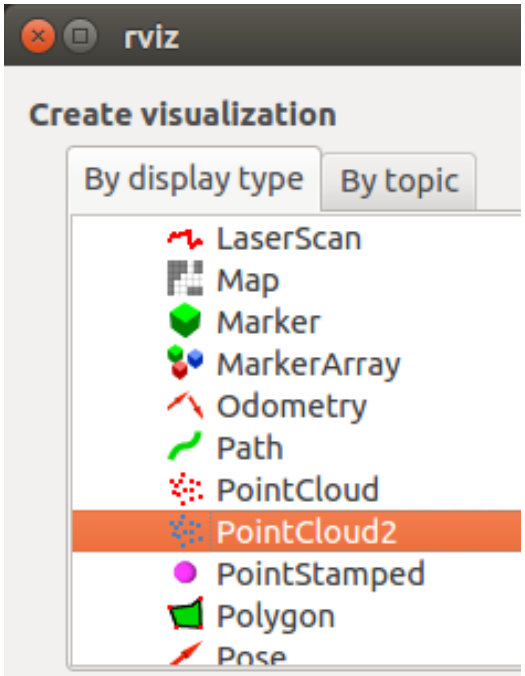


Figure: add PointCloud2

RVIZ - Try different settings

- /camera/depth
- /camera/rgb
- try different settings: position, axis, transformer, color etc.

RVIZ - quick start commands

First start freenect driver (each command is two lines long):

```
roslaunch freenect_launch freenect.launch
depth_registration:=true
```

- compressed rgb image

```
rosrun image_view image_view
image:=/camera/rgb/image_color compressed
```

- compressed mono image

```
rosrun image_view image_view
image:=/camera/rgb/image_mono compressed
```

The End