

rqt_cam

Build Manual



e-con Systems

Your Product Development Partner

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Introduction to ROS

ROS is an open-source, meta-operating system for your robot. It provides the services including hardware abstraction, low-level device control, implementation of commonly used functionality, message-passing between processes, and package management. It also provides tools and libraries for obtaining, building, writing, and running code across multiple computers. ROS is similar in some respects to robot frameworks such as Player, YARP, Orocos, CARMEN, Orca, MOOS, and Microsoft Robotics Studio.

The ROS runtime **graph** is a peer-to-peer network of processes (potentially distributed across machines) that are loosely coupled using the ROS communication infrastructure. ROS implements several different styles of communication, including synchronous RPC-style communication over services, asynchronous streaming of data over topics, and storage of data on a parameter server. For more details, click <http://wiki.ros.org/ROS/Introduction> link.

ROS is not a real-time framework, though it is possible to integrate ROS with real-time code. The Willow Garage PR2 robot uses a system called pr2_etherCAT, which transports ROS messages in and out of a real-time process. ROS also has seamless integration with the Orocos Real-time Toolkit.

This document describes how to build rqt_cam application.

Installation

The supported ROS distribution is ROS kinetic and ROS Melodic. The steps to install the ROS kinetic and ROS Melodic are as follows:

1. Click the following link to install ROS kinetic.

<http://wiki.ros.org/kinetic/Installation>

2. Click the following link to install ROS melodic.

<http://wiki.ros.org/melodic/Installation>

3. Select Ubuntu and execute all the given installation commands.

Note: Use the Desktop-full Install: (Recommended) to get a full install of all ros packages, gui libraries.

4. Verify the installation by checking whether the directory **@ros_distribution_name/** (that is kinetic or melodic) is present in the path **/opt/ros/** once ROS is installed.

Building Workspace

The rqt_cam application is a simple interface for capturing and viewing video from the devices supported by the Linux driver.

The steps to build workspace are as follows:

Step 1. [Installing Dependencies](#)

Step 2. [Creating Workspace](#)

Step 1 - Installing Dependencies

The below table lists the dependencies to be installed for using rqt_cam.

Table 1: Installing Dependencies

| Dependencies | Commands |
|-----------------|--|
| Libudev library | <pre>\$ sudo apt-get install libudev-dev</pre> |

Step 2 - Creating Workspace

Run the following commands to create workspace.

```
$ mkdir -p ~/catkin/src/  
$ cd ~/catkin/src/  
$ catkin_init_workspace  
$ cd ~/catkin/src/  
$ git clone https://github.com/econsystems/rqt_cam.git
```

Building rqt_cam

This section describes about how to build the rqt_cam.

The steps to run rqt_cam are as follows:

1. Run the following commands to build the package.

```
$ cd ~/catkin/  
$ catkin_make  
$ source ./devel/setup.bash
```

2. Run the following commands to launch the publisher node.

```
$ roscd ecam_v4l2/  
$ roslaunch launch/launch.launch
```

3. Open another terminal.

Note: If your not in the catkin directory, navigate to catkin directory and then run the following command to launch the rqt_cam application.

```
$ rqt_cam
```

Troubleshooting

In this section, you can view the list of commonly occurring issues and their troubleshooting steps.

No such package/stack *ecam_v4l2*

This error occurs when trying to change directory to `cam_v4l2_pub` using `roscd`, and when ROS environment variables are not added to your bash session.

To solve this error, run the following command.

```
$ source ./devel/setup.bash
```

rqt_cam: command not found

This error occurs when ROS environment variables are not added to your bash session and while executing `rqt_cam`.

To solve this error, run the following command.

```
$ source ./devel/setup.bash
```

Note:

The above two errors will occur whenever a new terminal is opened, to avoid sourcing the bash file every time, you must perform the following:

1. Add the below line to `~/.bashrc` file.

```
source ~/@catkin_workspace_name/devel/setup.bash
```

2. Run the following command to add the ROS environmental variables to the bash session whenever you open a new terminal.

```
$ source ~/.bashrc
```

Could not find ROS master. Either start a *roscore* or abort loading the plugin.

This error occurs when the `rqt_cam` application is executed without launching the publisher node.

To solve this error, first launch publishing node and then execute `rqt_cam`.

Glossary

API: Application Programming Interface

GUI: Graphical User Interface

ROS: Robot Operating System

V4L2: Video for Linux Version 2 is a collection of device drivers and an API for supporting real-time video capture on Linux systems.

Support

Contact Us

If you need any support on OpenCV sample application, please contact us using the Live Chat option available on our website - <https://www.e-consystems.com/>

Creating a Ticket

If you need to create a ticket for any type of issue, please visit the ticketing page on our website - <https://www.e-consystems.com/create-ticket.asp>

RMA

To know about our Return Material Authorization (RMA) policy, please visit the RMA Policy page on our website - <https://www.e-consystems.com/RMA-Policy.asp>

General Product Warranty Terms

To know about our General Product Warranty Terms, please visit the General Warranty Terms page on our website - <https://www.e-consystems.com/warranty.asp>

Revision History

| Rev | Date | Description | Author |
|-----|------------------|----------------------|---------------|
| 1.1 | 24-February-2020 | Added git clone link | Ramson Jehu K |
| 1.0 | 20-January-2020 | Initial Draft | Ramson Jehu K |