**Steps to create a catkin workspace**

1. Open the terminal.
2. Create a workspace directory using the command

mkdir –p ~/<workspace\_name>/src

1. Go to the workspace directory using the command

cd ~/<Workspace\_name>

1. Make the workspace using the command

catkin\_make

1. Run the command

source devel/setup.bash

**Dependencies for building the source code**

Install the dependencies using the commands as follows:

* sudo apt install build-essential cmake libglfw3-dev libglew-dev libeigen3-dev \

libjsoncpp-dev libtclap-dev

* sudo apt install ros-<ROS-VERSION>-ros-core ros-<ROS-VERSION>-pcl-ros \

ros-<ROS-VERSION>-tf2-geometry-msgs ros-<ROS-VERSION>-rviz

where <ROS-VERSION> is kinetic, melodic, or noetic.

**Steps to Install python SDK for recording Lidar Data in PCAP format**

1. Open terminal and Run the command
   1. python3 -m pip install --upgrade pip
   2. python3 -m pip install 'ouster-sdk[examples]'
   3. export OPENBLAS\_CORETYPE=ARMV8

**Steps to execute the source code**

1. Go to the workspace directory using the command

cd ~/<workspace\_name>/src

1. Download the build provided from the link

https://downloads.chetu.com

1. Create a softlink to the build directory in the src directory of workspace using the command

ln –s <path to the release build directory> ./src

1. Make the workpace using the command

catkin\_make

1. Run the command

source devel/setup.bash

1. Run the command

roslaunch ouster\_ros ouster.launch sensor\_hostname:=<sensor hostname> \

udp\_dest:=<udp data destination> metadata:=<path to metadata json>\ lidar\_mode:=<lidar mode> viz:=<viz>

where:

* <sensor hostname> can be the hostname or IP of the sensor
* <udp data destination> is the hostname or IP to which the sensor should send data
* <path to metadata json> is the path to the json file to which to save calibration metadata.
* <lidar mode> is one of 512x10, 512x20, 1024x10, 1024x20, or 2048x10, and
* <viz> is either true or false: if true, a window should open and start displaying data after a few seconds.

Example :

roslaunch ouster\_ros ouster.launch sensor\_hostname:=os-992109000066.local udp\_dest:=192.168.60.210 metadata:=/media/toad/jetsonSSD/os-992109000066.local.json lidar\_mode:=2048x10 viz:=true

**Steps to execute the source code using bash Script**

1. Go to the workspace directory using the command

cd ~/<workspace\_name>/src

1. Download the release build provided from the link

https://downloads.chetu.com

1. Copy the “startup.sh” , “sonar.sh” ,”lidar\_pcap.py” and ”setup.conf” file from the Scripts folder present in the release build downloaded in step 2 to the src directory in the workspace.
2. Copy the “LEDControl.py” file from the Scripts folder present in the release build downloaded in step 2 to the workspace directory.
3. Run the command.

bash –c startup.sh

**Steps to execute the source code using Desktop App**

1. Go to the workspace directory using the command

cd ~/<workspace\_name>/src

1. Download the release build provided from the link

https://downloads.chetu.com

1. Copy the “startup.sh” file from the Scripts folder present in the release build downloaded in step 2 to the src directory in the workspace.
2. Copy the “LEDControl.py” file from the “Scripts” folder present in the release build downloaded in step 2 to the workspace directory.
3. Copy the “images.jpeg” and “App.desktop” files from the “Desktop Applications” folder present in the release build downloaded in step 2 to desktop.
4. Provide execute permission to the “App.desktop” file.

To provide execute permission right click on file -> Permissions -> check the checkbox for execution permission.

1. Run the application by clicking on it.

**Steps to Execute the Application for controlling LED separately**

1. Go to the workspace directory using the command

cd ~/<workspace\_name>/src

1. Download the release build provided from the link

https://downloads.chetu.com

1. Copy the “LEDControl.py” file from the “Scripts” folder present in the release build downloaded in step 2 to the workspace directory.
2. Copy the “images.jpeg” and “LEDControl.desktop” files from the “Desktop Applications” folder present in the release build downloaded in step 2 to desktop.
3. Provide execute permission to the “LEDControl.desktop” file.

To provide execute permission right click on file -> Permissions -> check the checkbox for execution permission.

1. Run the application by clicking on it.

**Steps to Execute the Application for Rotary Encoder**

1. Download the release build provided from the link

https://downloads.chetu.com

1. Copy the “Encoder.c” file from the “Rotary Encoder/source” folder present in the release build downloaded in step 1 to the desktop.
2. Copy the “Encoder.sh” file from the “Rotary Encoder/script” folder present in the release build downloaded in step 1 to the desktop.
3. Copy the “images.jpeg” and “Encoder.desktop” files from the “Rotary Encoder/Desktop Application” folder present in the release build downloaded in step 1 to desktop.
4. Provide execute permission to the “Encoder.desktop” file.

To provide execute permission right click on file -> Permissions -> check the checkbox for execution permission.

1. Run the application by clicking on it.