

gps 激光雷达 连接过程记录

- <https://www.usilab.cn:10080/yaopt3/NavSatSignalParser/src/master>

•

```
shang@shang:~$ ls /dev/tty
tty      tty21    tty35    tty49    tty62    ttyS17    ttyS30
tty0      tty22    tty36    tty5     tty63    ttyS18    ttyS31
tty1      tty23    tty37    tty50    tty7     ttyS19    ttyS4
tty10     tty24    tty38    tty51    tty8     ttyS2     ttyS5
tty11     tty25    tty39    tty52    tty9     ttyS20    ttyS6
tty12     tty26    tty4     tty53    ttyprintk ttyS21    ttyS7
tty13     tty27    tty40    tty54    ttyS0     ttyS22    ttyS8
tty14     tty28    tty41    tty55    ttyS1     ttyS23    ttyS9
tty15     tty29    tty42    tty56    ttyS10    ttyS24    ttyUSB0
tty16     tty3     tty43    tty57    ttyS11    ttyS25
tty17     tty30    tty44    tty58    ttyS12    ttyS26
tty18     tty31    tty45    tty59    ttyS13    ttyS27
tty19     tty32    tty46    tty6     ttyS14    ttyS28
tty2      tty33    tty47    tty60    ttyS15    ttyS29
tty20     tty34    tty48    tty61    ttyS16    ttyS3
```

```
shang@shang:~$ sudo chmod 666 /dev/ttyUSB0
[sudo] password for shang:
shang@shang:~$ sudo apt-get install cutecom
Reading package lists... Done
Building dependency tree
Reading state information... Done
cutecom is already the newest version (0.22.0-2).
0 upgraded, 0 newly installed, 0 to remove and 553 not upgraded.
```

- 另一个终端打开roscore 使用ros的每一个终端都 source catkin_ws/devel/setup.sh

```
shang@shang:~$ source catkin_ws/devel/setup.sh
shang@shang:~$ roscore
... logging to /home/shang/.ros/log/bd0fa5d4-edb2-11e9-b52a-70f11c0575cb/roslaun
ch-shang-5689.log
Checking log directory for disk usage. This may take awhile.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://shang:36573/
ros_comm version 1.12.14
```

- 无lcm 师兄拷贝

```
shang@shang:~$ rosrn unionstrong_driver nmea_serial_driver _port:/dev/ttyUSB0 _
baud:=115200
Traceback (most recent call last):
  File "/home/shang/catkin_ws/src/navsatparser/src/unionstrong_driver/unio
nstrong_driver/scripts/nmea_serial_driver", line 39, in <module>
    import libnmea_navsat_driver.driver
  File "/home/shang/catkin_ws/src/navsatparser/src/unionstrong_driver/unio
nstrong_driver/src/libnmea_navsat_driver/driver.py", line 3, in <module>
    import lcm
ImportError: No module named lcm
```

- 编译lcm

```

shang@shang:~$ cd lcm/
shang@shang:~/lcm$ mkdir build
mkdir: cannot create directory 'build': File exists
shang@shang:~/lcm$ ls
AUTHORS          docs              lcm-dotnet        lcm-lua           NEWS
build            examples          lcmgen            lcm-pkgconfig     README.md
cmake            format_code.sh    lcm-java          lcm-python        test
CMakeLists.txt   lcm              lcm-lite          liblcm-test       WinSpecific
COPYING          lcm-cmake         lcm-logger        m4macros
shang@shang:~/lcm$ sudo rm -r build
shang@shang:~/lcm$ mkdir build
shang@shang:~/lcm$ cd build/
shang@shang:~/lcm/build$ cmkae ..
No command 'cmkae' found, did you mean:
  Command 'cmake' from package 'cmake' (main)
cmkae: command not found
shang@shang:~/lcm/build$ cmake .
CMake Error: The source directory "/home/shang/lcm/build" does not appear to contain CMakeLists.txt.
Specify --help for usage, or press the help button on the CMake GUI.
shang@shang:~/lcm/build$ cmake ..
-- The C compiler identification is GNU 5.4.0
-- The CXX compiler identification is GNU 5.4.0
-- Check for working C compiler: /usr/bin/cc

```

```

shang@shang: ~
-- Found Lua: /usr/lib/x86_64-linux-gnu/liblua5.2.so;/usr/lib/x86_64-linux-gnu/libm.so (found version "5.2.4")
-- CPack: Packages will be placed under /home/shang/lcm/build/packages
-- Configuring done
-- Generating done
-- Build files have been written to: /home/shang/lcm/build
shang@shang:~/lcm/build$ sudo make install
Scanning dependencies of target lcm_use_file
[ 0%] Generating lcmUtilities.cmake
[ 0%] Built target lcm_use_file
Scanning dependencies of target lcm
[ 1%] Building C object lcm/CMakeFiles/lcm.dir/eventlog.c.o
[ 1%] Building C object lcm/CMakeFiles/lcm.dir/lcm.c.o
/home/shang/lcm/lcm/lcm.c: In function 'lcm_create':
/home/shang/lcm/lcm/lcm.c:124:5: warning: 'g_static_rec_mutex_init' is deprecated: Use 'g_rec_mutex_init' instead [-Wdeprecated-declarations]
    g_static_rec_mutex_init (&lcm->mutex);
    ^
In file included from /usr/include/glib-2.0/glib.h:107:0,
                  from /home/shang/lcm/lcm/lcm.c:8:
/usr/include/glib-2.0/glib/deprecated/gthread.h:176:10: note: declared here
void      g_static_rec_mutex_init      (GStaticRecMutex *mutex);
          ^

```

```

shang@shang: ~
-- Installing: /usr/local/share/aclocal/lcm.m4
-- Installing: /usr/local/lib/pkgconfig/lcm.pc
-- Installing: /usr/local/lib/pkgconfig/lcm-java.pc
shang@shang:~/lcm/build$ cd ..
shang@shang:~/lcm$ cd lcm-
lcm-cmake/      lcm-java/      lcm-logger/    lcm-pkgconfig/
lcm-dotnet/    lcm-lite/     lcm-lua/       lcm-python/
shang@shang:~/lcm$ cd lcm-p
lcm-pkgconfig/ lcm-python/
shang@shang:~/lcm$ cd lcm-python/
shang@shang:~/lcm/lcm-python$ python setup.py install
No command 'python' found, did you mean:
  Command 'python' from package 'python3' (main)
  Command 'python' from package 'python-minimal' (main)
python: command not found
shang@shang:~/lcm/lcm-python$ python setup.py install
running install
running build
running build_py
creating build
creating build/lib.linux-x86_64-2.7
creating build/lib.linux-x86_64-2.7/lcm
copying lcm/__init__.py -> build/lib.linux-x86_64-2.7/lcm
running build_ext

```

```

shang@shang: ~
error: could not delete '/usr/local/lib/python2.7/dist-packages/lcm/_lcm.so': Permission denied
shang@shang:~/lcm/lcm-python$ sudo python setup.py install
running install
running build
running build_py
running build_ext
running install_lib
copying build/lib.linux-x86_64-2.7/lcm/_lcm.so -> /usr/local/lib/python2.7/dist-packages/lcm
byte-compiling /usr/local/lib/python2.7/dist-packages/lcm/__init__.py to __init__.pyc
running install_egg_info
Writing /usr/local/lib/python2.7/dist-packages/lcm-1.3.95.egg-info
shang@shang:~/lcm/lcm-python$ cd..
cd..: command not found
shang@shang:~/lcm/lcm-python$ cd ..
shang@shang:~/lcm$ cd .
shang@shang:~/lcm$ cd ..
shang@shang:~$ roslaunch unionstrong_driver nmea_serial_driver _port:/dev/ttyUSB0 _
baud:=115200
Imu acc_x: -0.1758 acc_y: 0.296 acc_z: 0.9359
Imu acc_x: -0.1758 acc_y: 0.2961 acc_z: 0.936
Imu acc_x: -0.1756 acc_y: 0.296 acc_z: 0.9358

```

- source catkin_ws/devel/setup.sh
- rostopic list
- rostopic echo /unionstrong/gpfpd
- cutecom 在软件中搜索
 - 倒数第二第三位数定位卫星 到室外才有
- 激光雷达
 - 教程

- <https://blog.csdn.net/littlehunder/article/details/51920681>
- 下载 vlp16.xml <https://github.com/XinWenfei/useful>

- 网络配置

Editing Wired connection 1

Connection name: Wired connection 1

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway
192.168.1.110	24	192.168.1.201

DNS servers:

Search domains:

DHCP client ID:

☐ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

- roscore

```

roscore http://shang:11311/
shang@shang:~$ roscor
No command 'roscor' found, did you mean:
  Command 'rosc' from package 'python-rosinstall' (universe)
  Command 'roscore' from package 'python-roslaunch' (universe)
roscor: command not found
shang@shang:~$ roscore
... logging to /home/shang/.ros/log/15573a6c-ee27-11e9-b78c-70f11c0575cb/roslaun
ch-shang-3813.log
Checking log directory for disk usage. This may take awhile.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://shang:34909/
ros_comm version 1.12.14

SUMMARY
=====

PARAMETERS
* /rostdistro: kinetic
* /rosversion: 1.12.14

NODES

```


- 先source setup.sh 再roslaunch

```
shang@shang:~$ cd catkin_velodyne/
shang@shang:~/catkin_velodyne$ cd devel
shang@shang:~/catkin_velodyne/devel$ source setup.sh
shang@shang:~/catkin_velodyne/devel$ roslaunch '/home/shang/catkin_velodyne/src/velodyne/velodyne_pointcloud/launch/VLP16_points.launch'
... logging to /home/shang/.ros/log/15573a6c-ee27-11e9-b78c-70f11c0575cb/roslaunch-shang-4280.log
Checking log directory for disk usage. This may take awhile.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://shang:34877/

SUMMARY
=====

PARAMETERS
* /rostdistro: kinetic
* /rosversion: 1.12.14
* /velodyne_nodelet_manager_cloud/calibration: /home/shang/catki...
* /velodyne_nodelet_manager_cloud/max_range: 130.0
```

- rviz

```
shang@shang:~$ rviz
[ INFO] [1571019087.156876438]: rviz version 1.12.17
[ INFO] [1571019087.156924998]: compiled against Qt version 5.5.1
[ INFO] [1571019087.156945669]: compiled against OGRE version 1.9.0 (Ghadamon)
[ INFO] [1571019087.947610514]: Stereo is NOT SUPPORTED
[ INFO] [1571019087.947690086]: OpenGL version: 3 (GLSL 1.3).
^Cshang@shang:~$ rviz
[ INFO] [1571019214.772720725]: rviz version 1.12.17
[ INFO] [1571019214.772791057]: compiled against Qt version 5.5.1
[ INFO] [1571019214.772806338]: compiled against OGRE version 1.9.0 (Ghadamon)
[ INFO] [1571019214.873463482]: Stereo is NOT SUPPORTED
[ INFO] [1571019214.873542485]: OpenGL version: 3 (GLSL 1.3).
[ERROR] [1571026991.378955538]: poll failed with error Interrupted system call
```

- rosbag

- 记录 rosbag record -a

```
shang@shang:~$ rosbag record -a
[ INFO] [1571019184.111182277]: Recording to 2019-10-14-10
[ INFO] [1571019184.112065973]: Subscribing to /velodyne_no
[ INFO] [1571019184.116279119]: Subscribing to /velodyne_no
an/parameter_descriptions
[ INFO] [1571019184.121087997]: Subscribing to /velodyne_no
arameter_descriptions
[ INFO] [1571019184.125974718]: Subscribing to /velodyne_no
parameter_descriptions
[ INFO] [1571019184.128444542]: Subscribing to /velodyne_no
arameter_updates
```

- rosbag play -r 倍率 bag

```
^Cshang@shang:~$ rosbag play '/home/shang/2019-10-14-10-13-04.bag'
[ INFO] [1571019240.597861016]: Opening /home/shang/2019-10-14-10-13-04.bag

Waiting 0.2 seconds after advertising topics... done.

Hit space to toggle paused, or 's' to step.
[DELAYED] Bag Time: 1571019184.166365 Duration: 0.000000 / 22.326108 Delay
[RUNNING] Bag Time: 1571019184.166365 Duration: 0.000000 / 22.326108
[RUNNING] Bag Time: 1571019184.166365 Duration: 0.000000 / 22.326108
```