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1. ROS代码编译问题

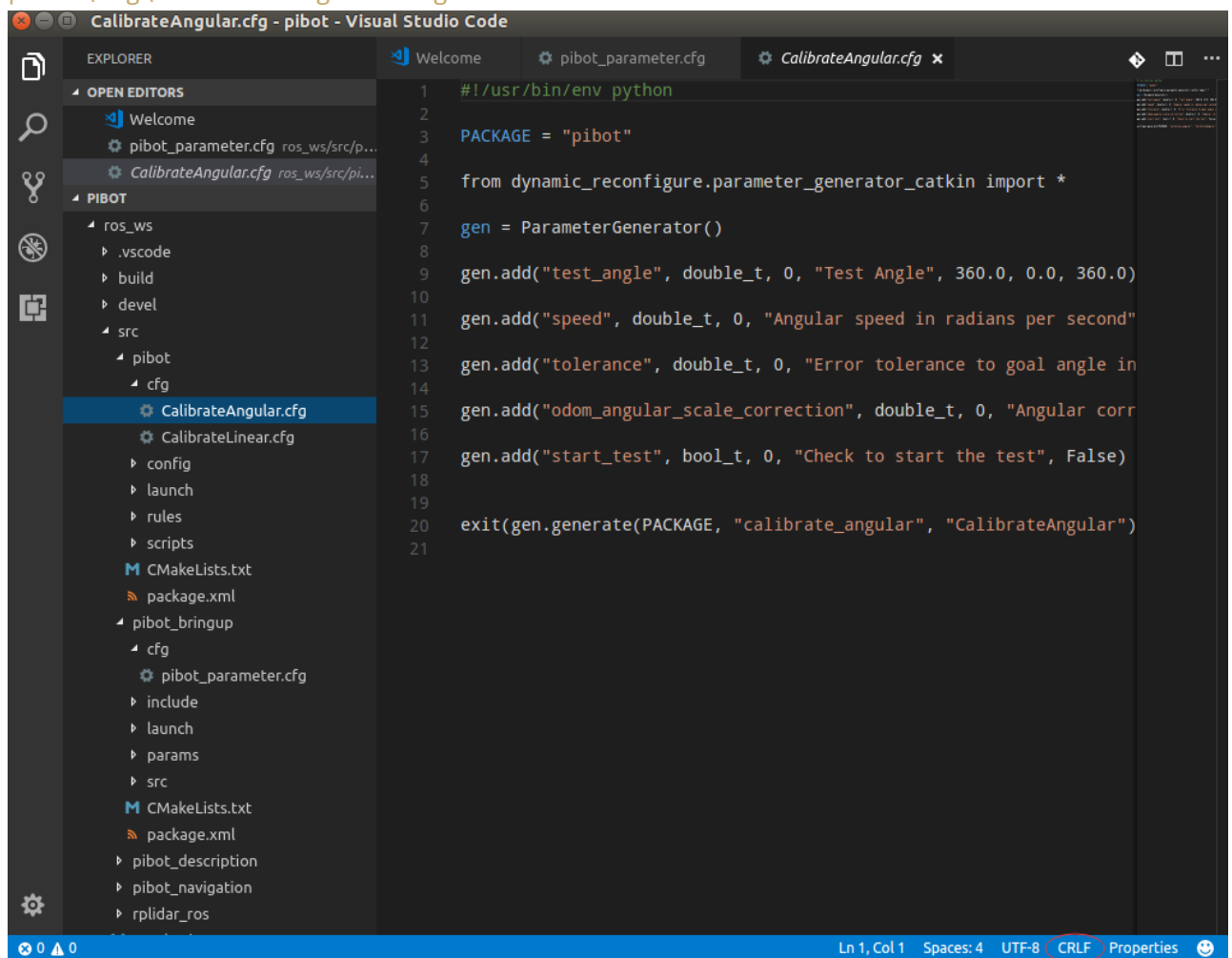
如果从windows拷贝的源码编译可能遇到以下问题

- No such file or directory

```
Generating dynamic reconfigure files from cfg/CalibrateAngular.cfg: /home/turtlebot/pibot/ros_ws/devel
pibot/cfg/CalibrateAngularConfig.py
: No such file or directory
make[2]: *** [/home/turtlebot/pibot/ros_ws/devel/include/pibot/CalibrateAngularConfig.h] Error 127
make[1]: *** [pibot/CMakeFiles/pibot_gencfg.dir/all] Error 2
make[1]: *** Waiting for unfinished jobs....
Generating reconfiguration files for pibot_driver in pibot_bringup
Wrote header file in /home/turtlebot/pibot/ros_ws/devel/include/pibot_bringup/pibot_driverConfig.h
[ 13%] Built target pibot_bringup_gencfg
make: *** [all] Error 2
Invoking "make -j2 -l2" failed
```

这是生成动态参数时因为windows和Linux下换行不一致导致的，使用Visual Code打开

pibot\cfg\CalibrateAngular.cfg



```
CalibrateAngular.cfg - pibot - Visual Studio Code
1  #!/usr/bin/env python
2
3  PACKAGE = "pibot"
4
5  from dynamic_reconfigure.parameter_generator_catkin import *
6
7  gen = ParameterGenerator()
8
9  gen.add("test_angle", double_t, 0, "Test Angle", 360.0, 0.0, 360.0)
10
11  gen.add("speed", double_t, 0, "Angular speed in radians per second"
12
13  gen.add("tolerance", double_t, 0, "Error tolerance to goal angle in
14
15  gen.add("odom_angular_scale_correction", double_t, 0, "Angular corr
16
17  gen.add("start_test", bool_t, 0, "Check to start the test", False)
18
19
20  exit(gen.generate(PACKAGE, "calibrate_angular", "CalibrateAngular")
21
```

右下角点击CRLF修改为LF并保存，同样的还有pibot\cfg\CalibrateLinear.cfg 和 pibot_bringup\cfg\pibot_parameter.cfg

2. 权限问题

Permission denied

```
./catkin_generated/env_cached.sh: 16: exec: /home/turtlebot/pibot/ros_ws/src/pibot/cfg/CalibrateAngular.cfg: Permission denied
make[2]: *** [/home/turtlebot/pibot/ros_ws/devel/include/pibot/CalibrateAngularConfig.h] Error 126
make[2]: *** Waiting for unfinished jobs....
[ 20%] Generating dynamic reconfigure files from cfg/CalibrateLinear.cfg: /home/turtlebot/pibot/ros_ws/devel/include/pibot/Calib
ages/pibot/cfg/CalibrateLinearConfig.py
./catkin_generated/env_cached.sh: 16: exec: /home/turtlebot/pibot/ros_ws/src/pibot/cfg/CalibrateLinear.cfg: Permission denied
make[2]: *** [/home/turtlebot/pibot/ros_ws/devel/include/pibot/CalibrateLinearConfig.h] Error 126
make[1]: *** [pibot/CMakeFiles/pibot_gencfg.dir/all] Error 2
make: *** [all] Error 2
Invoking "make -j2 -l2" failed
```

问题原因与上面类似，解决方法就是添加执行权限chmod +x pibot\cfg\CalibrateAngular.cfg同样的还有 pibot\cfg\Calibratelinear.cfg 和pibot_bringup\cfg\pibot_parameter.cfg

3. 参数问题

Invalid arg

```
Done checking log file disk usage. Usage is <1GB.
while processing /home/firefly/pibot_ros/ros_ws/src/pibot_bringup/launch/robot.launch:
Invalid <arg> tag: environment variable 'PIBOT_LIDAR' is not set.
Arg xml is <arg default="$(env PIBOT_LIDAR)" doc="lidar type [rplidar, eai-x4, eai-g4]" name="lidar"/>
The traceback for the exception was written to the log file
```

问题原因是没有设置环境变量 `doc="lidar type [rplidar, eai-x4, eai-g4]"` 设置为支持的选项即可
如:export PIBOT_LIDAR=rplidar或者export PIBOT_LIDAR=eai-x4 类似还有export
PIBOT_MODEL=apollo或者export PIBOT_MODEL=zeus

需要执行pibot_init_env.sh设置环境变量

4. 雷达启动不转，health state 异常

```
IDAR S/N: B9E69DF1C3E39AC4C3E698F94931340D
mware Ver: 1.24
dware Rev: 5
ror, cannot retrieve rplidar health code: 80008002
plidarNode-2] process has died [pid 1760, exit code 255, c
os/ros_ws/devel/lib/rplidar_ros/rplidarNode __name:=rplida
id-2] [pid=1760, code=255, time=15.232675561704000, b827ebc04ac7/rplidarNode
```

多半是你这usb供电问题，或者可能电池电量不足，电池需要充电

5. timeout

```
process[pibot_driver-2]: started with pid [3027]
[ INFO] [1530453944.060739289]: port:/dev/pibot buadrate:921600
[ INFO] [1530453944.073323153]: out_pid_debug_enable:1
[ INFO] [1530453944.082599149]: BaseDriver startup
Transport main read/write started
[ INFO] [1530453944.092933188]: connected to main board
[ INFO] [1530453946.093344607]: end sleep
timeout:
[ INFO] [1530453946.244221452]: robot version: build time:
timeout:
[ INFO] [1530453946.394910291]: subscribe cmd topic on [cmd_vel]
timeout:
[ INFO] [1530453946.598903989]: RobotParameters: 0 0 0 0 0 0 0 0 0 0 0 0
timeout:
timeout:
timeout:
timeout:
timeout:
timeout:
timeout:
timeout:
```

- 检查UBS是否插好

```
ls /dev/pibot
```

- 另外检查波特率是否正确

```
roscd pibot_bringup/params
vi base_param.yaml # 包括base_param_xx.yaml
```

修改波特率，`stm32f1/arduino`为115200，`stm32f4`都为921600

6. 编译缺少包

```

-- add_subdirectory(robot_upstart)
CMake Error at robot_upstart/CMakeLists.txt:14 (find_package):
  By not providing "Findroslint.cmake" in CMAKE_MODULE_PATH this project has
  asked CMake to find a package configuration file provided by "roslint", but
  CMake did not find one.

  Could not find a package configuration file provided by "roslint" with any
  of the following names:

    roslintConfig.cmake
    roslint-config.cmake

  Add the installation prefix of "roslint" to CMAKE_PREFIX_PATH or set
  "roslint_DIR" to a directory containing one of the above files.  If
  "roslint" provides a separate development package or SDK, be sure it has
  been installed.

-- Configuring incomplete, errors occurred!
See also "/home/david/pibot_ros/ros_ws/build/CMakeFiles/CMakeOutput.log".
See also "/home/david/pibot_ros/ros_ws/build/CMakeFiles/CMakeError.log".

```

如图类似错误,提示Could not find a package configuration file provided by "xxxx" with any,缺少ros的相关功能包导致的,需要通过apt-get install安装,如果不知道具体名称可以使用apt-cache search查找,

```
apt-cache search roslint
```

```

david@david-OptiPlex-3050:~/pibot_ros/ros_ws$ apt-cache search "roslint"
ros-desktop - Robot OS desktop metapackage
ros-kinetic-roslint - CMake lint commands for ROS packages.
ros-lunar-roslint - CMake lint commands for ROS packages.

```

如ros版本包安装即可 选择想要的

```
sudo apt-get install ros-kinetic-roslint
```

如果search结果太多可以添加"ros-{ROS_DIST}-xxx"搜索 例如缺少serial包,如果apt-cache search serial会显示较多选项,我们可以apt-cache search ros-kinetic-serial即可以定位准确的安装的包名称

7. 无法启动Rviz

- QXcbConnection: Could not connect to display

```

/opt/ros/kinetic/lib/rviz/rviz: /usr/local/lib/libcurl.so.4: no version information available (required by
/opt/ros/kinetic/lib/libresource_retriever.so)
QXcbConnection: Could not connect to display

```

在XShell等工具ssh登入是无法启动Rviz(pibot_view或者roslaunch pibot_navigation view_nav.launch)的,需要在Ubuntu主机或者虚拟机建立多机通讯后(执行pibot_init_env),直接在Ubuntu主机或者虚拟机启动