

Crazyswarm开发环境搭建

准备工作

配置Server环境

配置Client环境

参照:<https://crazyswarm.readthedocs.io/en/latest/installation.html> 官方文档(Pyphysical Robots and Simulation)完成开发环境配置

准备工作

Ubuntu18.04 或 Ubuntu20.04(推荐)

对应ros版本 (Melodic或Noetic)

Anacoda(用于配置cfcclient)

Python3.7 (官方推荐) 及以上 (本文档在python3.8下验证测试通过)

申请公司gitlab账号,用于拉取源码.教程链接如下

<https://efyfc.yuque.com/ghgklk/bsxq3o/xi7kfd>

配置Server环境

1.修改环境变量

在~/.zashrc或~/.bashrc文件最后一行,添加如下指令,指定Crazyswar的Python版本.

▼ 指定python版本

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```
1 export CSW_PYTHON=python3
```

```
打开(O)  + .zshrc 保存(S) ...
96 # Compilation flags
97 # export ARCHFLAGS="-arch x86_64"
98
99 # Set personal aliases, overriding those provided by oh-my-zsh libs,
100 # plugins, and themes. Aliases can be placed here, though oh-my-zsh
101 # users are encouraged to define aliases within the ZSH_CUSTOM folder.
102 # For a full list of active aliases, run `alias`.
103 #
104 # Example aliases
105 # alias zshconfig="mate ~/.zshrc"
106 # alias ohmyzsh="mate ~/.oh-my-zsh"
107
108
109 source /opt/ros/noetic/setup.zsh
110 source /home/xingmaker/PX4-Autopilot/Tools/setup_gazebo.bash /home/xingmaker/PX4-Autopilot /
111     home/xingmaker/PX4-Autopilot/build/px4_sitl_default
112 export ROS_PACKAGE_PATH=$ROS_PACKAGE_PATH:/home/xingmaker/PX4-Autopilot:/home/xingmaker/PX4-
113     Autopilot/Tools/sitl_gazebo
114
115 # >>> conda initialize >>>
116 # !! Contents within this block are managed by 'conda init' !!
117 __conda_setup="$('/home/xingmaker/anaconda3/bin/conda' 'shell.zsh' 'hook' 2> /dev/null)"
118 if [ $? -eq 0 ]; then
119     eval "$__conda_setup"
120 else
121     if [ -f "/home/xingmaker/anaconda3/etc/profile.d/conda.sh" ]; then
122         . "/home/xingmaker/anaconda3/etc/profile.d/conda.sh"
123     else
124         export PATH="/home/xingmaker/anaconda3/bin:$PATH"
125     fi
126 fi
127 unset __conda_setup
128 # <<< conda initialize <<<
129 export CSW_PYTHON=python3
130
131
```

添加环境变量后,重启一下终端或更新一下~/.zshrc; ~/.bashrc文件

2.安装相关依赖

运行如下代码:

安装依赖

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```
1 sudo apt install -y ros-[ROS version]-tf ros-[ROS version]-tf-conversions r
os-[ROS version]-joy
2 sudo apt install -y libpcl-dev libusb-1.0-0-dev
3 sudo apt install -y swig lib${CSW_PYTHON}-dev ${CSW_PYTHON}-pip
4 ${CSW_PYTHON} -m pip install pytest numpy PyYAML scipy
```

3.安装可视化环境,供仿真使用

▼ 安装可视化环境

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```
1 (推荐)
2 $ ${CSW_PYTHON} -m pip install vispy
3 (备选)
4 $ ${CSW_PYTHON} -m pip install matplotlib
5 (可选, 仿真录制环境)
6 $ sudo apt install -y ffmpeg
7 $ ${CSW_PYTHON} -m pip install ffmpeg-python
```

4. 拉取公司源码并进行编译

▼ 拉取源码与编译

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```
1 git clone http://gitlab.efy-tech.cn:3882/code/software/crazyfile/crazyswarm
2 cd crazyswarm
3 ./build.sh
```

5. 测试crazyswarm安装环境

▼ 测试安装环境

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```
1 cd ros_ws/src/crazyswarm/scripts
2 source ../../../../devel/setup.bash
3 $CSW_PYTHON -m pytest
```

```

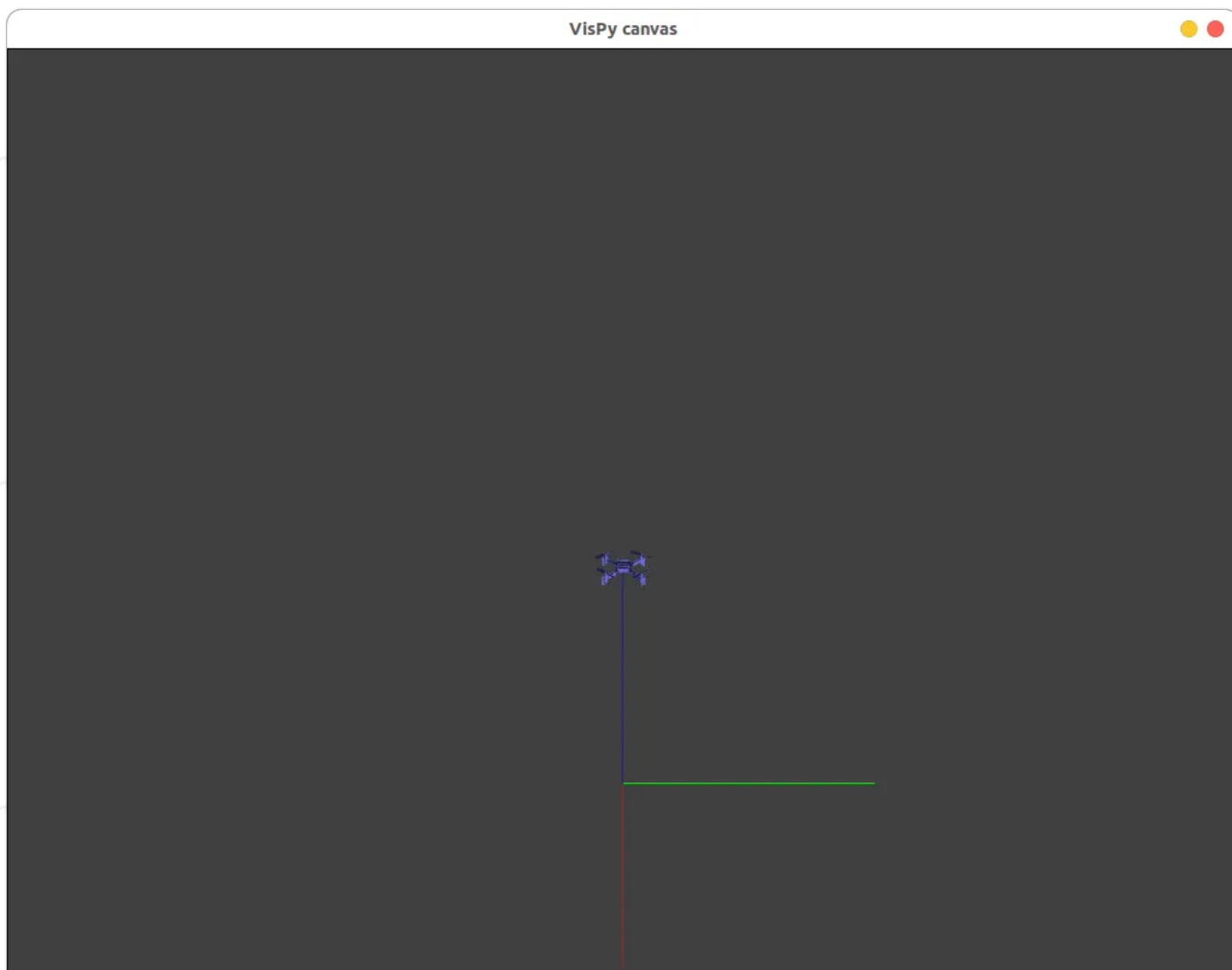
xingmaker@xingmaker:~/crazyswarm/ros_ws/src/crazyswarm/scripts 68x24
rootdir: /home/xingmaker/crazyswarm/ros_ws/src/crazyswarm/scripts
configfile: pytest.ini
collected 31 items

test_collisionAvoidance.py ..... [ 38%]
test_highLevel.py ..... [ 67%]
test_lowLevel.py ..... [ 87%]
test_ros.py ..... [ 90%]
test_simOnly.py ..... [ 93%]
test_videoOutput.py ..... [ 96%]
test_yamlString.py ..... [100%]

===== warnings summary =====
../../../../usr/lib/python3/dist-packages/past/builtins/misc.py:45
  /usr/lib/python3/dist-packages/past/builtins/misc.py:45: Deprecati
onWarning: the imp module is deprecated in favour of importlib; see
the module's documentation for alternative uses
  from imp import reload

-- Docs: https://docs.pytest.org/en/stable/how-to/capture-warnings.h
tml
AL) install ffmpeg if you want to record high-quality videos from the simulator;
===== 31 passed, 1 warning in 3.69s =====
-> scripts git:(master) X

```



出现上述图示,即为安装成功

配置Client环境

1.使用conda,创建一个虚拟环境,命名为cfclient, 在~目录下, 拉取client源码。

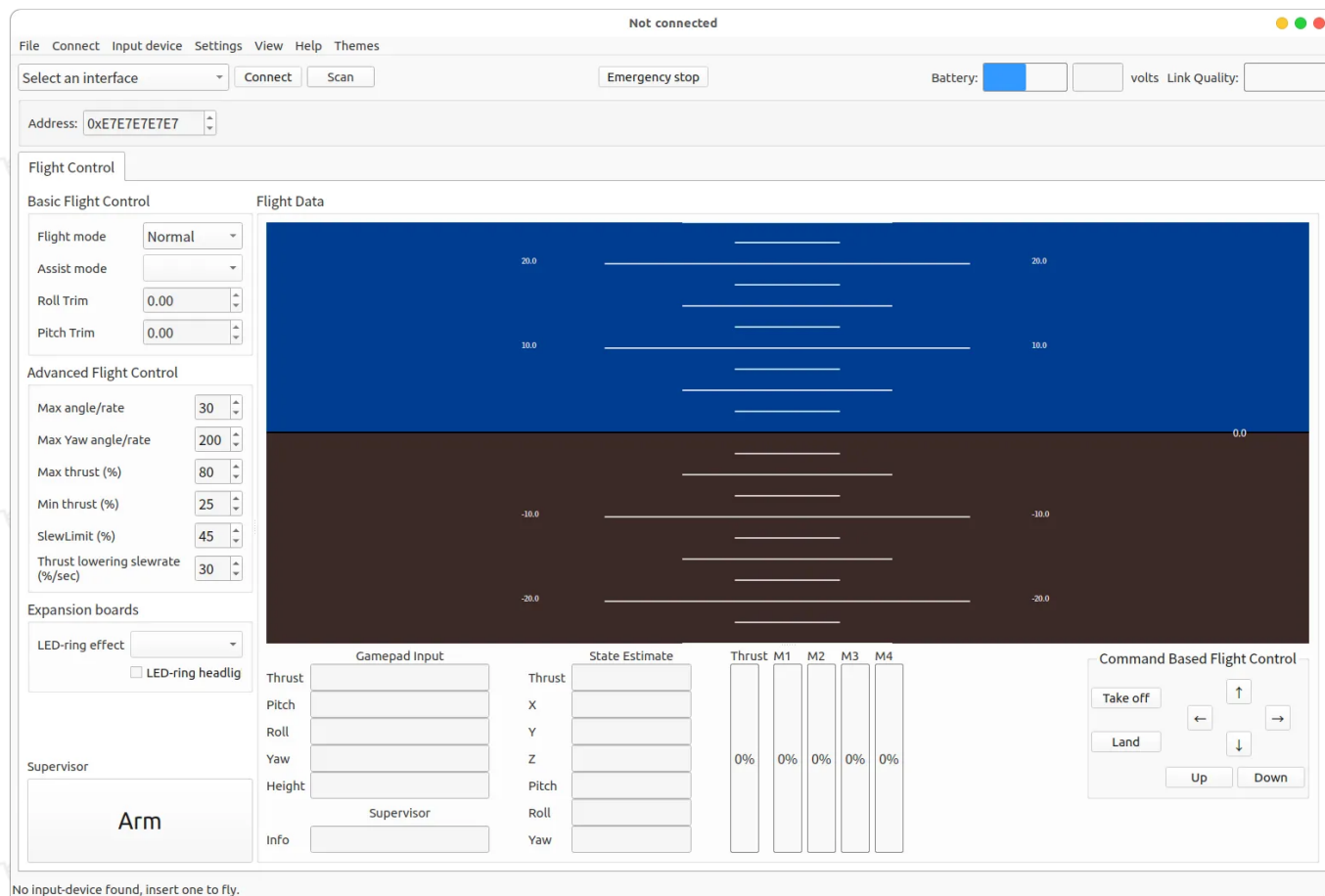
```
配置client Plain Text |
1  #下载相关依赖
2  sudo apt install git python3-pip libxcb-xinerama0 libxcb-cursor0
3  pip3 install --upgrade pip
4  #创建虚拟环境
5  conda create -n=cfclient python==3.8(3.7 会出现python依赖问题 )
6  conda activate cfclient
7  #拉取源码
8  git clone https://github.com/bitcraze/crazyflie-clients-python
9  cd crazyflie-clients-python
10 pip3 install -e .  //指的是下载setup.py里的依赖, 也可以直接在文件里打开自己一个个装
```

2.测试

▼ 测试client

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1 cfclient



出现上图即为安装完成