1. 软件安装版本

<https://blog.csdn.net/Fullspeeder/article/details/125883587>

（关于安装软件时x86 ,x64,x86\_64,ARM 64, ARM 32 的选择）

1. 镜像源

<https://blog.csdn.net/q12373/article/details/108773090>

（ubuntu18.04 更改设置镜像源）

<https://www.cnblogs.com/AstroZhao/p/16528221.html>

[Ubuntu 18 添加镜像](https://www.cnblogs.com/AstroZhao/p/16528221.html)

<https://blog.csdn.net/weixin_44953928/article/details/123314676>

镜像源网址

1. 下载额外数据文件失败ttf-mscorefonts-installer

<https://www.likecs.com/show-243428.html#sc=720>

[ttf-mscorefonts-installer 无法安装，解决办法](https://www.likecs.com/default/index/url?u=aHR0cHM6Ly93d3cuY25ibG9ncy5jb20vbW91c2VsZW8vcC8xMDg1MTAzOC5odG1s" \t "/tmp/wps-linanji/x/_blank)

1. 日志文件清理

<https://blog.csdn.net/qq_34238567/article/details/120351298>

（linux日志文件详解）

1. 备份还原

（1）windows11

<https://blog.csdn.net/qq_29508575/article/details/122171281>

win11还原点如何设置 windows11还原点的设置方法

1. ubuntu18

a备份

<https://blog.csdn.net/sinat_27554409/article/details/78227496>

后面最好加一个参数，不然会报错。  
tar cvpzf backup.tgz --exclude=/proc --exclude=/lost+found --exclude=/backup.tgz --exclude=/mnt --exclude=/sys --exclude=/media / --warning=no-file-change

b还原

能打开：

<https://blog.csdn.net/weixin_50508111/article/details/127256136?ops_request_misc=%257B%2522request%255Fid%2522%253A%2522167029573916800182755916%2522%252C%2522scm%2522%253A%252220140713.130102334.pc%255Fall.%2522%257D&request_id=167029573916800182755916&biz_id=0&utm_medium=distribute.pc_search_result.none-task-blog-2~all~first_rank_ecpm_v1~rank_v31_ecpm-6-127256136-null-null.142^v67^control,201^v4^add_ask,213^v2^t3_esquery_v3&utm_term=ubuntu18%20%E5%A4%87%E4%BB%BDu%E7%9B%98&spm=1018.2226.3001.4187>

u盘作为启动盘

<https://blog.csdn.net/sty1023750281/article/details/80877500?spm=1001.2101.3001.6661.1&utm_medium=distribute.pc_relevant_t0.none-task-blog-2%7Edefault%7ECTRLIST%7ERate-1-80877500-blog-127444064.pc_relevant_multi_platform_whitelistv4&depth_1-utm_source=distribute.pc_relevant_t0.none-task-blog-2%7Edefault%7ECTRLIST%7ERate-1-80877500-blog-127444064.pc_relevant_multi_platform_whitelistv4&utm_relevant_index=1>

<https://blog.csdn.net/sinat_27554409/article/details/78227496>

重装后还原

<https://blog.csdn.net/zoehaszoe/article/details/111623878?ops_request_misc=&request_id=&biz_id=102&utm_term=ubuntu%E5%A4%87%E4%BB%BD%E5%90%8E%20%E8%BF%98%E5%8E%9F&utm_medium=distribute.pc_search_result.none-task-blog-2~all~sobaiduweb~default-3-111623878.142^v67^control,201^v4^add_ask,213^v2^t3_esquery_v3&spm=1018.2226.3001.4187>

1. ros

<https://blog.csdn.net/qq_43193873/article/details/126140130#t15>

（1）Collecting pandas

Retrying (Retry(total=4, connect=None, read=None, redirect=None, status=None)) after connection broken by 'ConnectTimeoutError(<urllib3.connection.VerifiedHTTPSConnection object at 0x7f14648bad50>, 'Connection to pypi.org timed out. (connect timeout=15)')': /simple/pandas/

等 或用源(清华牛逼)

<https://blog.csdn.net/weixin_40668374/article/details/107868341>

（2） 换命令

sudo sh -c '. /etc/lsb-release && echo "deb https://mirrors.tuna.tsinghua.cn/ros/ubuntu/ $DISTRIB\_CODENAME main" > /etc/apt/sources.list.d/ros-latest.list'

https://mirrors.tuna.tsinghua.edu.cn/ros/ubuntu/

（3）sudo apt update

有些没有更新 不管先

（4）sudo rosdep init 超时

<https://blog.csdn.net/wohu1104/article/details/125209331>

（5）rosdep update 超时

[https://gitee.com/KunJian04/rosdistro](https://gitee.com/KunJian04/rosdistro" \t "/home/linanji/文档\\x/_blank)

<https://blog.csdn.net/weixin_44023934/article/details/121242176>

2.gazebo

1. sudo apt-get update 超时

不管

包：<https://gitee.com/lin13570938830/putn>

1 aloam

<https://gitee.com/mirrors_HKUST-Aerial-Robotics/A-LOAM>

<https://blog.csdn.net/qq_39247667/article/details/118895425?spm=1001.2101.3001.6650.1&utm_medium=distribute.pc_relevant.none-task-blog-2%7Edefault%7ECTRLIST%7ERate-1-118895425-blog-123798823.pc_relevant_aa&depth_1-utm_source=distribute.pc_relevant.none-task-blog-2%7Edefault%7ECTRLIST%7ERate-1-118895425-blog-123798823.pc_relevant_aa&utm_relevant_index=2>

（1）ceres

<http://ceres-solver.org/installation.html>

d盘里有ceres2.1.0

权限sudo

（2）pcl

<https://blog.csdn.net/qq_39247667/article/details/118895425?spm=1001.2101.3001.6650.1&utm_medium=distribute.pc_relevant.none-task-blog-2%7Edefault%7ECTRLIST%7ERate-1-118895425-blog-123798823.pc_relevant_aa&depth_1-utm_source=distribute.pc_relevant.none-task-blog-2%7Edefault%7ECTRLIST%7ERate-1-118895425-blog-123798823.pc_relevant_aa&utm_relevant_index=2>

1. 不用测试 直接开始putn部分
2. putn

<https://gitee.com/lin13570938830/putn>

把d盘（A-LOAM放入工作putn\_ws/src内）

1. pip install casadi 慢

添加源

（2）catkin\_make 权限

sudo chmod 777 -R /putn\_ws 重启终端

软件：

1vscode

（1）下载安装

（2）插件

（3）ctrl+shift+B

cd /putn\_ws/

catkin\_make

source /putn\_ws/devel/setup.bash

chmod 777 ~/aloam-putn/src/putn/src/putn/putn\_mpc/scripts/lcontroller.py

//chmod 777 ~/aloam-putn/src/putn/src/putn/putn\_mpc/scripts/controller.py

roslaunch putn\_launch simulation.launch scene:="scenario name"

rosrun teleop\_twist\_keyboard teleop\_twist\_keyboard.py /cmd\_vel:=cmd\_vel\_obstacle