清华源

```
sudo sh -c '. /etc/lsb-release && echo "deb http://mirrors.tuna.tsinghua.edu.cn/ros/ubuntu/ $DISTRIB_CODENAME mai
```

设置key

```
sudo apt-key adv --keyserver 'hkp://keyserver.ubuntu.com:80' --recv-key C1CF6E31E6BADE8868B172B4F42ED6FBAB17C654
```

更新Ubuntu

```
sudo apt-get update
```

```
sudo apt-get install ros-melodic-desktop-full
```

```
sudo apt install python-rosdep python-rosinstall python-rosinstall-generator python-wstool build-essential
```

```
sudo apt-get install ros-melodic-ros-base ros-melodic-image-transport ros-melodic-tf ros-melodic-tf-conversions r
```

解决依赖

```
sudo rosdep init
rosdep update
```

若报错

```
ERROR: cannot download default sources list from:
https://raw.githubusercontent.com/ros/rosdistro/master/rosdep/sources.list.d/20-default.list
Website may be down.
```

则：

```
#打开hosts文件
sudo gedit /etc/hosts
#在文件末尾添加
151.101.84.133  raw.githubusercontent.com
#保存后退出再尝试
```

```
ERROR: default sources list file already exists:
etc/ros/rosdep/sources.list.d/20-default.list
Please delete if you wish to re-initialize
#则:
sudo rm /etc/ros/rosdep/sources.list.d/20-default.list
sudo apt-get update
```

环境设置

```
echo "source /opt/ros/melodic/setup.bash" >> ~/.bashrc
source ~/.bashrc
```

环境测试:

```
env | grep ROS
```

创建catkin工作空间

```
mkdir -p ~/catkin_ws/src
cd ~/catkin_ws/src
catkin_init_workspace
cd ~/catkin_ws/
catkin_make #此时虽然是空的，但仍然可以编译
echo "source ~/catkin_ws/devel/setup.bash" >> ~/.bashrc
source ~/.bashrc
```

最后验证:

```
roscore
```

```
sudo apt-get install ros-<distro>-ros-tutorials
#将替换成你所安装的版本（比如Kinetic、Jade、Indigo、hydro、groovy、fuerte等）。
sudo apt-get install ros-kinetic-ros-tutorials
```