

ROS 应用工业相机

本手册描述了在桌面版 x64 和嵌入式 aarch64 Ubuntu 系统上安装 ROS 系统和使用工业相机的步骤。

1 ROS 安装

1.1. 添加源

x64 和 aarch64 均推荐采用中科大的源。

```
sudo sh -c 'cat /etc/lsb-release && echo "deb http://mirrors.ustc.edu.cn/ros/ubuntu/
$DISTRIB_CODENAME main" > /etc/apt/sources.list.d/ros-latest.list'
```

1.2. 添加私钥/公钥

x64

```
sudo apt-key adv --keyserver hkp://pool.sks-keyservers.net --recv-key 0xB01FA116
sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-keys F42ED6FBAB17C654
```

aarch:

```
sudo apt-key adv --keyserver 'hkp://keyserver.ubuntu.com:80' --recv-key C1CF6E31E6BADE88
68B172B4F42ED6FBAB17C654
```

1.3. 更新软件列表

```
sudo apt-get update
```

1.4. 安装 ROS

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

1.5. 初始化

1.5.1 初始化

```
sudo rosdep init
rosdep update
```

1.5.2 设置环境变量



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

1.6. 安装 rosinstall

```
sudo apt-get install python-roinstall python-roinstall-generator python-wstool build-essential
```

1.7. 测试是否安装成功

```
roscore
```

2 示例程序

2.1 解压

```
tar xvzf hikrobot_camera_ws.tar.gz
```

2.2 编译

```
cd hikrobot_camera_ws  
catkin_make
```

2.3 运行

```
source devel/setup.bash  
roslaunch hikrobot_camera hikrobot_camera_rviz.launch
```

```
source ./devel/setup.bash  
roslaunch hikrobot_camera hikrobot_camera.launch
```

2.4 其它

相机运行参数修改 `src\hikrobot_camera\config\camera.yaml`

修改或添加更多相机功能修改 `src\hikrobot_camera\include\hikrobot_camera.hpp` 后重新编译

Linux 下修改巨帧 `sudo ifconfig eth0 mtu 9000`



3 测试环境

x64: CPU: Intel® Pentium(R) Gold G5400 CPU @ 3.70GHz x 4 Ubuntu 18.04.6 LTS

aarch64: Jetson Nano, Ubuntu 18.04.6 LTS

[参考资料]

https://blog.csdn.net/weixin_44444810/article/details/109843523 Ubuntu 安装 ROS

<https://www.cnblogs.com/letisl/p/11815191.html> ROS 安装

https://blog.csdn.net/Kenny_GuanHua/article/details/116845781 ROS 安装问题解决

<https://github.com/luckydada/HIKROBOT-MVS-CAMERA-ROS> 代码参考