Installation Guide

05 April 2019 18:22

Component	Commands
Ubuntu 16.04	• Install the iso • DON'T BOTHER WITH A VIRTUAL MACHINE, IT CAUSES TOO MANY ISSUES AND USB 3.0 (REQUIRED FOR KINECT CAMERA) IS VERY TEMPROMENTAL
Ros kinectic	sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" > /etc/apt/sources.list.d/ros-latest.list' sudo apt-key adv --keyserver hkp://ha.pool.sks-keyservers.net:80 --recv-key 421C365BD9FF1F717815A3895523BAEEB01FA116 sudo apt-get update sudo apt-get install ros-kinetic-desktop-full sudo rosdep init rosdep update echo "source /opt/ros/kinetic/setup.bash" >> ~/.bashrc source ~/.bashrc
Additional ros packages	sudo apt-get install ros-kinetic-joy sudo apt-get install ros-kinetic-hector-slam sudo apt-get install ros-kinetic-pointcloud-to-laserscan sudo apt-get install ros-kinetic-navigation sudo apt-get install ros-kinetic-robot-localization sudo apt-get install ros-kinetic-usb-cam sudo apt-get install ros-kinetic-gps-goal sudo apt-get install ros-kinetic-swri-transform-util sudo apt-get install ros-kinetic-mapviz ros-kinetic-mapviz-plugins ros-kinetic-tile-map ros-kinetic-multires-image sudo apt-get install ros-kinetic-gazebo-ros-control sudo apt-get install ros-kinetic-controller-manager sudo apt-get install ros-kinetic-imu-tools sudo apt-get install ros-kinetic-image-geometry sudo apt-get install ros-kinetic-frontier-exploration sudo apt-get install ros-kinetic-rosserial sudo apt-get install ros-kinetic-rosserial-arduino
Python virtualenv	sudo pip install virtualenv virtualenvwrapper sudo rm -rf ~/get-pip.py ~/.cache/pip echo -e "\n# virtualenv and virtualenvwrapper" >> ~/.bashrc echo "export WORKON_HOME=$HOME/.virtualenvs" >> ~/.bashrc echo "source /usr/local/bin/virtualenvwrapper.sh" >> ~/.bashrc source ~/.bashrc mkvirtualenv pegasus3 -p python2 workon pegasus3
Python libraries	workon pegasus3 pip install catkin_pkg pip install numpy pip install rospkg pip install empy pip install imutils pip install opencv-contrib-python pip install pylint pip uninstall serial pip install pyserial pip install defusedxml pip install pyside pip install geographiclib pip install utm pip install matplotlib pip install scipy
Image stuff	sudo apt-get install build-essential cmake pkg-config sudo apt-get install libjpeg8-dev libtiff5-dev libjasper-dev libpng12-dev sudo apt-get install libavcodec-dev libavformat-dev libswscale-dev libv4l-dev sudo apt-get install libxvidcore-dev libx264-dev sudo apt-get install libgtk-3-dev sudo apt-get install python2.7-dev python3.5-dev
Libfreenect2 (Kinect camera)	git clone https://github.com/OpenKinect/libfreenect2.git cd libfreenect2 sudo apt-get install build-essential cmake pkg-config sudo apt-get install libusb sudo apt-get install libturbojpeg libjpeg-turbo8-dev sudo apt-get install libglfw3-dev mkdir build && cd build cmake .. -DCMAKE_INSTALL_PREFIX=$HOME/freenect2 make make install sudo cp ../platform/linux/udev/90-kinect2.rules /etc/udev/rules.d/ (run test program) ./bin/Protonect
Iai_kinect2	In catkin_ws/src • git clone https://github.com/code-iai/iai_kinect2.git • cd iai_kinect2 • rosdep install -r --from-paths . • cd ~/catkin_ws

	• catkin_make -DCMAKE_BUILD_TYPE="Release"
GPS	sudo chmod 666 /dev/ttyACM0 (replace this with whatever the device name is)
Sip (good luck) & PyKDL (Maybe not needed)	Download sip from https://riverbankcomputing.com/software/sip/download cd /path/to/src/SIP python configure.py --incdir=~/.pyenv/versions/<name-of-virtualenv>/include/python2.7 make make install pip install PyKDL
Xbox controller	sudo apt-get install xboxdrv sudo xboxdrv --detach-kernel-driver --led 2
Arduino ROS serial	http://wiki.ros.org/rosserial_arduino/Tutorials/Arduino%20IDE%20Setup