ROS在Ubuntu下安装

14353404 张亚琛

在Ubuntu下安装ROS，模拟运行雷达功能。

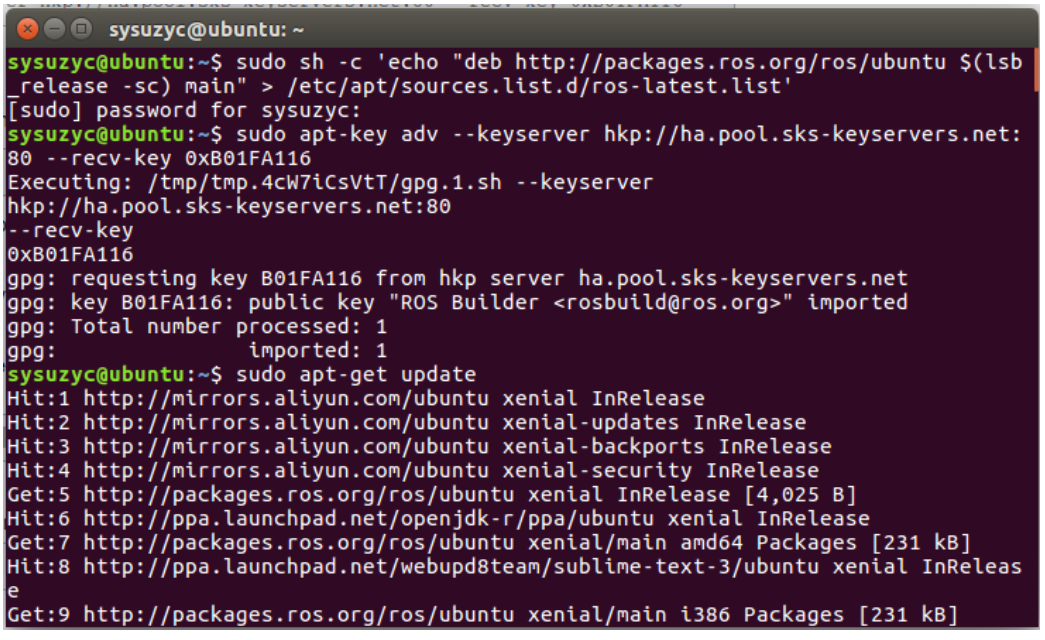
实验步骤

本次实验的步骤如下：

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" > /etc/apt/sources.list.d/ros-lates
sudo apt-key adv --keyserver hkp://ha.pool.sks-keyservers.net:80 --recv-key 0xB01FA116
sudo apt-get update
sudo apt-get install ros-kinetic-desktop-full
apt-cache search ros-kinetic
sudo rosdep init
rosdep update
echo "source /opt/ros/kinetic/setup.bash" >> ~/.bashrc
source ~/.bashrc
source /opt/ros/kinetic/setup.bash
sudo apt-get install python-rosinstall
```

其中，每一步都需要安装正确之后，才可以很好的完成这次的实验。 详细的步骤如下所示：

首先是进行一些依赖项的申请和更新：



然后是进行rosedp配置：

```
sysuzyc@ubuntu: ~
Setting up ros-kinetic-perception (1.3.0-0xenial-20161003-134227-0700) ...
Setting up dh-strip-nondeterminism (0.015-1) ...
Setting up odbcinst (2.3.1-4.1) ...
Setting up ruby2.3 (2.3.1-2~16.04) ...
Setting up ruby (1:2.3.0+1) ...
Setting up gazebo7 (7.0.0+dfsg-2) ...
Setting up ros-kinetic-gazebo-ros (2.5.7-0xenial-20161001-043306-0700) ...
Setting up ros-kinetic-gazebo-plugins (2.5.7-0xenial-20161001-044818-0700) ...
Setting up ros-kinetic-gazebo-ros-pkgs (2.5.7-0xenial-20161001-075616-0700) ...
Setting up ros-kinetic-simulators (1.3.0-0xenial-20161020-155040-0700) ...
Setting up ros-kinetic-desktop-full (1.3.0-0xenial-20161020-155501-0700) ...
Processing triggers for libc-bin (2.23-0ubuntu3) ...
Processing triggers for systemd (229-4ubuntu10) ...
Processing triggers for ureadahead (0.100.0-19) ...
sysuzyc@ubuntu:~$ apt-cache search ros-kinetic
ros-kinetic-ackermann-msgs - ROS messages for robots using Ackermann steering.
ros-kinetic-actionlib - The actionlib stack provides a standardized interface fo
r interfacing with preemptable tasks.
ros-kinetic-actionlib-lisp - actionlib_lisp is a native implementation of the fa
mous actionlib in Common Lisp.
ros-kinetic-actionlib-msgs - actionlib_msgs defines the common messages to inter
act with an action server and an action client.
ros-kinetic-actionlib-tutorials - The actionlib_tutorials package
ros-kinetic-agvs-common - URDF description of the Agvs and Agvs.
```

```
sysuzyc@ubuntu: ~
ros-kinetic-zeroconf-avahi-suite - Suite of packages supporing the avahi impleme
ntation of zeroconf for ros.
ros-kinetic-zeroconf-msgs - General ros communications used by the various zeroc
onf implementations.
sysuzyc@ubuntu:~$ sudo rosdep init
[sudo] password for sysuzyc:
Wrote /etc/ros/rosdep/sources.list.d/20-default.list
Recommended: please run

        rosdep update

sysuzyc@ubuntu:~$ rosdep update
reading in sources list data from /etc/ros/rosdep/sources.list.d
Hit https://raw.githubusercontent.com/ros/rosdistro/master/rosdep/osx-homebrew.y
aml
Hit https://raw.githubusercontent.com/ros/rosdistro/master/rosdep/base.yaml
Hit https://raw.githubusercontent.com/ros/rosdistro/master/rosdep/python.yaml
Hit https://raw.githubusercontent.com/ros/rosdistro/master/rosdep/ruby.yaml
Hit https://raw.githubusercontent.com/ros/rosdistro/master/releases/fuerte.yaml
Query rosdistro index https://raw.githubusercontent.com/ros/rosdistro/master/ind
ex.yaml
Add distro "groovy"
Add distro "hydro"
```

然后是进入到bash的目录下，找到对应的文件，并运行之。

```
sysuzyc@ubuntu: ~
Add distro "indigo"
Add distro "jade"
Add distro "kinetic"
updated cache in /home/sysuzyc/.ros/rosdep/sources.cache
sysuzyc@ubuntu:~$ echo "source /opt/ros/kinetic/setup.bash" >> ~/.bashrc
sysuzyc@ubuntu:~$ source ~/.bashrc
sysuzyc@ubuntu:~$ sudo apt-get install python-rosinstall
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-4.4.0-31 linux-headers-4.4.0-31-generic
  linux-image-4.4.0-31-generic linux-image-extra-4.4.0-31-generic
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  bzr libjs-excanvas libserf-1-1 libsvn1 mercurial mercurial-common
  python-bzrlib python-configobj python-dbus python-gpgme python-httplib2
  python-keyring python-launchpadlib python-lazr.restfulclient python-lazr.uri
  python-oauth python-secretstorage python-simplejson python-vcstools
  python-wadllib python-wstool subversion
Suggested packages:
  bzr-doc bzrtools python-bzrlib.tests qct kdiff3 | kdiff3-qt | kompare | meld
  | tkcvs | mgdiff python-mysqldb python-bzrlib-dbg python-kerberos
  python-configobj-doc python-dbus-doc python-dbus-dbg python-fs python-gdata
```

所以，在上面的内容跑完之后，我们的ROS就安装并配置完成了。

实验感想

这次的实验其实不是很难，只是进行了对ros的配置，并没有很实际的用到这些东西。但是，在后面的实验中还是会用到的。在后面进行catagropher的配置中是会利用到ROS工具的。所以，这一次的实验其实只是为了给后面的实验打下基础而已。因此，我们这里必须要保证配置是没有问题的。不然的话，后面的实验室没有办法完成的。这次的配置基本上就是按照文档进行的，也没有碰到什么问题。这里也就不再多说。最后，希望ta可以给些比较有实用性的实验内容。这样的话，同学们也会更加的有耐心去做这些的实验。而不是做完了之后，不知道以后会不会用到，而以敷衍的态度来做这些作业。那样的话是没有任何的价值的。