

# INSTALL AND RUN THE ARM PACKAGE ON THE ROS SYSTEM

## writing steps

1:open “Terminal”

```
2: type "sudo sh -c 'echo \"deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main\" > /etc/apt/sources.list.d/ros-latest.list'"
```

3:It will ask you for the Ubuntu password,Enter the system password.

4:type “sudo apt install curl”

5:type "curl -s https://raw.githubusercontent.com/ros/rosdistro/master/ros.asc | sudo apt-key add -"

6:type “sudo apt-get update”

7:type "sudo apt-get install ros-noetic-desktop-full"

## Results

```
es Terminal ▾ 21:30 22 يولو 22 yara@yara-WORKSPACE: ~/catkin_ws

yara@yara-WORKSPACE: $ sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" > /etc/apt/sources.list.d/ros-latest.list'
[sudo] password for yara:
yara@yara-WORKSPACE: $ sudo apt install curl
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libfprint-2-tod1 libl10n9 linux-modules-5.4.0-1002-oem ubuntu-system-service
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 31 not upgraded.
Need to get 161 kB of archives.
After this operation, 412 kB of additional disk space will be used.
Get:1 http://sa.archive.ubuntu.com/ubuntu focal-updates/main amd64 curl amd64 7.68.0-1ubuntu2.12 [161 kB]
Fetched 161 kB in 2s (88.6 kB/s)
Selecting previously unselected package curl.
(Reading database ... 187530 files and directories currently installed.)
Preparing to unpack .../curl_7.68.0-1ubuntu2.12_amd64.deb ...
Unpacking curl (7.68.0-1ubuntu2.12) ...
Setting up curl (7.68.0-1ubuntu2.12) ...
Processing triggers for man-db (2.9.1-1) ...
yara@yara-WORKSPACE: $ curl -s https://raw.githubusercontent.com/ros/rosdistro/master/ros.asc | sudo apt-key add -
OK
yara@yara-WORKSPACE: $ sudo apt-get update
Hit:1 http://sa.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://sa.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://packages.ros.org/ros/ubuntu focal InRelease [4676 B]
Get:4 http://packages.ros.org/ros/ubuntu focal/main i386 Packages [21.5 kB]
Get:5 http://packages.ros.org/ros/ubuntu focal/main amd64 Packages [698 kB]
Get:6 http://sa.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:7 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Fetched 1060 kB in 7s (157 kB/s)
Reading package lists... Done
yara@yara-WORKSPACE: $ sudo apt-get install ros-noetic-desktop-full
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libfprint-2-tod1 libl10n9 linux-modules-5.4.0-1002-oem ubuntu-system-service
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  autoconf automake autopoint autotools-dev binfmt-support binutils
  binutils-common binutils-x86-64-linux-gnu blt build-essential bzip2-doc
  cmake cmake-data comerr-dev cpp-8 cython3 debhelper
  default-libmysqlclient-dev dh-autoreconf dh-strip-nondeterminism
```

# INSTALL AND RUN THE ARM PACKAGE ON THE ROS SYSTEM

## complete the steps

8:type "echo "source /opt/ros/noetic/setup.bash" >> ~/.bashrc"

9: type "source ~/.bashrc"

10:type "sudo apt install python3-rosdep python3-rosinstall python3-rosinstall-generator  
python3-wstool build-essential"

11:It will ask you for the Ubuntu password,Enter the system password.

## Results

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Setting up ros-noetic-desktop-recll (1.3.0-1~local.20220320.003017) ...
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...
yara@yara:~/WORKSPACE:$ echo "source /opt/ros/noetic/setup.bash" >> ~/.bashrc
yara@yara:~/WORKSPACE:$ source ~/.bashrc
yara@yara:~/WORKSPACE:$
yara@yara:~/WORKSPACE:$ sudo apt install python3-rosdep python3-rosinstall python3-rosinstall-generator python3-wstool build-essential
[sudo] password for yara:
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

## complete the steps

12:type "sudo apt install python3-rosdep"

13: type "sudo rosdep init"

14:type "rosdep update"

15:type "mkdir -p ~/catkin\_ws/src"

16: type "cd ~/catkin\_ws/"

17:type "cd ~/catkin\_ws/src"

18: type "git clone https://github.com/smart-methods/arduino\_robot\_arm.git "

19:type "cd ~/catkin\_ws"

20:type "rosdep install --from-paths src --ignore-src -r -y"

21: type "sudo apt-get install ros-noetic-moveit"

22:type "sudo apt-get install ros-noetic-joint-state-publisher ros-noetic-joint-state-publisher-gui"

```
23:type "sudo apt-get install ros-noetic-gazebo-ros-control joint-state-publisher"  
24: type "sudo apt-get install ros-noetic-ros-controllers ros-noetic-ros-control"
```

## Results

```
[+]
yara@yara-WORKSPACE: ~/catkin_ws

The following packages were automatically installed and are no longer required:
  libfprint-2-tod1 libllvm9 linux-modules-5.4.0-1002-oem ubuntu-system-service
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 31 not upgraded.
yara@yara-WORKSPACE:~/catkin_ws$ yara@yara-WORKSPACE:~/catkin_ws$ sudo apt-get install ros-noetic-gazebo-ros-control joint-state-publisher
Reading package lists... Done
Building dependency tree
Reading state information... Done
ros-noetic-gazebo-ros-control is already the newest version (2.9.2-1focal.20220519.094658).
ros-noetic-gazebo-ros-control set to manually installed
```

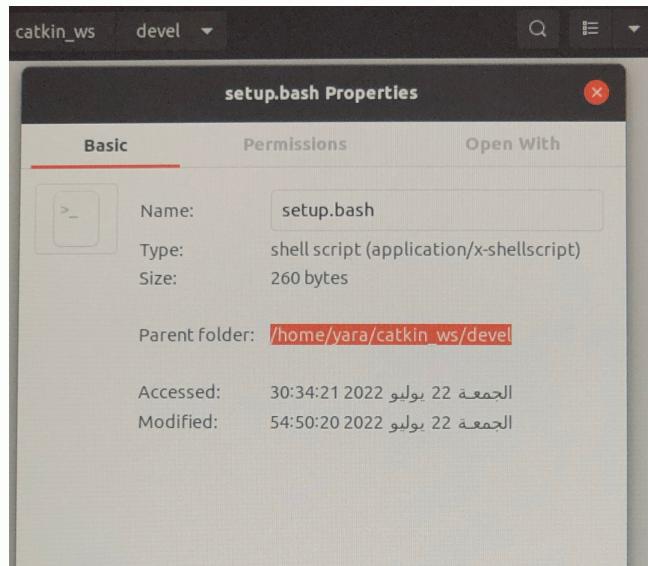
```
[...]
yara@yara-WorkSpace:~/catkin_ws$ cd ~/catkin_ws/src
yara@yara-WorkSpace:~/catkin_ws/src$ git clone https://github.com/smart-methods/arduino_robot_arm.git
Cloning into 'arduino_robot_arm'...
remote: Enumerating objects: 206, done.
remote: Counting objects: 100% (98/98), done.
remote: Compressing objects: 100% (98/98), done.
remote: Total 206 (delta 54), reused 3 (delta 0), pack-reused 108
Receiving objects: 100% (206/206), 1.24 MiB | 374.00 KiB/s, done.
Resolving deltas: 100% (83/83), done.
yara@yara-WorkSpace:~/catkin_ws/src$ cd ~/catkin_ws
yara@yara-WorkSpace:~/catkin_ws$ rosdep install --from-paths src --ignore-src -r -y
executing command [sudo -H apt-get install -y ros-noetic-moveit-ros-planning]
Reading package lists... Done
[...]
```

## complete the steps

25:In new window of terminal type “sudo nano ~/.bashrc”

26:It will ask you for the Ubuntu password,Enter the system password.

27: Scroll to the bottom of the page and type the extension of the file you want to add to bashrc >> go to the file>> click right >> properties



28:ctrl + O after that click enter >> ctrl X

29:type “source ~/.bashrc”

30:type“roslaunch robot\_arm\_pkg check\_motors.launch”

## Results

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fi

# colored GCC warnings and errors
#export GCC_COLORS='error=01;31:warning=01;35:note=01;36:caret=01;32:locus=01:quote=01'

# some more ls aliases
alias ll='ls -alF'
alias la='ls -A'
alias l='ls -CF'

# Add an "alert" alias for long running commands.  Use like so:
#   sleep 10; alert
alias alert='notify-send --urgency=low -i "$(($? = 0) && echo terminal || echo error)" "$(history|tail -n 1)"'

# Alias definitions.
# You may want to put all your additions into a separate file like
# ~/.bash_aliases, instead of adding them here directly.
# See /usr/share/doc/bash-doc/examples in the bash-doc package.

if [ -f ~/.bash_aliases ]; then
    . ~/.bash_aliases
fi

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -q posix; then
    if [ -f /usr/share/bash-completion/bash_completion ]; then
        . /usr/share/bash-completion/bash_completion
    elif [ -f /etc/bash_completion ]; then
        . /etc/bash_completion
    fi
fi
source /opt/ros/noetic/setup.bash
source /home/yara/catkin_ws/devel/setup.bash■

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos  M-U Undo
^X Exit     ^R Read File  ^Y Replace   ^U Paste Text ^T To Spell  ^G Go To Line M-E Redo
```

Operation of the arm package raised as a video