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# Setting up AMR

## Step 1

Download Ubuntu 20.04.6 LTS (Focal Fossa) desktop image file

## Step 2

Burn the iso image file into a clean thumb drive or make sure to copy your stuff inside the thumb drive into a safe location before burning the image file. (Unetbootin software)

## Step 3

Plug the thumb drive into the raspberry pi or whatever computer system the amr is using.

## Step 4

Turn on the computer system after plugging in the keyboard, mouse and monitor, once power on ubuntu should start the installation process on it on. Also recommended to have wifi connection.

## Step 5

Can follow this website on the installation process of ubuntu ([link](https://www.zdnet.com/article/how-to-install-ubuntu-linux/))

A screenshot of a computer

Description automatically generatedcan use minimal or normal installation.

## Step 6

Once installation is finished open the terminal and follow these steps in the website ([link](https://wiki.ros.org/noetic/Installation/Ubuntu))

Use these command as well

**Desktop-Full Install: (Recommended)** : Everything in **Desktop** plus 2D/3D simulators and 2D/3D perception packages

* sudo apt install ros-noetic-desktop-full
* sudo apt install ros-noetic-PACKAGE

e.g.

sudo apt install ros-noetic-slam-gmapping

and sudo apt install ros-noetic-move-base

## Step 7

Cp catkin\_ws and bring that file to the new amr currently working on.

## Step 8

Copy paste the catkin\_ws file into the computer system and delete the build file as well as the devel file.

## Step 9

Change directory with the command cd catkin\_ws then use the command

Sudo apt install ros-noetic-move-base

Sudo apt install ros-noetic-vision-msgs

Sudo apt-get install libudev-dev

Then catkin\_make and it should be working.

## Step10

Download sopas engineering tool application([link](https://www.sick.com/ae/en/catalog/digital-services-and-solutions/software/sopas-engineering-tool/p/p367244)) also ([link](https://wiki.ros.org/sick_scan))

Manuel ([link](https://www.sick.com/media/pdf/1/01/601/IM0081601.PDF))

## Step 11

Copy paste the file from the thumbdrive lidarloc\_installer.sh

Write the command chmod +x lidarloc\_installer.sh

Sudo nano ./lidarloc\_installer.sh

## Step 12

Connect the ethernet cable of the lidar sensor to your computer

Go to settings to modify ethernet ip address to roughly 192.168.1.100 and subnet mask is 255.255.255.0 the ip address first 3 must be 192.168.1

## Step 13

Go to the sopas software click search settings

Then click right then select picoscan then next then add ip address of the same ip as the lidar sensor and it should find the sensor.

## Step 14

After being able to see the sensor on the left screen click the 3 dot to change it ip address. The first 3 number must follow the same ip you set for ethernet then the last number set it to whatever number not in use.

## Step 15

Can click to go in and the status should be all green.

Log into the device choose username: service password:Service level

## References

<https://monovm.com/blog/how-to-download-ubuntu/#Prerequisites-to-Download-Ubuntu>

<https://learn.ubiquityrobotics.com/noetic_overview_need_to_know>

<https://ubuntu.com/tutorials/how-to-run-ubuntu-desktop-on-a-virtual-machine-using-virtualbox#1-overview>