

Set-up Raspberry Pi

It is very important that you use a compatible version of Ubuntu

1. Using the Raspberry Pi Imager, install Ubuntu Server 20.04.x
2. SSH is already enabled, login with user:ubuntu, password:ubuntu and change the password.

Hostname and user

Run the following commands for basic setup:

```
sudo su - root
```

```
hostnamectl set-hostname <new hostname>
```

```
adduser robot
```

```
su - robot
```

Wifi

<https://itsfoss.com/connect-wifi-terminal-ubuntu/>

ROS Setup

<https://docs.ros.org/en/foxy/Installation/Ubuntu-Install-Debian.html>

Note: Install ros-foxy-ros-base package

Run the following command after installing:

```
sudo rosdep init
```

```
source /opt/ros/foxy/setup.bash (May need to be run after the init)
```

Get create_autonomy

(https://github.com/AutonomyLab/create_robot/tree/foxy)

Note: When running "rosdep install ..." , if there is ROS distro not set error, add the flag "--rosdistro foxy" to the command

Enable i2c

<https://askubuntu.com/questions/1273700/enable-spi-and-i2c-on-ubuntu-20-04-raspberry-pi>

Enable serial

Run:

```
sudo usermod -a -G dialout $USER
```

Then, logout and log user back in. Can also reboot to be sure.

carleton-mail-delivery-robot Setup

Run the following commands:

```
cd ~/create_ws/src
```

```
git clone https://github.com/autonomylab/create_robot.git
```

```
sudo apt-get install python3-pip
```

```
pip3 install Adafruit_ADS1x15
```

```
cd ~/create_ws
```

```
colcon build
```

If anything doesn't work, try running the following two commands:

```
source /opt/ros/foxy/setup.bash
```

```
source ~/create_ws/install/setup.bash
```

To launch, use the following command:

```
ros2 launch mail_delivery_robot robot.launch.py 'robot_model:=CREATE_2'
```

In another terminal, run the captain:

```
ros2 run mail_delivery_robot captain
```