Installing and Setting up Ubuntu

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Installation

1. Download the Ubuntu Server image from https://ubuntu.com/download/iot/raspberry-pi-2-3

   ```
   $ wget -P /tmp/ http://cdimage.ubuntu.com/releases/bionic/release/ubuntu-18.04.3-preinstalled-server-
     arm64+raspi3.img.xz
   ```

2. Then write the disk image to your SD card

   ```
   $ xzcat /tmp/ubuntu-18.04.3-preinstalled-server-arm64+raspi3.img.xz | sudo dd of=/dev/mmcblk0 bs=32M
   ```

   Be careful when using `dd`, if you specify the wrong output (`of=...`), it'll overwrite everything on that device, so it's easy to accidentally destroy your computer.

3. Install the SD card into the Raspberry Pi, connect it to a network using Ethernet, and power it up.
   If you don't have an Ethernet network to connect the Pi to, you can configure the WiFi first, as explained here: WiFi Setup

4. Use your favorite method to find its IP address. You can find it in your router's settings, with an app like Fing, or by using a command line tool like `nmap`.

5. Connect to the Raspberry Pi over SSH

   ```
   $ ssh ubuntu@192.168.1.100
   ```

   Replace the IP address with the one you found in the previous step.
   You'll be prompted a password, the default one is `ubuntu`.

6. Follow the instructions to change the default password and connect again.

SSH Configuration

1. Set the hostname:

   ```
   pi $ sudo hostnamectl set-hostname rpi3
   ```

2. Install the `avahi-daemon` package to enable mDNS:

   ```
   pi $ sudo apt install avahi-daemon
   ```

3. If you already had the `avahi-daemon` installed, you have to restart it to use the new hostname:

   ```
   pi $ sudo service avahi-daemon restart
   ```

4. Close the SSH connection:

   ```
   pi $ exit
   ```

5. You should now be able to reach the Pi using its mDNS hostname:

   ```
   $ ping rpi3.local -c3
   ```

6. Create an SSH configuration for the Pi on your computer, so you can connect to it without having to specify the hostname or username:

   ```
   $ cat >> ~/.ssh/config << 'EOF'
   Host RPi3
       HostName rpi3.local
       User ubuntu
   EOF
   ```

7. Add your public key to the Pi's `authorized_keys`, so you can connect to it without entering the password each time:

```
$ ssh-copy-id -i ~/.ssh/id_rsa.pub RPi3
```

If you don't have an SSH key pair yet, you can follow these instructions on how to create one: DigitalOcean - How to Set Up SSH Keys.

8. You can now try to connect to it without having to specify the hostname or username, and without having to enter your password:

```
$ ssh RPi3
```