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# Getting Started with the Raspberry Pi Zero W without a Monitor



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*Update 8/25/2017: This post has been updated to use [Raspbian Stretch](#). These directions are also compatible with [Raspbian Jessie](#).*



The recommended way to set up any [Raspberry Pi](#) is with a keyboard, mouse, and monitor. The [Pi Zero](#) and the [Pi Zero W](#) makes this even harder by requiring you to have a [USB adapter](#) (for the mouse and keyboard), and a [mini HDMI adapter](#) (for the monitor).

Since the Pi Zero W is WiFi enabled, we can preconfigure the operating system to enable SSH and have the WiFi credentials when we are first powering the device. Thus, when it comes online, it will be available on your local network for you to start using the Pi. Since we'll be controlling the device via command line, you'll want to be comfortable with the terminal.

## Materials:

- Raspberry Pi Zero W
- microSD card
- Micro USB cable

## Micro SD Card Setup

First, you'll have to flash the microSD card with an operating system. I recommend a [32GB SanDisk MicroSD card](#); it worked perfectly. It also comes with an adapter, which is how I was able to insert the MicroSD card into my computer.

### [1. Download Raspbian Stretch Lite](#)

Raspbian Stretch Lite is the "lite" version of the operating system for Raspberry Pis. The "lite" means that there just isn't a GUI desktop included in the OS, so we'll be doing everything via the command line.

### [2. Download Etcher](#)

Etcher is an awesome tool, created by [balena](#), that lets us burn images to SD cards & USB drives. In this case, we'll use it to flash the Stretch Light OS to the MicroSD card.

### [3. Flash OS to MicroSD with Etcher](#)

Etcher makes things simple. Just select the image, select your MicroSD card, and flash!



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× [SD card](#)

Etcher automatically unmounts the SD card.



Once you connect, you will see something like this. You should see a new device named `raspberrypi`.



Once selected, you'll see files similar to this:



On Linux, you'll see the full Stretch Lite OS. You'll want to do the rest of the steps in the `/boot` folder.

## 5. Enable SSH

In `boot`, create a file called `ssh`. This file (no file extension needed) will enable SSH on the Pi.

## 6. ENABLE WIFI

Create a file called `wpa_supplicant.conf`. This is a configuration file that will allow you to pre-configure the WiFi credentials. On boot, the Pi will copy and use this as the default configuration file.

In this file, place the following content:

```
country=US
ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev
update_config=1

network={
    ssid="WIFI_SSID"
    scan_ssid=1
    psk="WIFI_PASSWORD"
    key_mgmt=WPA-PSK
}
```

Please double check and verify the WiFi credentials. If not, the next step will be hard.



## SSH into the Pi Zero W

Insert microSD card into the Pi and power with the micro USB cable. Now, after the Pi turns on, in about 30-90 seconds, it will fully boot and connect to WiFi.

Open your terminal. I recommend [Hyper](#).

If you only have one Raspberry Pi on your network, you can SSH into the device via its hostname:

```
ssh pi@raspberrypi.local
```

~~Once you have more than one Pi on your network~~, a number will be attached to the hostname.



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so, find the Raspberry Pi, and copy the IP address.

- You can use [Angry IP Scanner](#) to scan your network on your machine. With it, you'll be able to see the Pi. Once found, copy the IP address (it will be located along with the hostname).

Note: The default password is `raspberry`

## Update and Install Libraries

It's highly recommended to update your device and change the default password.

To update the Pi:

```
sudo apt-get update && sudo apt-get upgrade -y
```

You may need to install [pip](#):

```
sudo apt-get install python-pip
```

To change password, use this command:

```
passwd
```

Then, the instructions in the terminal will walk you through changing the password.

## That's a wrap

That's it! Now, you are ready to begin building cool things with your Raspberry PI Zero W. If you need example code, check out this [Hackster project](#). It's an example application for creating an API for the Raspberry Pi Zero W to control four LEDs, each connected to its own GPIO.

### Remote Control Raspberry Pi Zero W with API



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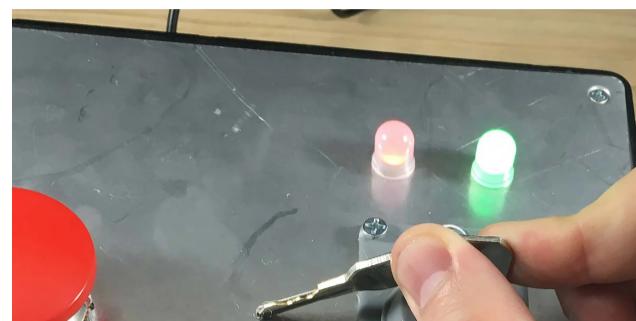
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