

# Home Assistant Installation Notes

The following is the hardware I used to create the system. For reference the cost of the system is approximately \$100 (excluding Z-Wave devices), however setting this up requires expert Linux skills.

1. Beaglebone Black Rev. C
2. Aeon Labs DSA02203-ZWUS Z-Wave Z-Stick Series 2 USB Dongle

Setup the Beaglebone Black as described on <http://beagleboard.org/> and attach it to your network via an ethernet cable. How to set this up is beyond the scope of this tutorial, but there are many resources on the internet to get you started with the development board. In the end you should be able to ssh into your beaglebone black (BBB), for example you should be able to execute "ssh root@beaglebone.local" from your development computer.

## Upgrade to Jessie (required for python 3.4)

The following instructions are for a mac.

1. Download image from <http://beagleboard.org/latest-images>. For example:  
<https://debian.beagleboard.org/images/bone-debian-8.4-lxqt-4gb-armhf-2016-05-13-4gb.img.xz> (775MB)
2. Check the sha of the image.  

```
$ shasum -a 256 bone-debian-8.4-lxqt-4gb-armhf-2016-05-13-4gb.img.xz
28d67e877497fb9e52fe605f2cbefdbaeddaff23e9fa82e9ed2076ae375aa777f
bone-debian-8.4-lxqt-4gb-armhf-2016-05-13-4gb.img.xz
```
3. Install 7z and uncompress image:  

```
$ brew install p7zip
$ 7z x bone-debian-8.4-lxqt-4gb-armhf-2016-05-13-4gb.img.xz
```
4. Copy to sd card
  - a. See <https://help.ubuntu.com/community/Installation/FromImgFiles>
5. The following are on the Beaglebone device.
6. Power off
7. Install sd card
8. Power on
9. ssh debian@beaglebone.local (passwd = temppwd)
10. Update the boot to flash the image:
  - a. "To turn these images into eMMC flasher images, edit the /boot/uEnv.txt file on the Linux partition on the microSD card and remove the '#' on the line with

'cmdline=init=/opt/scripts/tools/eMMC/init-eMMC-flasher-v3.sh'. Enabling this will cause booting the microSD card to flash the eMMC. Images are no longer provided here for this to avoid people accidentally overwriting their eMMC flash."

11. power up while pressing the boot button. Release after leds light up. After a few seconds, Leds turn on and off sequentially in a silon pattern. When the flash is done leds are all on.
12. turn off.
13. remove sd card.
14. turn on. ssh debian@beaglebone.local
- 15.

```
debian@beaglebone:~$ cat /etc/debian_version  
8.4
```

16. Make some space on the device, by removing unnecessary packages and files:

```
sudo apt-get remove --purge lightdm  
sudo apt-get remove --purge x11-common  
sudo apt-get remove --purge python  
sudo apt-get remove --purge ruby  
sudo apt-get autoremove  
sudo apt-get remove --purge ppp pppconfig pppoeconf wvdial  
sudo apt-get purge libgtk2.0-common --yes  
sudo rm -rf /usr/share/doc/*
```

## Z-Wave

```
$ sudo pip3 install --upgrade cython  
$ git clone https://github.com/OpenZWave/python-openzwave.git  
$ cd python-openzwave  
$ git checkout python3  
$ PYTHON_EXEC=$(which python3) make build  
$ sudo PYTHON_EXEC=$(which python3) make install
```

### Set up the Z-Wave Stick

1. Run sudoedit /etc/udev/rules.d/50-ttyusb.rules and add the following line:  
KERNEL=="ttyUSB[0-9]\*",NAME="tts/USB%n",SYMLINK+="%k",GROUP="uucp",MODE="0666"
2. Plugin Z-Wave stick
3. Reboot

## Setup Home Assistant service

```
sudo pip install colorlog
```

```
sudo wget
```

```
https://raw.githubusercontent.com/home-assistant/home-assistant/master/script/home-assistant%40.service -O /lib/systemd/system/home-assistant@debian.service
```

```
debian@beaglebone:/lib/systemd/system$ sudo vi home-assistant@debian.service
```

```
debian@beaglebone:/lib/systemd/system$ sudo systemctl --system daemon-reload
```

```
debian@beaglebone:/lib/systemd/system$ sudo systemctl enable home-assistant@debian
```

```
Created symlink from /etc/systemd/system/multi-user.target.wants/home-assistant@debian.service to /lib/systemd/system/home-assistant@debian.service.
```

```
debian@beaglebone:/lib/systemd/system$ sudo systemctl start home-assistant@debian
```

## Create a Service to Turn Off LED Diagnostics

The beaglebone has some extremely bright LEDs that flash a lot, and turn your house into a disco party. If you are not into that then the following script and service can be used to turn them off.

Script: `/usr/bin/disable-usr-leds.sh`

```
#!/bin/bash
echo none > /sys/class/leds/beaglebone\:green\:usr0/trigger
echo none > /sys/class/leds/beaglebone\:green\:usr1/trigger
echo none > /sys/class/leds/beaglebone\:green\:usr2/trigger
echo none > /sys/class/leds/beaglebone\:green\:usr3/trigger
```

Service: `/lib/systemd/system/disable-usr-leds.service`

```
[Unit]
Description=Disable USB leds Service

[Service]
Type=simple
ExecStart=/usr/bin/disable-usr-leds.sh

[Install]
WantedBy=multi-user.target
```