

RPI Ad-Hoc Network Configuration for Printrboard

Basic Setup

This document is intended to guide you through the process of setting up your RaspberryPi for use as an Ad-Hoc Network connection to your Printrboard for wireless control of your Printrbot 3d Printer. If you are new to working with the RaspberryPi platform, I would recommend going through Adafruit's online tutorial. It is very informative and one of the best that I have seen. The tutorial will cover all of the required items listed below that you will need to have configured to proceed. You can access the tutorial here: <https://learn.adafruit.com/category/learn-raspberry-pi>

Required items to setup your RPi:

1.) The latest distro of Octopi which can be downloaded here: <https://github.com/guysoft/OctoPi>

2.) You will need a wireless ethernet adapter connected to your RPi. I am using the [Edimax EW-7811Un](#), which works very well for us here and doesn't require any additional drivers to be installed on your RPi to function properly.

3.) The last thing is you will need to be connected to your home network so that we can download the necessary software for your RPi.

*Again, how to burn an image to an SD card, and how to setup your RPi's Wifi connection are covered in the Adafruit tutorial.

Once you have the Octopi image on your SD card and are connected to your home network, you are ready to continue.

Keyboard Re-configuration

This is necessary because the Octopi distro uses Great Britain keyboards as the default setting. For all of the US users, you will need to reconfigure the keyboard. If you are not in the US and use the Great Britain setup, please skip this section.

At the command line type:

```
sudo nano dpkg-reconfigure keyboard-configuration
```

I am using a SIIG Inc. keyboard that I bought at my local Fry's, but I chose the settings outlined below and they work well without any issues. At the first prompt, select the Aluminum Mac Keyboard(ANSI).

At the next screen which is keyboard layout select - "OTHER"

For country origin select - "English(US)"

You will come back to a screen showing all layouts available for the “English(US)” keyboard set. From here choose - “English (Macintosh)”

Next for the mapping of “ALT GR (i.e. >)” select - “default”

For the configuration of CTRL+ALT+BACKSPACE behavior select - “NO”

Once you are finished you will need to restart your RPi for the changes to take affect. To save time, we will restart after the next step, as we will not need to use any of the changes we just made until later.

Configuring your RPi as a DHCP Server

Normally when your RPi connects to a Wifi network it gets an IP address assigned to it from a router. In the Ad-Hoc network that we are setting up your RPi is going to act as the router and assign an IP address to your computer when you connect to it in order to control your Printbot.

To install the dhcp server package, open your command line terminal and type:

```
sudo apt-get install dhcp3-server
```

Once the installation finishes, we will have to configure the DHCP Server. To get to the default configuration file for editing type:

```
sudo nano /etc/dhcp/dhcpd.conf
```

Update the configuration file so that it contains the following. There are many lines and options here, many of which are commented out and non-functional. However, you can either go through and find the items that need to be changed, or delete all of the contents and only add what is below. The choice is yours.

```
ddns-update-style interim;  
default-lease-time 600;  
max-lease-time 7200;  
authoritative;  
log-facility local7;  
subnet 192.168.1.0 netmask 255.255.255.0 {  
    range 192.168.1.5 192.168.1.150;  
}
```

Once complete, restart your RPi before moving onto the next step.

Broadcasting an Ad-Hoc Network

We are almost finished, and the last thing to do is to change the network interfaces file that Octopi uses to connect to networks. The first thing to do is make a backup copy of your default settings. To do this, open your command line terminal and type:

```
sudo cp /etc/network/interfaces /etc/network/interfaces_backup
```

Now open the network interfaces file for modification, type:

```
sudo nano /etc/network/interfaces
```

Modify the file so that it contains the following:

```
auto lo
```

```
iface lo inet loopback
```

```
iface eth0 inet dhcp
```

```
auto wlan0
```

```
iface wlan0 inet static
```

```
    address 192.168.1.1
```

```
    netmask 255.255.255.0
```

```
    wireless-channel 1
```

```
    wireless-essid RPiAdHocNetwork  <— — Whatever you want your network name to be here
```

```
    wireless-mode ad-hoc
```

Once you are finished, save all of your changes and restart your RPi. The process of getting the network up and running takes a minute or two so be patient! Go to your network connections and scan for available networks, you should now see the name of your new network.

Select the network and connect to it.

Open up an internet browser (it doesn't matter which type) and type the address of your RPi in the URL. If you have forgotten what it was, we set it to 192.168.1.1

If your RPi is up and running, you will be brought to the Octopi User Interface and will be prompted to set up your user name and password for security. If you are not brought to this page, your Pi needs more time to finish booting up, so wait another minute and try again.

Congratulations, you are now ready to print wirelessly with your Printbot using your RPi!