

# Using a Wifi Adapter on the Beaglebone

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## Formatting:

1. Commands starting with \$ are host Linux console commands:  
\$ echo "Hello world!"
2. Commands starting with # are target Linux console commands:  
# echo "On the target! Hello world!"
3. Almost all commands are case sensitive in Linux and GDB.

## References:

[https://linux.die.net/man/8/wpa\\_supplicant](https://linux.die.net/man/8/wpa_supplicant)

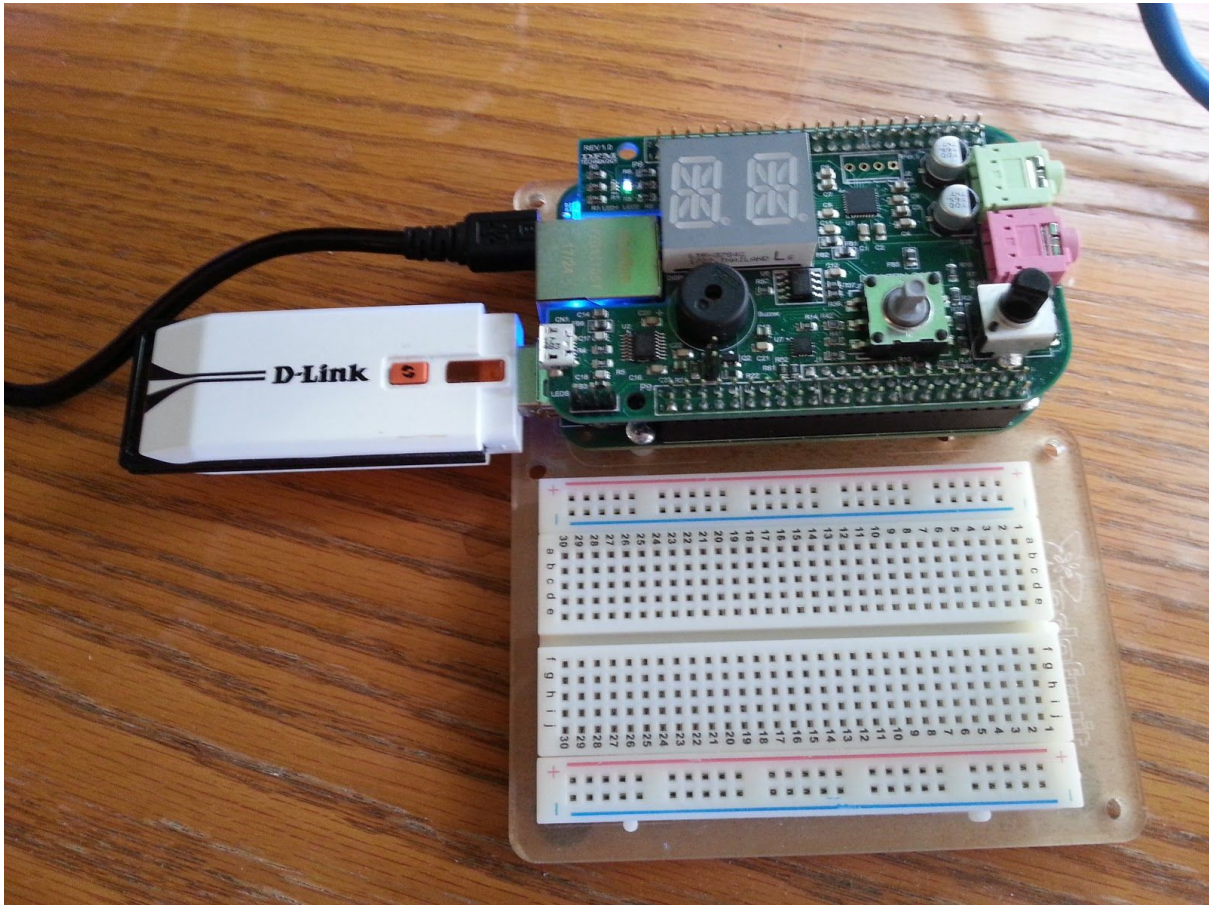
<https://www.cyberciti.biz/faq/setting-up-an-network-interfaces-file/>

<https://manpages.debian.org/jessie/ifupdown/interfaces.5.en.html>

## 1. Attaching a WiFi Adapter

Most, but not all, USB WiFi adapters can be used with the beaglebone. When selecting a USB WiFi adapter, ensure that the model has an in tree Linux driver available.

After selecting an appropriate WiFi adapter, insert it into the Beaglebone:



## 2. Add Networks to wpa\_supplicant.conf

1. On the Beaglebone, create the following wpa\_supplicant.conf file with the following command:

```
# nano /etc/wpa_supplicant/wpa_supplicant.conf
```

2. If the file already exists and is populated, remove all contents.
3. Add the following to wpa\_supplicant.conf, where <network name> and <network password> are the names and passwords of your networks:

```
ctrl_interface=/var/run/wpa_supplicant  
ctrl_interface_group=0  
update_config=1
```

```
network={  
    ssid="<network name>"  
    psk="<network password>"  
}
```

```
network={  
    ssid="<network name 1>"  
    psk="<network name 2>"  
}
```

4. Save and close the wpa\_supplicant.conf file.

### 3. Add the WiFi Interface to the interfaces File

1. On the beaglebone, open the interfaces file with the following command:

```
# nano /etc/network/interfaces
```

2. Append the following to the interfaces file:

```
#This tells Linux to bring up the interface on boot
auto wlan0
#This defines the wireless interface, the network family, and
#to use DHCP to retrieve an IP address
iface wlan0 inet dhcp
    #Tells wpa_supplicant which kernel API to use
    wpa-driver nl80211
    #Tells wpa_supplicant where to find network credentials
    wpa-conf /etc/wpa_supplicant/wpa_supplicant.conf
```

3. Save and close the interfaces file.

## 4. Disabling the wpa\_supplicant service

1. Although this may seem counterintuitive, the wpa\_supplicant systemd service needs to be disabled. This is because the systemd service interferes with wpa\_supplicant when the /etc/interfaces files tries to start the process.

To disable the the systemd wpa\_supplicant service, run the following command to mask the service on the Beaglebone:

```
# systemctl mask wpa_supplicant
```

2. Reboot the Beaglebone. After rebooting, the Beaglebone should automatically connect to one of the networks in the wpa\_supplicant.conf file.