

[DOCUMENTATION](#) > [CONFIGURATION](#) > [WIRELESS](#) > WIRELESS-CLI

## SETTING WIFI UP VIA THE COMMAND LINE

This method is suitable if you don't have access to the graphical user interface normally used to set up WiFi on the Raspberry Pi. It is particularly suitable for use with a serial console cable if you don't have access to a screen or wired Ethernet network. Note also that no additional software is required; everything you need is already included on the Raspberry Pi.

### Getting WiFi network details

To scan for WiFi networks, use the command `sudo iwlist wlan0 scan`. This will list all available WiFi networks, along with other useful information. Look out for:

1. 'ESSID:"testing"' is the name of the WiFi network.
2. 'IE: IEEE 802.11i/WPA2 Version 1' is the authentication used. In this case it's WPA2, the newer and more secure wireless standard which replaces WPA. This guide should work for WPA or WPA2, but may not work for WPA2 enterprise. For WEP hex keys, see the last example [here](#). You'll also need the password for the wireless network. For most home routers, this is found on a sticker on the back of the router. The ESSID (ssid) for the examples below is `testing` and the password (psk) is `testingPassword`.

### Adding the network details to the Raspberry Pi

Open the `wpa-supPLICant` configuration file in nano:

```
sudo nano /etc/wpa_supplicant/wpa_supplicant.conf
```

Go to the bottom of the file and add the following:

```
network={
    ssid="testing"
    psk="testingPassword"
}
```

The password can be configured either as the ASCII representation, in quotes as per the example above, or as a pre-encrypted 32 byte hexadecimal number. You

can use the `wpa_passphrase` utility to generate an encrypted PSK. This takes the SSID and the password, and generates the encrypted PSK. With the example from above, you can generate the PSK with `wpa_passphrase "testing" "testingPassword"`. The output is as follows.

```
network={
    ssid="testing"
    #psk="testingPassword"

    psk=131e1e221f6e06e3911a2d11ff2fac9182665c004de85300f9cac208a6a80531
}
```

Note that the plain text version of the code is present, but commented out. You should delete this line from the final `wpa_supplicant` file for extra security.

The `wpa_passphrase` tool requires a password with between 8 and 63 characters. For more complex passphrases you can extract the content of a text file and use it as input for `wpa_passphrase`, if the password is stored as plain text inside a file somewhere, by calling `wpa_passphrase "testing" < file_where_password_is_stored`. For extra security, you should delete the `file_where_password_is_stored` afterwards, so there is no plain text copy of the original password on the system.

If you are using the `wpa_passphrase` encrypted PSK you can either copy and paste the encrypted PSK into the `wpa_supplicant.conf` file, or redirect the tools output to your configuration file by calling `wpa_passphrase "testing" "testingPassword" >> /etc/wpa_supplicant/wpa_supplicant.conf`. Note that this requires you to change to `root` (by executing `sudo su`), or you can use `wpa_passphrase "testing" "testingPassword" | sudo tee -a /etc/wpa_supplicant/wpa_supplicant.conf > /dev/null`, which will append the passphrase without having to change to `root`. Both methods provide the necessary administrative privileges to change the file. Lastly, make sure you use `>>`, or use `-a` with `tee`, (both can be used to append text to an existing file) since `>`, or omitting `-a` when using `tee`, will erase all contents and **then** append the output to the specified file. Note that the redirection to `/dev/null` at the end of the second form simply prevents `tee` from **also** outputting to the screen

[BLOG](#)
[DOWNLOADS](#)
[COMMUNITY](#)
[HELP](#)
[FORUMS](#)
[EDUCATION](#)

Now save the file by pressing `Ctrl+X`, then `y`, then finally press `Enter`.

Reconfigure the interface with `wpa_cli -i wlan0 reconfigure`.

You can verify whether it has successfully connected using `ifconfig wlan0`. If the `inet addr` field has an address beside it, the Raspberry Pi has connected to the network. If not, check that your password and ESSID are correct.

## Unsecured Networks

If the network you are connecting to does not use a password, the `wpa_supplicant` entry for the network will need to include the correct `key_mgmt` entry. e.g.

```
network={
    ssid="testing"
    key_mgmt=NONE
}
```

## Hidden Networks

If you are using a hidden network, an extra option in the `wpa_supplicant` file, `scan_ssid`, may help connection.

```
network={
    ssid="yourHiddenSSID"
    scan_ssid=1
    psk="Your_wifi_password"
}
```

You can verify whether it has successfully connected using `ifconfig wlan0`. If the `inet addr` field has an address beside it, the Raspberry Pi has connected to the network. If not, check your password and ESSID are correct.

## Adding multiple wireless network configurations

On recent versions of Raspbian, it is possible to set up multiple configurations for wireless networking. For example, you could set up one for home and one for school.

For example

```
network={
    ssid="SchoolNetworkSSID"
    psk="passwordSchool"
    id_str="school"
}

network={
    ssid="HomeNetworkSSID"
    psk="passwordHome"
    id_str="home"
}
```

If you have two networks in range, you can add the `priority` option to choose between them. The network in range, with the highest priority, will be the one that is connected.

```
network={
    ssid="HomeOneSSID"
    psk="passwordOne"
    priority=1
    id_str="homeOne"
}
```

```
}  
  
network={  
    ssid="HomeTwoSSID"  
    psk="passwordTwo"  
    priority=2  
    id_str="homeTwo"  
}
```

[VIEW/EDIT THIS PAGE ON GITHUB](#)  
[READ OUR USAGE AND CONTRIBUTIONS POLICY](#)



#### About

[About us](#)  
[Team](#)  
[Governance](#)  
[Partners](#)

#### Support

[Help](#)  
[Documentation](#)  
[Learning resources](#)  
[Training](#)  
[Downloads](#)  
[FAQs](#)

#### Contact

[Contact us](#)

#### Social

[Twitter](#)  
[Facebook](#)  
[Google+](#)  
[GitHub](#)  
[Vimeo](#)  
[YouTube](#)  
[Instagram](#)



**RASPBERRY PI FOUNDATION**  
**UK REGISTERED CHARITY 1129409**

[Cookies](#) [Trademark rules and brand guidelines](#)