

SIU-indoor Linux Wireless Connection Manual

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Abstract

SIUC IT provides instructions for connecting to the new SIU-indoor system only for Ubuntu. It can be quite confusing to figure out how to configure the specific settings that are required for other Linux distros, with very different network configuration utilities. This document describes how to manually set up the required configuration, and even how to manually initiate the Wifi connection to SIU-indoor.

Secure/encrypted Wifi in Linux relies on the use of a tool known as wpa_supplicant, a free implementation of 802.11i the Wifi security protocols like WPA, etc. This tool should have been installed by any reasonable installer if a Wifi card was detected.

1 Configure Linux Wireless Connection

1.1 Configuration file

The configuration settings for secure access points are stored in the file `/etc/wpa_supplicant.conf` by default. Different settings can be stored for different access points in separate "network" entries. Access points are identified by their SSIDs.

A network entry configuration that works for SIU-indoor is as follows:

```
network={
    id_str="SIU"
    ssid="SIU-indoor"
    scan_ssid=1
    proto=RSN
    key_mgmt=WPA-EAP
    eap=PEAP
    pairwise=CCMP
    group=CCMP
    identity="siu850??????" #Replace the '?'s!
    password="YOUR_NETWORK_PASSWORD" #Put your PWD.
    phase2="auth=MSCHAPV2"
    eap_workaround=1
}
```

To prepare your Linux system to connect to SIU-indoor, this configuration entry needs to be appended to the `/etc/wpa_supplicant.conf` file.

Note that because your network password goes into this file unencrypted, it is important that the file be *readable only by root*, which should be the default.

1.2 Connection options

Once you have a `wpa_supplicant.conf` file setup properly, you may be able to use your standard window manager network management tool to connect (since it should find the SIU-indoor entry and use it. However, some network tools fail to properly find the entry because it was setup manually, or find it but improperly modify it.

If your network management tool fails to connect to SIU-indoor, you should be able to manually connect to it. There are two commands you can use:

- `wpa_cli`
- `wpa_supplicant`

1.3 Connecting with wpa_cli

`wpa_cli` is the intended tool to manually control `wpa_supplicant`. If you simply call `wpa_cli` you get an interactive environment in which you can type commands. Use `help` to see a list. You can also run a command(s) by calling `wpa_cli` as:

```
wpa_cli [ -i ifname ] command...
```

(`ifname` is the interface name, e.g., `wlan0`. You should not need to specify it if you have only a single wireless network interface.)

You should be able to connect to SIU-indoor by doing:

```
wpa_cli reassociate
```

`wpa_cli` identifies its stored networks definitions from their indices. You can list the stored networks and their indices by doing:

```
wpa_cli list_networks
```

You can select a particular network with:

```
wpa_cli select_network N
```

Once you associate with a network using `wpa_cli`, your machine should automatically receive an IP address (assuming DHCP is being used). If you do not get an IP address, you may have to call `dhclient` (see below).

Note that `wpa_cli` requires that the `wpa_supplicant` daemon already be running. If it is not, the `wpa_cli` command will fail.

1.4 Connecting with wpa_supplicant

It is possible to use the `wpa_supplicant` command to start the `wpa_supplicant` daemon and automatically attempt to connect to a defined network.

To start `wpa_supplicant` manually and initiate a connection use:

```
wpa_supplicant -B -iwlan0 -c/etc/wpa_supplicant.conf -Dwext
```

Note that if you call this command when `wpa_supplicant` is already running (due to your window manager's networking component) then the above command will fail. In that case, first kill the existing process with:

```
killall wpa_supplicant
```

You can check for running `wpa_supplicant` processes:

```
ps aux|grep wpa_supplicant
```

1.5 DHCP Client

The DHCP client will generally not need to be run explicitly after associating to a network, as it should happen automatically. However, if your network tool and/or commands like `ifconfig` show that an IP address is not being obtained, the DHCP client can be run manually using this command:

```
dhclient
```

2 Configure Ubuntu Wireless Connection

Please see:

```
http://wireless.siu.edu/indoor/linux.htm
```