

Configuring 802-1x on Linux

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**Based on HP DV6132 Notebook (BCM4311 Wireless) running on
Ubuntu Feisty Fawn - 2.6.20-14-generic #2 SMP**

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1 Introduction

This document shortly describes howto setup a wireless connection to a 802-1x network. The document is based on Ubuntu Feisty Fawn - 2.6.20-14-generic #2 SMP running on a HP DV6132 Notebook (BCM4311 wireless), but may also work on other flavours of Linux with some modifications.

If you have additions and modifications to this document, please mail them to me. See <http://www.brunier.nl> for contact details.

2 Basic networking

First you need to get basic networking running on your machine. The BCM4311 wireless chipset is not yet fully support by the BCM43XX-project.

<http://bcm43xx.berlios.de/>

Therefore I did a fallback to NdisWrapper

<http://ndiswrapper.sourceforge.net/>

2.1 NdisWrapper

- First install the NdisWrapper by typing: “apt-get install ndiswrapper-utils-1.9”
- Now use “ndiswrapper -i” to install your Windows driver into the wrapper. “ndiswrapper -i <pathtoinffile>”
Make sure the sys files are also there.
- Now you have everything setup to enable your wireless card.
Do a “modprobe ndiswrapper” to enable your card.
- Add “ndiswrapper” to /etc/modules to make sure the ndiswrapper is loaded at every boot.

Please note that ndiswrapper conflicts with the bcm43xx driver. Make sure to do a “rmmod bcm43xx” before doing the modprobe of ndiswrapper. To prevent bcm43xx from loading at boot, add a line “blacklist bcm43xx” to “/etc/modprobe.d/blacklist”.

3 802-1x

After setting up basic networking we can proceed in getting 802-1x to work. For auto-SSID detection and association I use Wifi-Radar.

<http://wifi-radar.systemimager.org/>

It's a nice tool than can handle WEP out of the box, and can interface with WPA through WPA-Supplicant. WPA-Supplicant is the software we use to connect to the 802-1x network.

http://hostap.epitest.fi/wpa_supplicant/

3.1 WPA Supplicant

- First install the WPA Supplicant by typing: “apt-get install wpasupplicant”
- Create /etc/wpa_supplicant/wpa_supplicant.conf and add the following lines to it:

```
ctrl_interface=/var/run/wpa_supplicant
ap_scan=2
eapol_version=1
```

```
network={
ssid="yourssid"
scan_ssid=1
key_mgmt=IEEE8021X
eap=TTLS
anonymous_identity="anonymous"
phase2="auth=PAP"
identity="yourusername"
password="yourpassword"
}
```

Please note that is tested on a 802-1x network without certificates enabled.

3.2 Wifi-radar

Setting up Wifi-radar to let it interface with WPA Supplicant is fairly simple.

- First install the Wifi-radar by typing: “apt-get install wifi-radar”
- Now start wifi-radar and hopefully you’ll see a list of discoverable (ssid broadcast enabled) networks.
- Double click your network and make sure the configuration looks like this figure:



- Now you should be able to connect fine to the network through Wifi-radar.
- Make sure to place Wifi-radar in the bootsequence to automatically pick the available configured networks for you.

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Version 1.2, November 2002

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