A tale of installing RT18812AU driver and make it works in VirtualBox

Firmin Martin

2021-03-01

Few days ago, I bought a USB Wi-Fi adapter to learn about pentesting. The goal was using this adapter to connect a virtual Kali Linux distribution in VirtualBox to Wi-Fi network through USB.

After some hesitations, I picked up a cheap enough model which uses a `RT18812AU` chip. An important factor to choose this chip is that it is dual-band. This was the first time I'm dealing with such material. Of course, there was not plug-and-play such thing. So I had to manually install the driver.

Figure 1: The Wi-Fi adapter I bought.

The adapter comes with a "quick installation guide" written in gibberish English.[1] So, not very promising. I decided to insert directly the provided CD and see if I can do something. There was three directories for respectively OSX, Windows and Linux. I extracted the Linux directory and ran the `install.sh` without too much hesitation. It failed. No worry, such thing happens, I read the Makefile, again gibberish English comment... I went to the driver directory (`rtl88x2BU_WiFi_linux_v5.3.1_27678.20180430_COEX20180427-5959`)

[1] It starts with a typo: "Chater 1: driver installation".

to see if I can do something and got the marvelous idea to feed it to Google to see if I can get an up-to-date version. I found one,

```
git clone https://github.com/morrownr/88x2bu.git
```

and followed the instructions. It compiles! The bad news is the plugged adapter doesn't have any sign of life. Weird! After all kinds of attempts and reboots, I naively ran a new command

```
lsusb
```

which reveals that the chip was actually a `RT18812AU`. I double-checked the chip model and realized that it's right, and thought I bought a BU but finally picked a AU. So... why they ever put an outdate `RT18812BU` in the CD? Mystery. Again, I searched a driver for this chip, and found this one:

```
git clone https://github.com/gnab/rtl8812au
```

... followed the instructions, and bingo! The adapter LED started blinking. I expected that it would work painless in VirtualBox... was wrong. In the Kali Linux USB settings, the button "add new USB filter" didn't display my USB devices, contrary to what I expected. After heavy surfing on the Internet, I found this relevant thread. Ah, I wasn't in `vboxusers` group:

```
groups
```

So, I had to add it.

```
sudo usermod -a -G vboxusers firmart
```

Logged out. Log back. And finally:

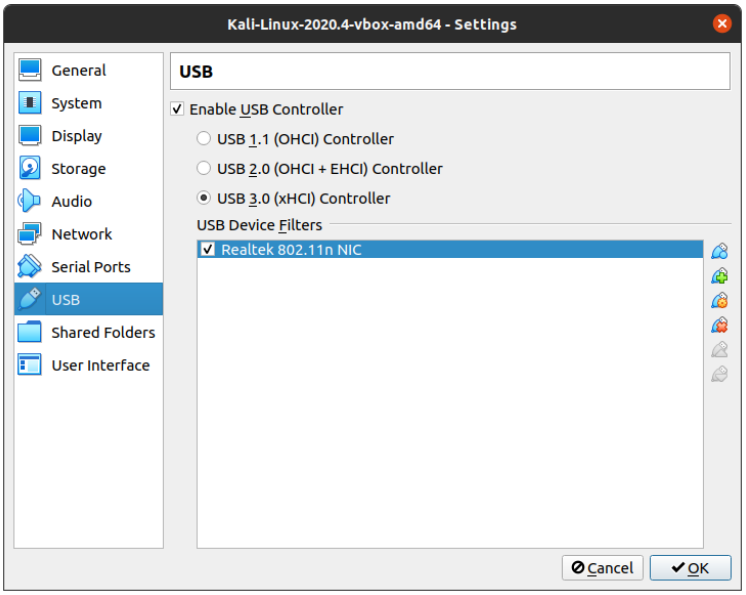

Figure 2: The Wi-fi adapter detected on VirtualBox.

Ventre Saint-Antoine!, would say a medieval Frenchman.

Conclusion

- If you are on Linux, do not even bother to insert the CD (and read the "quick installation guide").

- Search right away on Google `<chip> github` and you would find an enhanced driver with a useful README.
- `lsusb` is actually useful to make sure the USB device is there and to double-check the chip model.

This tale[2] could not be written down without the help of `~/.zsh_history` and my browser history.

[2] Dated of 2021-02-22.