Configuring your Laptop as a gateway/router for your Raspberry Pi

The Raspberry Pi will need now and then an internet connection to get packages from the internet.

- **Windows**

  There are two ways to set this up.

  1. **Internet Connection Sharing mode**  
     In ICS mode your laptop will function as a NAT gateway, the raspberry Pi will not be accessible by external computers, this will only be possible from your laptop.

     ![ICS Diagram]

     In other words: a safer environment.

  2. **Bridge mode**  
     In bridge mode your laptop will function as a network router, the raspberry Pi will be accessible by external computers.

     ![Bridge Diagram]

     In other words: a less safe environment.
To setup Internet Connection Sharing (windows):

Go to:

- Control Panel -> Network and Sharing Center -> Change adapter settings
- Right Click on the Wi-Fi adapter -> Properties
- Select the Sharing Tab
- Enable “Allow other network users to connect through this computer’s internet connection.”

To determine the Ip Address of your laptop’s and your Pi’s Ethernet port, you can use the following command in a command prompt: `arp -a`

This will show something similar to this:

In this overview the first interface shows the laptop’s Lan adapter with Ip Address 192.168.137.1 and the Raspberry Pi with an ip address 192.168.137.38 (confirmed by the Physical Address of the pi).
Using Linux within VirtualBox:

When you choose for a Linux installation on your laptop with a VirtualBox, it’s advisable to set the VirtualBox network of the Linux client to NAT:

In that way you are able to access within the Linux environment the internet (wifi) and your local subnet to your Raspberry Pi.
Keep track of the IP address of your Pi!
**Apple: OS X Yosemite**

Share your Internet connection with others on your network

You can share your Internet connection with other users on your local network.

1) Open Sharing preferences if it isn’t already open (choose Apple menu > System Preferences, then click Sharing).

2) Select the Internet Sharing checkbox.

3) Click the “Share your connection from” pop-up menu, then choose the Internet connection you want to share. For example, if you’re connected to the Internet over Ethernet, choose Ethernet.

4) Select how you want to share your Internet connection in the “To computers using” list. For example, if you want to share your Internet connection over Wi-Fi, select Wi-Fi.

If you share your Internet connection using Wi-Fi, deselect the Internet Sharing checkbox, click Wi-Fi Options, give your network a name and password, then select the Internet Sharing checkbox again.

(more on the next page)
If you get an exclamation that it’s not allowed with the 802.1x network type, you could either switch to the “Enschede stad van nu” wifi network or try to fix it with one of the following links on the internet:

http://superuser.com/questions/848043/how-can-i-share-my-ethernet-connection-over-wi-fi-on-os-x

If your Internet connection and your local network use the same port (Ethernet, for example), investigate possible side effects before you turn on Internet sharing. In some cases, sharing your Internet connection disrupts the network. If you use a cable modem, for example, you might unintentionally affect the network settings of other ISP customers, and your ISP might terminate your service.
- **Linux (Ubuntu 14.04 LTS)**

  Make sure you have your wifi network up and running.

- Click on the network icon of the top bar and select Edit connection.

- Click on Add

- Select Ethernet connection and click on create
• Select Ipv4 Settings and modify method to Share to other computers and Save.
• Close the configuration screen.
• Now you can hookup your pi and let it boot...
  Check if the pi has received an Ip address and test internet connections...
Troubleshooting: network switching hardware or SecureW2

In order to make either one of these options available, the automatic switching between LAN/WLAN ports needs to be disabled on several levels.

Depending on the make/model, use either or a combination of the following options:

A. Laptop BIOS: disable the: “enable LAN/WLAN switching” (HP Laptops)

B. Stop the “Secure W2 Service” (if you use the Secure W2 authentication on windows)
   - Start -> Control Panel -> Administrative Tools -> Services
   - Right Click the service “Secure W2” -> Stop.

   If you don’t change the “Startup Type” form Automatic to Manual, you need execute this step every time.

   or

   - Start an elevated Command Prompt (run as administrator) and run the following command: “net stop sw2svc”