**LAB 19**

**Networking in VMware Workstation/Fusion**

# **NAT in VMware Workstation/Fusion**

1. There are several ‘types’ of VMnet networks available in VMware (see lecture slides). Your Linux VM should be connected within a virtual NAT network. What is the name of the network that VMware gives to this network by default? (And connect your Linux VM to this network if this would not be the case.) This network runs virtually inside your laptop and the network traffic of your VMs flows through this virtual NAT router and next through the NAT router of your home network to get to the Internet (“nested NAT”).

Vmnet8

1. What is the IP address of the default gateway in this NAT network of VMware? To find out the default gateway that your Linux VM is using, you need to retrieve the route table in your Linux VM. At this IP address, the (virtual) NAT service is running.

192.168.5.2

# **NAT port forwarding in VMware Workstation/Fusion**

1. Start your Linux VM and install a web server such as nginx or apache2 if it is not yet present (apt install).
2. Verify that on the virtual machine you can download the home page of your web server by the command: ***wget localhost***
3. Inspect the private IPv4 address your virtual machine has. Surf from your laptop to this IP address with your web browser. That should work.
4. In the previous question, you surfed from one client (your laptop) to another (your Linux VM) on the same side (the ‘inside’) of your NAT network. Now we want to go one step further and from the ‘outside’ can also reach the web server to the ‘inside’. To do that, we need to configure port forwarding on this NAT service. Make sure via **NAT port forwarding** in VMware’s “Virtual Network Editor” that you can access the VM’s website on **port 8080**.

Verify that this works by surfing with another device in your home network (e.g. your smartphone on Wi-Fi) to that IP address and port, and you will be served by the web server running on your VM.

1. Verify this by surfing at your laptop to port 8080 on the IP address your laptop has received from your home router (see the very first question of this assignment, i.e. not the IP address 192.168.x.1 in the same range of your Linux VM IP address).