

Satoutah Haithem Grp01 ISI

Allouache Ayhem Grp02 ISI

## Partie VM VirtualBox

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### Les problemes rencontrés

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#### Guest Addition installation problem

Manually Mount Guest Additions: If the automatic insertion doesn't work, you can try manually mounting the Guest Additions ISO.

1. In the VirtualBox Manager, select your virtual machine.
2. Click on "Settings."
3. Go to the "System" tab.
4. In the "Motherboard" tab, make sure "Floppy" is not checked.
5. Click "OK" to save the settings.
6. Start your virtual machine. Now, try manually inserting the Guest Additions ISO:
  - In the running virtual machine window, go to the menu and select "Devices" > "Optical Drives" > "Choose a disk file."
  - Navigate to the location where you have the Guest Additions ISO and select it.

#### Shared folder windows 7

. Run Installer as Administrator:

- Right-click on the VBoxWindowsAdditions-amd64.exe (or the appropriate version for your system) installer.
- Choose "Run as administrator."

#### Shared folder windows 7

`Sudo adduser vboxuser vboxsf`

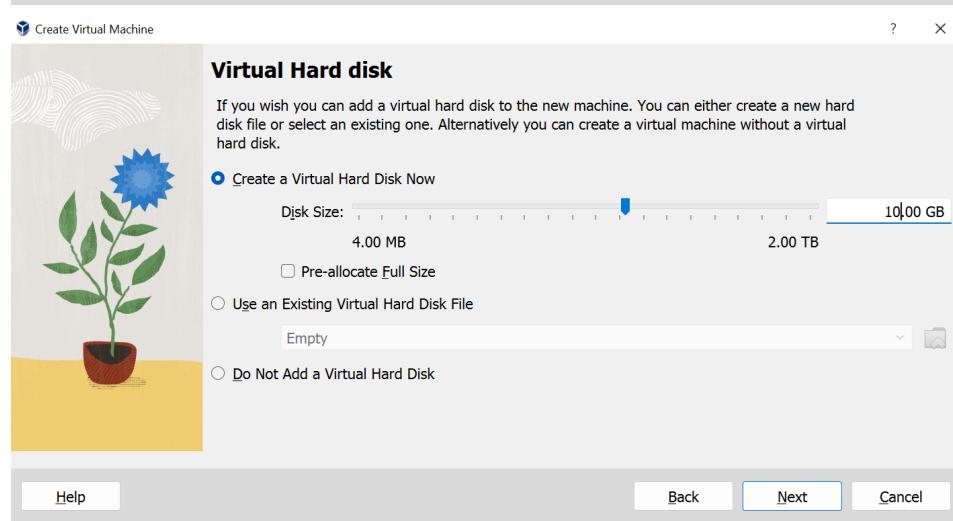
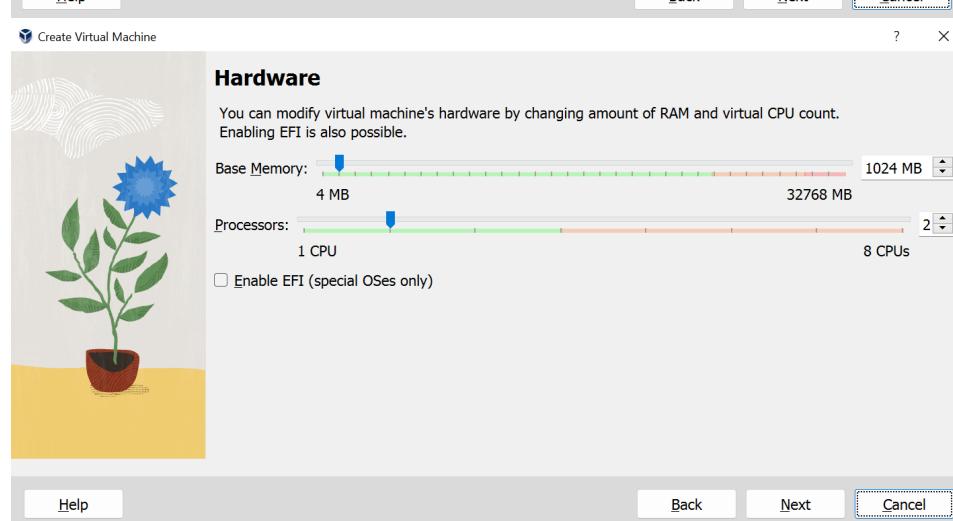
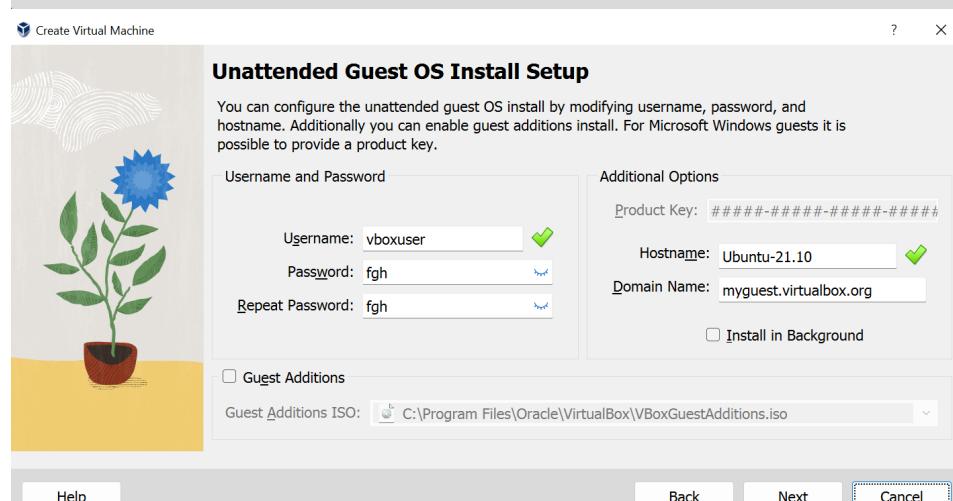
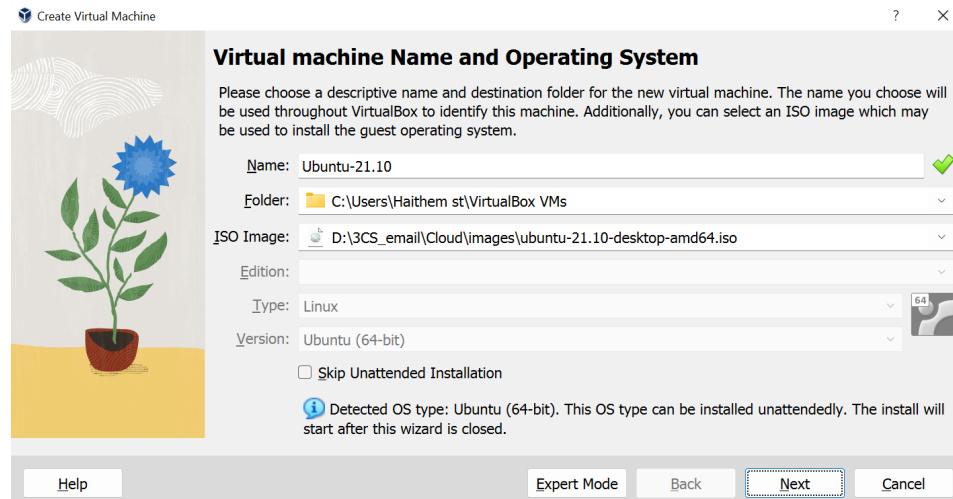
Add user with all privileges

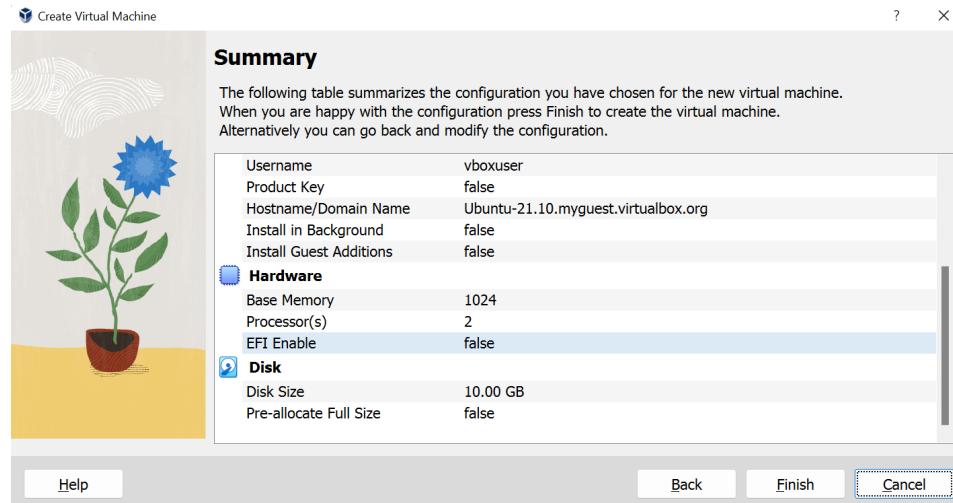
```
Su  
Apt install sudo  
Usermod -aG sudo user-name
```

## Configuration of virtual machine

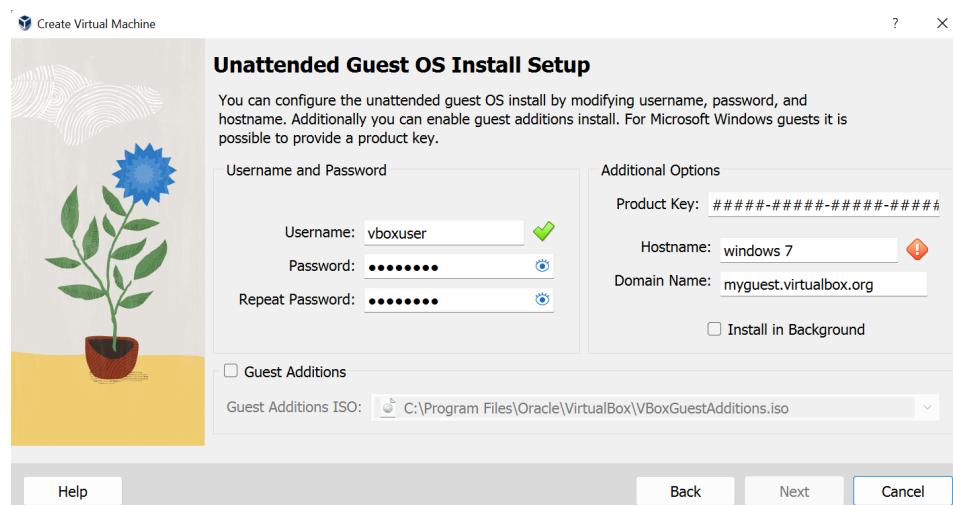
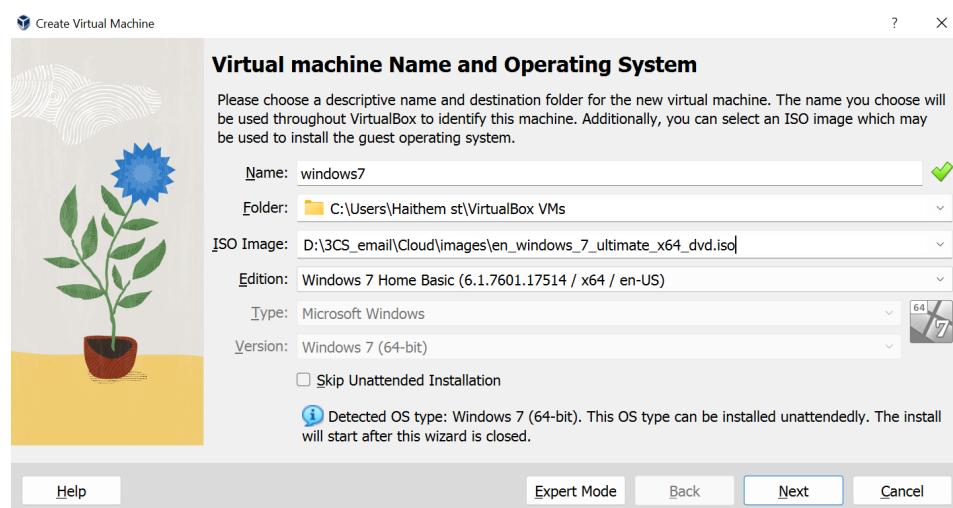
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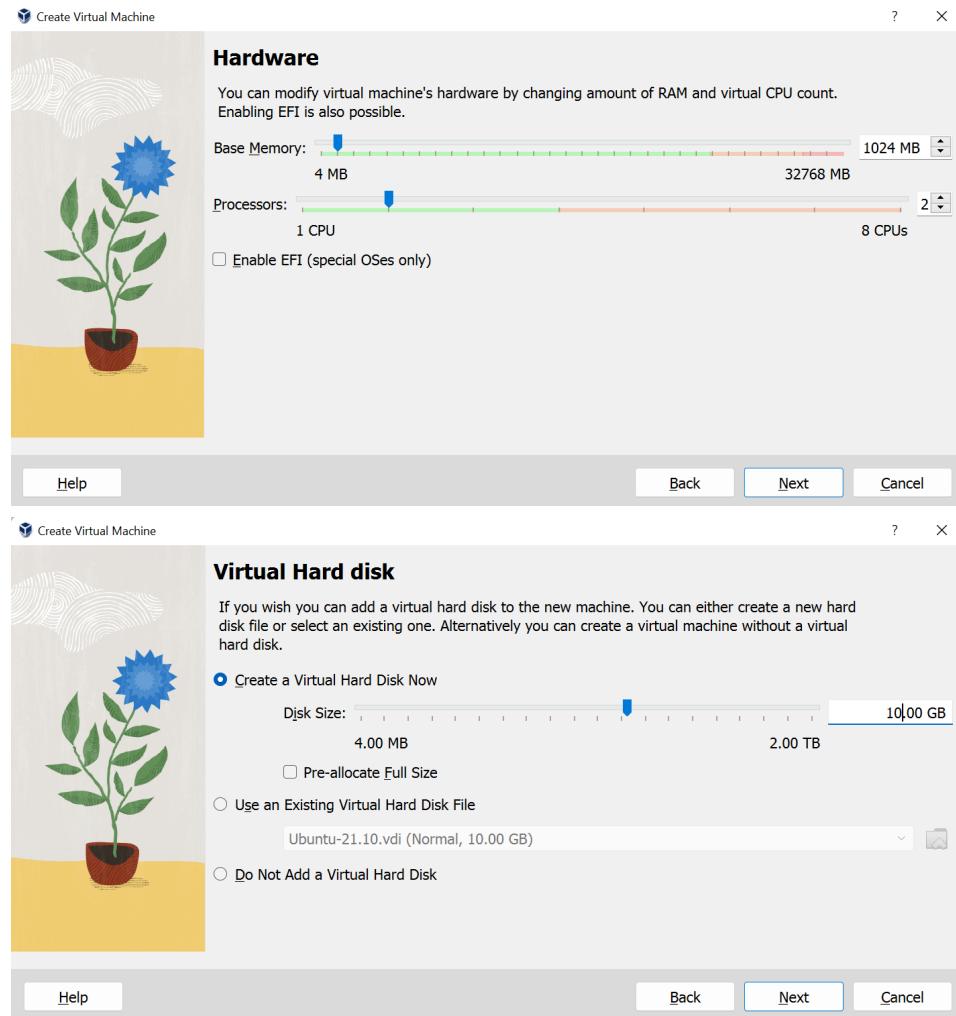
### ubuntu installation



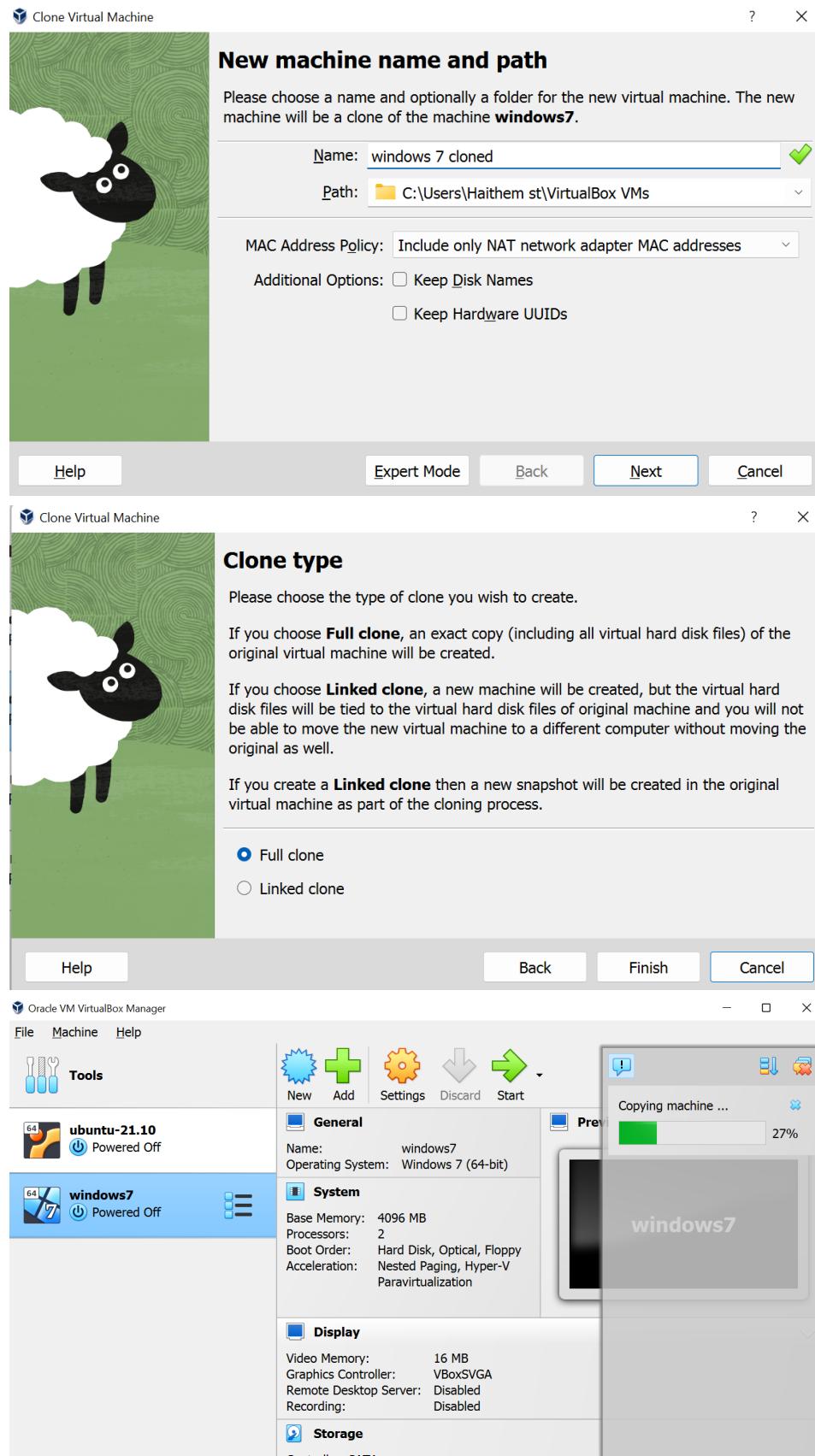


## windows 7 installation





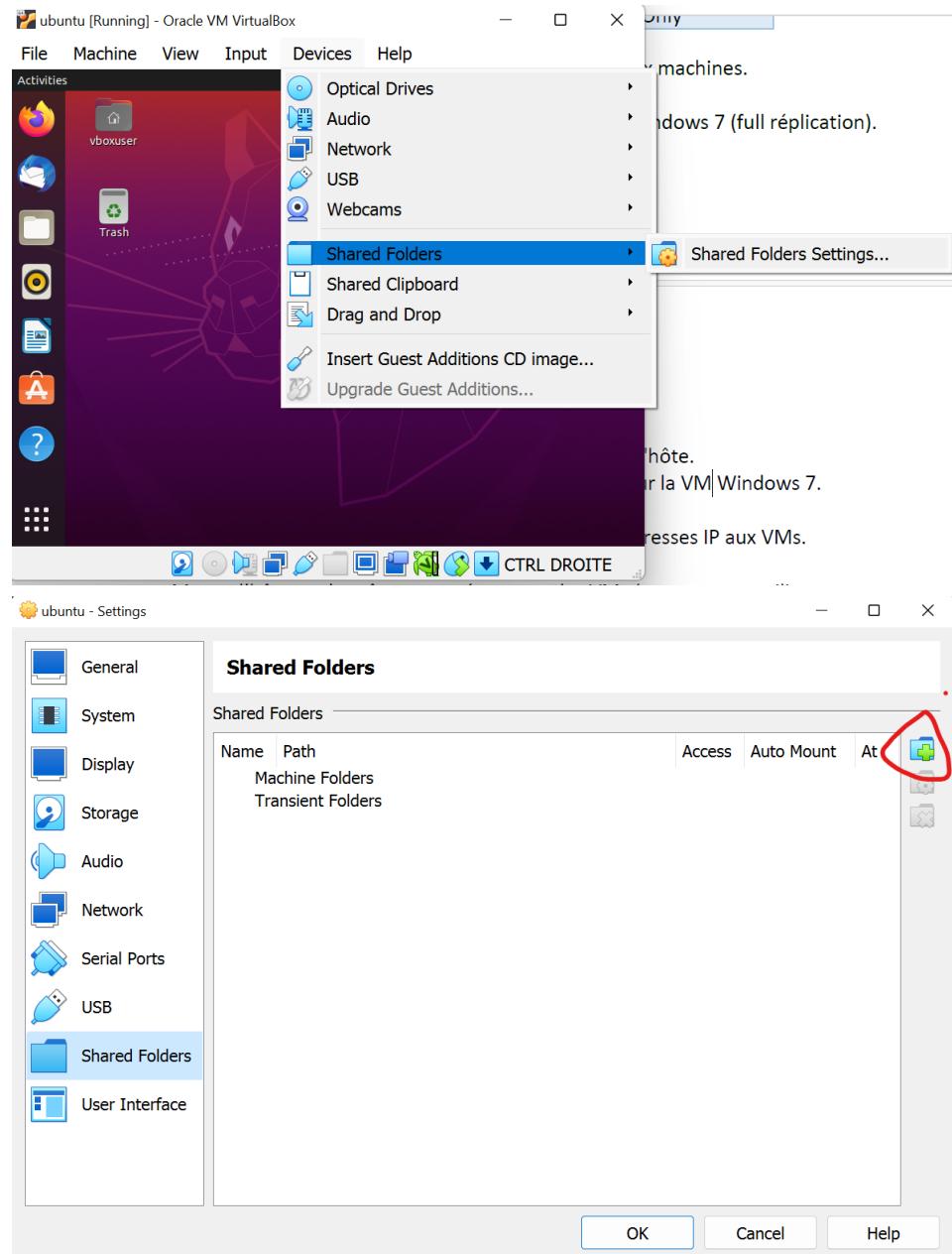
widows 7 clone

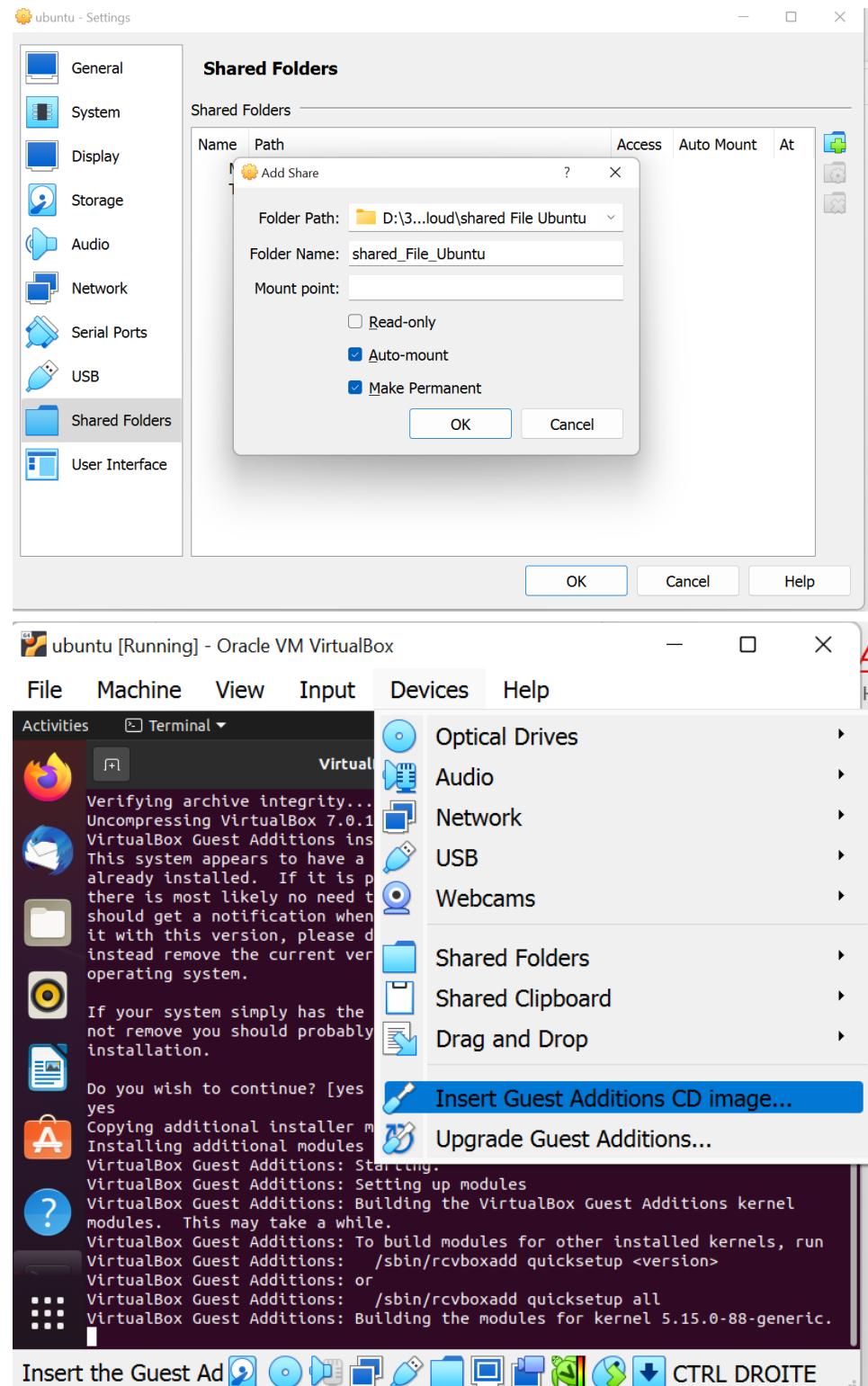


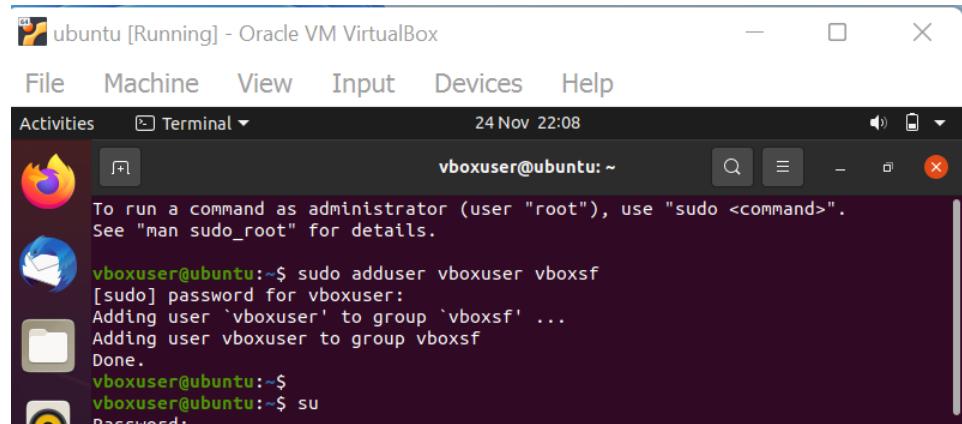
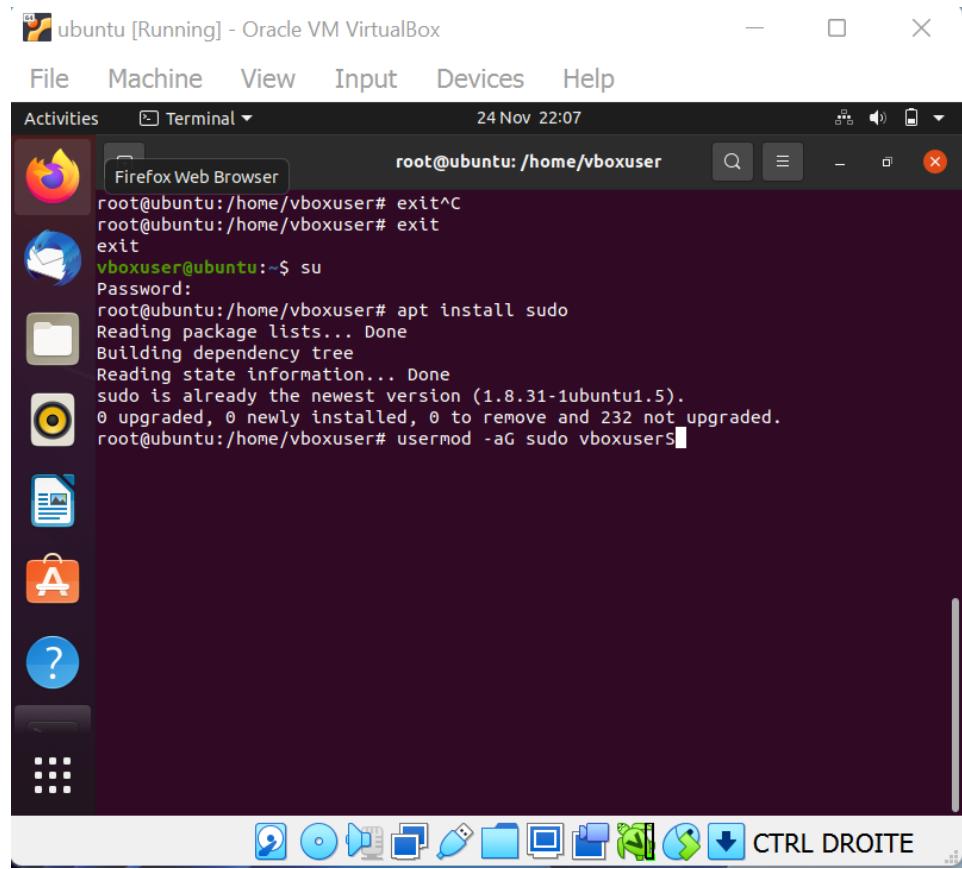
## shared file ubuntu

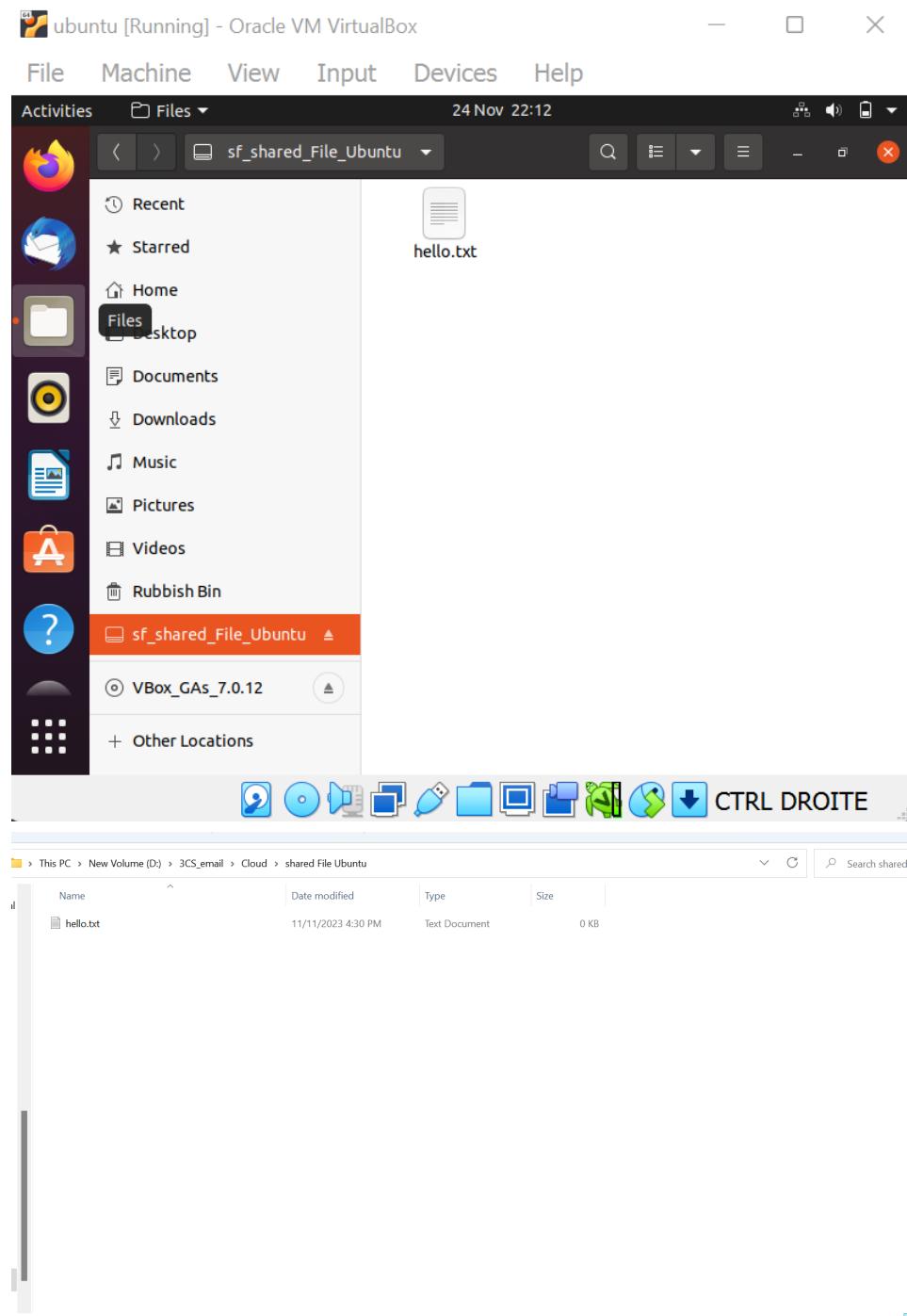
- we need to click on Devices on the top menu of the virtual machine
- then we click to shared folder setting
- after click on the + on the right
- we configure the path on the host

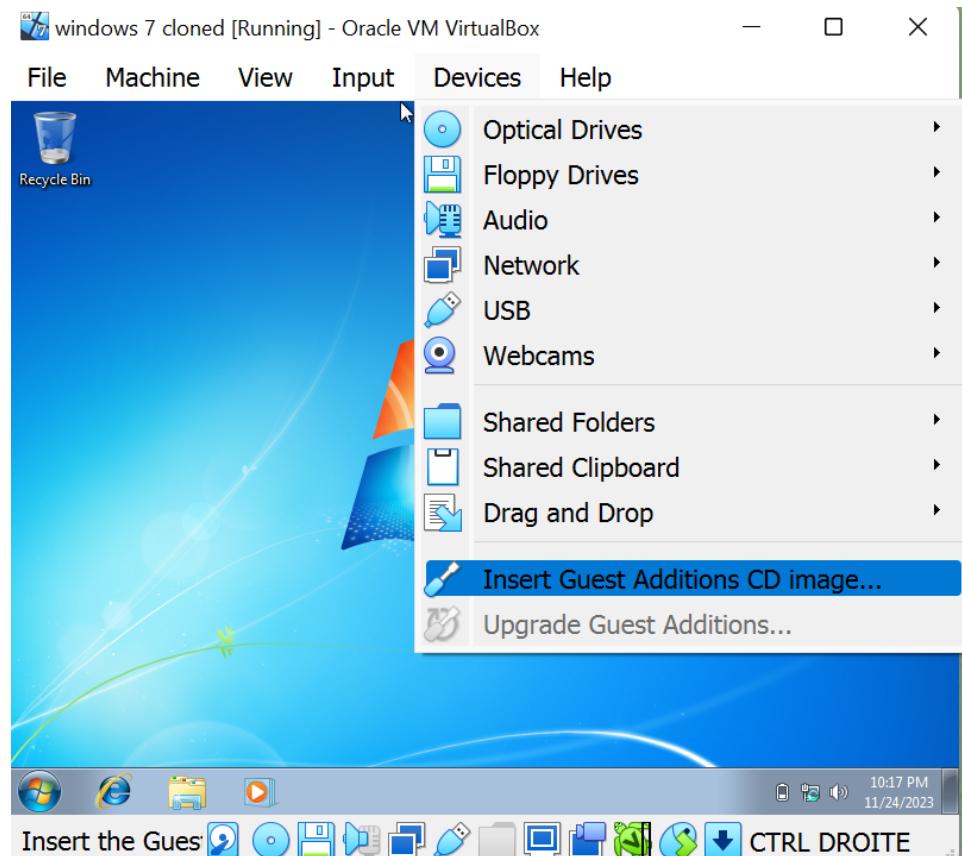
- check auto-mount and make it permanent
- make the vboxuser suder user
- also we nedd to add the user as vboxsf





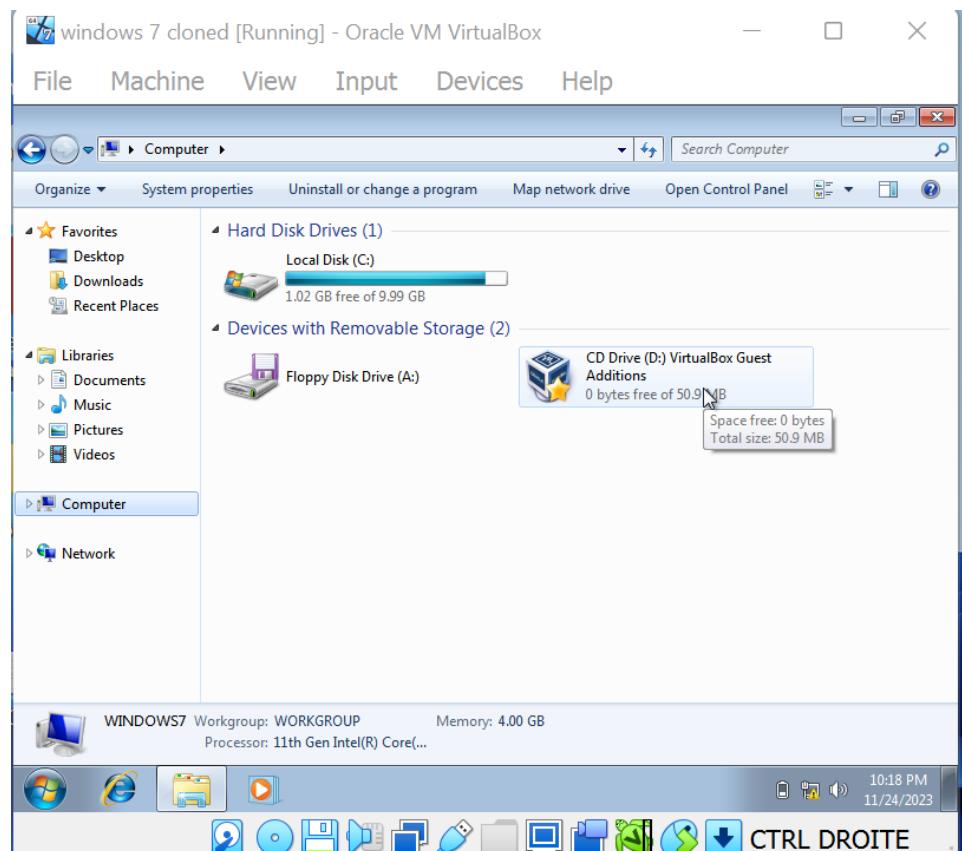


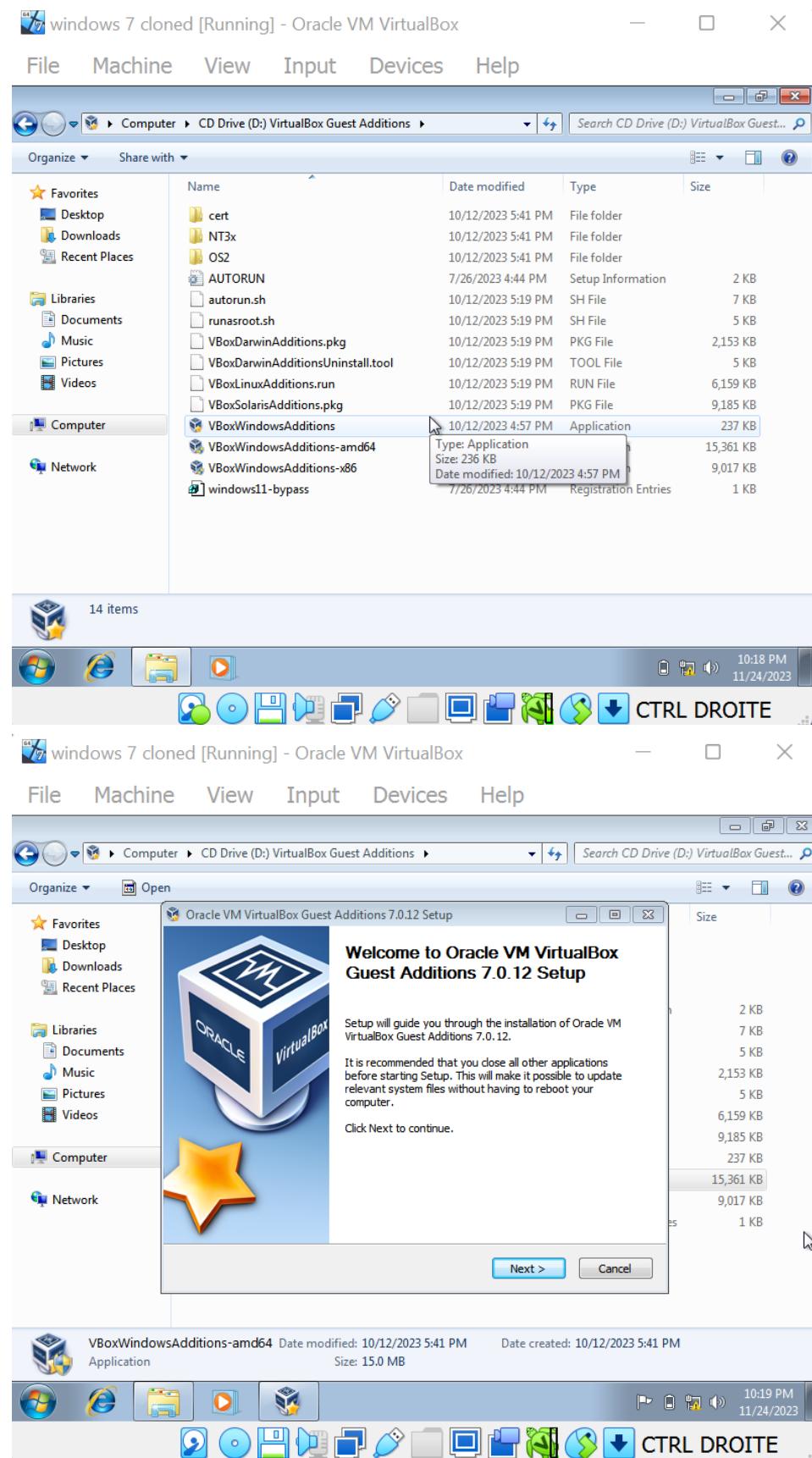


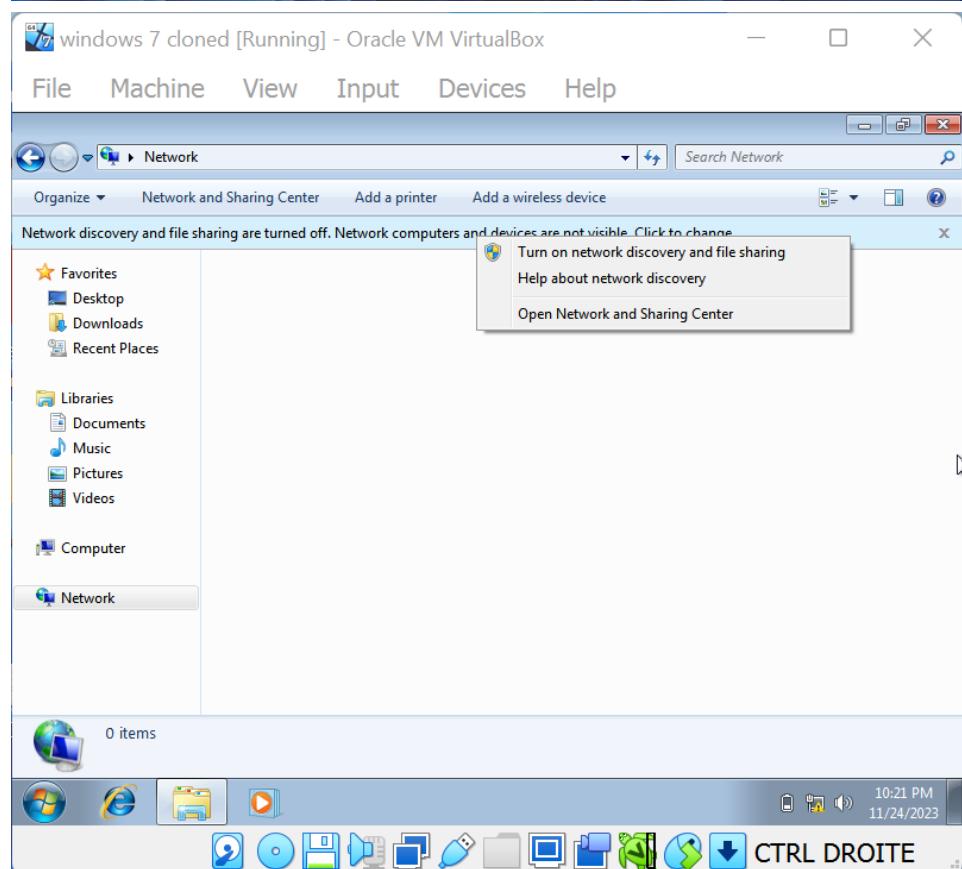
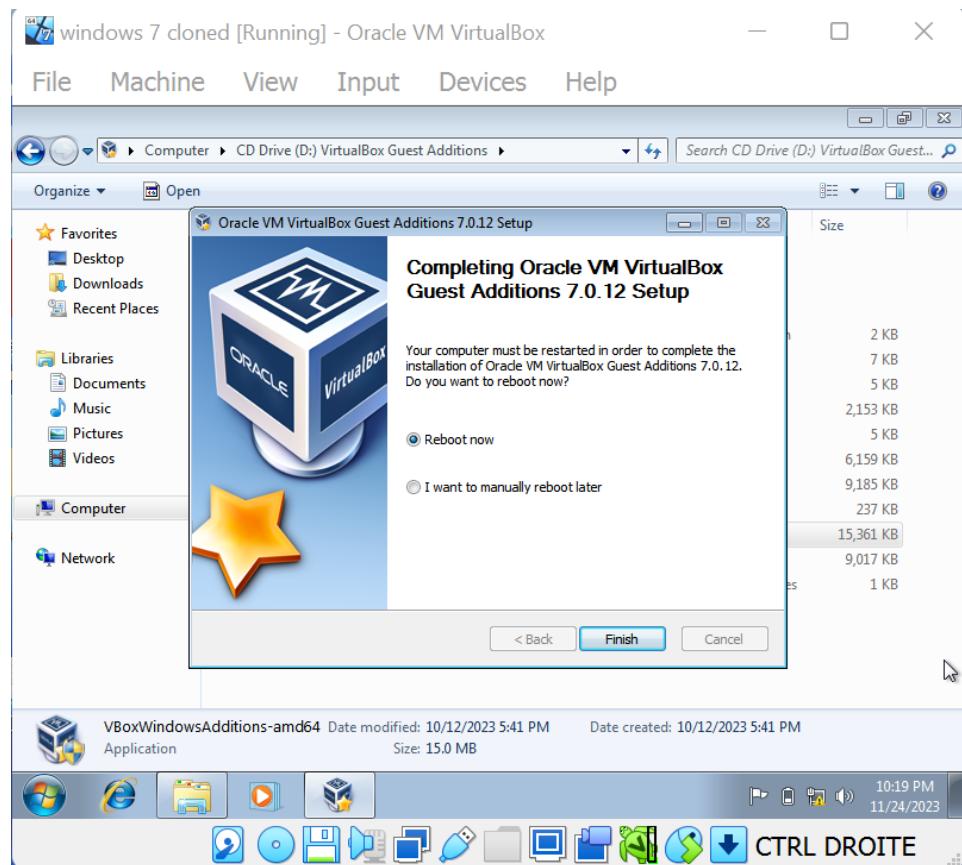


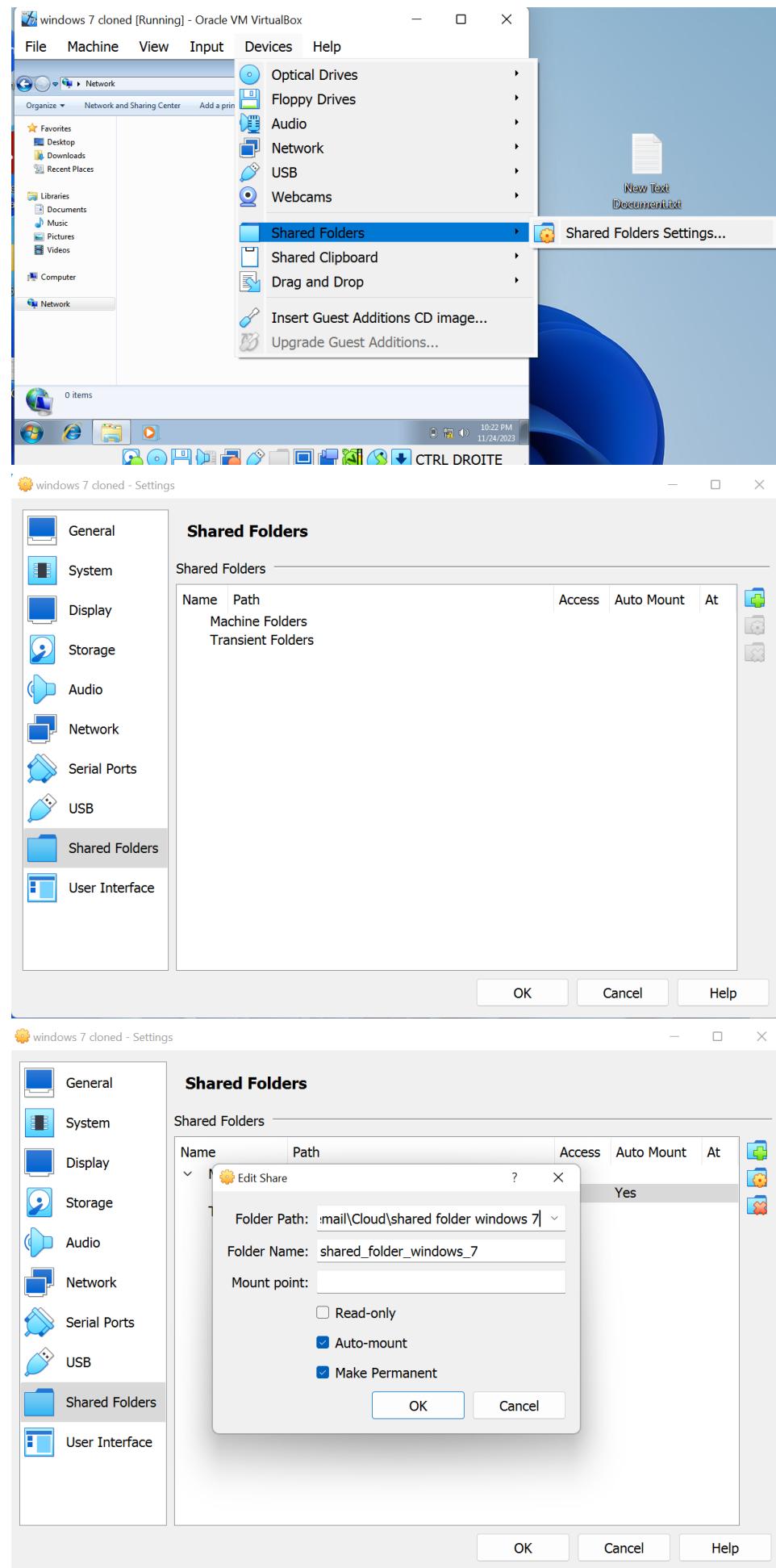
## shred file windows 7

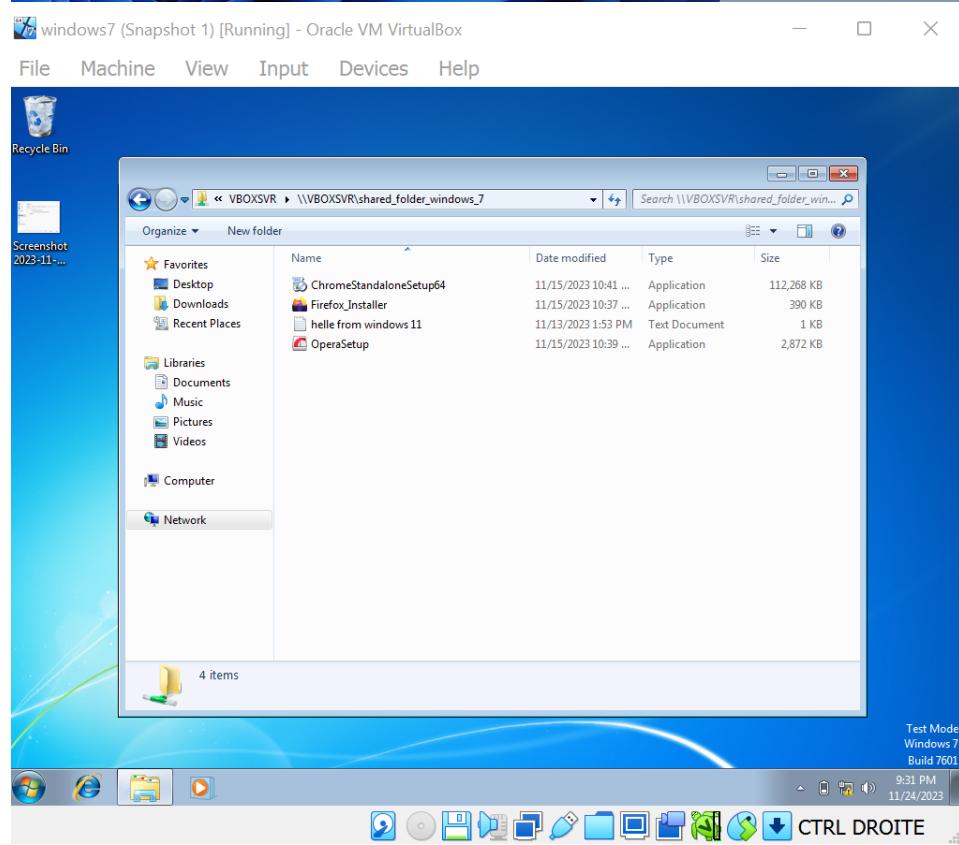
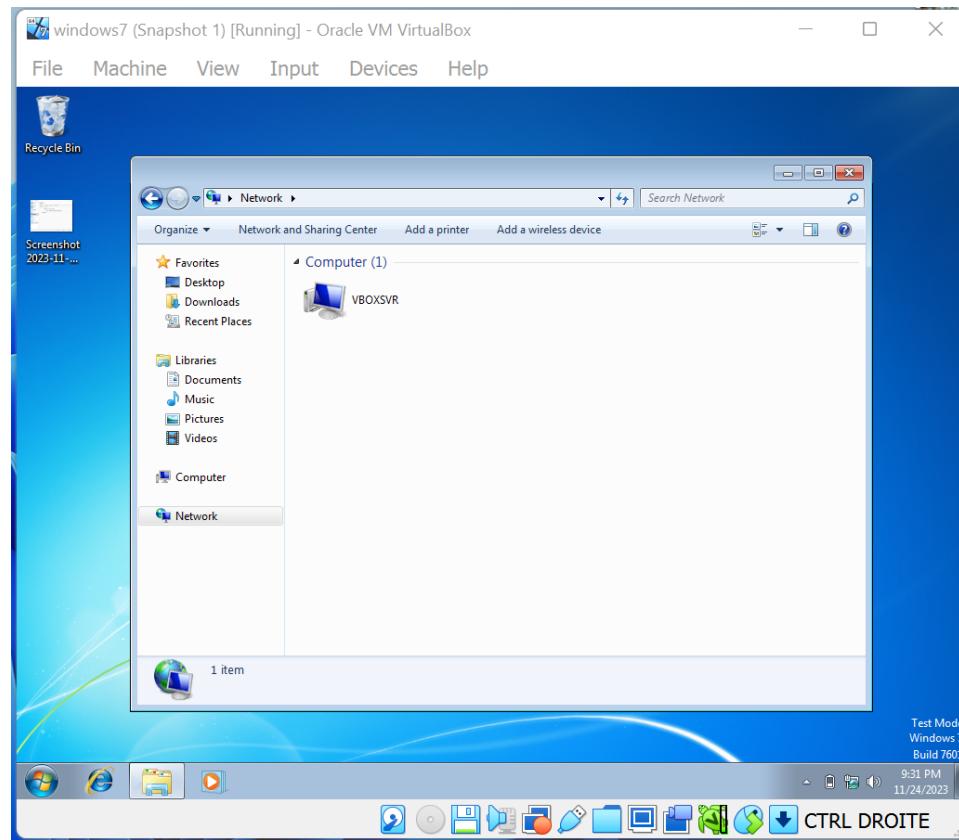
- Install vbox guest addition
- Turn on network discovery
- configure shared folder setting ( shared folder path on host machine and make it permanent and auto-mount)

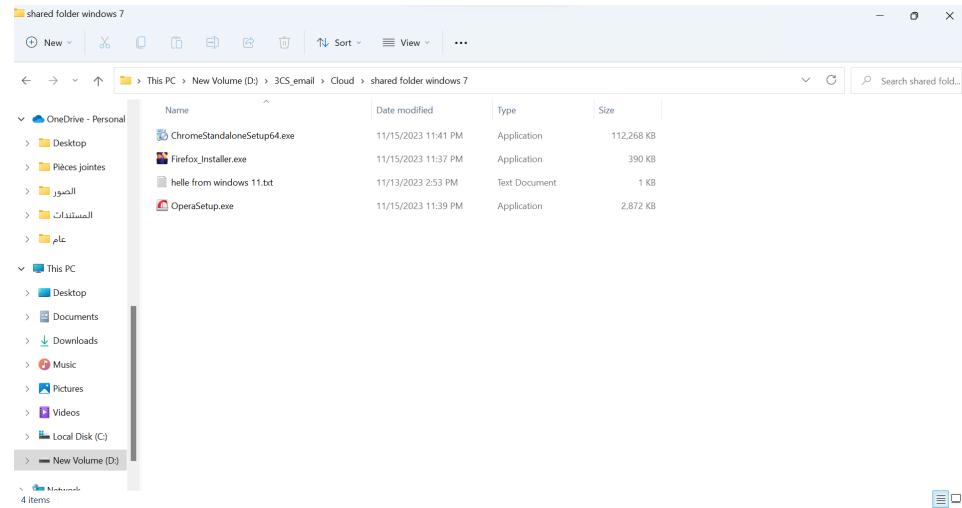






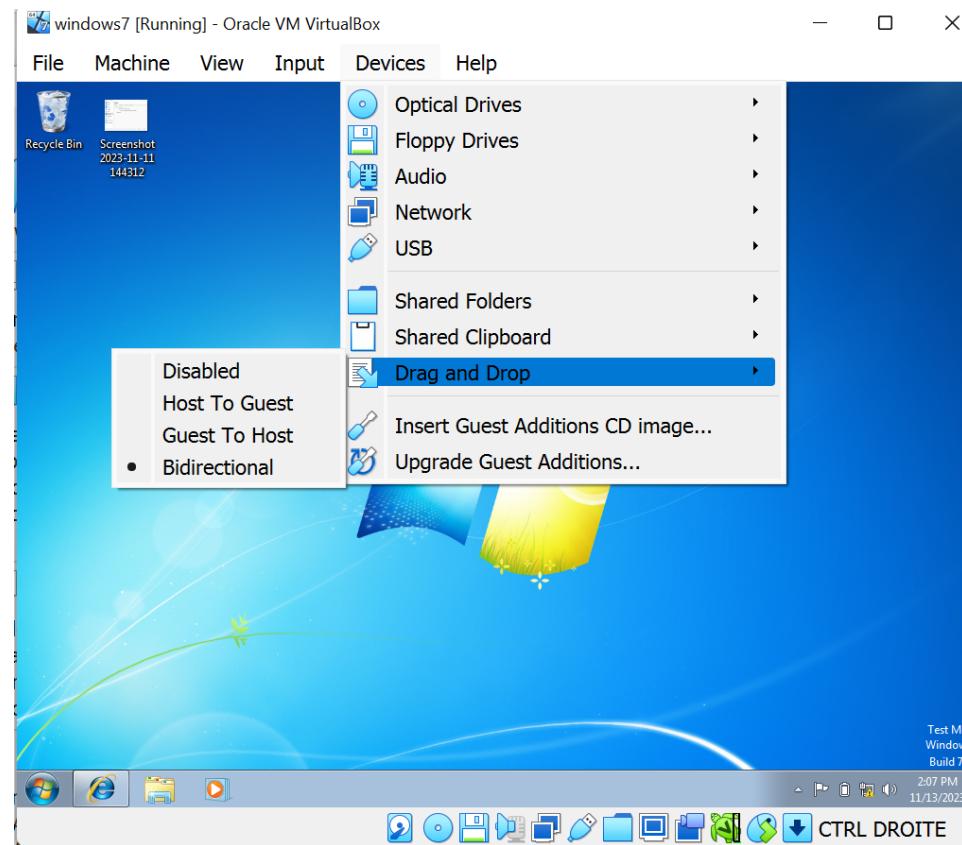


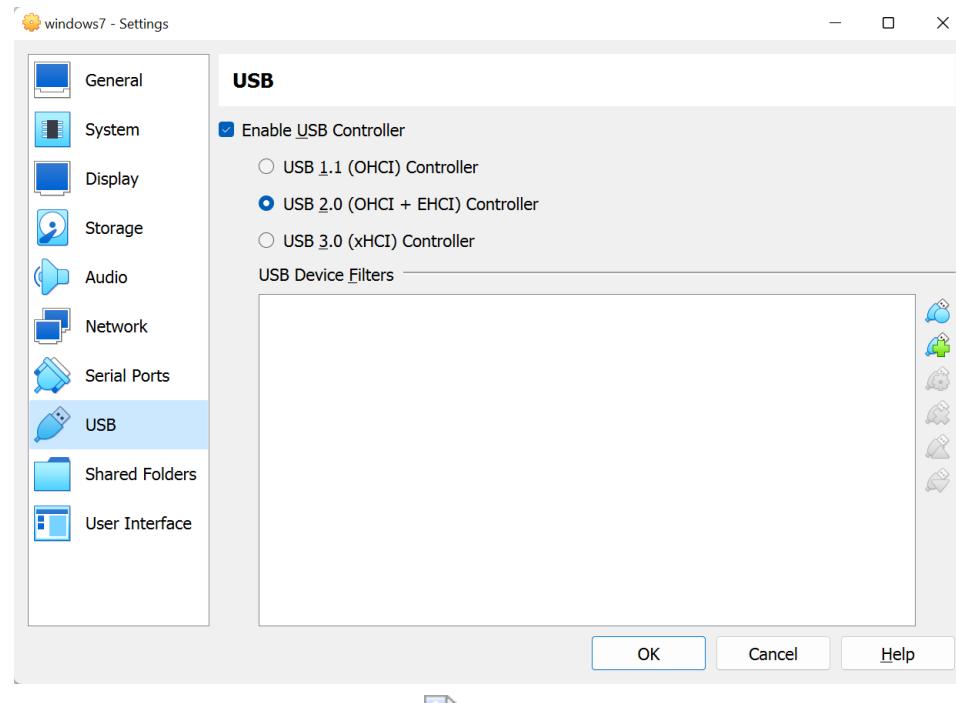




## share periphérique

- insert the guest addition cd image
- enable bidirectionnal drag and drop
- enable usb controller and select it

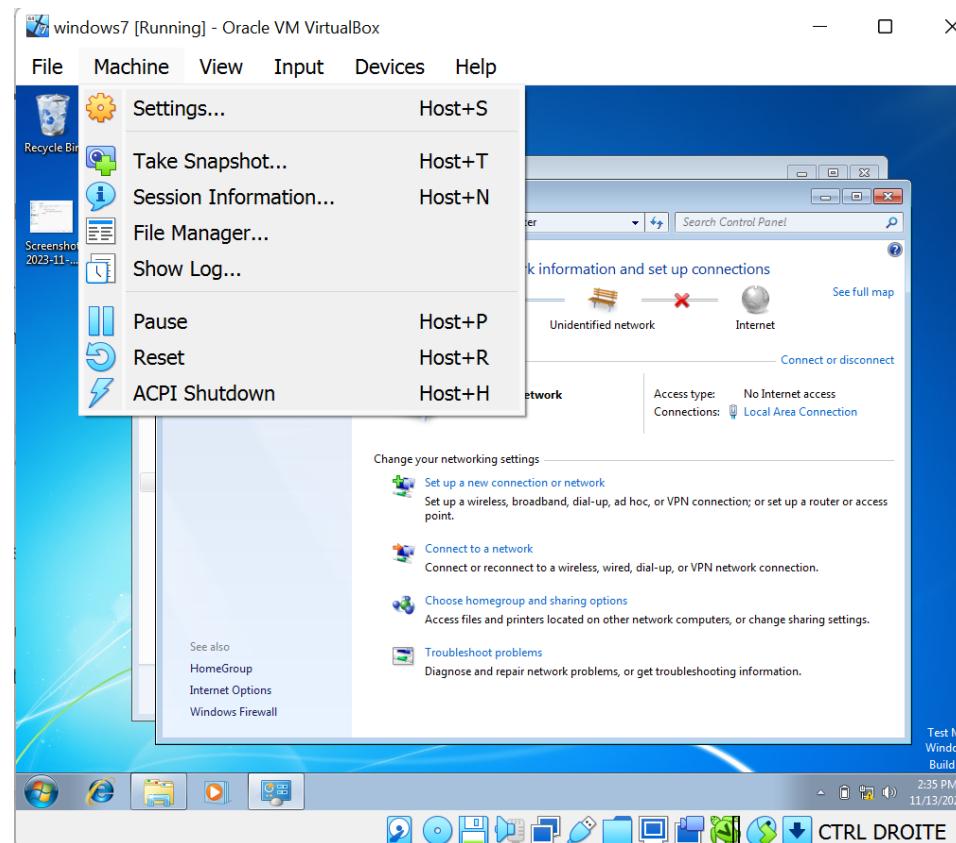


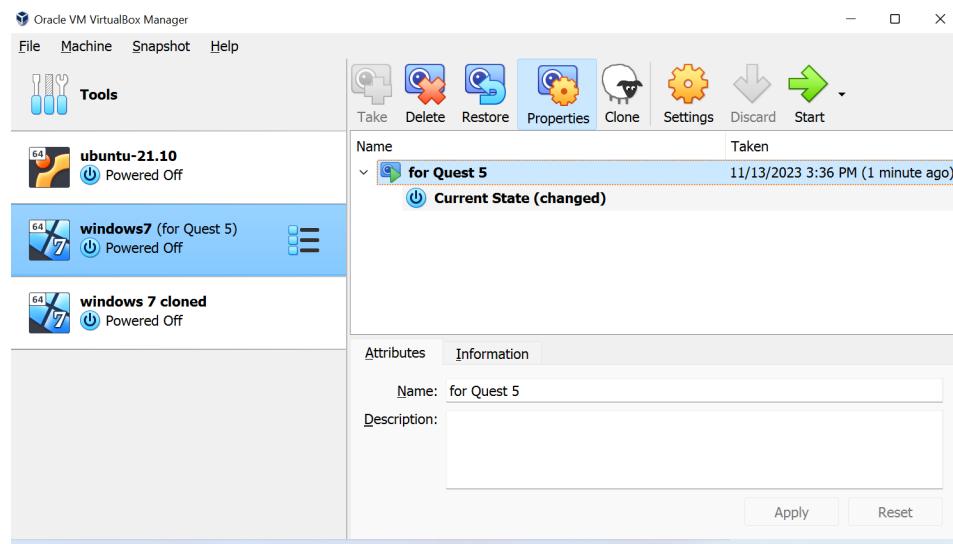


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## Take and restore snapshot

- Go to machine and click to take snapshot
- to restore click on vm and select snapshot after click to restore snapshot

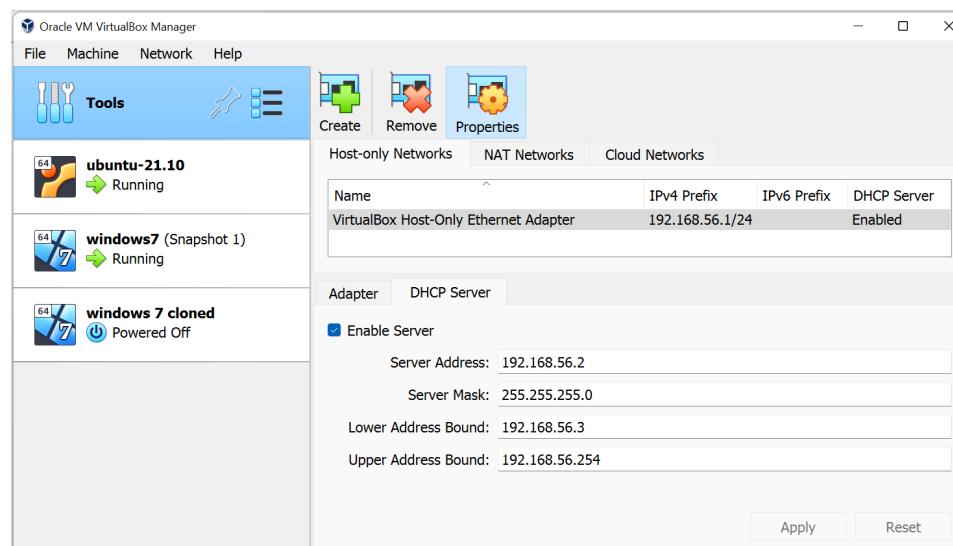
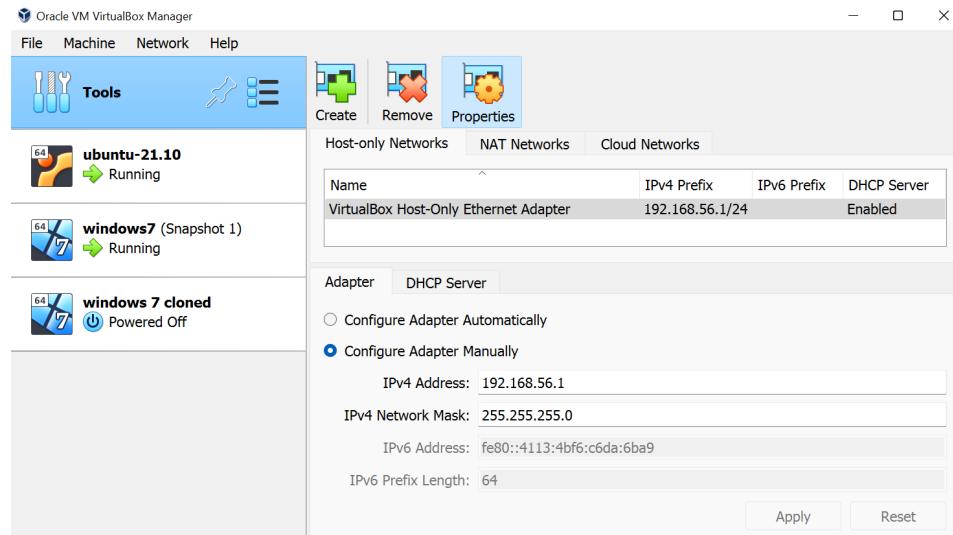




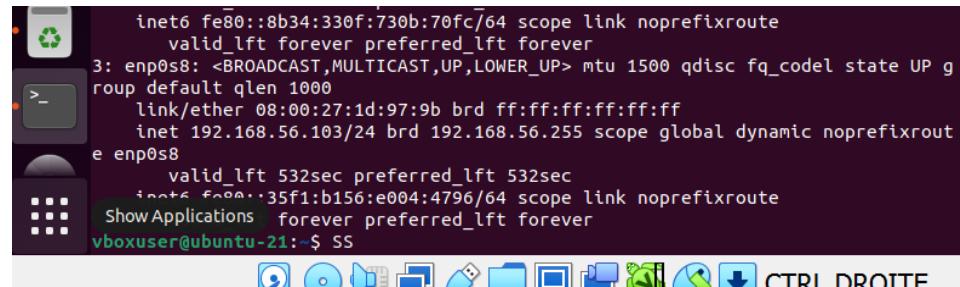
## 6. Mettre les VMs dans un réseau privé (Host-Only) :

- Utiliser le serveur DHCP virtuel pour attribuer des adresses IP aux VMs

- Go to tool after host only networks
- configure adapter manually
- enable dhcp server and give it range of values<sup>2</sup>



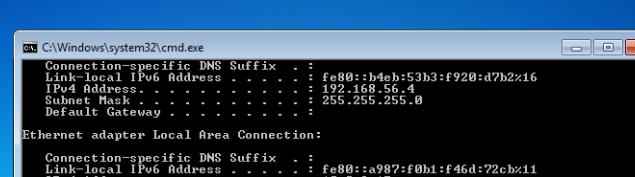
## Vérifier les adresses IP attribuées aux VMs.



```

inet6 fe80::8b34:330f%730b:70fc%64 scope link noprefixroute
      valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:1d:97:9b brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.103/24 brd 192.168.56.255 scope global dynamic noprefixroute
      valid_lft 532sec preferred_lft 532sec
      inet6 fe80::35f1:b156:e004:4796%64 scope link noprefixroute
        Show Applications  forever preferred_lft forever
vboxuser@ubuntu-21:~$ SS

```

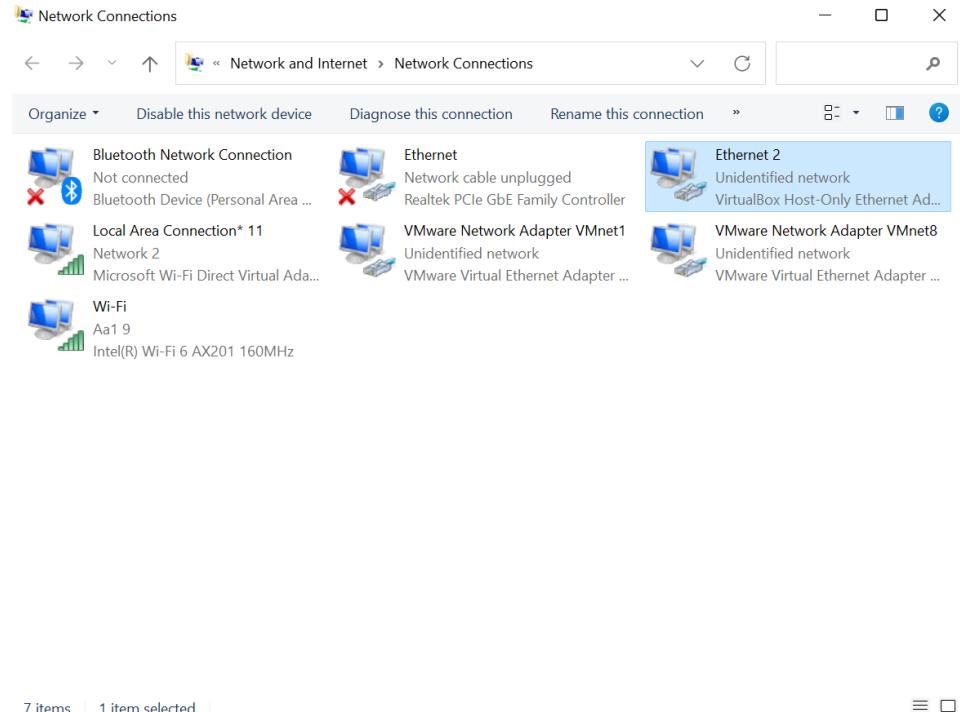


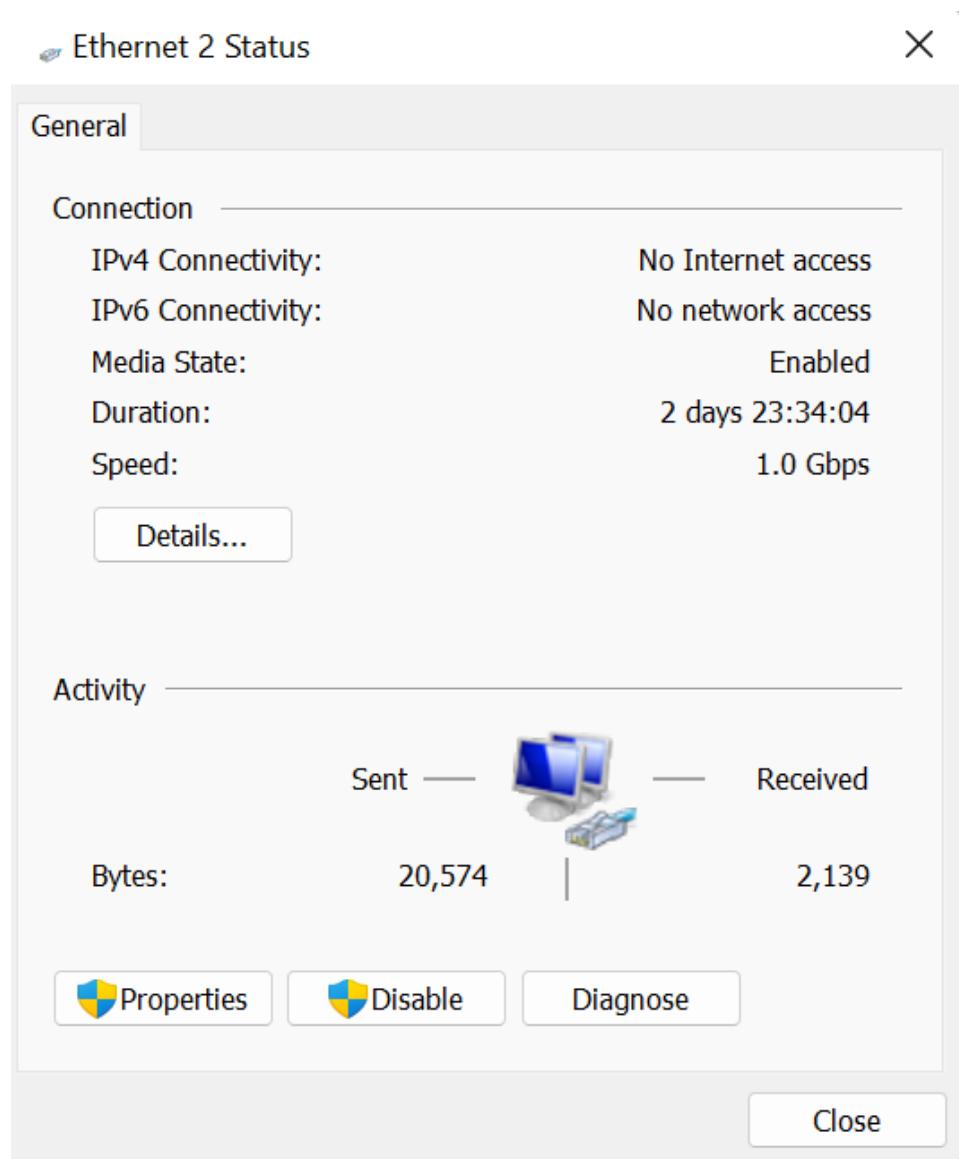
```

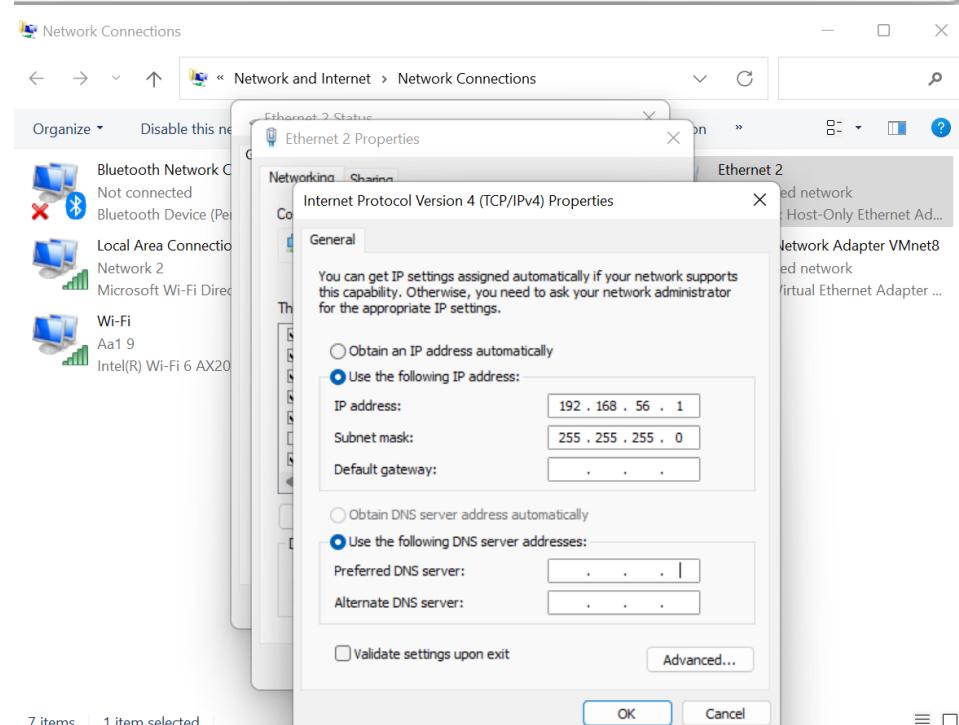
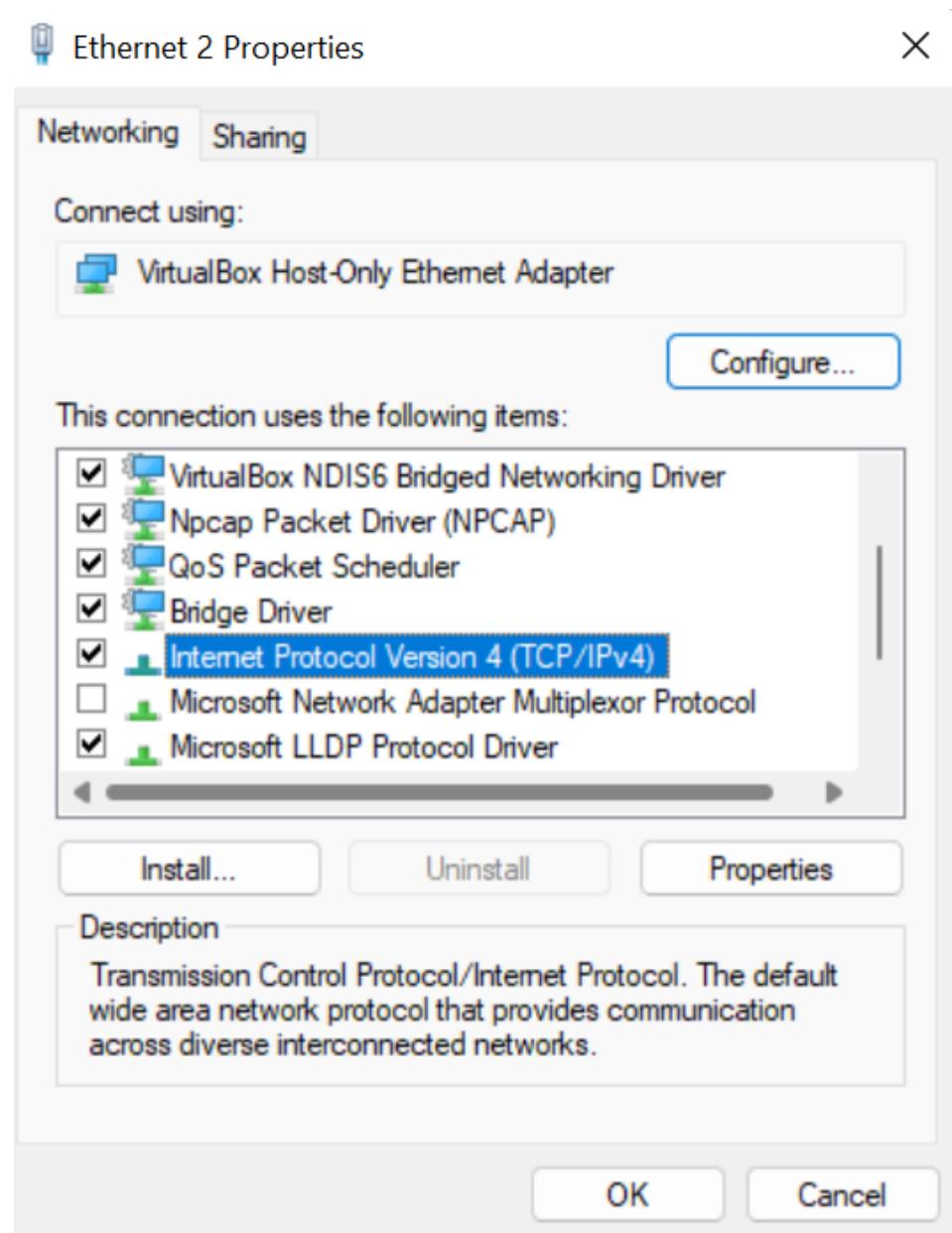
cmd C:\Windows\system32\cmd.exe
Connection-specific DNS Suffix . . . . : fe80::b4eb:53b3:f920:d7b2%16
Link-local IPv6 Address . . . . . : 192.168.56.4
IPv4 Address . . . . . : 255.255.255.0
Default Gateway . . . . . :
Ethernet adapter Local Area Connection:
  Connection-specific DNS Suffix . . . . : fe80::a987:f0b1:f46d:72cb%11

```

Mettre l'hôte sur le même sous réseau que les VMs (vous pouvez utiliser un adressage statique pour mettre les VMs et l'hôte sur le même sous réseau).

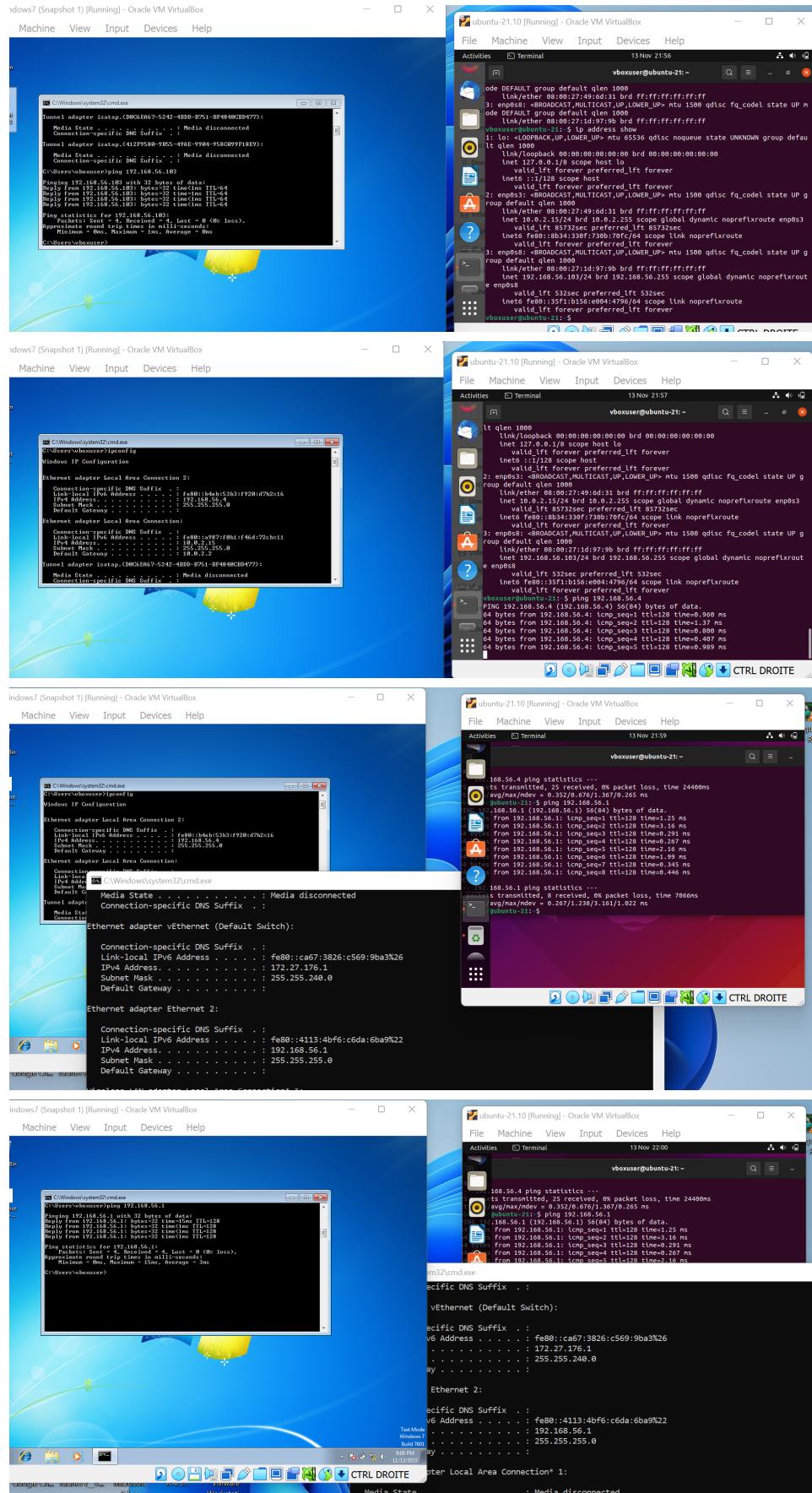


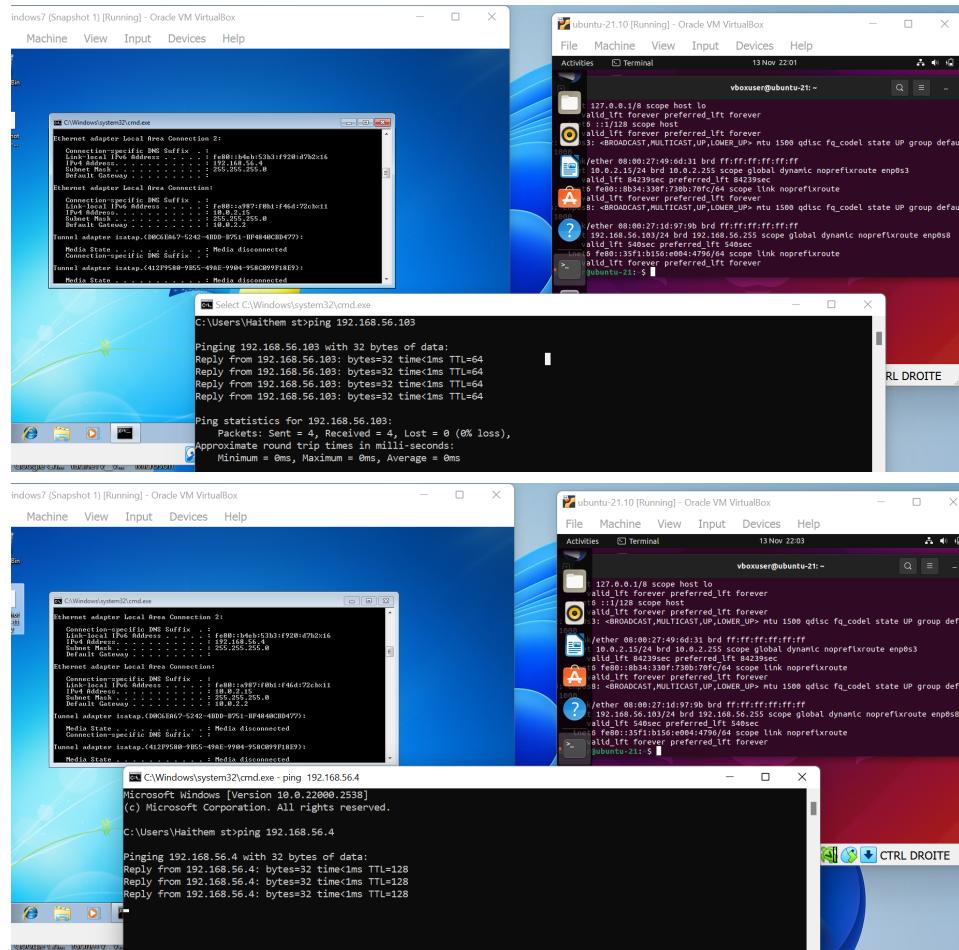




# Tester la communication/connexion inter VMs et entre les VMs et l'hôte (n'oubliez pas de désactiver le pare-feu).

- we can ping between all the vms and host because we are under the same network

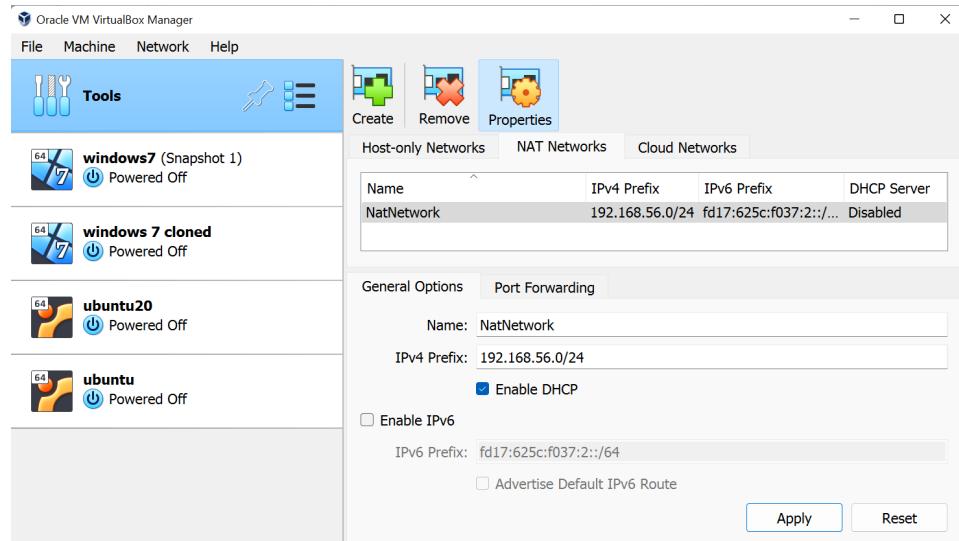




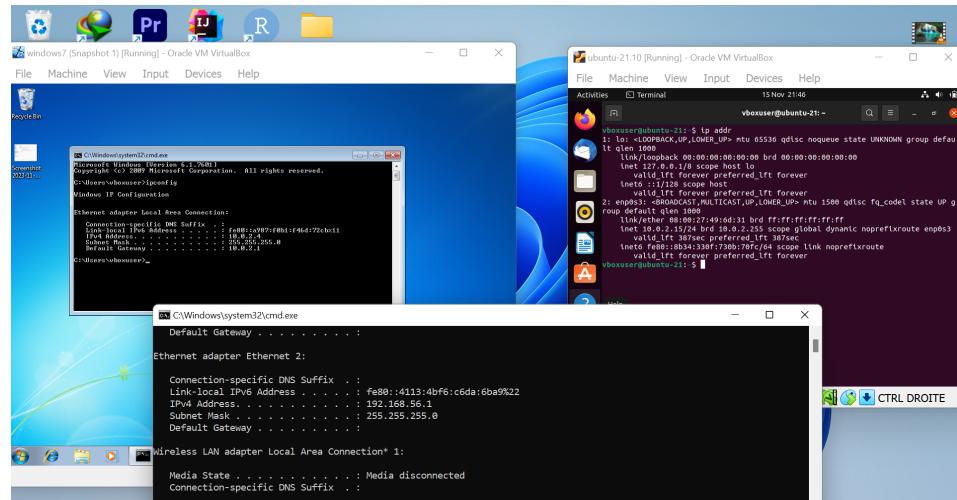
## 7. Mettre les VMs sur le mode de réseau virtuel NAT (NAT pour VMware Workstation et réseau NAT pour Oracle VM VirtualBox).

- Utiliser le serveur DHCP virtuel pour attribuer des adresses IP aux VMs.

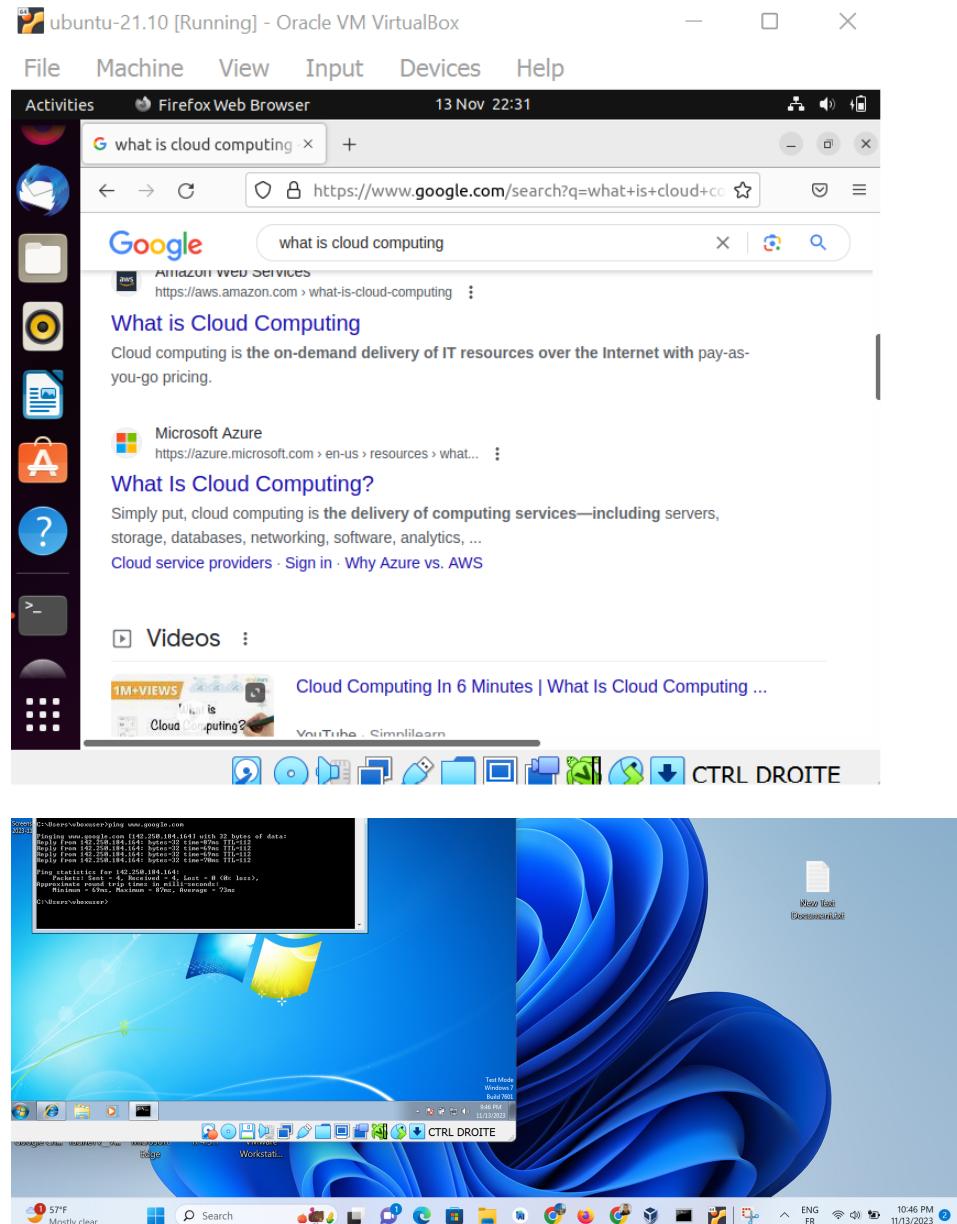
- enable the dhcp server



- Vérifier les adresses IP attribuées aux VMs ainsi que la passerelle par défaut.

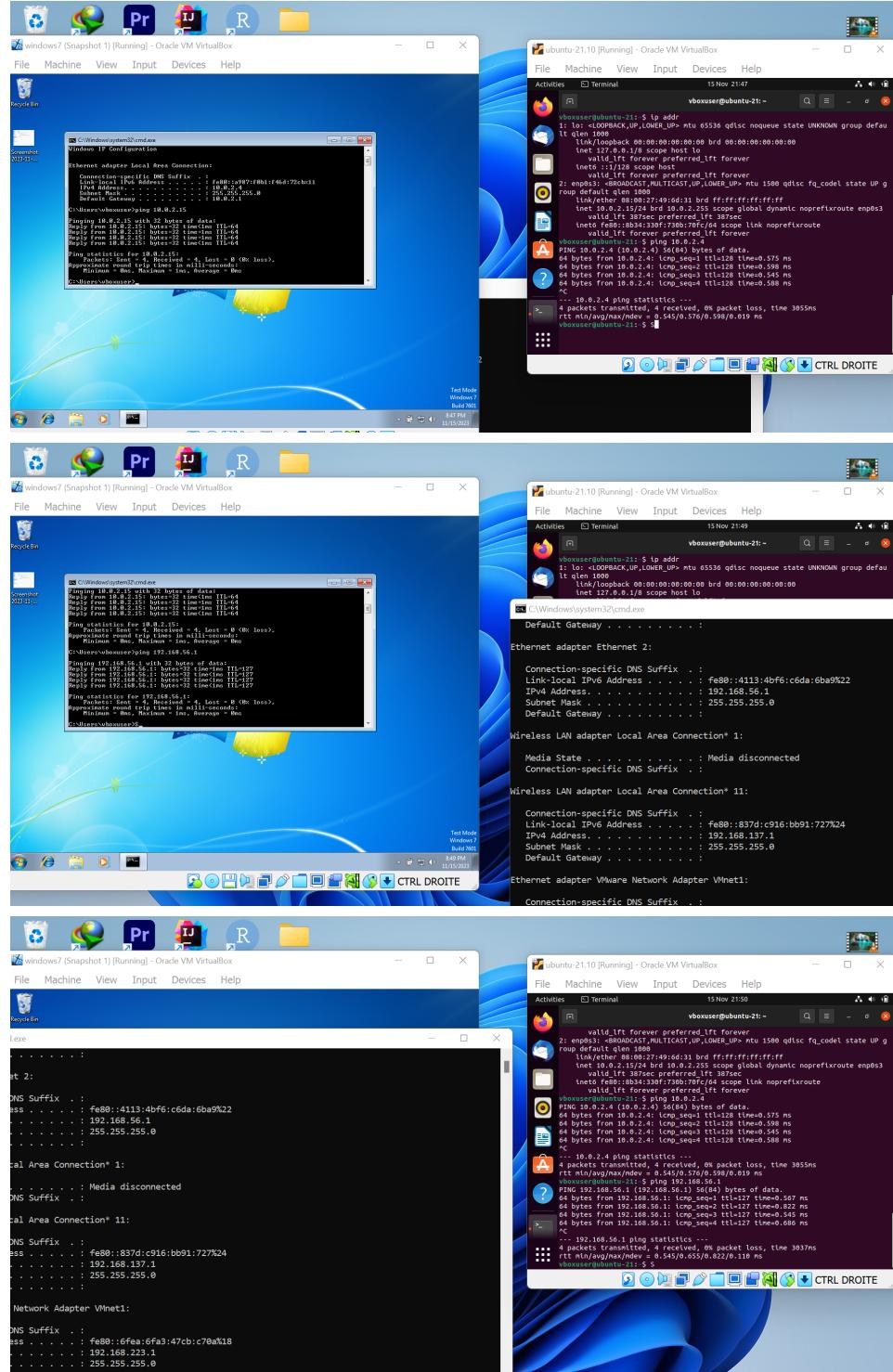


- Connecter l'hôte à internet (vous pouvez utiliser le partage Internet entre vos smartphones et l'hôte).



## – Tester la communication inter VMs, entre les VMs et l'hôte et l'accès des VMs à Internet.

- we can ping normally



## – Créer et tester une règle de redirection de port (Port Forwarding).

- install the apache server with the command

```
sudo apt-get install apache2
```

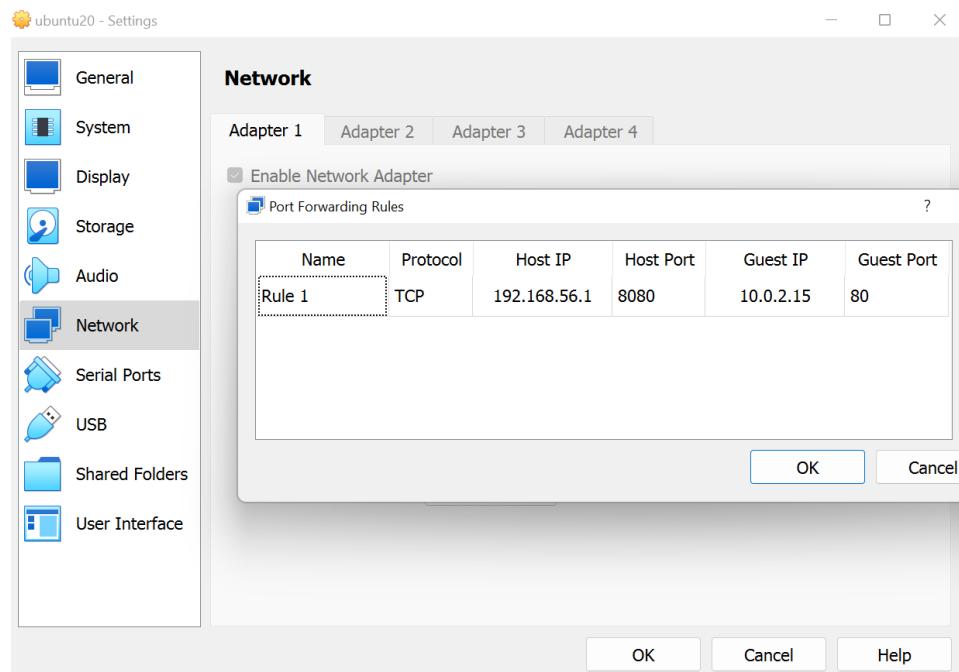
- lunch the server with the command

```
sudo systemctl status apache2
```

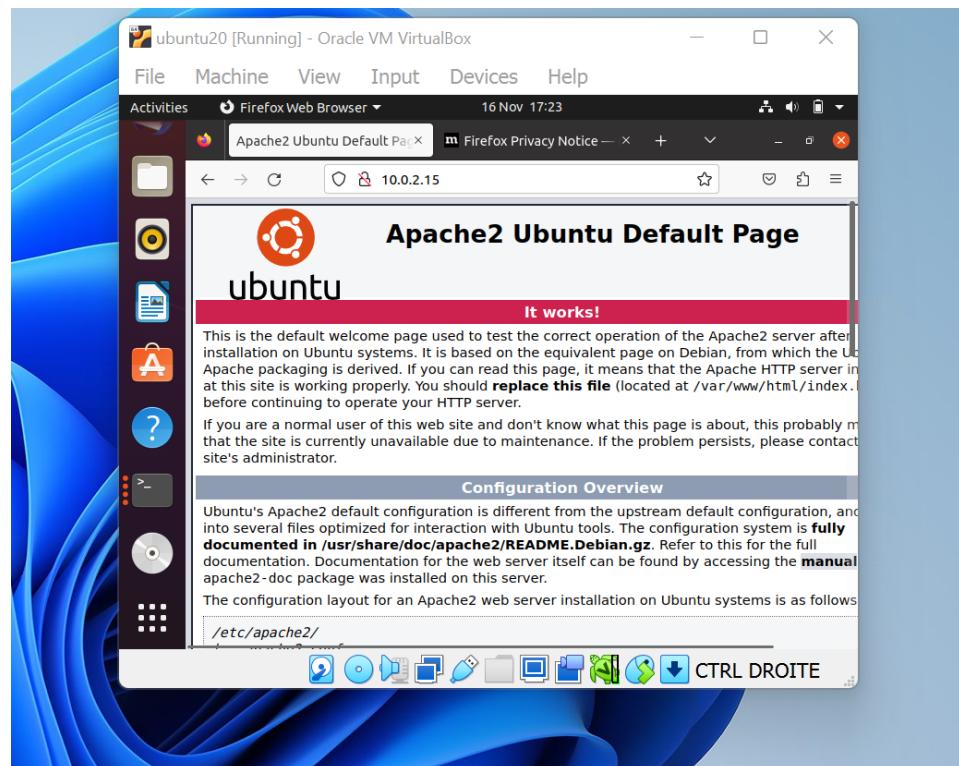
```
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
vboxuser@oaa:~$ sudo apt-get install apache2  
[sudo] password for vboxuser:  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1  
  libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0  
Suggested packages:  
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom  
The following NEW packages will be installed:  
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1  
  libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0  
0 to upgrade, 9 to newly install, 0 to remove and 233 not to upgrade.  
Need to get 1,826 kB of archives.  
After this operation, 7,973 kB of additional disk space will be used.  
D Help want to continue? [Y/n] Y  
Get:1 http://us.archive.ubuntu.com/ubuntu focal/main amd64 libapr1 amd64 1.6.5-1ubuntu1 [91.4 kB]  
Get:2 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 libaprutil1 amd64 1.6.1-4ubuntu2.2 [85.1 kB]  
Get:3 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-4ubuntu2.2 [10.5 kB]  
Get:4 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 libaprutil1-ldap amd64 1.6.1-4ubuntu2.2 [8,752 B]  
Get:5 http://us.archive.ubuntu.com/ubuntu focal/main amd64 liblua5.2-0 amd64 5.
```

```
Enabling conf serve-cgi-bin.  
Enabling site 000-default.  
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /lib/systemd/system/apache2.service.  
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /lib/systemd/system/apache-htcacheclean.service.  
Processing triggers for ufw (0.36-6ubuntu1) ...  
Processing triggers for systemd (245.4-4ubuntu3.20) ...  
Processing triggers for man-db (2.9.1-1) ...  
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...  
vboxuser@oaa:~$  
vboxuser@oaa:~$  
vboxuser@oaa:~$  
vboxuser@oaa:~$ sudo systemctl status apache2  
● apache2.service - The Apache HTTP Server  
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor pres  
   Active: active (running) since Sat 2023-11-25 00:20:56 +01; 1min 55s ago  
     Docs: https://httpd.apache.org/docs/2.4/  
    Main PID: 2464 (apache2)  
       Tasks: 55 (limit: 4599)  
      Memory: 4.9M  
        CGroup: /system.slice/apache2.service  
                ├─2464 /usr/sbin/apache2 -k start  
                ├─2465 /usr/sbin/apache2 -k start  
                ├─2466 /usr/sbin/apache2 -k start  
N--- 25 Nov 00:20:56 ooa systemd[1]: Starting The Apache HTTP Server...  
N Show Applications ooa systemd[1]: Started The Apache HTTP Server.  
lines 1-14/14 (END)
```

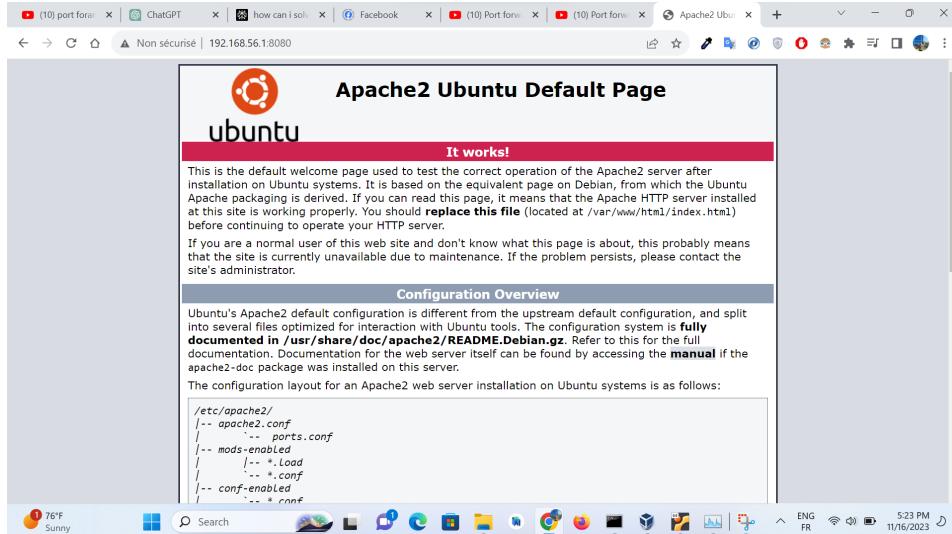
- define the rule of port forwarding on the configuration



- test apache on the vm



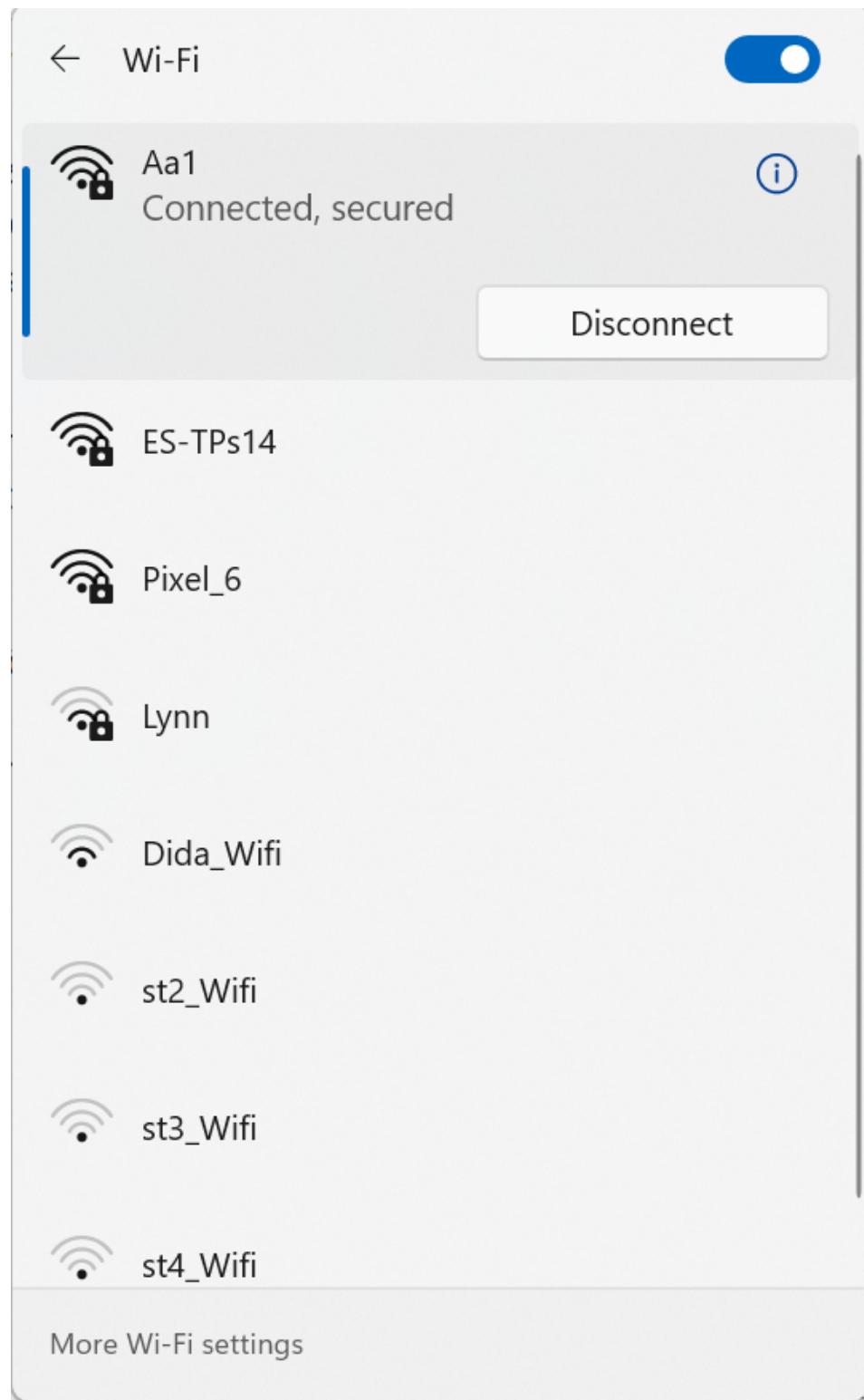
- use the port defined on the rule of port forwarding 8080 on the host machine



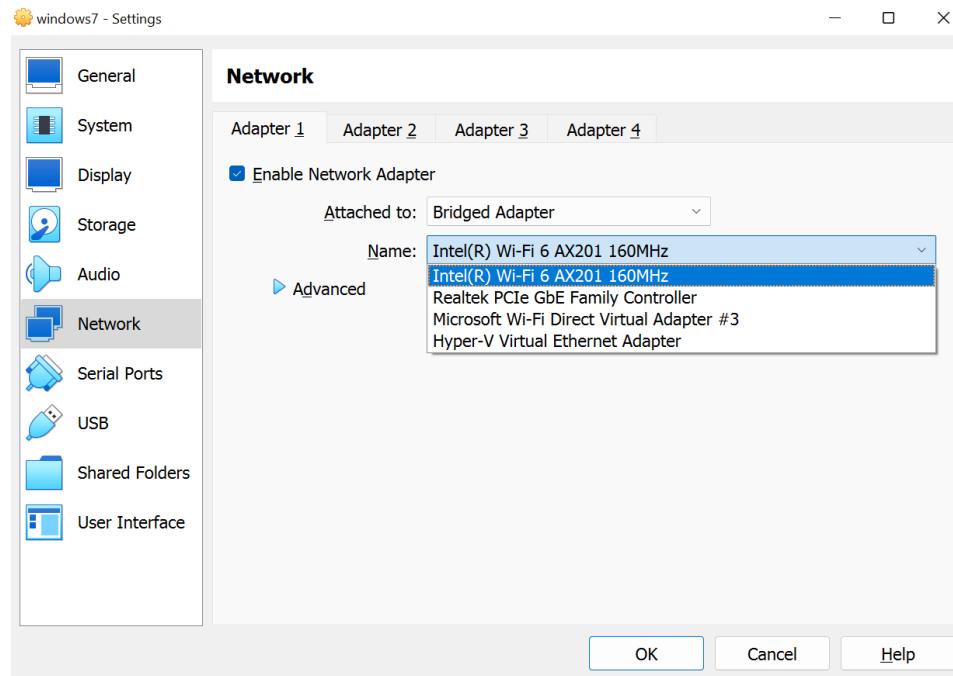
## 8. Mettre les VMs sur le mode de réseau virtuel Bridged.

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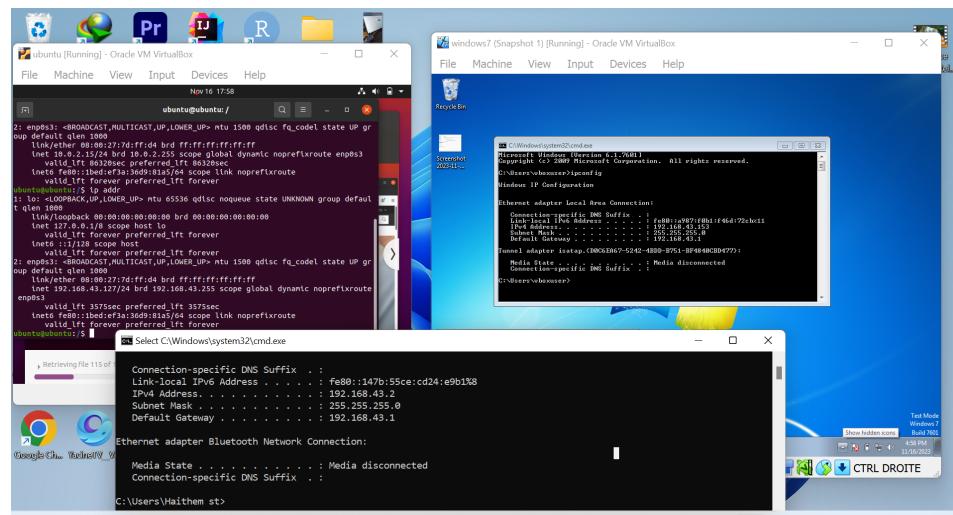
- Utiliser le serveur DHCP externe pour attribuer des adresses IP à l'hôte et aux VMs (vous pouvez utiliser le serveur DHCP de vos smartphones).



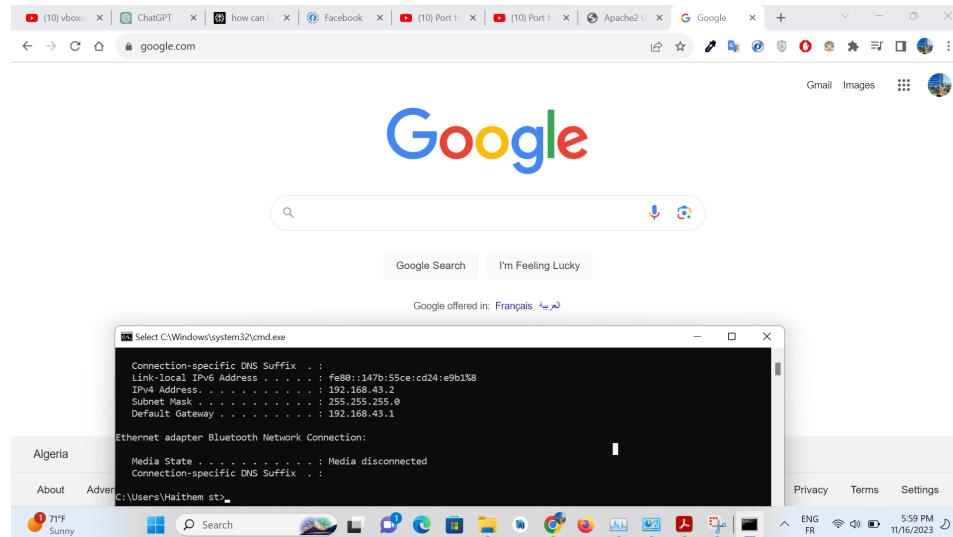
Utiliser le mode automatique pour la connexion directe avec le réseau externe (bridged to), sinon choisir l'interface réseau physique de l'hôte connectée au réseau externe.



- Vérifier les adresses IP attribuées à l'hôte et aux VMs ainsi que la passerelle par défaut (il faut s'assurer que l'hôte et les VMs se trouvent dans le même sous réseau)

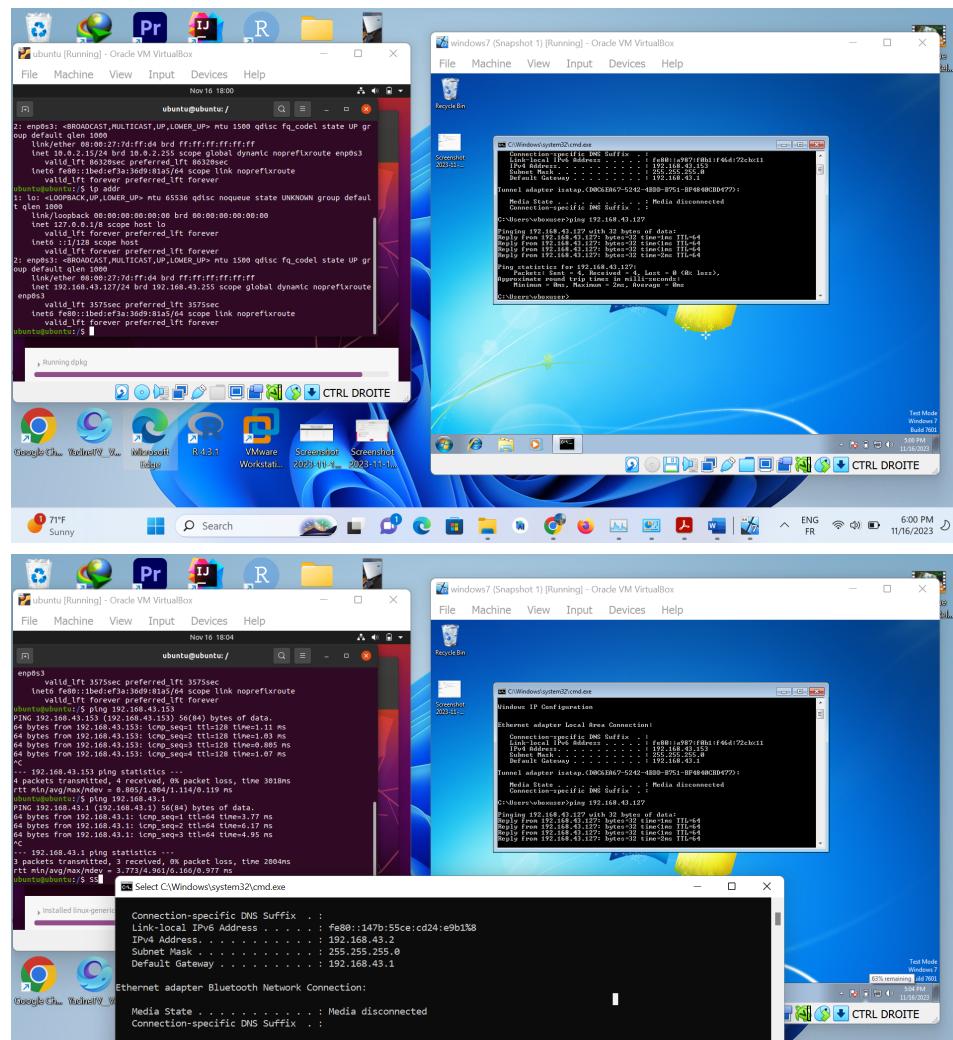


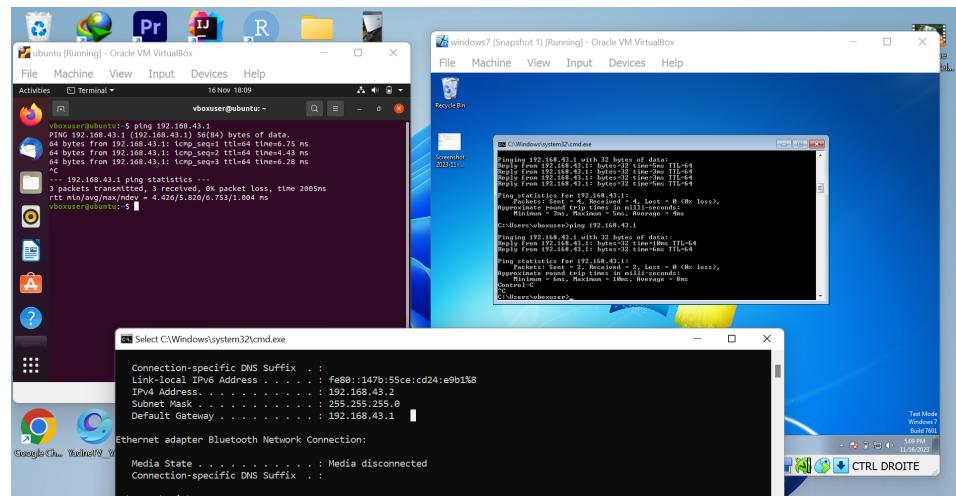
- Vérifier que l'hôte est connecté à Internet



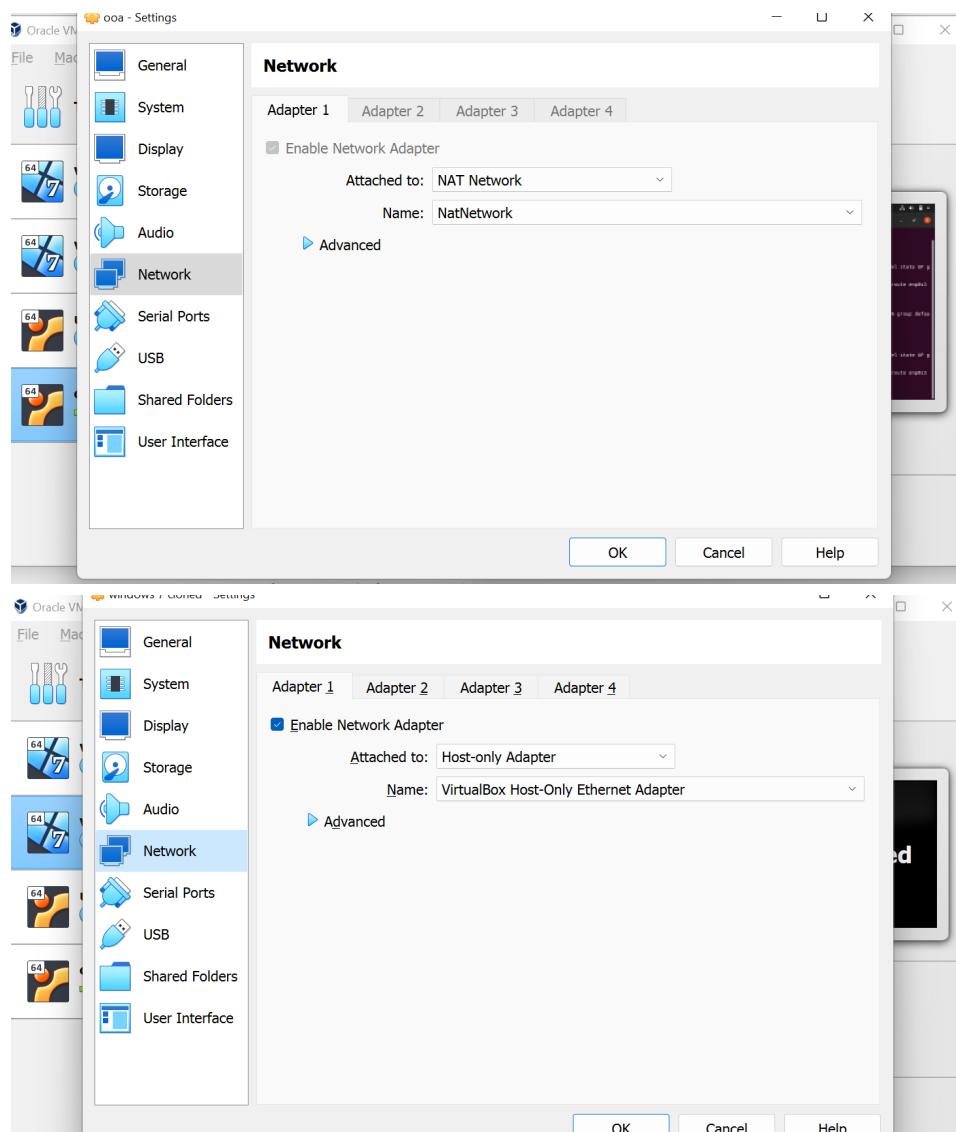
## Tester la communication inter VMs, entre les VMs et l'hôte et l'accès des VMs à Internet.

- ping work between all machines

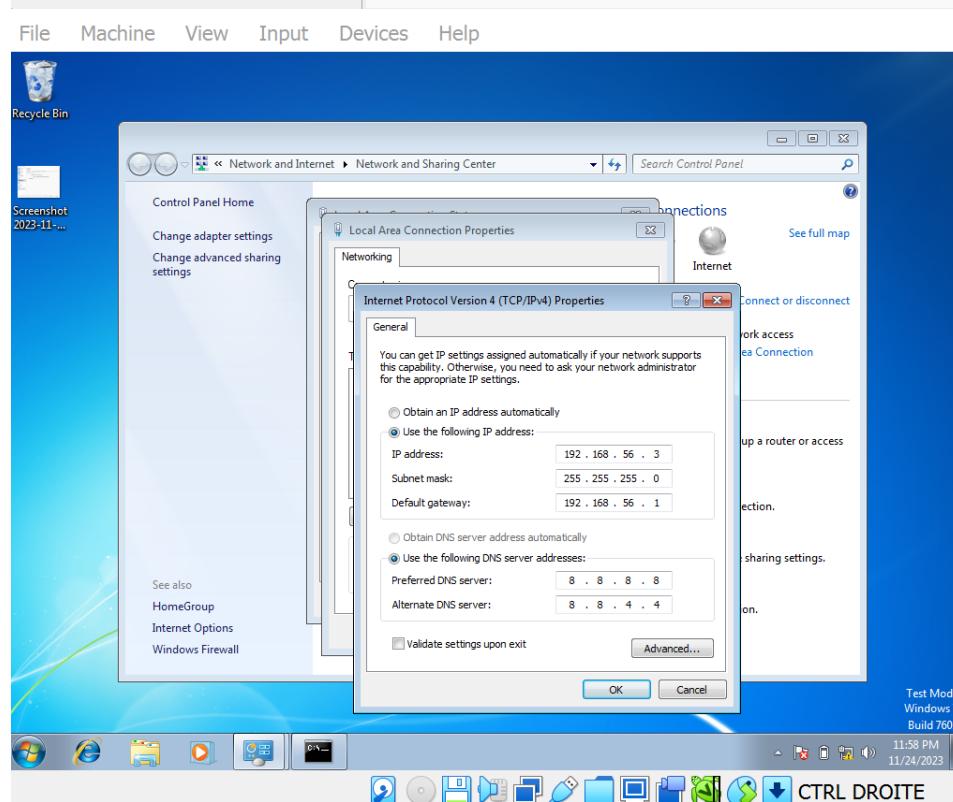
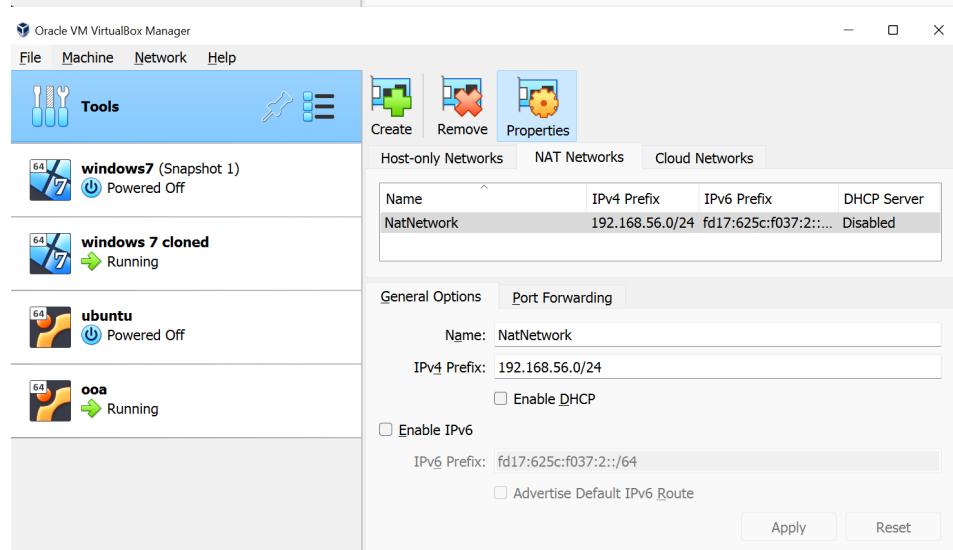
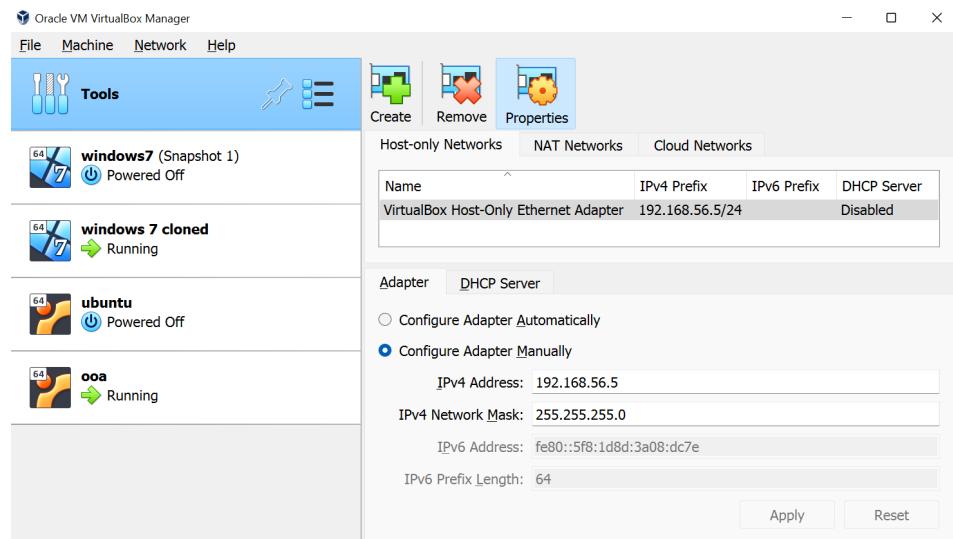


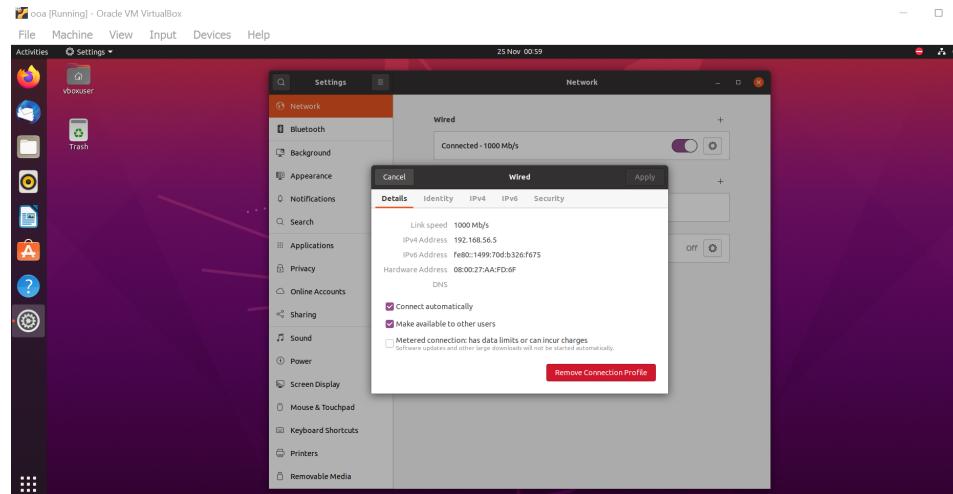


## 9. Mettre les deux VMs sur deux modes de réseau virtuel différents (une VM sur le mode Host-Only et l'autre sur le mode réseau NAT).

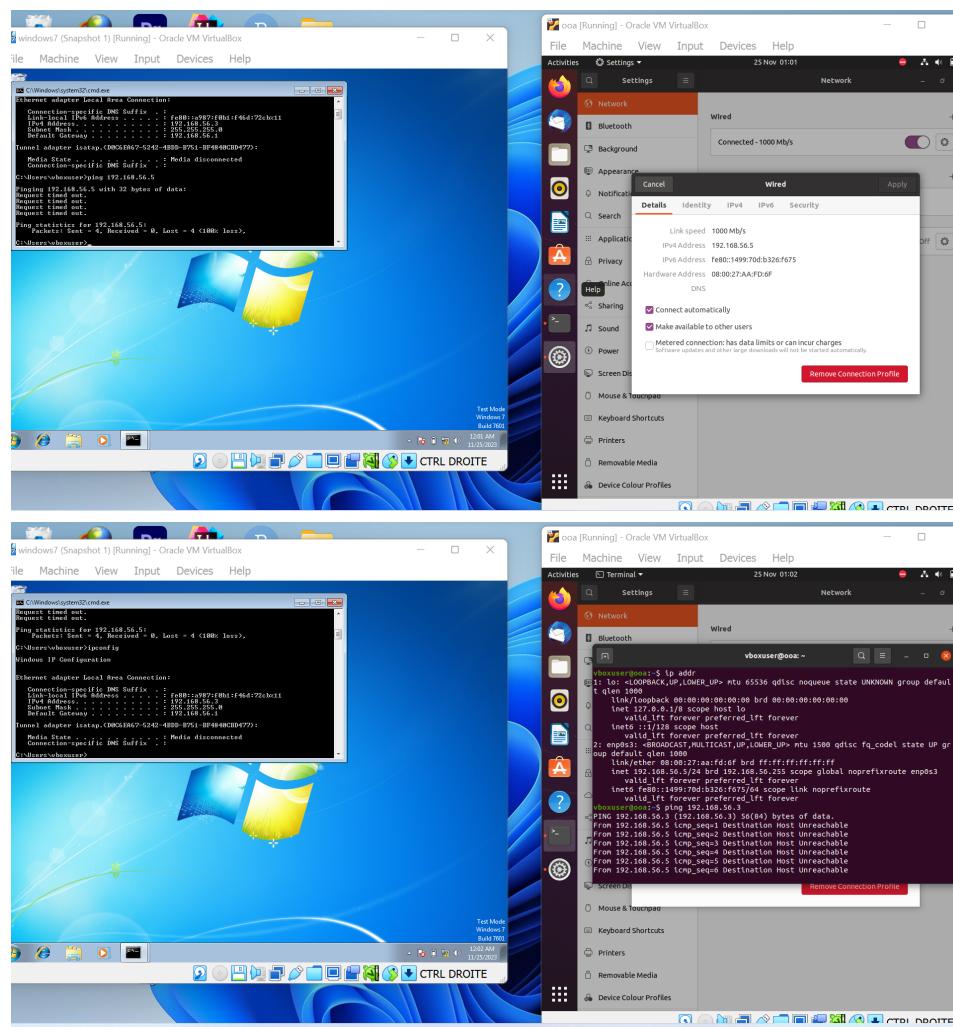


Désactiver le serveur DHCP virtuel pour les deux modes.



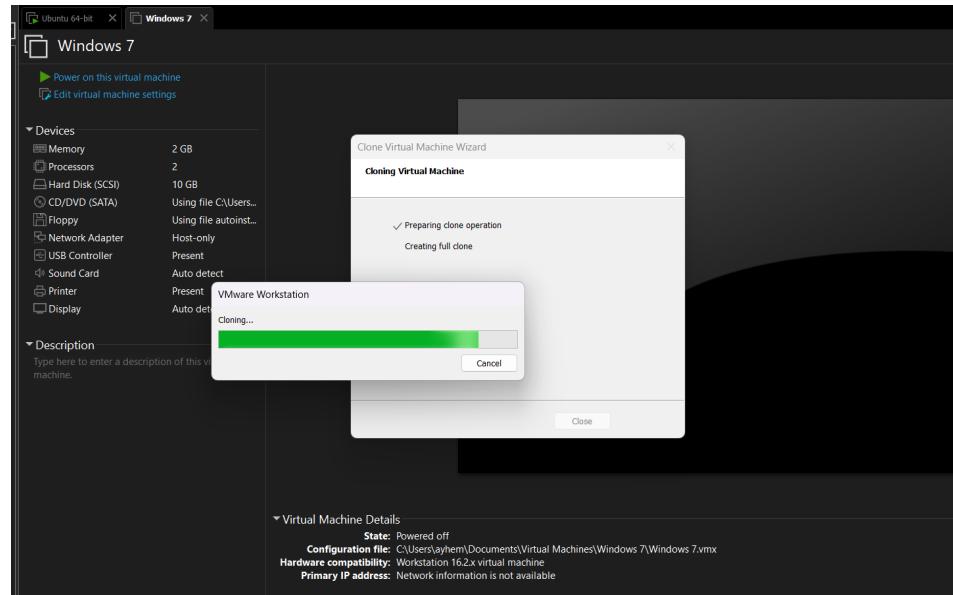


- we can't ping on this case

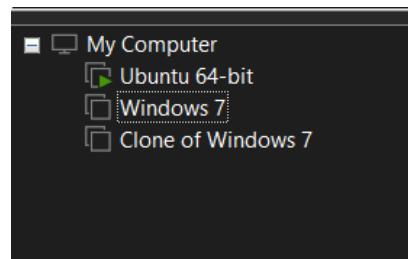


## Partie VMware

Créer une duplication (clone) de l'état actuel de la VM Windows 7 (full réplication).

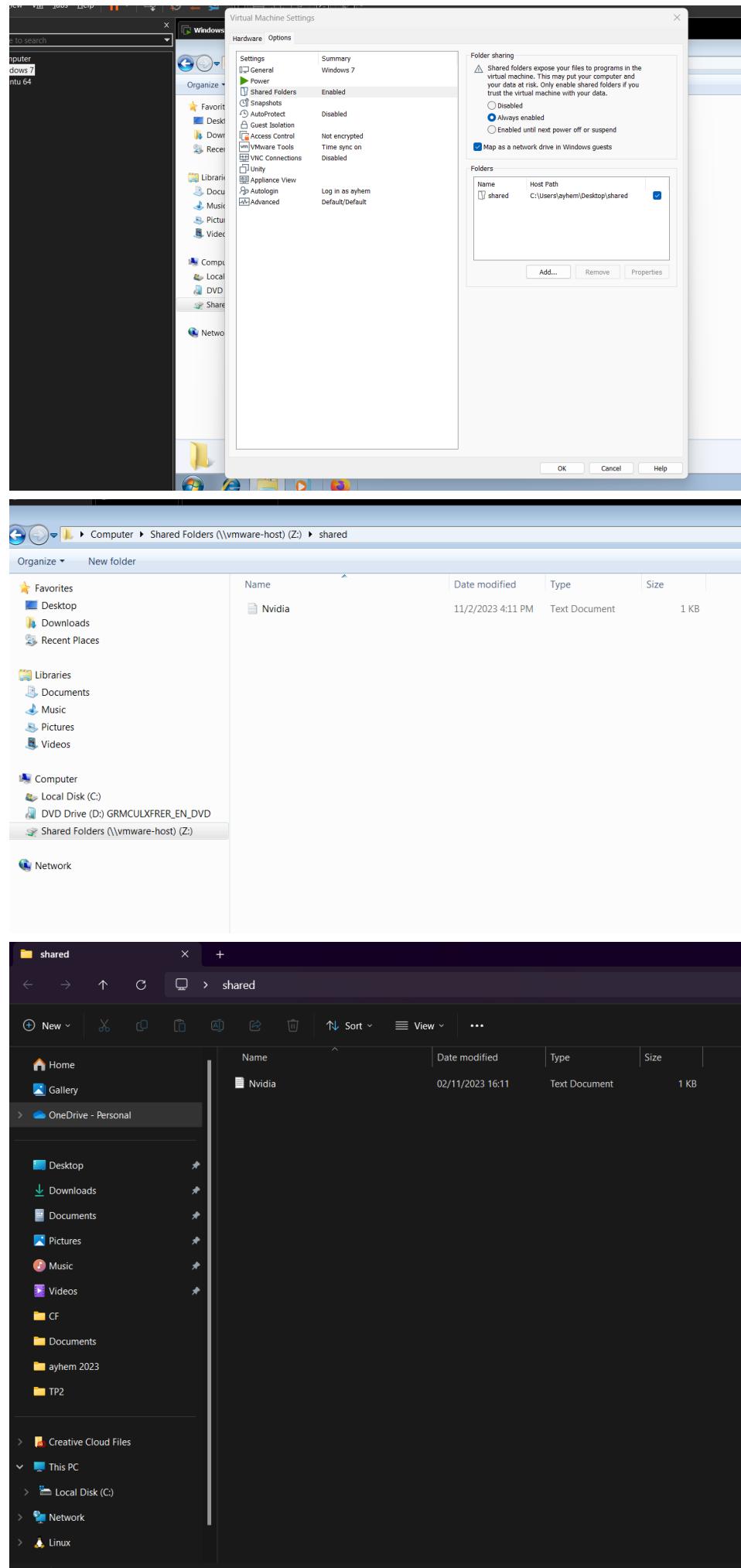


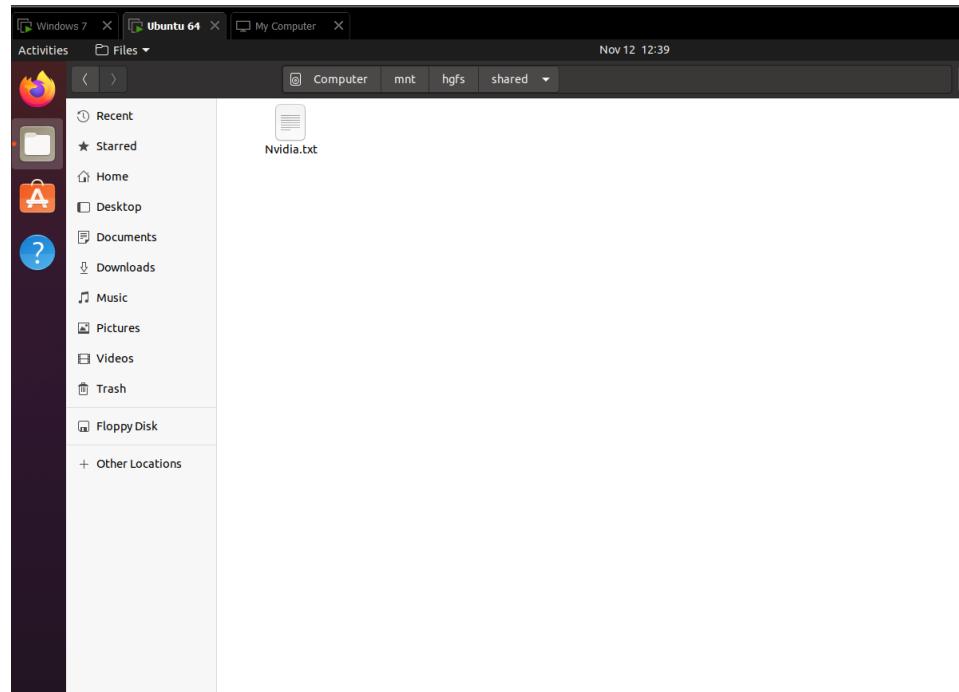
Une nouvelle machine clone a été créée.



## Configurer un partage de fichiers entre la VM et l'hôte.

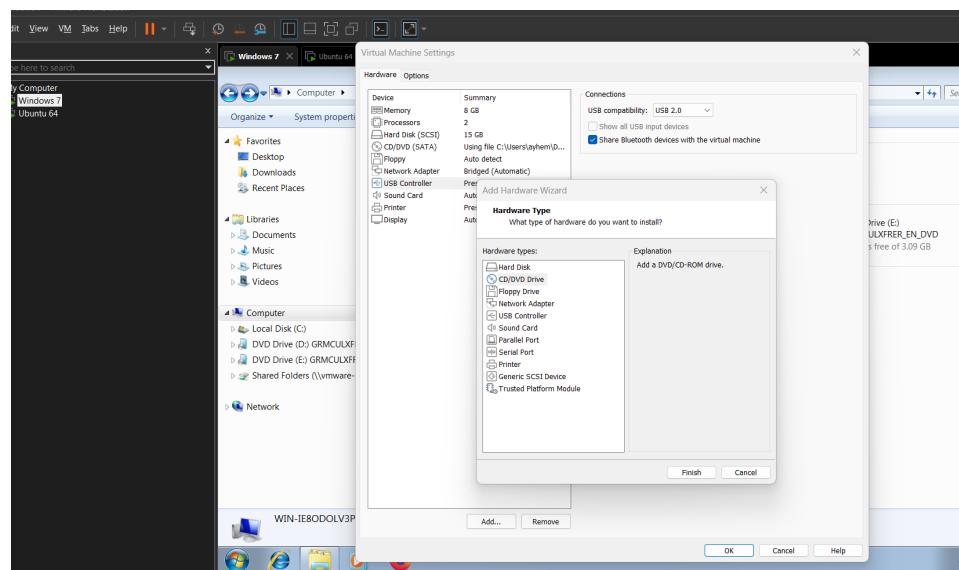
- On doit d'abord aller vers les paramètres de machine virtuelle → options → Shared Folder et le modifier vers "Always enabled" et ajouter le chemin du dossier dans la machine host
- On doit installer Vmware Tools pour qu'on puisse faire le partage entre la machine host et guest.
- On peut voir que le fichier est bien partagé entre la machine host et guest.





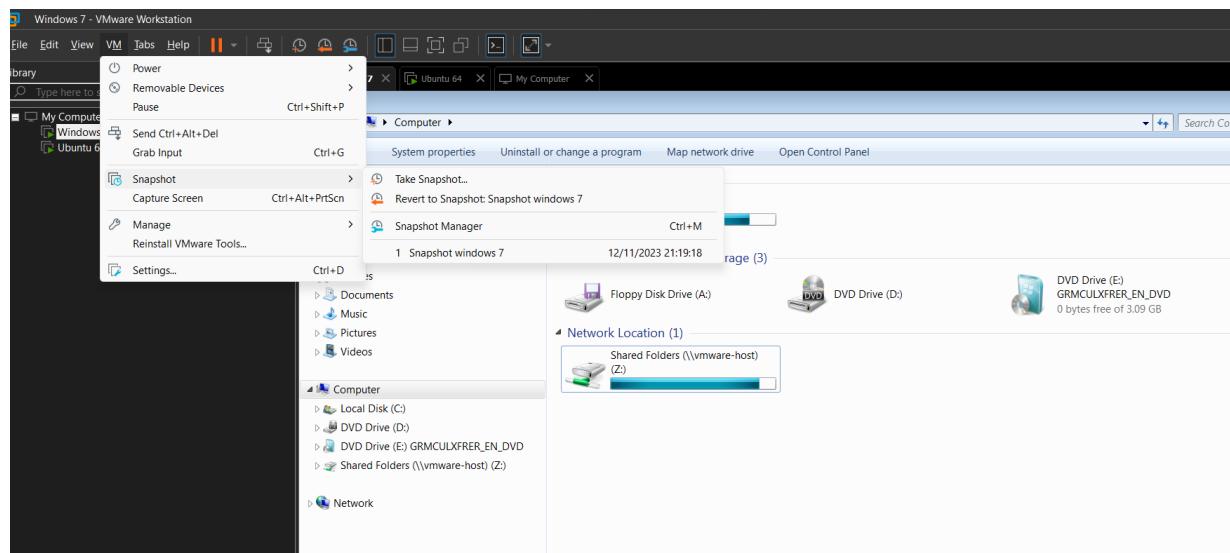
## Configurer un partage des périphériques entre la VM et l'hôte.

On ajoute un nouveau périphérique. et on notice que l'on peut voir sur la machine host et guest



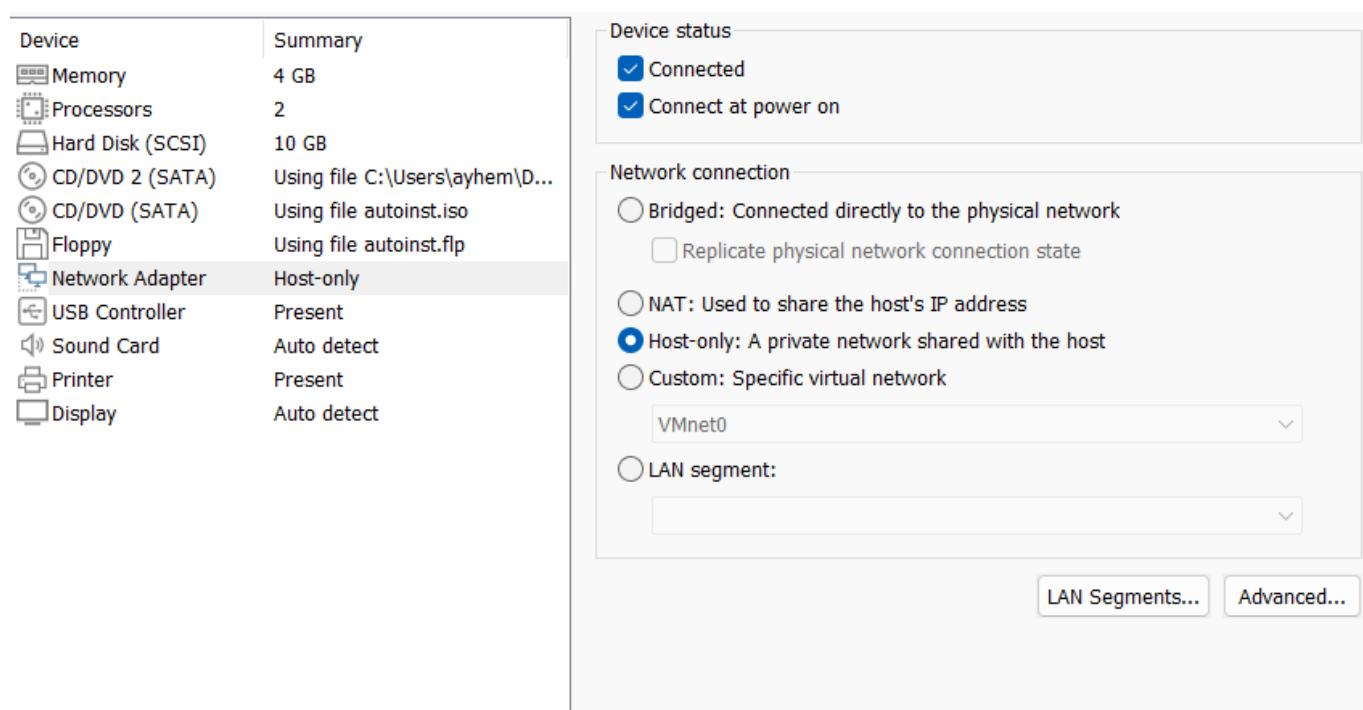
# Créer et restaurer une image instantanée (snapshot) pour la VM Windows 7.

Pour prendre une snapshot dans vmware , on clique sur VM → Snapshot → Take Snapshot



Pour restaurer un snapshot on clique sur : revert to Snapshot : Snapshot windows 7 , et on va voir qu'on a reviendrai dans la même etat et la position ou on a cree le snapshot

## Mettre les VMs dans un réseau privé (Host-Only) :



l'intervalle de reseau et de 192.168.157.128 → 192.168.157.254

## Ip address pour Windows 7 et Ubuntu

DHCP Settings

Network: vmnet1

Subnet IP: 192.168.221.0

Subnet mask: 255.255.255.0

Starting IP address: 192.168.221.3

Ending IP address: 192.168.221.254

Broadcast address: 192.168.221.255

Default lease time: Days: 0 Hours: 0 Minutes: 30

Max lease time: Days: 0 Hours: 2 Minutes: 0

Host-only (connect VMs internally in a private network)

Connect a host virtual adapter to this network

Host virtual adapter name: VMware Network Adapter VMnet1

Use local DHCP service to distribute IP address to VMs

DHCP Settings...

Subnet IP: 192.168.221.0 Subnet mask: 255.255.255.0

Restore Defaults Import... Export... OK Cancel Apply Help

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\ayhem>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

  Connection-specific DNS Suffix . : localdomain
  Link-local IPv6 Address . . . . . : fe80::15f2:d444:bf01:7f2a%11
  IPv4 Address . . . . . : 192.168.221.3
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . :

Tunnel adapter isatap.localdomain:

  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . : localdomain

C:\Users\ayhem>_
```

192.168.221.3

```
allprotas@ubuntu:~$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 192.168.221.4 netmask 255.255.255.0 broadcast 192.168.221.255
          inet6 fe80::495a:f954:20b2:a1ff prefixlen 64 scopeid 0x20<link>
            ether 00:0c:29:81:1a:03 txqueuelen 1000 (Ethernet)
              RX packets 11354 bytes 1016379 (1.0 MB)
              RX errors 0 dropped 0 overruns 0 frame 0
              TX packets 11392 bytes 911784 (911.7 KB)
              TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
        inet 127.0.0.1 netmask 255.0.0.0
          inet6 ::1 prefixlen 128 scopeid 0x10<host>
            loop txqueuelen 1000 (Local Loopback)
              RX packets 3210 bytes 249503 (249.5 KB)
              RX errors 0 dropped 0 overruns 0 frame 0
              TX packets 3210 bytes 249503 (249.5 KB)
              TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

allprotas@ubuntu:~$
```

192.168.221.4

toutes le machine sont dans le meme reseau

On teste la connectivite

```
Wireless LAN adapter Local Area Connection 10:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . .

Ethernet adapter VMnet1:
  Connection-specific DNS Suffix . . .
  Link-local IPv6 Address . . . . . : fe80::335c:9b5a:5d05:d4ea%7
  IPv4 Address. . . . . : 192.168.221.1
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . :

Wireless LAN adapter Wi-Fi:
  Connection-specific DNS Suffix . . .
  Link-local IPv6 Address . . . . . : fe80::dc43:933c:ba32:5319%21
  IPv4 Address. . . . . : 192.168.221.70
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : 192.168.221.2

Ethernet adapter vEthernet (Default Switch):
  Connection-specific DNS Suffix . . .
  Link-local IPv6 Address . . . . . : fe80::a43c:874b:e186:589c%47
  IPv4 Address. . . . . : 172.26.240.1
  Subnet Mask . . . . . : 255.255.240.0
  Default Gateway . . . . . :
```

```
C:\Users\ayhem>ping 192.168.221.3

Pinging 192.168.221.3 with 32 bytes of data:
Reply from 192.168.221.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.221.3:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\ayhem>
```

```
IPv4 Address . . . . . : 192.168.221.3
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :

Tunnel adapter isatap.localdomain:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . . localdomain

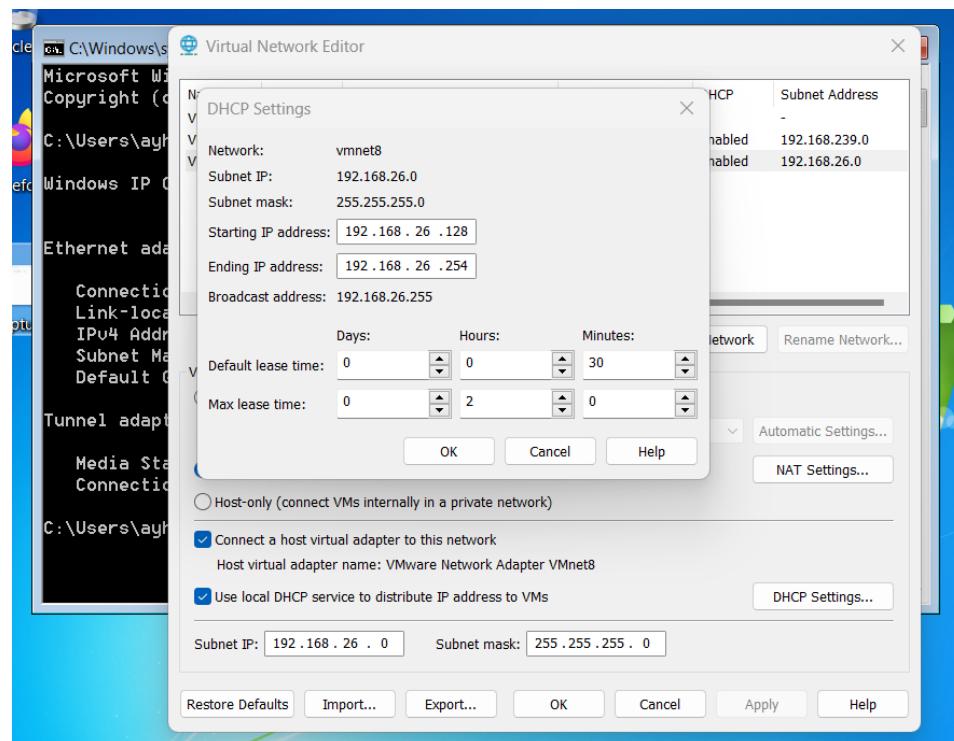
C:\Users\ayhem>ping 192.168.221.4

Pinging 192.168.221.4 with 32 bytes of data:
Reply from 192.168.221.4: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.221.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\ayhem>
```

## Mettre les VMs sur le mode de réseau virtuel NAT



```

C:\Windows\system32\cmd.exe
Tunnel adapter isatap.localdomain:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . : localdomain

C:\Users\ayhem>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

  Connection-specific DNS Suffix . : localdomain
  Link-local IPv6 Address . . . . . : fe80::15f2:d444:bf01:7f2a%11
  IPv4 Address . . . . . : 192.168.26.128
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : 192.168.26.2

Tunnel adapter isatap.localdomain:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . : localdomain

C:\Users\ayhem>

```

192.168.26.128

```

allprotas@ubuntu:~$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.26.129  netmask 255.255.255.0  broadcast 192.168.26.255
              inet6 fe80::495a:f954:20b2:aiff  prefixlen 64  scopeid 0x20<link>
                ether 00:0c:29:81:1a:03  txqueuelen 1000  (Ethernet)
                  RX packets 75278  bytes 108561828 (108.5 MB)
                  RX errors 0  dropped 0  overruns 0  frame 0
                  TX packets 12180  bytes 797194 (797.1 KB)
                  TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
              inet6 ::1  prefixlen 128  scopeid 0x10<host>
                loop  txqueuelen 1000  (Local Loopback)
                  RX packets 266  bytes 23117 (23.1 KB)
                  RX errors 0  dropped 0  overruns 0  frame 0
                  TX packets 266  bytes 23117 (23.1 KB)
                  TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

allprotas@ubuntu:~$ 

```

192.168.26.129

```

C:\Users\ayhem>ping 192.168.26.129

Pinging 192.168.26.129 with 32 bytes of data:
Reply from 192.168.26.129: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.26.129:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\ayhem>

```

ping de les vm vers l'hôte

```
C:\Users\ayhem>ping 192.168.221.70

Pinging 192.168.221.70 with 32 bytes of data:
Reply from 192.168.221.70: bytes=32 time=1ms TTL=128
Reply from 192.168.221.70: bytes=32 time=1ms TTL=128
Reply from 192.168.221.70: bytes=32 time=1ms TTL=128
Reply from 192.168.221.70: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.221.70:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\ayhem>
```

accéder vers l'internet a partir les vms

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

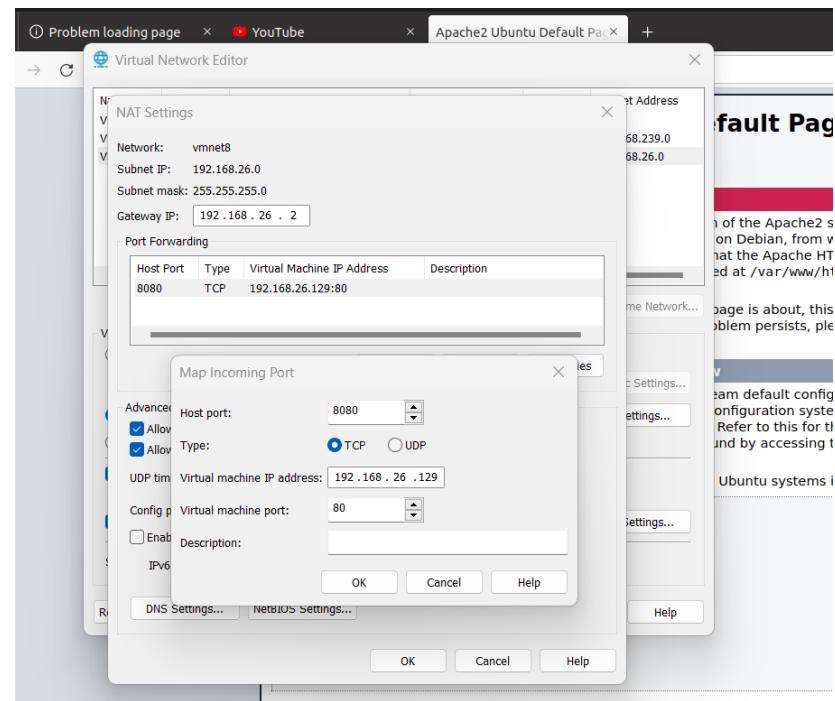
C:\Users\ayhem>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:
Reply from 8.8.8.8: bytes=32 time=76ms TTL=128
Reply from 8.8.8.8: bytes=32 time=49ms TTL=128
Reply from 8.8.8.8: bytes=32 time=63ms TTL=128
Reply from 8.8.8.8: bytes=32 time=59ms TTL=128

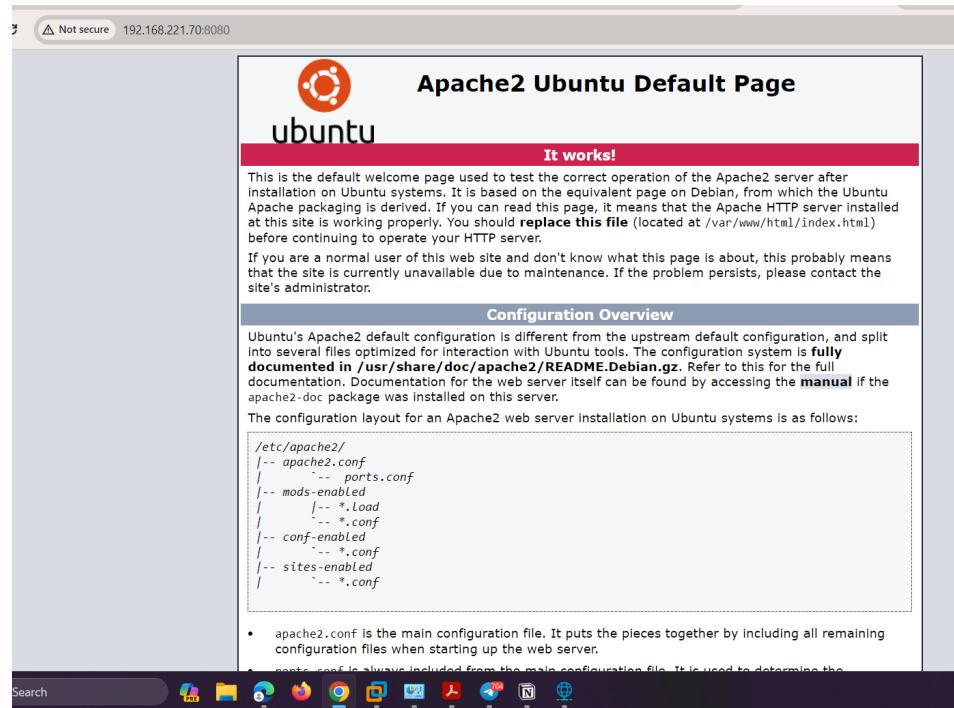
Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 49ms, Maximum = 76ms, Average = 61ms

C:\Users\ayhem>
```

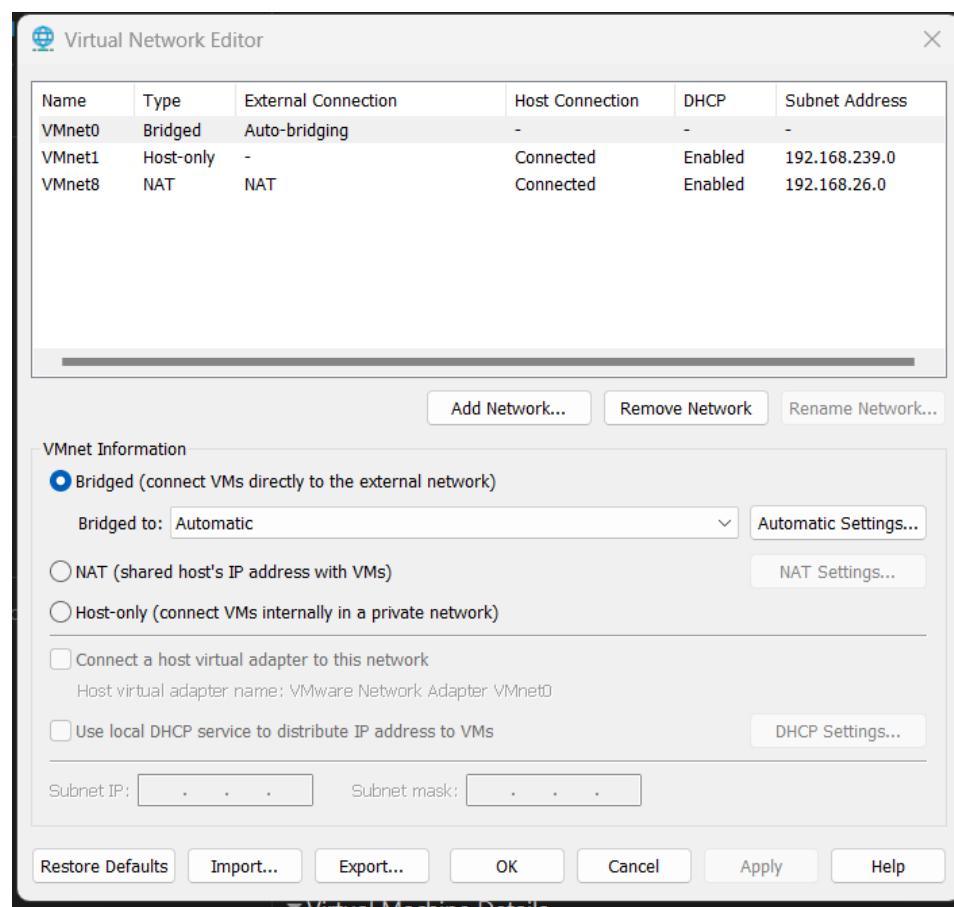
## Port forwarding



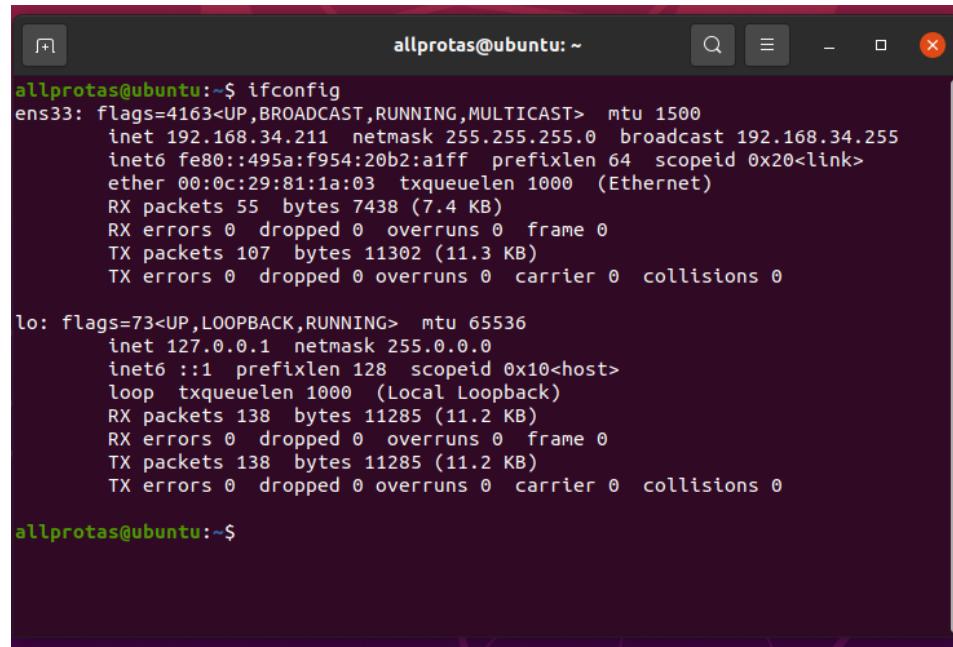
on peut accéder vers le server apache a travers notre host



## 8. Mettre les VMs sur le mode de réseau virtuel Bridged.



### L'attribution des addresses IP Host

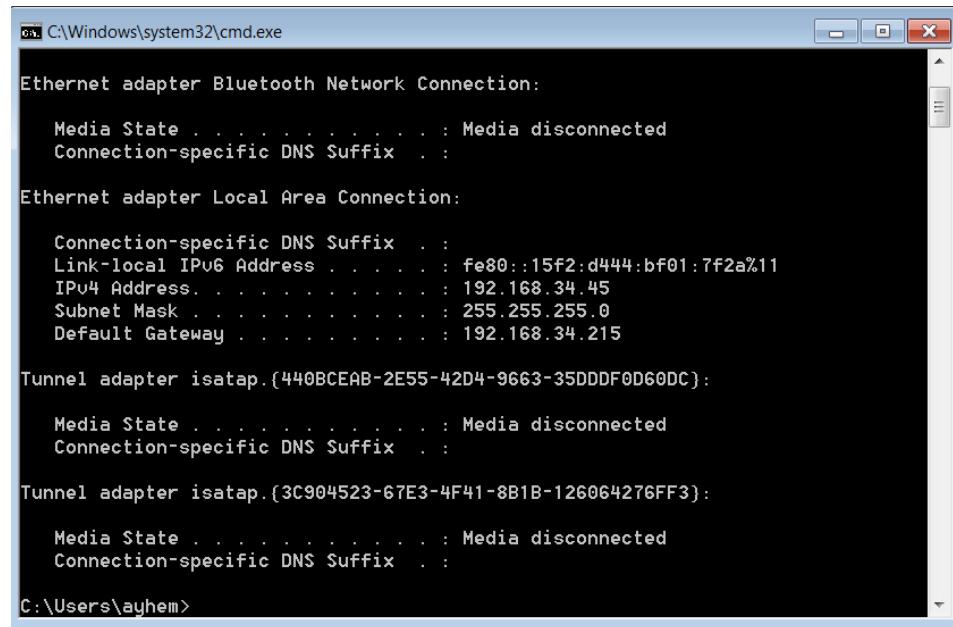


```
allprotas@ubuntu:~$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.34.211  netmask 255.255.255.0  broadcast 192.168.34.255
              inet6 fe80::495a:f954:20b2:a1ff  prefixlen 64  scopeid 0x20<link>
                ether 00:0c:29:81:1a:03  txqueuelen 1000  (Ethernet)
                  RX packets 55  bytes 7438 (7.4 KB)
                  RX errors 0  dropped 0  overruns 0  frame 0
                  TX packets 107  bytes 11302 (11.3 KB)
                  TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
              inet6 ::1  prefixlen 128  scopeid 0x10<host>
                loop  txqueuelen 1000  (Local Loopback)
                  RX packets 138  bytes 11285 (11.2 KB)
                  RX errors 0  dropped 0  overruns 0  frame 0
                  TX packets 138  bytes 11285 (11.2 KB)
                  TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

allprotas@ubuntu:~$
```

Ubuntu → 192.168.34.211



```
C:\Windows\system32\cmd.exe

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . .

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix . . .
    Link-local IPv6 Address . . . . . : fe80::15f2:d444:bf01:7f2a%11
    IPv4 Address. . . . . : 192.168.34.45
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.34.215

Tunnel adapter isatap.{440BCEAB-2E55-42D4-9663-35DDDF0D60DC}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . .

Tunnel adapter isatap.{3C904523-67E3-4F41-8B1B-126064276FF3}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . .

C:\Users\ayhem>
```

Windows7 → 192.168.34.45

```

Command Prompt

Wireless LAN adapter Wi-Fi:
  Connection-specific DNS Suffix  . :
  Link-local IPv6 Address . . . . . : fe80::ae1f:f752:1894:6fba%21
  IPv4 Address . . . . . : 192.168.34.99
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : 192.168.34.215

Ethernet adapter Bluetooth Network Connection:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix  . :

C:\Users\ayhem>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:
Reply from 8.8.8.8: bytes=32 time=101ms TTL=114
Reply from 8.8.8.8: bytes=32 time=101ms TTL=114
Reply from 8.8.8.8: bytes=32 time=110ms TTL=114
Reply from 8.8.8.8: bytes=32 time=82ms TTL=114

Ping statistics for 8.8.8.8:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 82ms, Maximum = 110ms, Average = 98ms

C:\Users\ayhem>

```

Host → 192.168.34.99

Toutes les machine sont dans le même sous réseau , et la machine host est connecté à l'internet (on peut pinger 8.8.8.8) La passerelle par défaut est : 192.168.34.215

## Test de connectivité entre les machines

```

allprotas@ubuntu:~$ ping 192.168.34.45
PING 192.168.34.45 (192.168.34.45) 56(84) bytes of data.
64 bytes from 192.168.34.45: icmp_seq=1 ttl=128 time=1.06 ms
64 bytes from 192.168.34.45: icmp_seq=2 ttl=128 time=1.02 ms
64 bytes from 192.168.34.45: icmp_seq=3 ttl=128 time=1.15 ms
64 bytes from 192.168.34.45: icmp_seq=4 ttl=128 time=1.32 ms
64 bytes from 192.168.34.45: icmp_seq=5 ttl=128 time=0.984 ms
64 bytes from 192.168.34.45: icmp_seq=6 ttl=128 time=1.07 ms
64 bytes from 192.168.34.45: icmp_seq=7 ttl=128 time=0.989 ms
^C

```

ping ubuntu vers windows7

```

C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\ayhem>ping 192.168.34.211

Pinging 192.168.34.211 with 32 bytes of data:
Reply from 192.168.34.211: bytes=32 time=1ms TTL=64
Reply from 192.168.34.211: bytes=32 time<1ms TTL=64
Reply from 192.168.34.211: bytes=32 time<1ms TTL=64
Reply from 192.168.34.211: bytes=32 time=1ms TTL=64

```

ping windows7 vers ubuntu

```
C:\Users\ayhem>ping 192.168.34.45

Pinging 192.168.34.45 with 32 bytes of data:
Reply from 192.168.34.45: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.34.45:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\ayhem>ping 192.168.34.211

Pinging 192.168.34.211 with 32 bytes of data:
Reply from 192.168.34.211: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.34.211:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

ping windows ver ubuntu et windows7

## Teste de connectivite vers l'internet

```
C:\Users\ayhem>ping google.com

Pinging google.com [216.58.198.78] with 32 bytes of data:
Reply from 216.58.198.78: bytes=32 time=74ms TTL=114
Reply from 216.58.198.78: bytes=32 time=78ms TTL=114
Reply from 216.58.198.78: bytes=32 time=119ms TTL=114
Reply from 216.58.198.78: bytes=32 time=78ms TTL=114

Ping statistics for 216.58.198.78:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 74ms, Maximum = 119ms, Average = 87ms

C:\Users\ayhem>
```

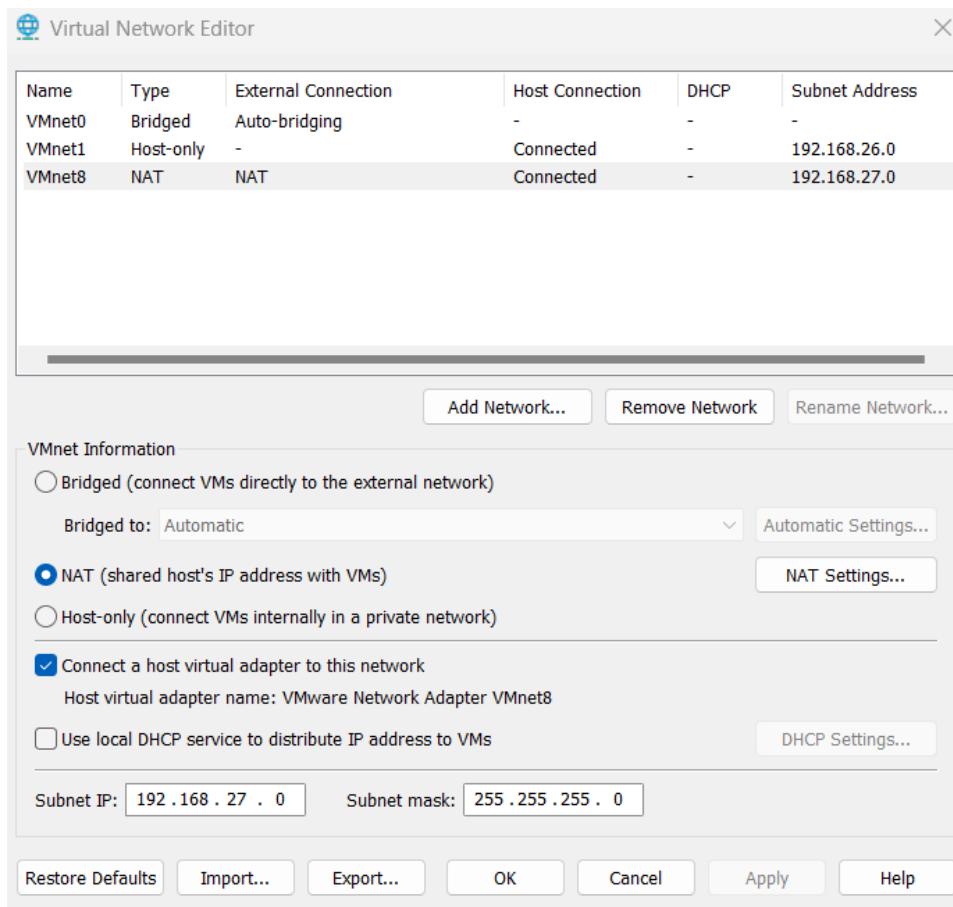
Windows7 peut connecter a l'internet

```
allprotos@ubuntu:~$ ping google.com
PING google.com (216.58.198.78) 56(84) bytes of data.
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=1 ttl=114 time=126 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=2 ttl=114 time=101 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=3 ttl=114 time=136 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=4 ttl=114 time=95.5 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=5 ttl=114 time=106 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=6 ttl=114 time=87.7 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=7 ttl=114 time=81.9 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=8 ttl=114 time=94.7 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=9 ttl=114 time=167 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=10 ttl=114 time=89.7 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=11 ttl=114 time=84.0 ms
64 bytes from mrs09s08-in-f14.1e100.net (216.58.198.78): icmp_seq=12 ttl=114 time=137 ms
^C
```

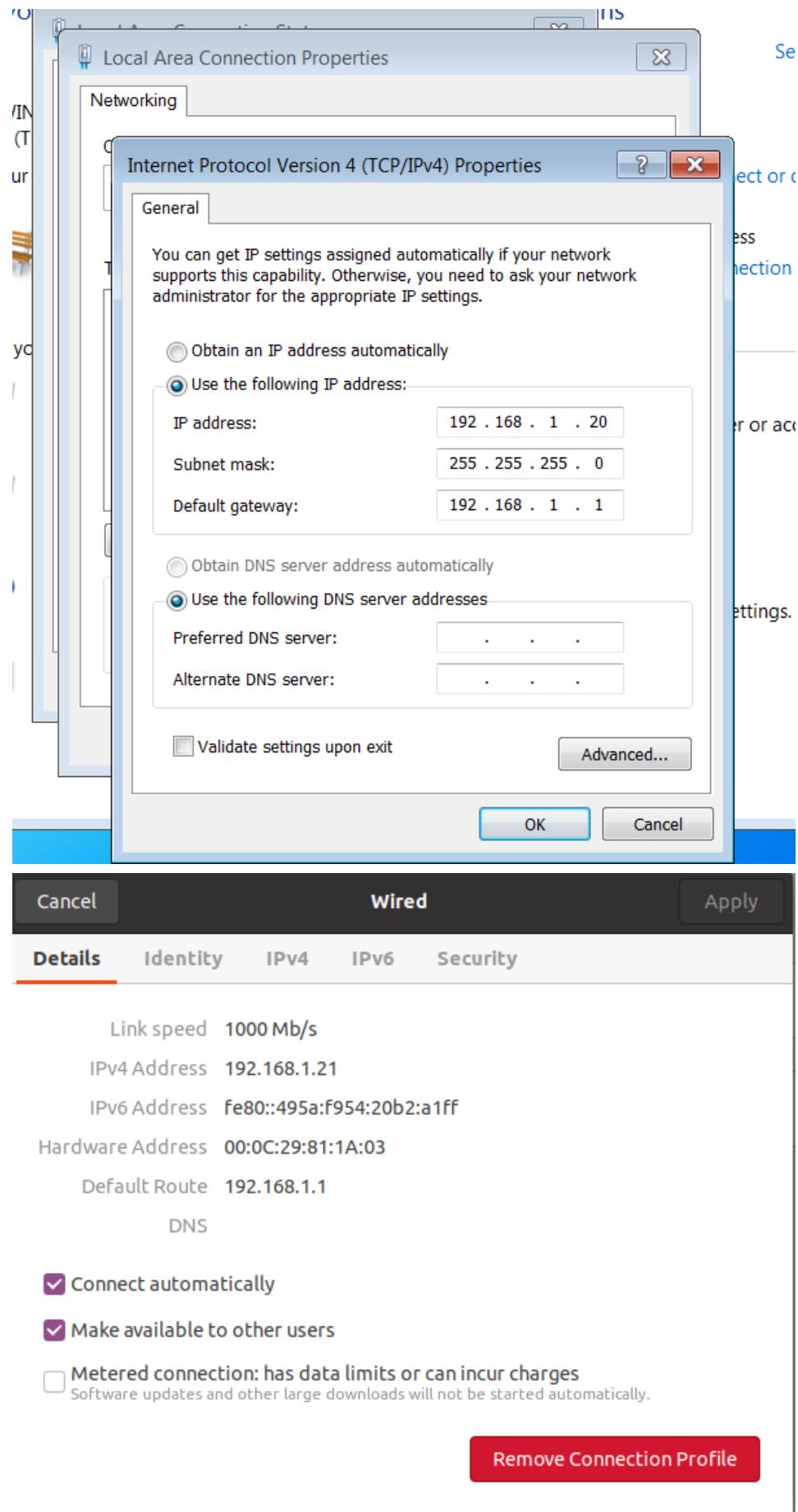
Ubuntu peut connecter a l'internet

## 9. Mettre les deux VMs sur deux modes de réseau virtuel différents (une VM sur le Nat et autre sur Host-Only)

Le server DHCP est désactivé dans les deux vm Windows7 → NAT Ubuntu → Host-Only

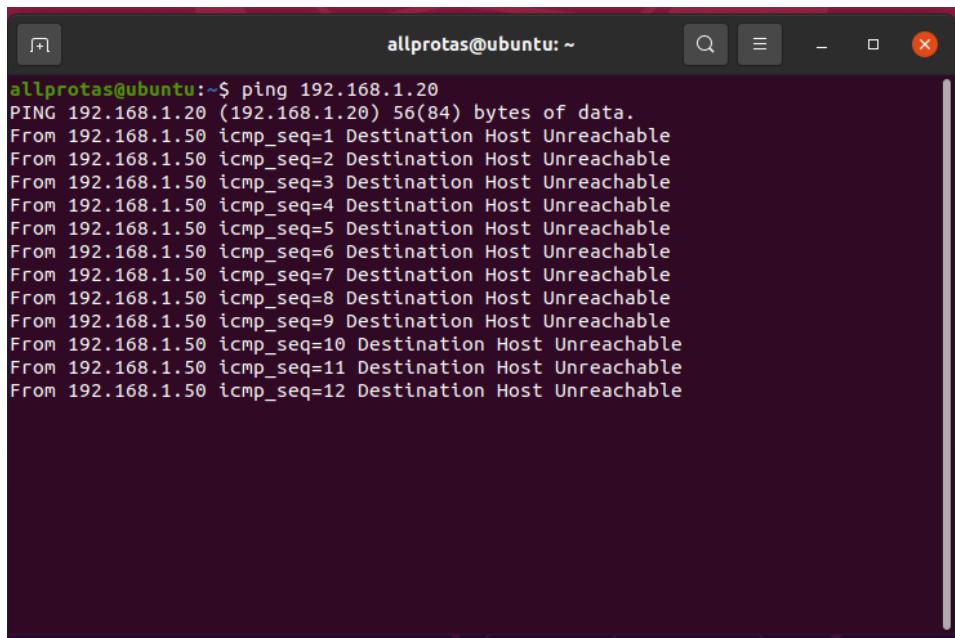


On va attribuer un ip static pour chacune des machines virtuelles



ip ubuntu : 192.168.1.21

ip windows7 : 192.168.1.20



The screenshot shows a terminal window titled "allprotas@ubuntu: ~". The user has run the command "ping 192.168.1.20". Instead of receiving a response, the terminal displays a series of ICMP error messages. Each message is a "Destination Host Unreachable" response with an increasing sequence number (icmp\_seq=1 to icmp\_seq=12) from the source IP 192.168.1.50.

```
allprotas@ubuntu:~$ ping 192.168.1.20
PING 192.168.1.20 (192.168.1.20) 56(84) bytes of data.
From 192.168.1.50 icmp_seq=1 Destination Host Unreachable
From 192.168.1.50 icmp_seq=2 Destination Host Unreachable
From 192.168.1.50 icmp_seq=3 Destination Host Unreachable
From 192.168.1.50 icmp_seq=4 Destination Host Unreachable
From 192.168.1.50 icmp_seq=5 Destination Host Unreachable
From 192.168.1.50 icmp_seq=6 Destination Host Unreachable
From 192.168.1.50 icmp_seq=7 Destination Host Unreachable
From 192.168.1.50 icmp_seq=8 Destination Host Unreachable
From 192.168.1.50 icmp_seq=9 Destination Host Unreachable
From 192.168.1.50 icmp_seq=10 Destination Host Unreachable
From 192.168.1.50 icmp_seq=11 Destination Host Unreachable
From 192.168.1.50 icmp_seq=12 Destination Host Unreachable
```

On peut pas faire une connection entre le windows et ubuntu