

## Mininet and XQuartz setup for **MAC** USERS

### Step 1: - Download and Install Virtualbox from link given below: -

<https://www.virtualbox.org/wiki/Downloads> (Click on OS X host)

#### VirtualBox 6.0.4 platform packages

- [Windows hosts](#)
- [OS X hosts](#)
- [Linux distributions](#)
- [Solaris hosts](#)

The binaries are released under the terms of the GPL version 2.

See the [changelog](#) for what has changed.

### Step 2: - Download and unzip Mininet Vm from Link Given below: -

<https://github.com/mininet/mininet/wiki/Mininet-VM-Images>


Click on: - 64 bit or 32 bit as required: -

- **Mininet 2.2.2 on Ubuntu 14.04 LTS - 64 bit** (recommended for most modern hardware and operating systems) ([sha256](#))
- **Mininet 2.2.2 on Ubuntu 14.04 LTS - 32 bit** (recommended for Windows users using VirtualBox or Hyper-V) ([sha256](#))

### Step 3: - Download and Install XQuartz from Link Given below: -

<https://www.xquartz.org/>

## Quick Download

Download	Version	Released	Info
 <a href="#">XQuartz-2.7.11.dmg</a>	2.7.11	2016-10-29	For OS X 10.6.3 or later

## Step 4: -

Open the unzipped Mininet folder and double click on “OVF”.



### Appliance settings

These are the virtual machines contained in the appliance and the suggested settings of the imported VirtualBox machines. You can change many of the properties shown by double-clicking on the items and disable others using the check boxes below.

CPU	1
RAM	1024 MB
USB Controller	<input checked="" type="checkbox"/>
Network Adapter	<input checked="" type="checkbox"/> Intel PRO/1000 MT Server (82545EM)
Storage Controller (SCSI)	LsiLogic
Virtual Disk Image	mininet-vm-x86_64.vmdk
Base Folder	/Users/mananthakkar/VirtualBox VMs
Primary Group	/

You can modify the base folder which will host all the virtual machines. Home folders can also be individually (per virtual machine) modified.

MAC Address Policy:

Additional Options: ☒ Import hard drives as VDI

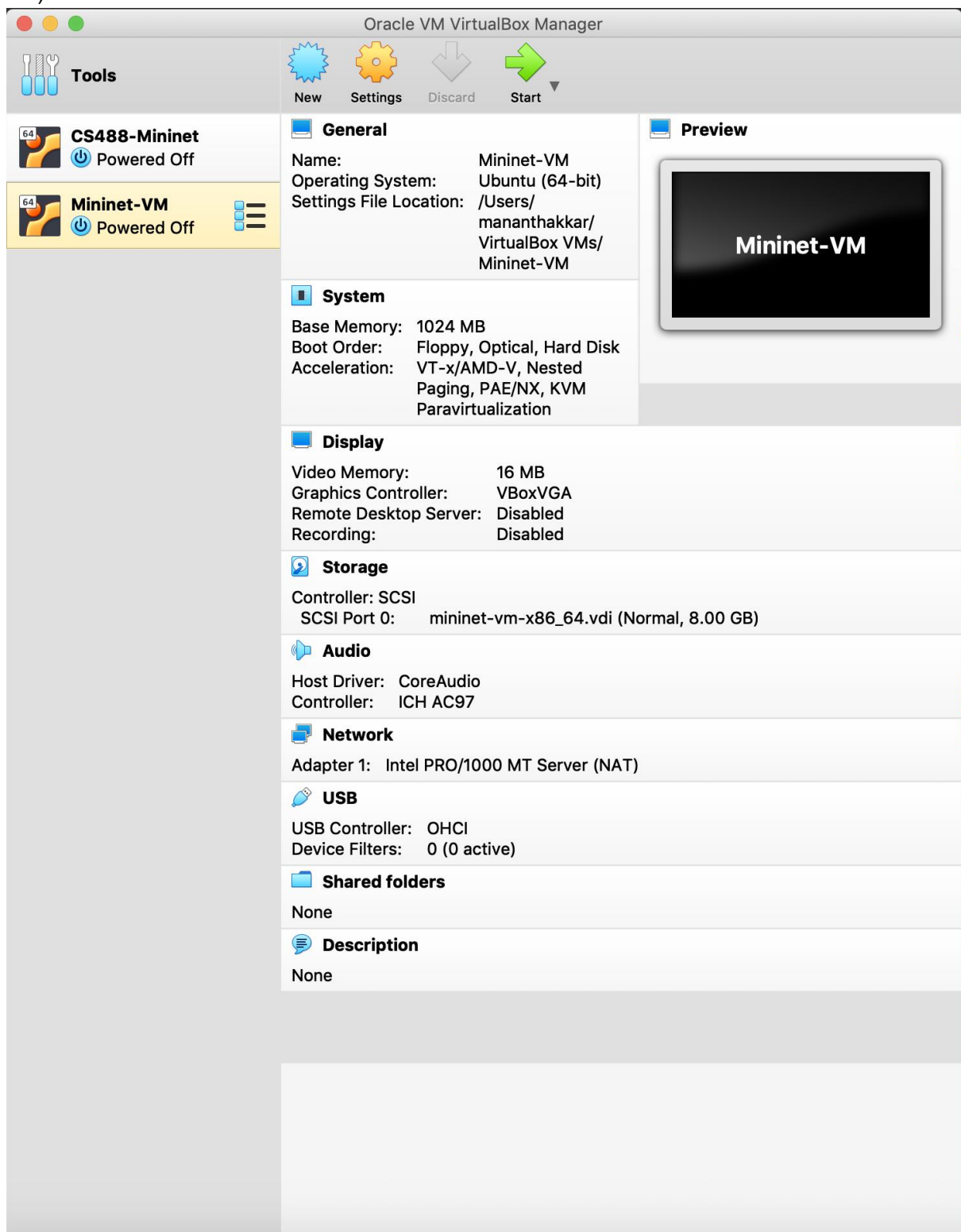
Appliance is not signed

**Step 1: -**

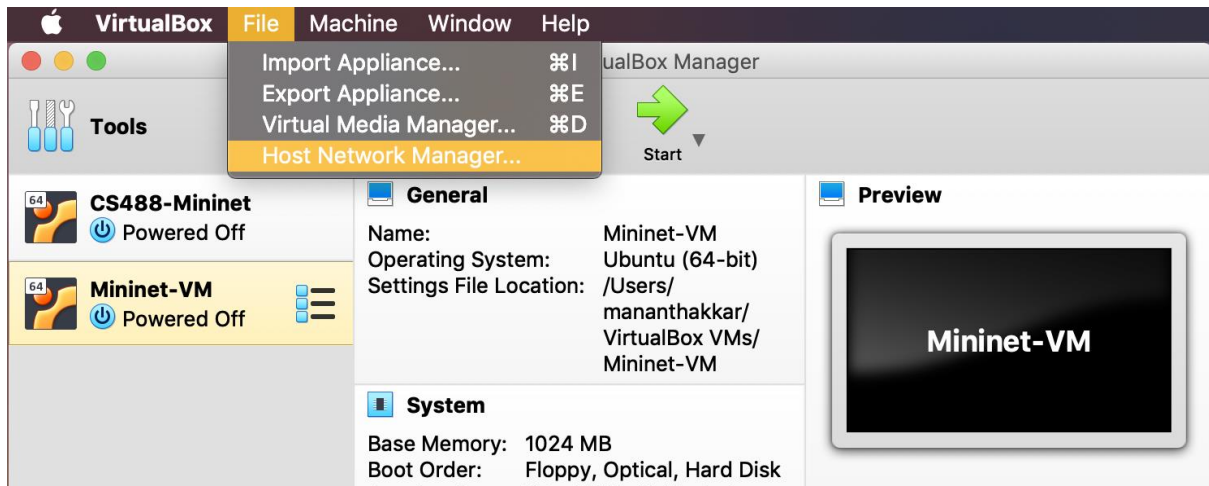
**Step 2: -**

Restore Defaults Go Back **Import** Cancel

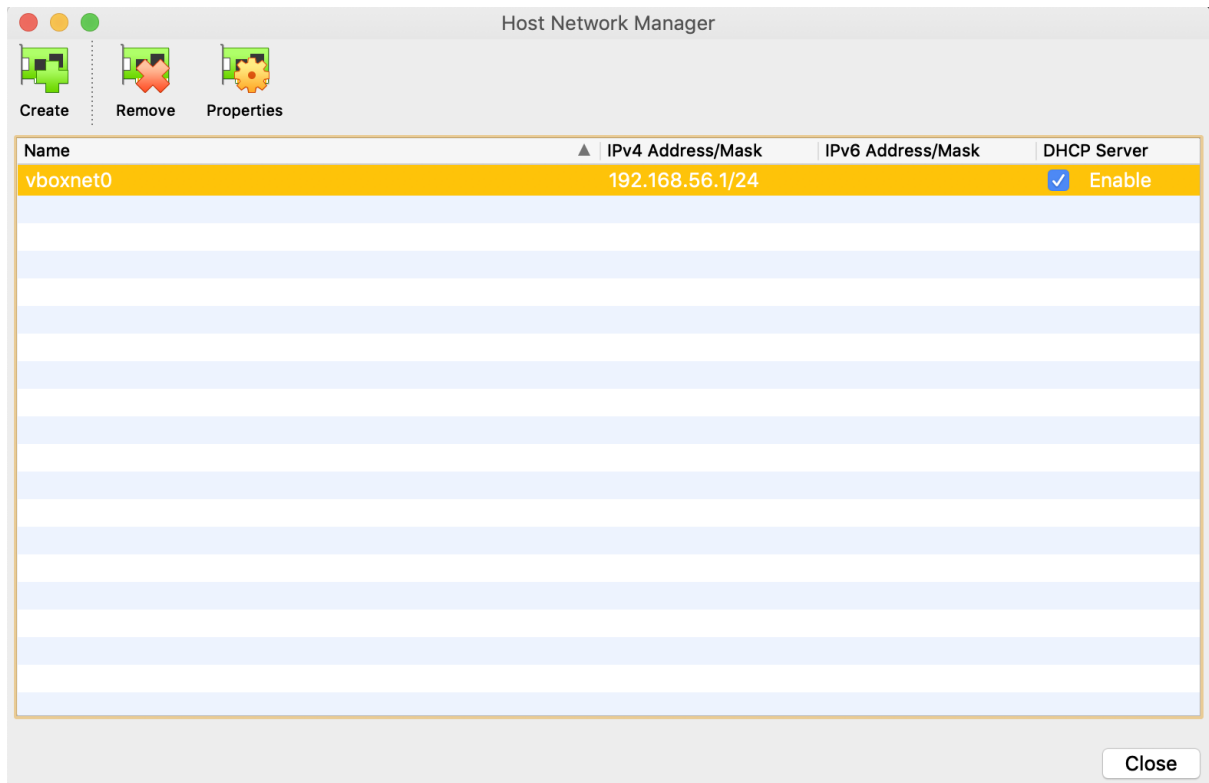
After importing: - You will have something like this (eg: -Mininet VM, or whatever name you set):-



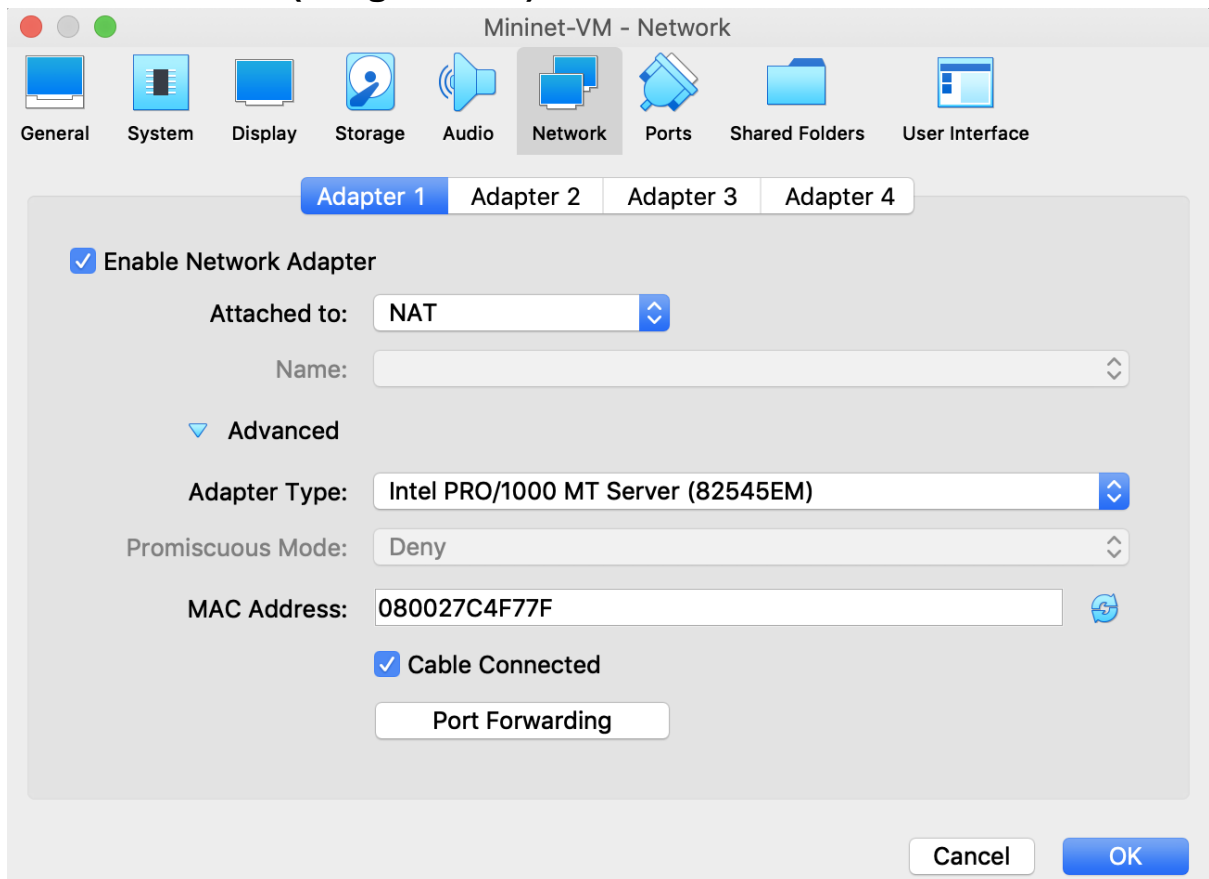
**Step 5: - Go to file on top and select Host Network Manager: -**



**NOTE: - if your host manager is empty and has not files then click on create (top left) and it should create something like this (in the image below - vboxnet0). Make sure the DHCP server of Host network is “ENABLED” Close the window after that.**

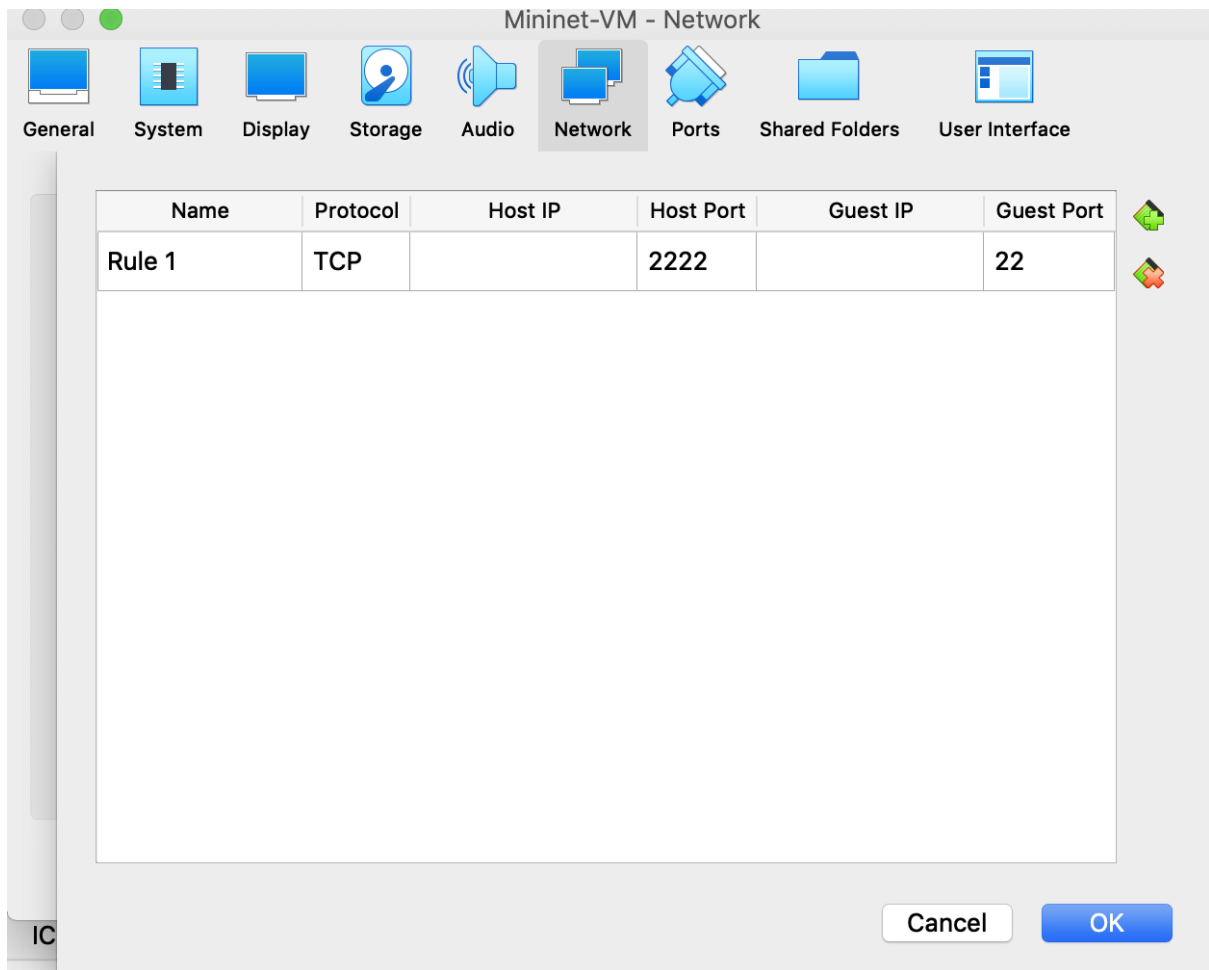


**Step 6: - Go to the setting of the VM and go to network and you should see this (Image below): -**

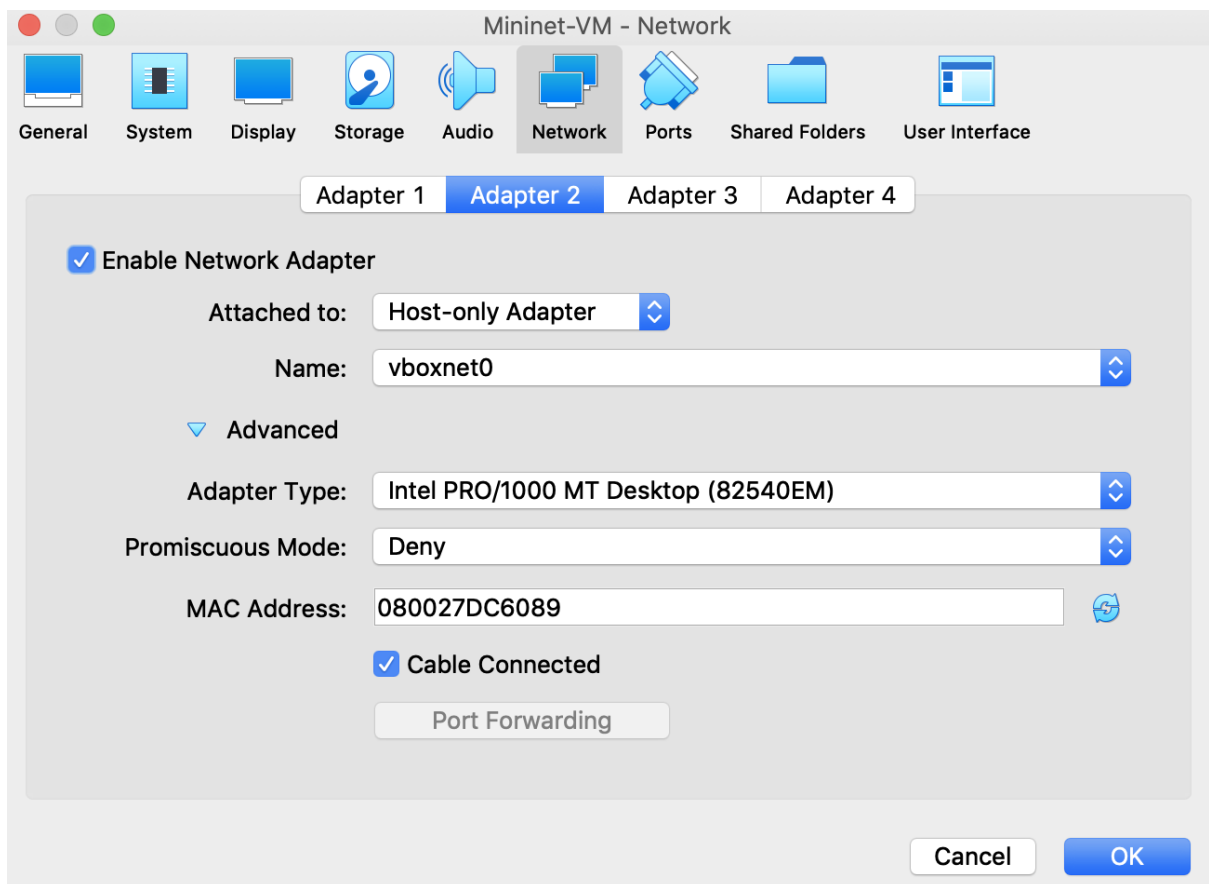


Note: - it should open Adapter 1 that is attached to NAT, and if you Advance dialog box is closed click on down arrow and it should open up.

**Step 7: - after advance drops down click on Port Forwarding and create Rule 1 if it is empty and put Host Port as “2222” and GuestPort and “22”. And click “Ok”.**

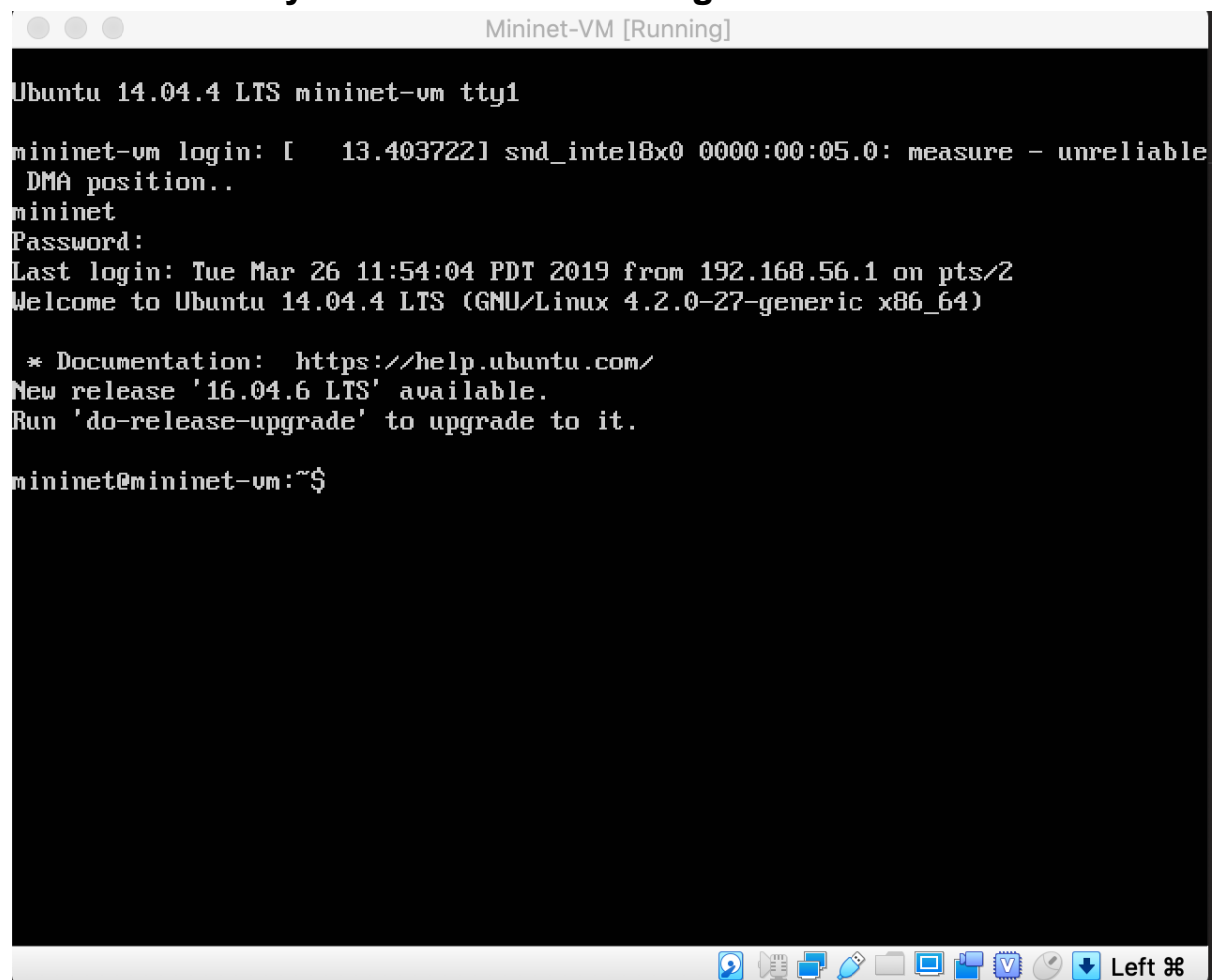


**Step 8: - Go to Adapter 2 and enable it and select “Attached to:” as “Host-only Adapter” and it should automatically give the name if the Host address we created (i.e. vboxnet0). If not please select it manually and Click on “Ok”.**



**Step 9: - Run the VM and enter the ID as “mininet” and Pass as**

“mininet”. And you will have something like this.



```
Mininet-VM [Running]
Ubuntu 14.04.4 LTS mininet-vm tty1
mininet-vm login: [ 13.403722] snd_intel8x0 0000:00:05.0: measure - unreliable
DMA position..
mininet
Password:
Last login: Tue Mar 26 11:54:04 PDT 2019 from 192.168.56.1 on pts/2
Welcome to Ubuntu 14.04.4 LTS (GNU/Linux 4.2.0-27-generic x86_64)

 * Documentation:  https://help.ubuntu.com/
New release '16.04.6 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

mininet@mininet-vm:~$
```

The screenshot shows a terminal window titled "Mininet-VM [Running]". The terminal output displays the Ubuntu 14.04.4 LTS login sequence, including system messages about DMA position, the user "mininet" logging in, a password prompt, and a last login message from 192.168.56.1. It also shows system announcements for documentation and a new release. The prompt "mininet@mininet-vm:~\$" is visible at the bottom of the terminal area. The window has a standard macOS-style title bar and a dock at the bottom with various application icons.



**Step 10: - Run command ( in specific order):** - 1) `sudo dhclient eth1`  
2) `ifconfig`

And now you should have something like this : -

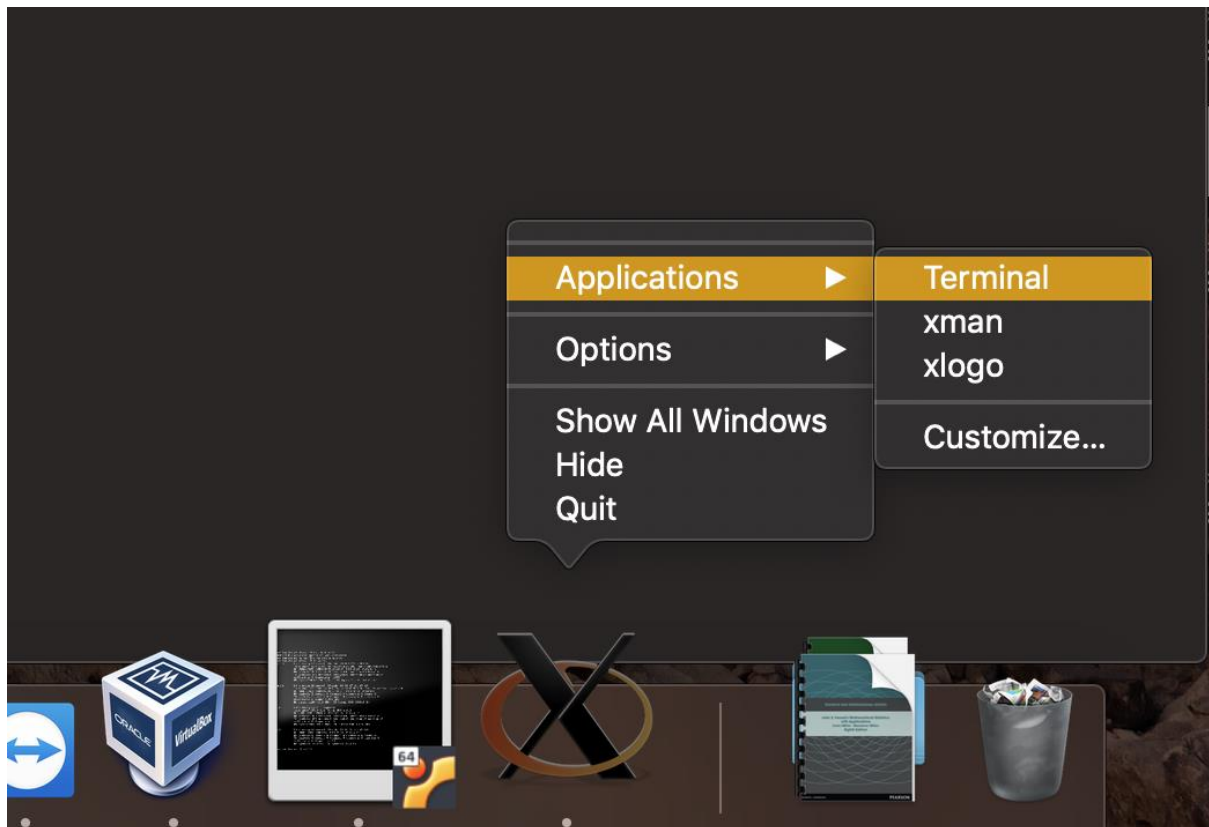
```
CS488-Mininet [Running]
mininet@mininet-vm:~$ dhclient eth1
RTNETLINK answers: Operation not permitted
mininet@mininet-vm:~$ sudo dhclient eth1
mininet@mininet-vm:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:b6:98:98
          inet addr:10.0.2.15  Bcast:10.0.2.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:190 errors:0 dropped:0 overruns:0 frame:0
          TX packets:192 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:18612 (18.6 KB)  TX bytes:17264 (17.2 KB)

eth1      Link encap:Ethernet  HWaddr 08:00:27:2c:e7:10
          inet addr:192.168.56.101  Bcast:192.168.56.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:2 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1180 (1.1 KB)  TX bytes:684 (684.0 B)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:168 errors:0 dropped:0 overruns:0 frame:0
          TX packets:168 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:8400 (8.4 KB)  TX bytes:8400 (8.4 KB)
```

In eth1 you will see the “inet addr” that is the IP of VM and we will connect that to host using XQuartz.

**Step 11: - Install XQuartz and Run the application and open the terminal.**



This is how XQuartz looks like and run the command

`"ssh -X mininet@192.168.56.101"`. **Note** : -(192.168.56.101) is my IP which I found in VM under eth1. Can be same or different from you. Use your IP and run the command. Its

prompts to enter the password, which is "mininet".

A terminal window titled "mininet@mininet-vm: ~" showing an SSH session. The user runs "ssh -X mininet@192.168.56.101". The terminal displays the password prompt, a welcome message for Ubuntu 14.04.4 LTS, documentation links, a new release notification for 16.04.6 LTS, and the last login time. The prompt returns to "mininet@mininet-vm:~\$".

```
bash-3.2$ ssh -X mininet@192.168.56.101
mininet@192.168.56.101's password:
Welcome to Ubuntu 14.04.4 LTS (GNU/Linux 4.2.0-27-generic x86_64)

 * Documentation:  https://help.ubuntu.com/
New release '16.04.6 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Tue Mar 26 18:21:04 2019
mininet@mininet-vm:~$
```

Now your VM is connect to the host and you can run the command such as: -

- 1) `sudo wireshark &`
- 2) `xterm h1`
- 3) `xterm h2`
- 4) `sudo mn`
  - a) `h1 pings h2`

## You can install eclipse using three command

- 1) `sudo apt-get update`
- 2) `sudo apt-get install openjdk-7-jdk`
- 3) `sudo apt-get install eclipse-platform`
- 4) After installing "`sudo eclipse &`"

Note: - opening wireshark and eclipse for first time might take long to open so wait for few seconds or a min and then proceed".