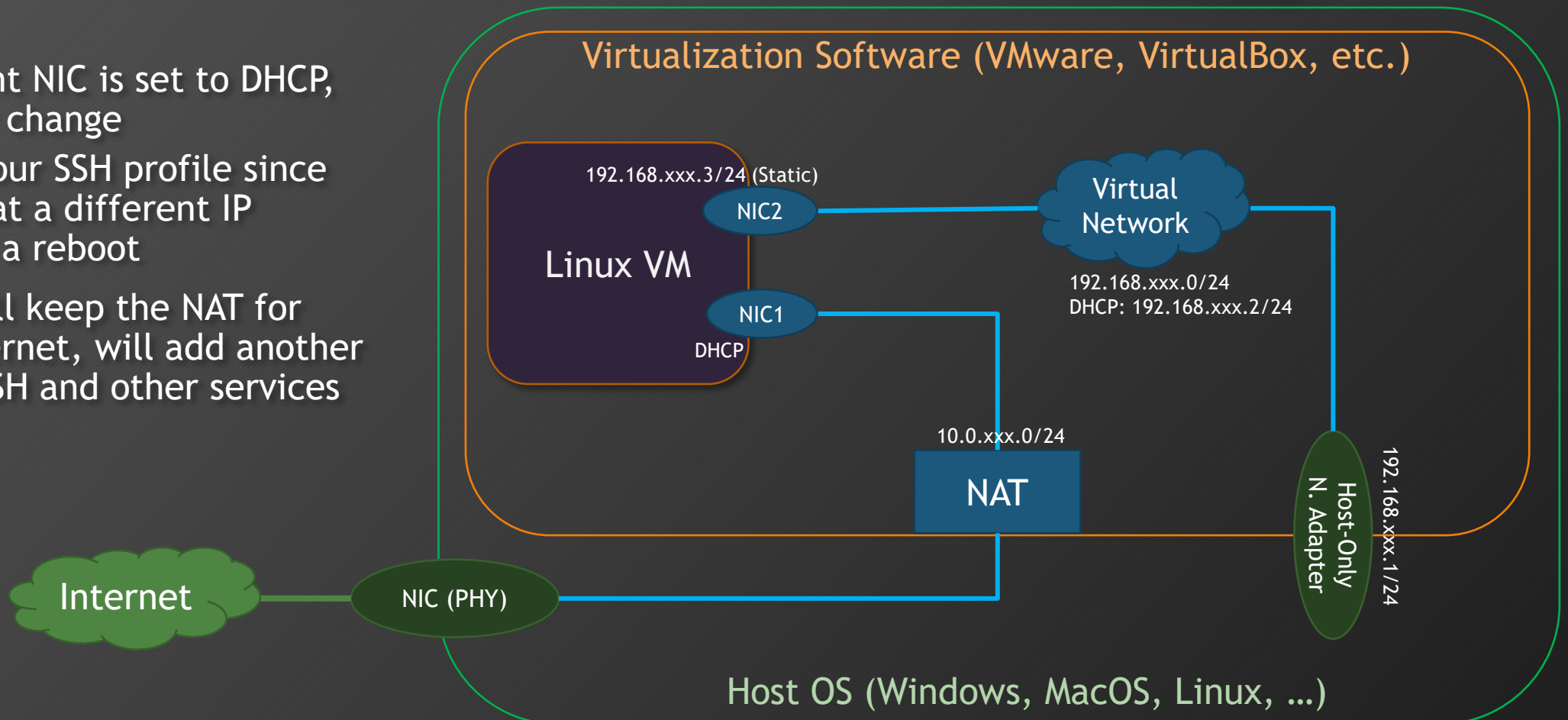


LAB3: Adding a second network interface

NIC with static IP for reliable server

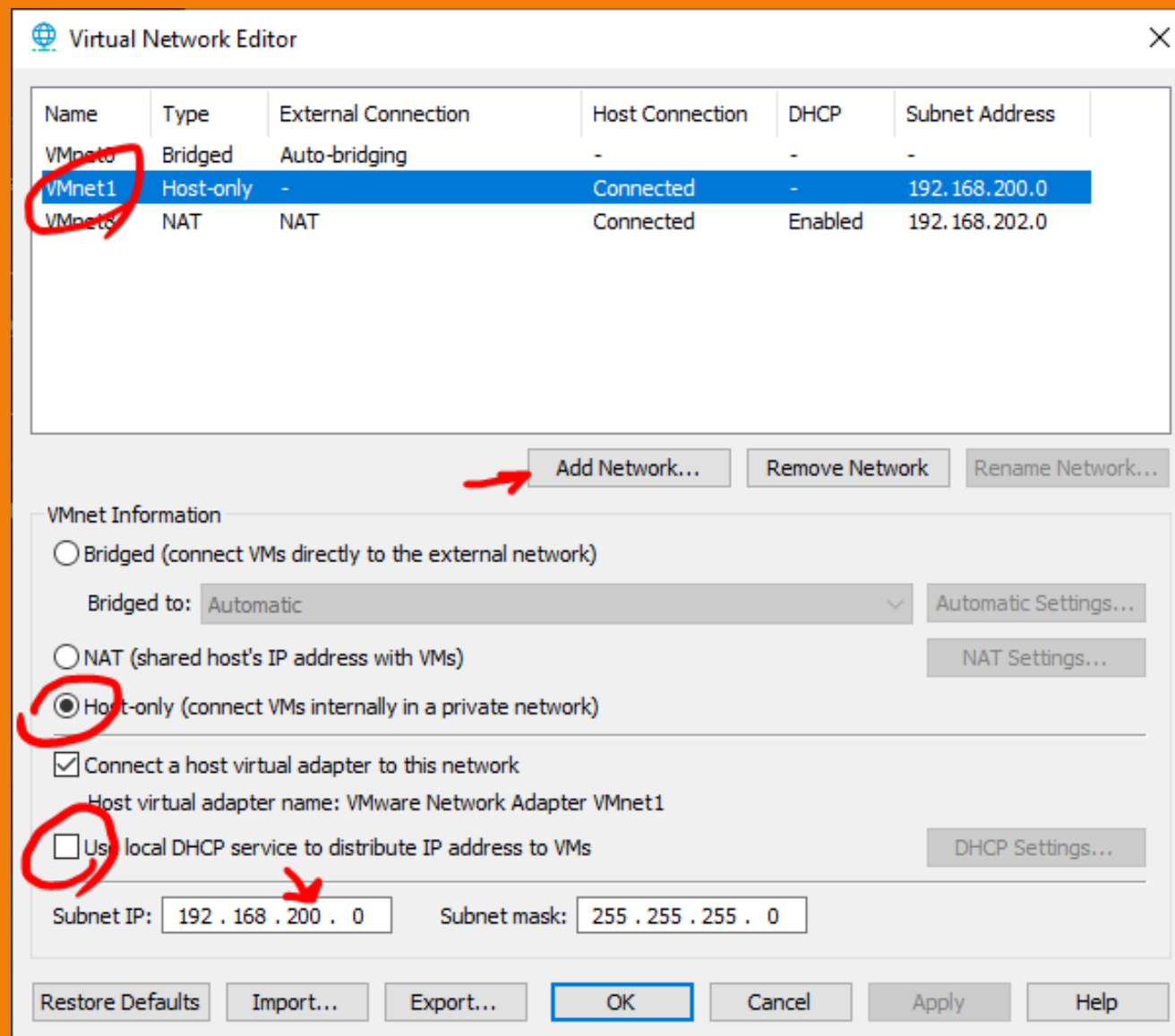
Objective

- Since our current NIC is set to DHCP, its IP address may change
 - This breaks your SSH profile since the server is at a different IP address after a reboot
- Solution: We will keep the NAT for connecting to Internet, will add another network for our SSH and other services



Step 1: Create a New Virtual Network (VMware)

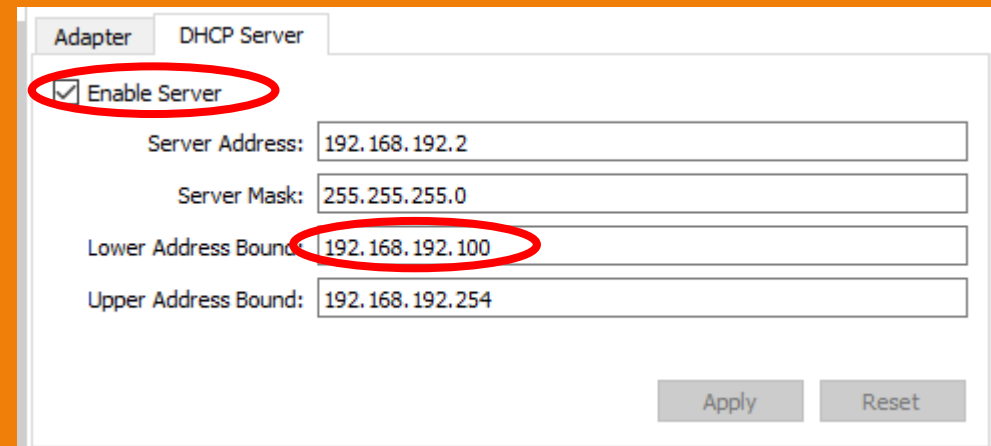
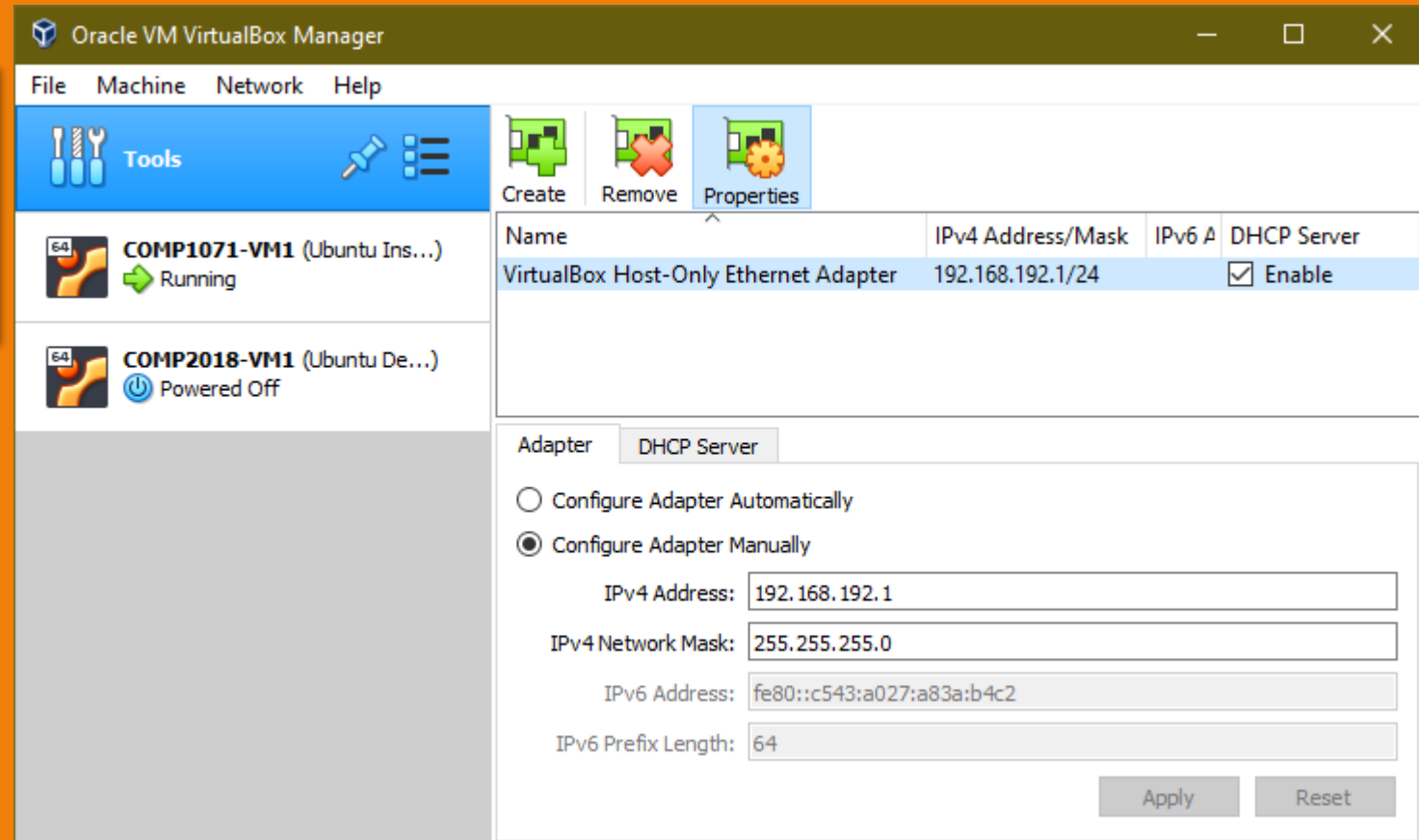
- In VMware Workstation go to “Edit” -> “Virtual Network Editor”
- Click on the “Change Settings” button
- Click on “Add Network”
- Set the settings similar to screenshot
 - Exact IP address and network name is probably going to be different
 - Select “Host Only” radio button
 - Uncheck “Use local DHCP service ...”
 - Set IP address of the network to what you like (or keep the same)
 - Remember the name of this Virtual Network (“VMnet1” here)
- Hit “Apply” and “OK”



Step 1: Create a New Virtual Network (VirtualBox)

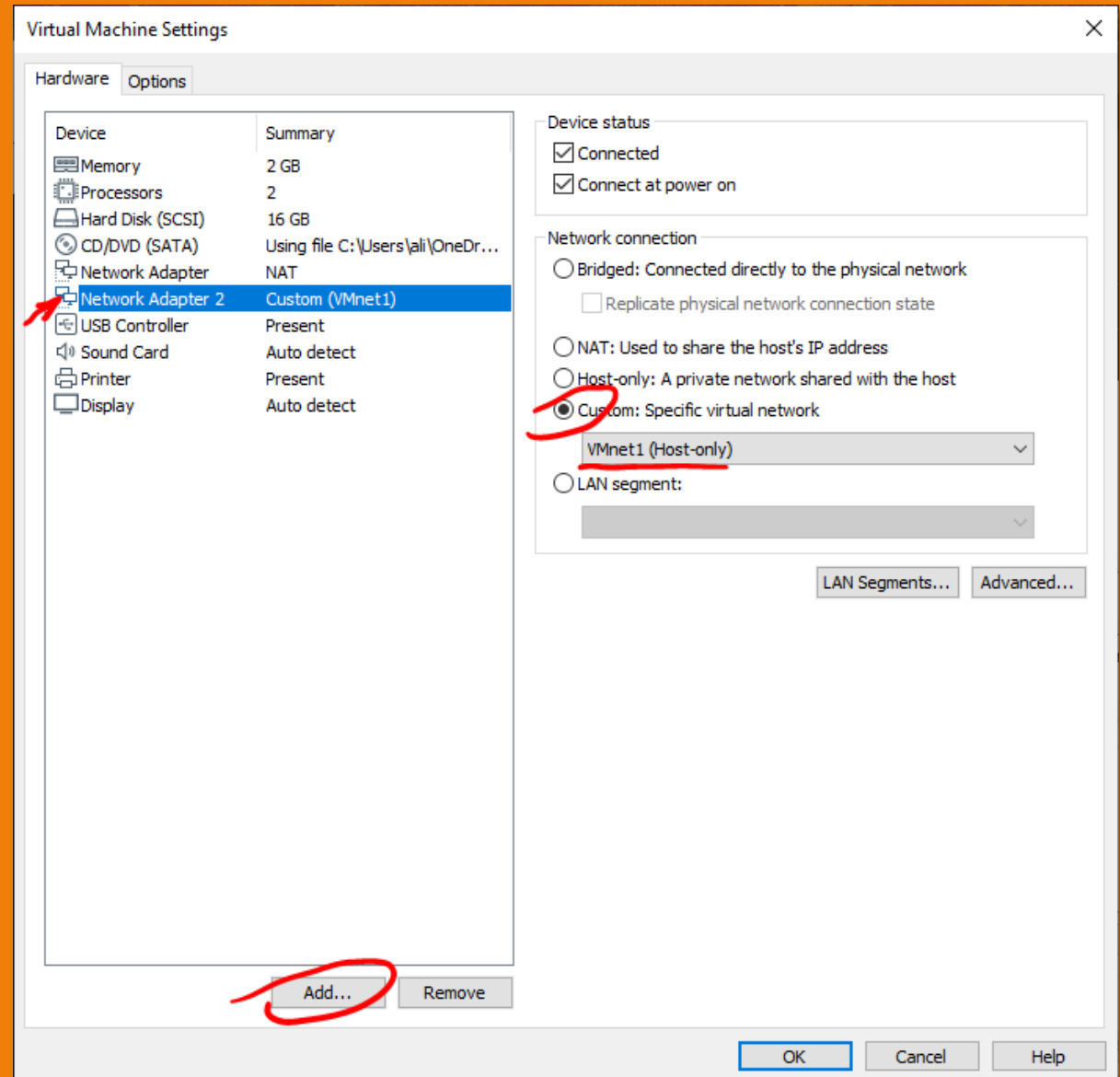
- In VirtualBox click on Tools -> Networks
- If there is no network create a new network.
- You can either just **disable DHCP**, or set the DHCP address range to start from 100 (so the lower addresses are available to be assigned manually)
- Hit Apply.

NOTICE: If you make changes to an existing Host-Only adapter on this screen, you may need to stop your VMs and start them again, or reboot your host operating system for the changes to fully take effect.



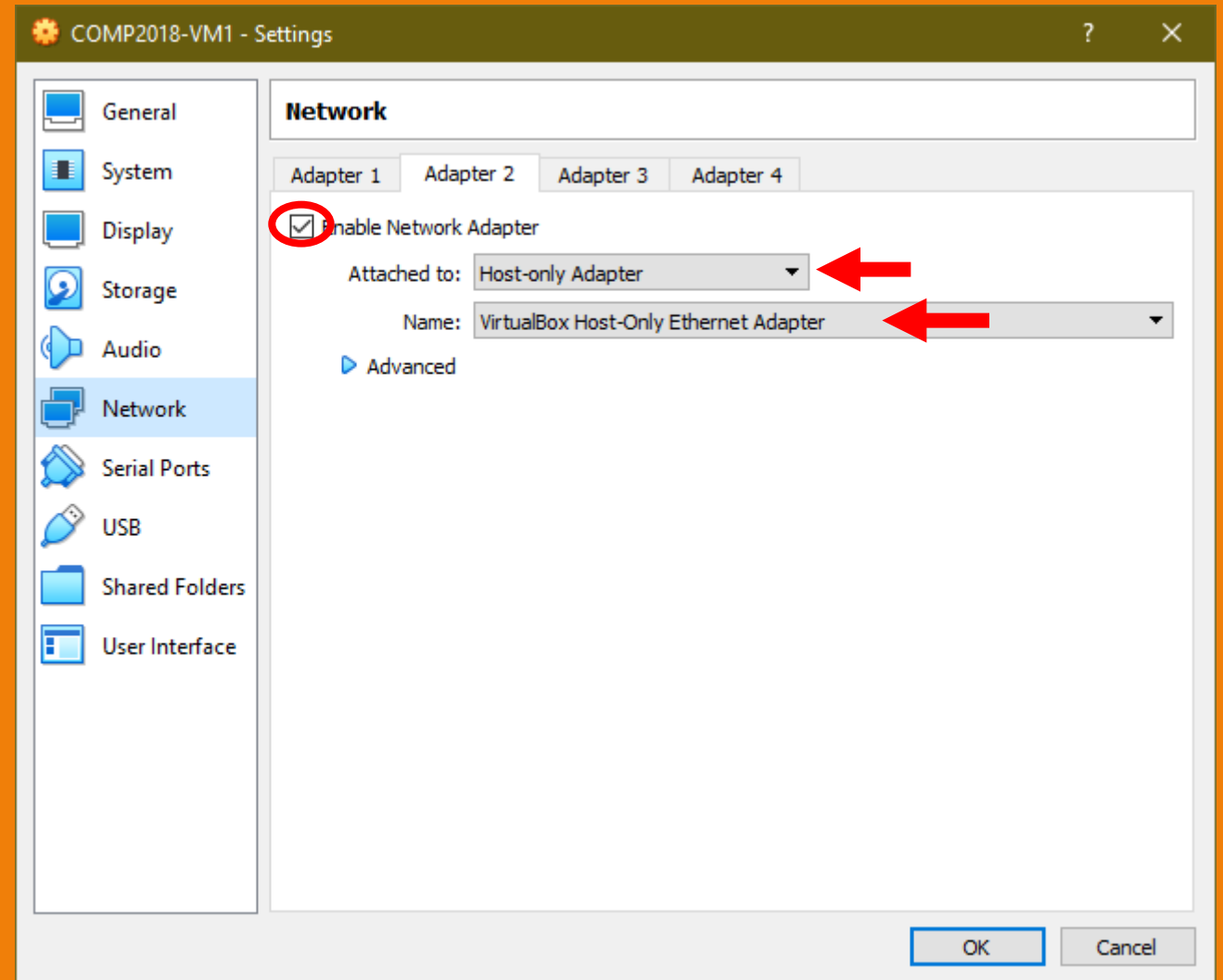
Step 2: Add 2nd NIC to your VM (VMware)

- Open your Linux VM Settings (“VM” -> “Settings...” or Ctrl+D)
- Click on Add... button
- Select “Network Adapter” and hit “Finished”
- Click on the newly added Network Adapter
- Select “Custom” radio button
- Select the VMnet that you configured in the last step



Step 2: Add 2nd NIC to your VM (VirtualBox)

- Open your Linux VM Settings by selecting the VM, “Machine” -> “Settings”
- Click on “Network”
- Select “Adapter 2” tab
- Enable the adapter
- Select Host-only Adapter, and select the existing VirtualBox Host-Only Ethernet Adapter for this lab



Step 3: Check out your new NIC in Linux

- Find the name of the new NIC in Linux:
 - Log into your Linux OS
 - Run: `ip address show`
 - Make note of the name of the NIC interfaces (in this example “ens38”)

```
ali@ers20059995-2:~$ ip address show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 00:0c:29:63:cd:06 brd ff:ff:ff:ff:ff:ff
    inet 192.168.202.128/24 brd 192.168.202.255 scope global dynamic ens33
        valid_lft 1761sec preferred_lft 1761sec
    inet6 fe80::20c:29ff:fe63:cd06/64 scope link
        valid_lft forever preferred_lft forever
3: ens38: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether 00:0c:29:63:cd:10 brd ff:ff:ff:ff:ff:ff
```

Step 4: Configure your new NIC (netplan)

- `ls /etc/netplan` to see what configuration files exist
- Then you may edit the configuration file: `sudo nano /etc/netplan/<config_file_.yaml>`
 - NOTE: the file names vary system to system
- Add configuration for your new NIC
 - NOTE: the IP address ending with .1 is reserved for your host, so start from .2 (VMware) or 3 (VirtualBox). In this example: 192.168.200.2/24

```
GNU nano 4.8 /etc/netplan/00-installer-config.yaml
# This is the network config written by 'subiquity'
network:
  ethernets:
    ens33:
      dhcp4: true
    ens38:
      addresses:
        - 192.168.200.2/24
  version: 2
```

[Read 9 lines]

^G Get Help	^O Write Out	^W Where Is	^K Cut Text	^J Justify	^C Cur Pos	M-U Undo
^X Exit	^R Read File	^_ Replace	^U Paste Text	^T To Spell	^_ Go To Line	M-E Redo

Step 5: Test Settings and Apply!

- To test if your configurations are correct: `sudo netplan try`
 - If there are no errors, netplan applies the settings and starts counting down, so you can try your SSH client to see if it works
 - If you lose SSH connection and new settings are broken, then the timeout will have the changes reversed back to the old settings
- To apply changes: `sudo netplan apply`
- DONE!
 - You should now be able to connect to static IP, so you are not affected by DHCP IP lease renewal!