

Adding Another Adapter for Internet Access - Help Desk Lab

I want to integrate Action1, a cloud-based endpoint management tool, into my [Help Desk Lab](#). Currently, my lab has three machines:

- Windows Server 2022 (Domain Controller)
- Windows 10 (Help Desk Workstation)
- Windows 10 (Employee Workstation)

They are all on the same domain, simotech.com, and connected via a LAN using a host-only adapter on each machine.

The issue is that in order to use Action1 in my lab, my machines need to access the internet, but at the same time stay on the LAN via the host-only adapter. So I'll add a second adapter to each machine that will allow internet access, while also keeping them on the LAN.

Here is how to do it:

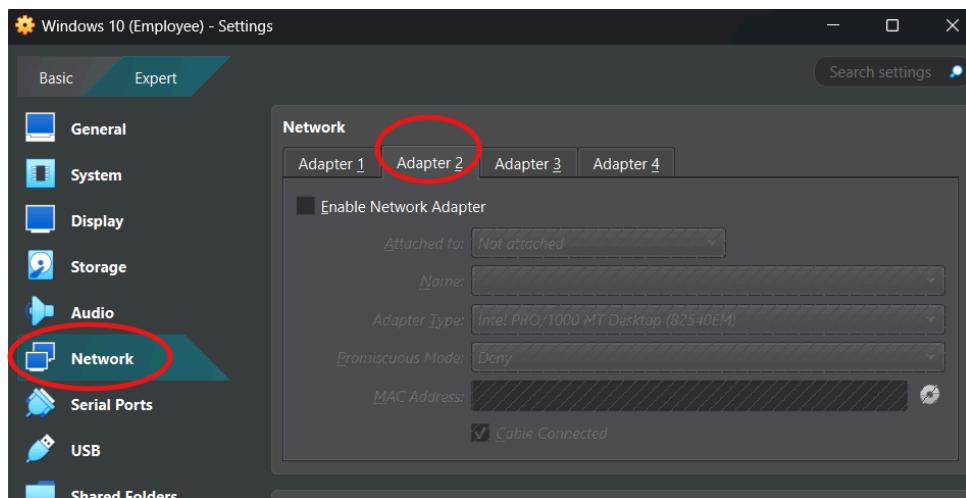
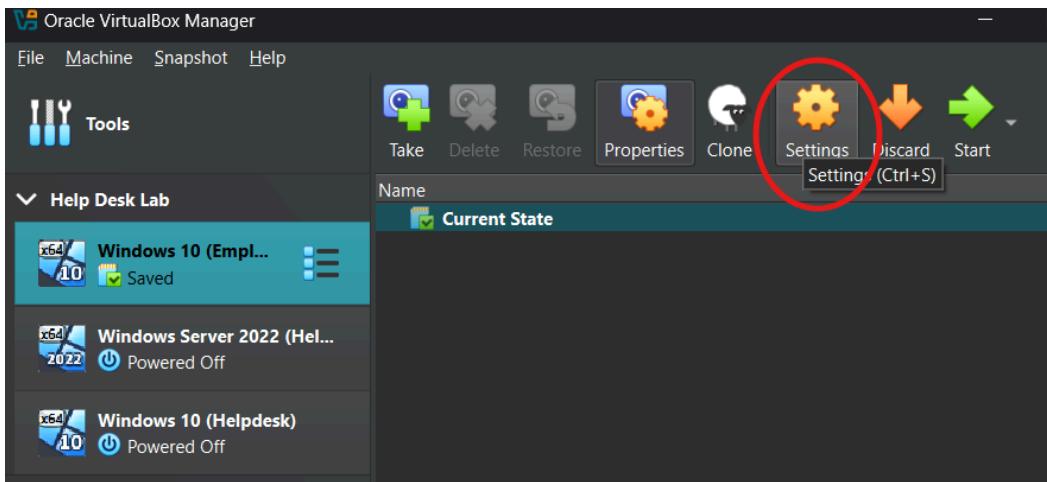
Step 1: Shut down the virtual machines

Before adding network adapters, shut down all VMs (Server 2022, Help Desk Win10, Employee Win10). This prevents network conflicts and ensures the adapter is recognized properly.

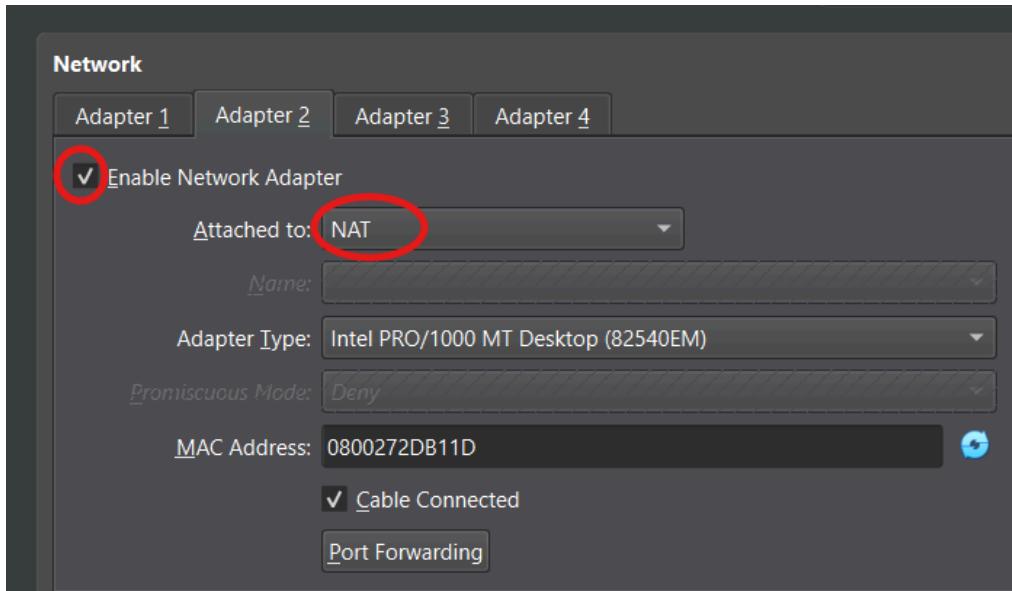
Step 2: Add a second network adapter to each VM

VirtualBox

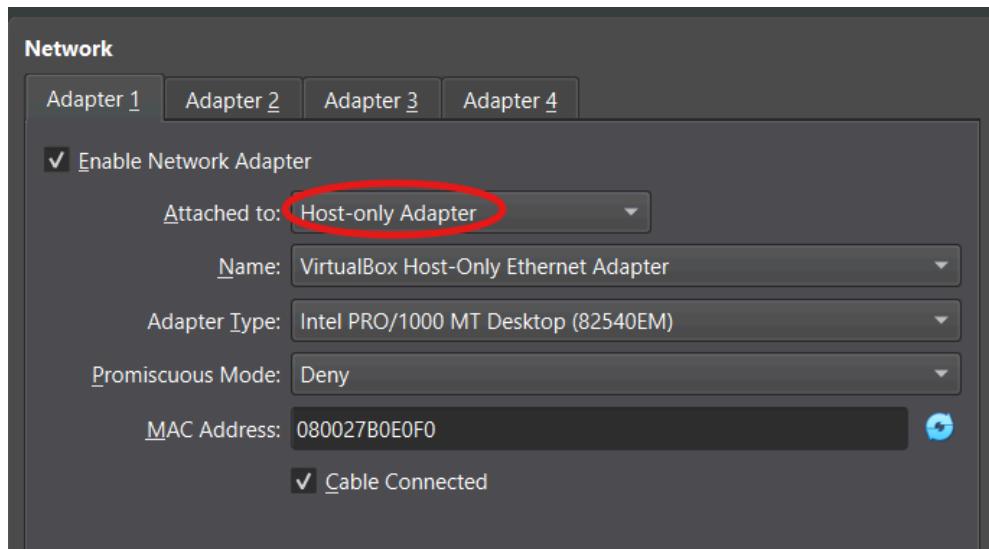
1. Go to VM Settings → Network → Adapter 2.



2. Enable Adapter 2 → attach to NAT.



3. Adapter 1 remains Host-only.



4. Click OK to save.

5. Repeat for the other 2 virtual machines.

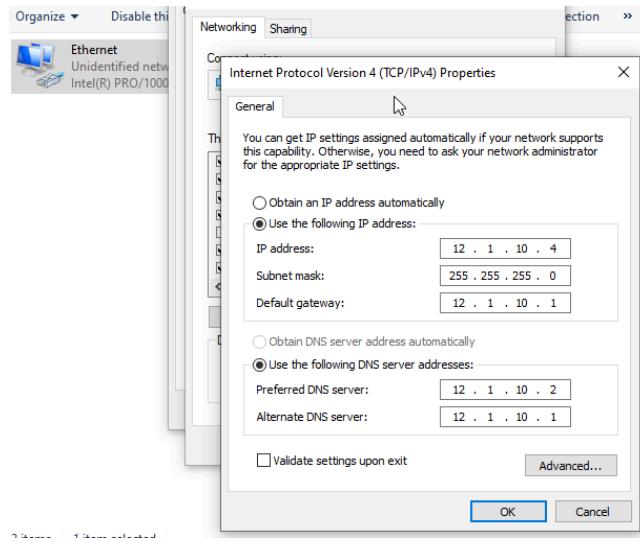
Step 3: Boot up the VMs

Start each VM. Windows should detect the new adapter automatically.

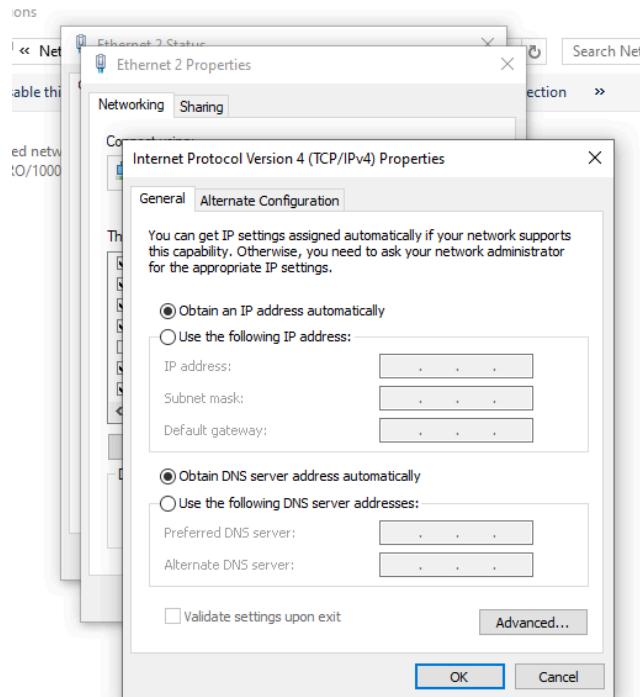


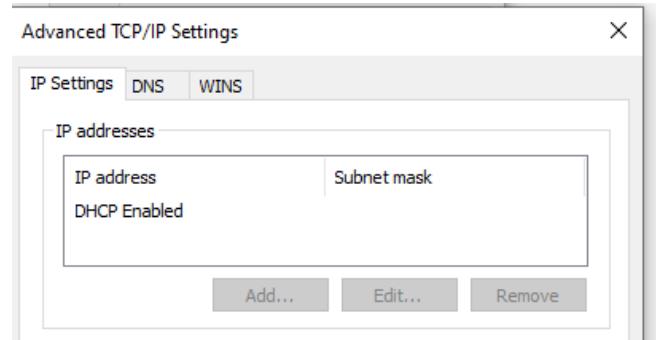
Step 4: Configure IP addresses and verify each VM has 2 adapters

1. Open Control Panel → Network and Sharing Center → Change adapter settings.
 - Host-only adapter (Adapter 1) (called Ethernet): keep the static IPs for domain communication. (To see how to do this check out my [Help Desk Lab](#) series)



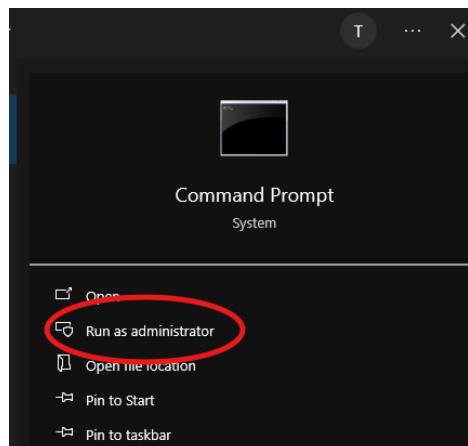
- NAT adapter (Adapter 2) (called Ethernet 2) : leave as DHCP, Windows will automatically get an IP and gateway for internet access.





Step 5: Test internet connectivity on each client

1. Open a command prompt on Windows 10 clients.



2. Ping a public IP: `ping 8.8.8.8`

```
C:\Windows\system32>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:
Reply from 10.0.2.15: Destination host unreachable.
Request timed out.
Reply from 10.0.2.15: Destination host unreachable.
Request timed out.

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
```

3. My ping failed, which means there is something wrong with my NAT adapter. If the ping fails, check the adapters ipconfigs in the command prompt: `ipconfig /all`

```
C:\Windows\system32>ipconfig /all

Windows IP Configuration

 Host Name . . . . . : Desktop2
 Primary Dns Suffix . . . . . : SimoTech.com
 Node Type . . . . . : Hybrid
 IP Routing Enabled. . . . . : No
 WINS Proxy Enabled. . . . . : No
 DNS Suffix Search List. . . . . : SimoTech.com

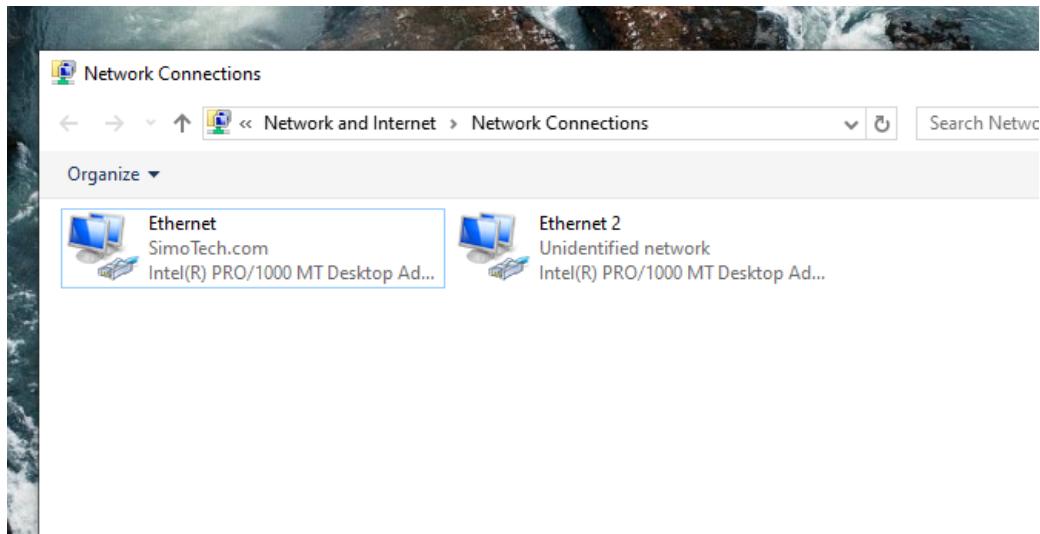
Ethernet adapter Ethernet:

 Connection-specific DNS Suffix . :
 Description . . . . . : Intel(R) PRO/1000 MT Desktop Adapter
 Physical Address. . . . . : 08-00-27-B0-E0-F0
 DHCP Enabled. . . . . : No
 Autoconfiguration Enabled . . . . . : Yes
 Link-local IPv6 Address . . . . . : fe80::cb97:bc0c:24dc:58d9%14(Preferred)
 IPv4 Address. . . . . : 12.1.10.4(Preferred)
 Subnet Mask . . . . . : 255.255.255.0
 Default Gateway . . . . . : 12.1.10.1
 DHCPv6 IAID . . . . . : 101187623
 DHCPv6 Client DUID. . . . . : 00-01-00-01-2F-99-C3-F0-08-00-27-B0-E0-F0
 DNS Servers . . . . . : 12.1.10.2
                                         12.1.10.1
 NetBIOS over Tcpip. . . . . : Enabled
```

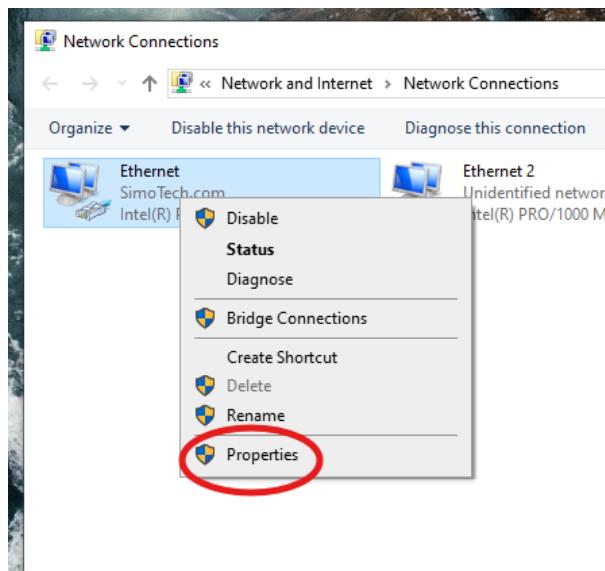
4. The issue is with the Default Gateway on the Host Only Adapter (called Ethernet). There should be no Default Gateway because Windows tries to route all traffic through this including the internet.

```
IPV4 Router Disc.: . . . . . : 12.1.10.4(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 12.1.10.1
DHCPv6 IAID . . . . . : 1037023
DHCPv6 Client DUID. . . . . : 00-01-00-01-2F-99-
```

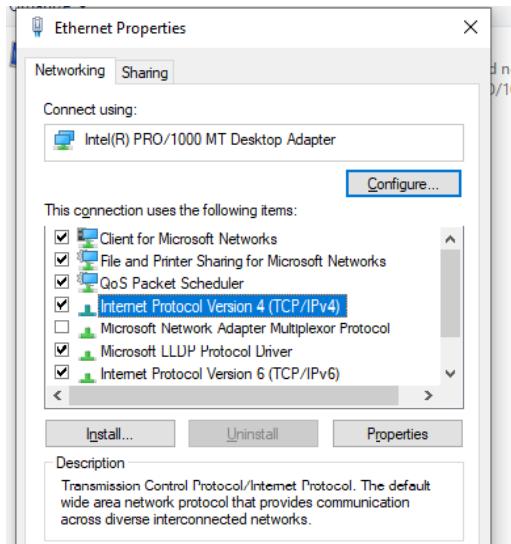
5. To fix it go to Control Panel → Network and Sharing Center → Change Adapter Settings.



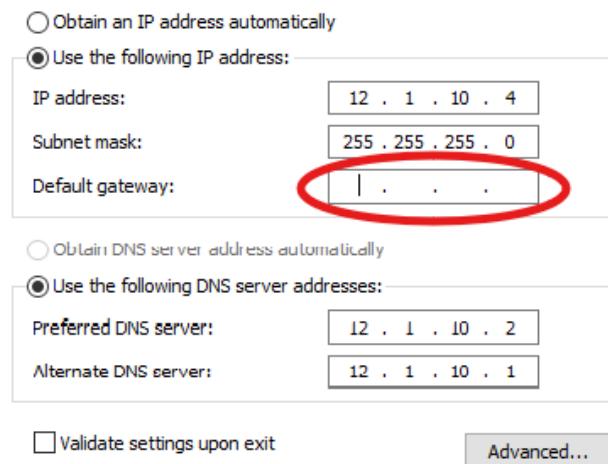
6. Right click on the Host Only Adapter (called Ethernet here) and click properties.



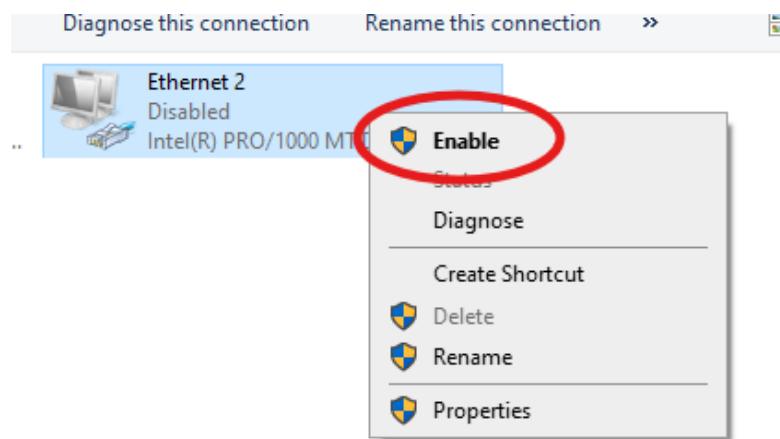
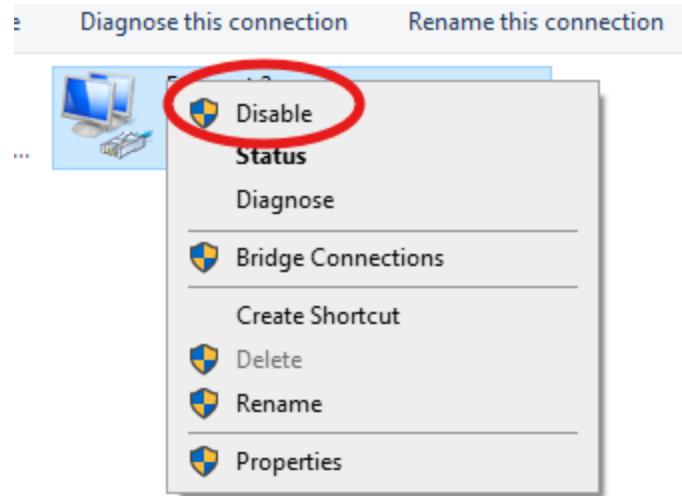
7. Click on Internet Protocol Version 4 and then delete the Default Gateway.



this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.



8. Next, reset the NAT adapter (called Ethernet 2 here) by right clicking → Disable → Enable.



9. After this, the ping to 8.8.8.8 was still unsuccessful, meaning my machine still can't connect to the internet. Additionally the DNS test failed as well.

```
C:\Windows\system32>ping 8.8.8.8

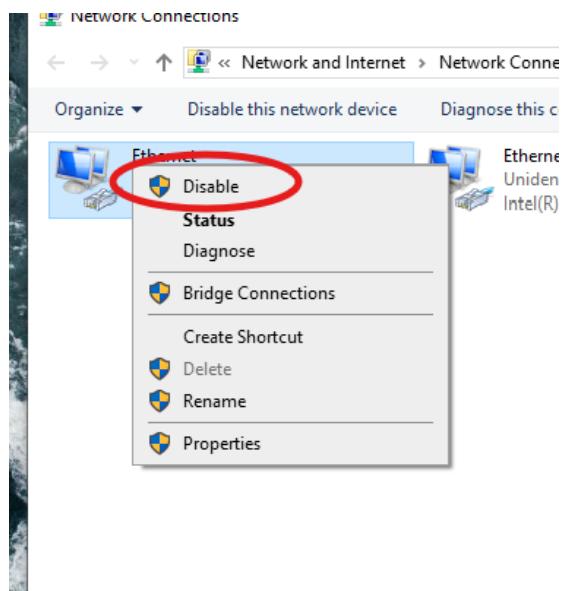
Pinging 8.8.8.8 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 8.8.8.8:
    Packets: Sent = 3, Received = 0, Lost = 3 (100% loss),
    Approximate round trip times (ms):
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
C:\Windows\system32>nslookup google.com
DNS request timed out.
    timeout was 2 seconds.
Server:  UnKnown
Address:  12.1.10.2

DNS request timed out.
    timeout was 2 seconds.
DNS request timed out.
    timeout was 2 seconds.
*** Request to UnKnown timed-out
```

10. Keep troubleshooting. Temporarily disable the Host Only Adapter to see if that is preventing the NAT adapter from connecting to the Internet. Right click → Disable → Enable.



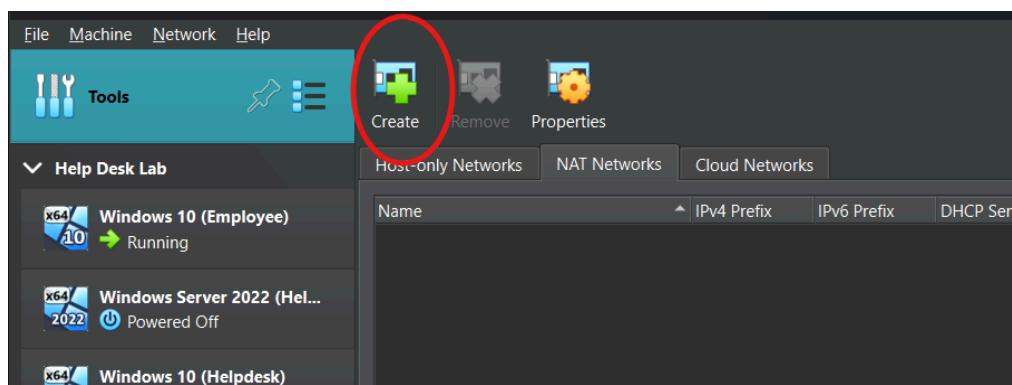
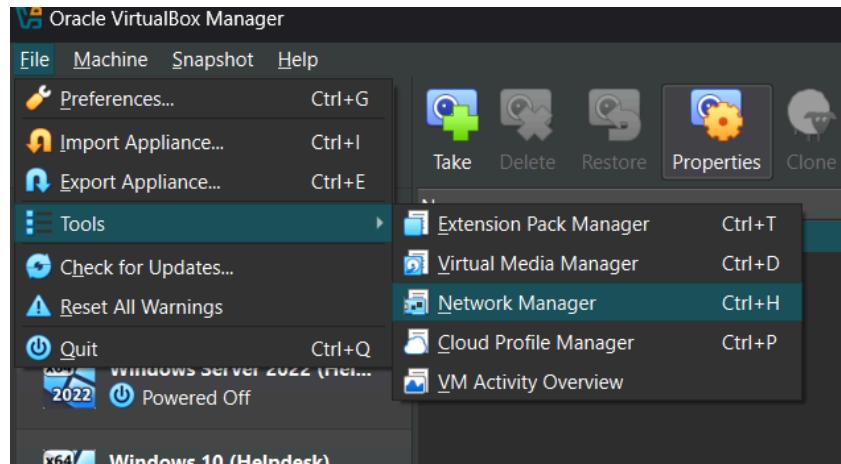
11. After disabling the Host Only Adapter, perform the ping again.

```
C:\Windows\system32>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:
Reply from 10.0.2.15: Destination host unreachable.

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

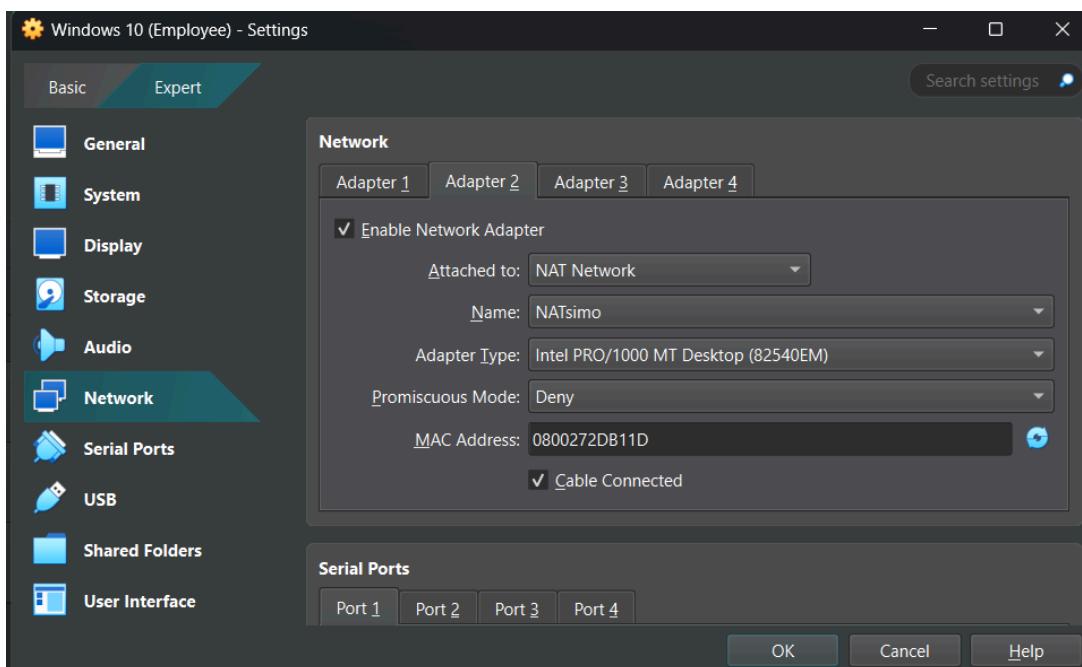
12. It failed once again, but now we know the issue. Our Windows 10 machine is using the NAT adapter because there is a reply coming from our NAT adapter IPv4 address. But for some reason, the traffic is not being properly routed through the NAT adapter Default Gateway. All of our ipconfigs are correct and it should work but VirtualBox is malfunctioning. So we will create a NAT Network. VirtualBox → File → Tools → Network Manager → NAT Networks → Create.



13. You can name it. Make sure DHCP is enabled and the IPv4 is set to 10.0.2.0/24.

Name	IPv4 Prefix	IPv6 Prefix	DHCP Server
NATsimo	10.0.2.0/24		Enabled

14. After closing all of your VMs, go to Settings, then Network and change Adapter 2 to NAT Network.



15. Now start up your VM again and go to Command Prompt and verify that the ipconfigs are correct. It should look similar to this (Adapter 2 should have a Default Gateway and an IPv4 address within the range that you set when you created the new NAT Network):

```
C:\Windows\system32>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

  Connection-specific DNS Suffix . :
  Link-local IPv6 Address . . . . . : fe80::cb97:bc0c:24dc:58d9%15
  IPv4 Address . . . . . : 12.1.10.4
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . :

Ethernet adapter Ethernet 2:

  Connection-specific DNS Suffix . :
  Link-local IPv6 Address . . . . . : fe80::73b9:6230:a0e8:ac98%10
  IPv4 Address . . . . . : 10.0.2.4
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . :
```

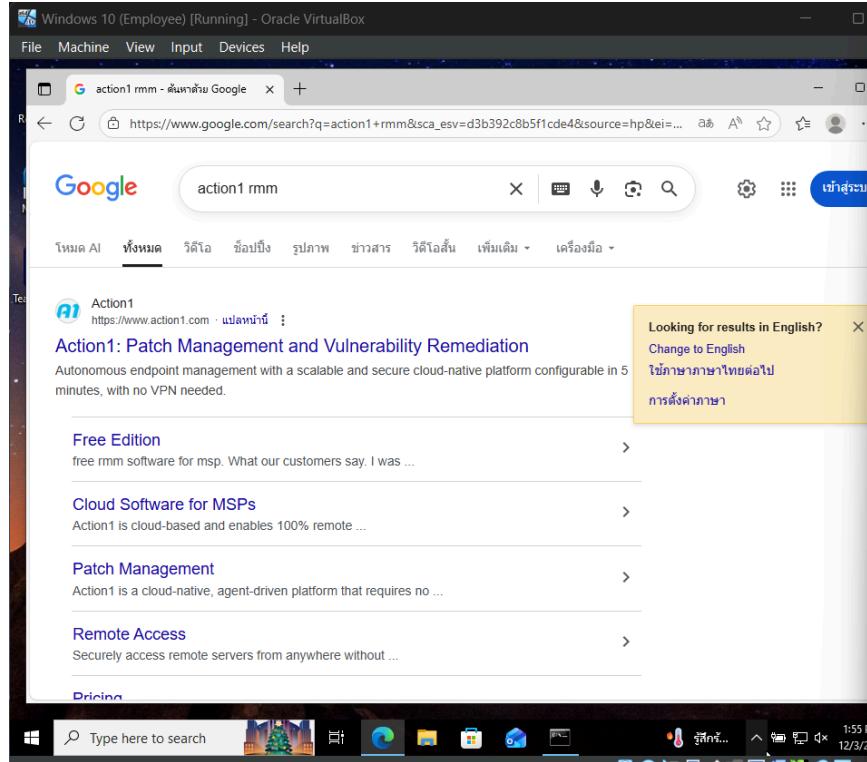
16. Next test internet connectivity: *ping 8.8.8.8*

```
C:\Windows\system32>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:
Reply from 8.8.8.8: bytes=32 time=11ms TTL=109
Reply from 8.8.8.8: bytes=32 time=10ms TTL=109
Reply from 8.8.8.8: bytes=32 time=9ms TTL=109
Reply from 8.8.8.8: bytes=32 time=12ms TTL=109

Ping statistics for 8.8.8.8:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 9ms, Maximum = 12ms, Average = 10ms
```

17. It works! Can confirm internet access by going to your browser and going to a website:



18. Make sure to do this on all VMs in the domain.

Step 6: Ready for Action1 integration

Now that each client has dual adapters:

- LAN communication over Host-only (for Active Directory, shared folders, lab services)
- Internet access over NAT (for Action1 cloud connectivity)

You can now proceed with:

- Installing the Action1 agent on each endpoint
- Connecting endpoints to the cloud console
- Running inventory scans, patch deployments, and remote scripts