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FAQ: FREQUENTLY ASKED QUESTIONS

DEPARTMENT OF COMPUTER SCIENCE. UNIVERSITY OF OVIEDO

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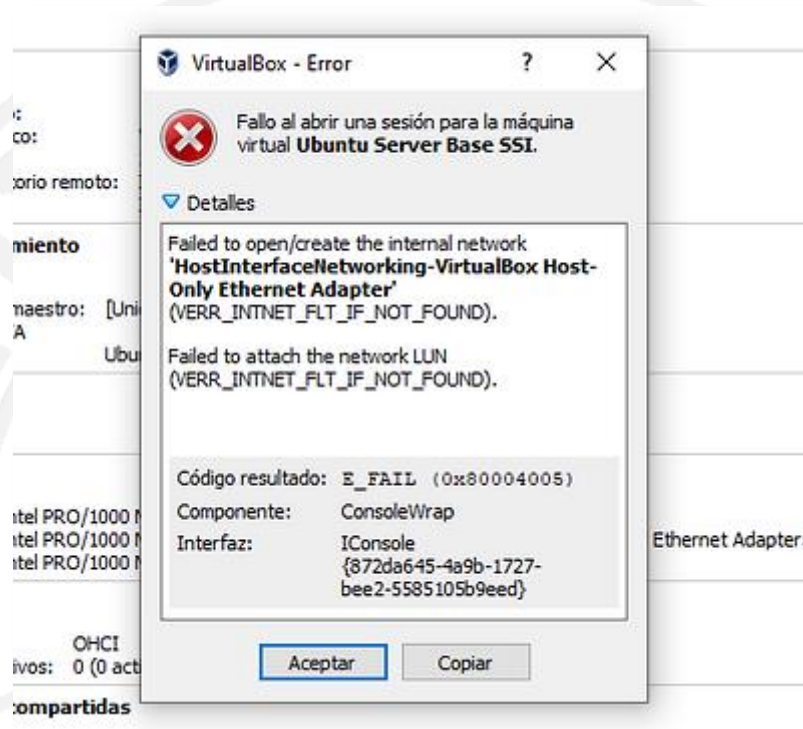
Content

VirtualBox problems	2
I have an error telling me that the host-only network interface is missing on the VMs	2
I have an error with the VBoxSVGA virtual device when importing the machine!	3
When importing a virtual machine, I get error 0x80070057 (E_INVALIDARG) error	4
Problems accessing Ubuntu server from the Windows host: I cannot connect to the VM from the windows system	5
I cannot connect two virtual machines using an Internal network	8
When I start the machine I get only a black screen and it does nothing	8
Can I use .ova with VMWare?	9
MobaXTerm problems	10
I cannot connect to the VM with MobaXTerm	10
ClamAV problems	11
In ClamAV when I try to update the signatures it always fails	11
Lynis problems	12
Where is the number that show the "machine resistance" to attacks?	12
SSH problems	13
In the Ubuntu VM you give us I am unable to connect via SSH	13
Linux commands	14
Properly changing user identity	14
VM connection problems	15
I am unable to access the VM services due to a timeout error	15

VirtualBox problems

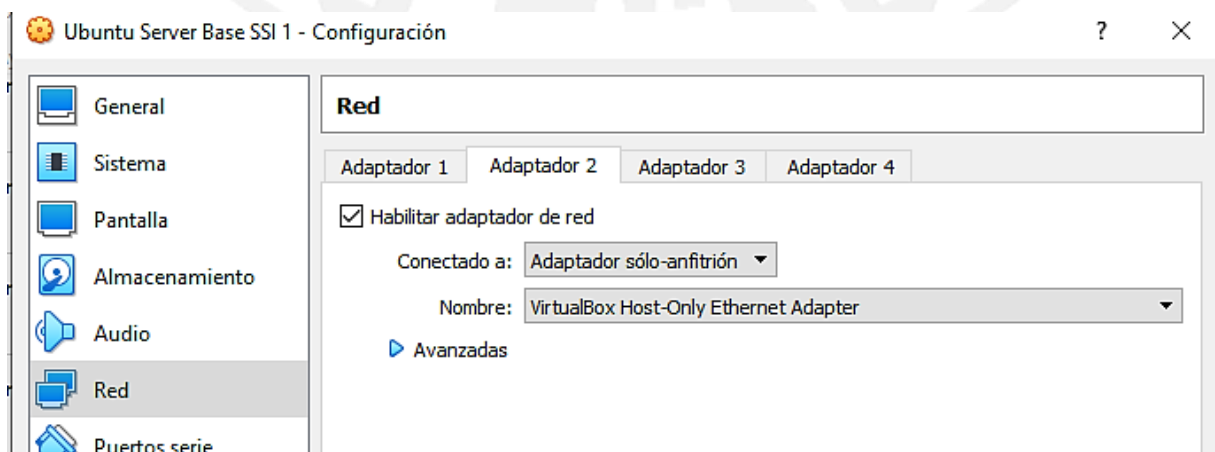
I have an error telling me that the host-only network interface is missing on the VMs

A message like this usually comes up:

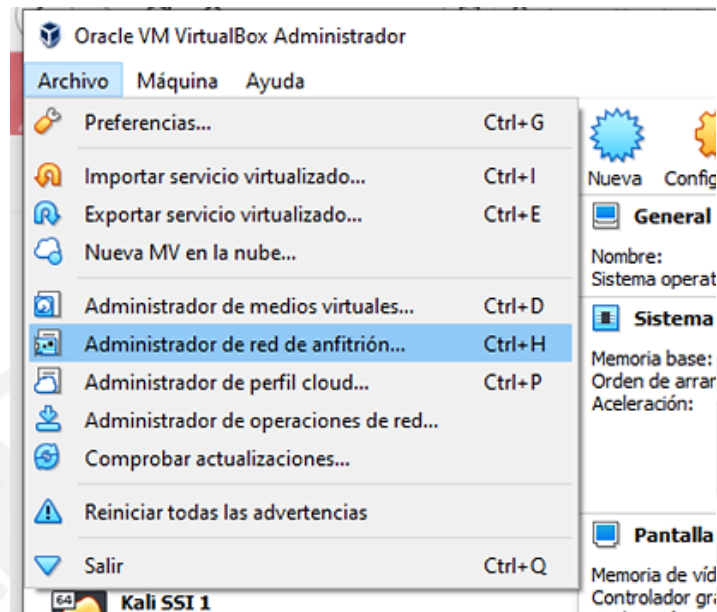


Answer: The problem is easy to fix: **Disable the "Host only" network card**, which will normally be the second on the delivered VMs. That would enable the VMs to start. However, when you lose that card, **you will not be able to use your real machine as a client of the virtual machine**. However, that has an easy solution as well:

- Make the host-only interface of another type (no matter what) and accept. Go back into the configuration and select host-only again.
- If that does not work, or the problem is that no network interface name is listed, and this combo box is blank:



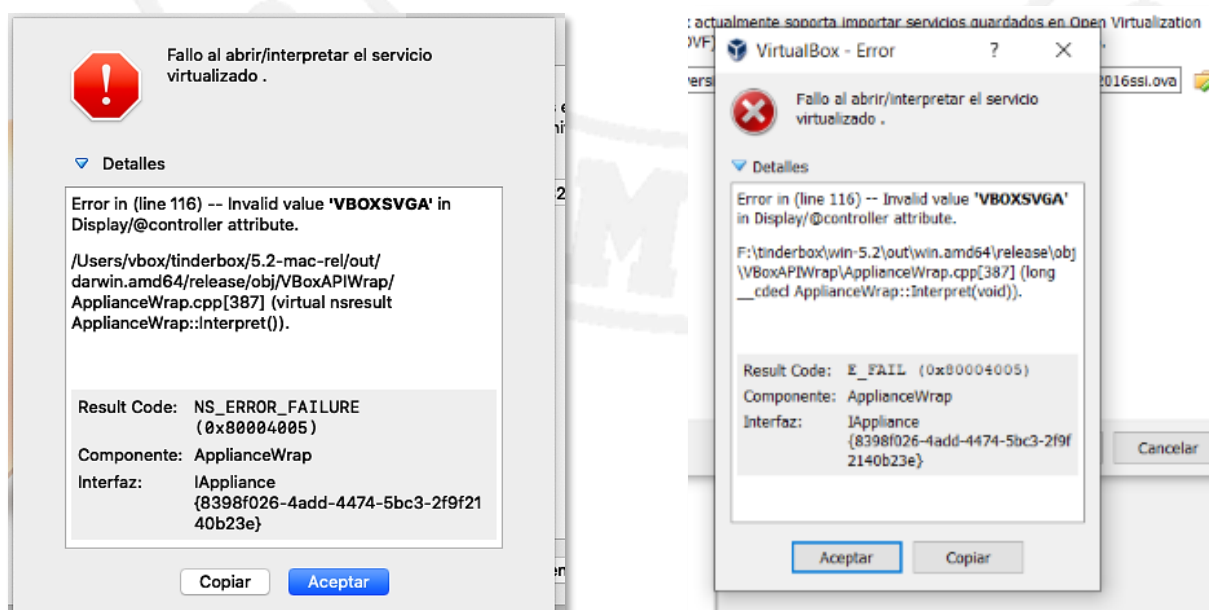
Then the problem in this case is an incomplete installation of **VirtualBox**. Cancel, return to the main screen, and go to this menu:



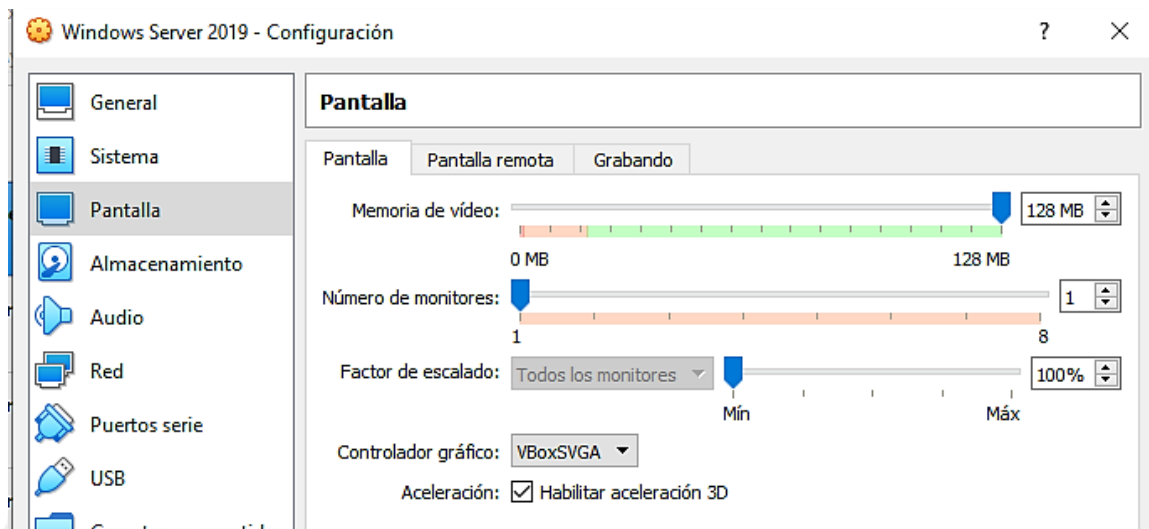
Create a new card manually (there will be none) and put its IP as **192.168.56.1** and network mask as **255.255.255.0**. If that gives any errors, create the card automatically. That would be all unless you had to create it automatically. In that case, the network IP will be **192.168.<a number that is not 56>.1** and you will have to change the network settings of the second virtual machine interface within *Ubuntu*. The complementary materials describe how to do it. **This might happen in practice labs**, as host-only network cards sometimes have been created manually.

I have an error with the VBOXSVGA virtual device when importing the machine!

A message like these two is displayed:



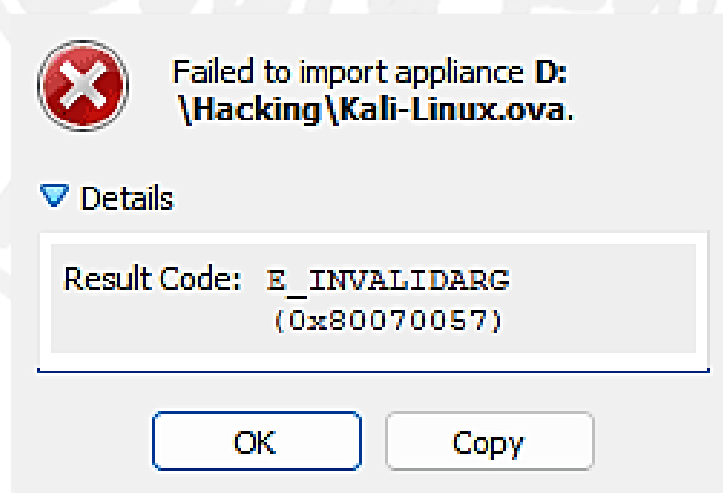
Answer: The error is that it cannot find the *VBoxSVGA* virtual graphics card. **This error is because you have an outdated version of *VirtualBox*.** Versions earlier than 6.1.X do not show that adapter on the corresponding screen:



Due to all the improvements that *VirtualBox* incorporates in the new versions, it is highly recommended to update it. It should not break compatibility with machines already created, or at least that is what the manufacturer says...

When importing a virtual machine, I get error 0x80070057 (E_INVALIDARG) error

It would be a message like this:



Answer: This happens simply because **there is not enough space available on the hard disk** where the virtual machine is being imported, so you would have to import it elsewhere or move/delete content. Being lower than 20Gb free hard disk space is always a bad idea with *Windows*, since we are exposed to strange errors derived from it.

Problems accessing Ubuntu server from the Windows host: I cannot connect to the VM from the windows system

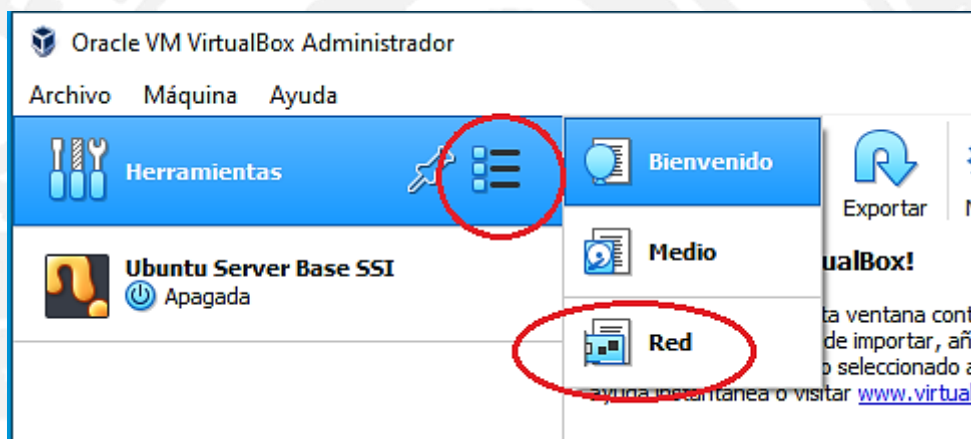
In many exercises you must access your *Linux* system from your physical machine, usually using the SSH protocol (using *Putty*, *MobaXterm* (see companion guide), *WinSCP*, ...). But even when you try to ping the VM to the Linux VM it does not work.

Answer: The reason of this error can be a configuration error, problems with the SSH or with the *firewall*. In this answer we are going to explain how to solve the first problem; there is another section (SSH) to try to solve the others.

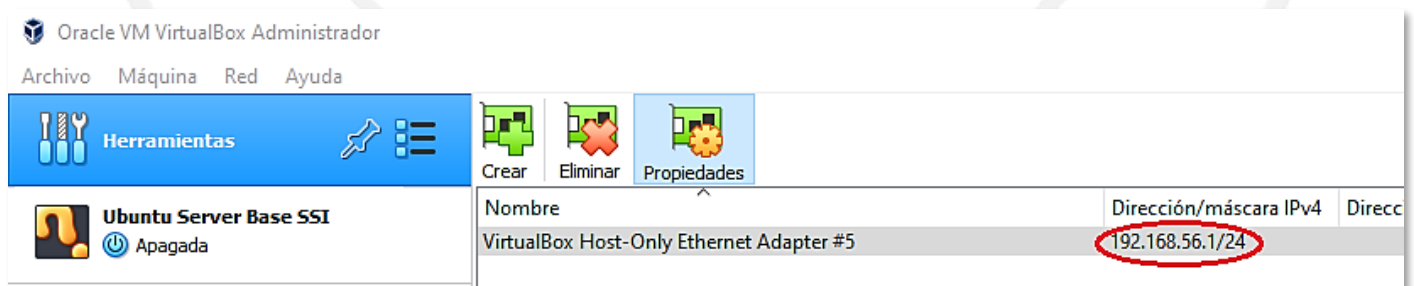
1.- Finding out the network address of our machines

To check the connection between both machines first you must find out the address that *VirtualBox* is using for the host only network. To do that:

In *VirtualBox* main window, press the “*Tools*” menu, and then “*Network*”.



Then, the configuration of your host-only adapter will appear:



There you can find the address of your *Host-Only* network. The network will be something like **192.168.X.1**, where the X can vary in each computer (normally X is **56**). In this network, the physical machine will always have the machine number **1** (**192.168.56.1** in this example), while we are using other on our *Ubuntu* system (**192.168.56.33** in our example).

2.-Solving configuration problems

Once we know the addresses of our machines, is time to check if the *Ubuntu* system is properly configured (the physical system is normally configured automatically). Use the **ifconfig** command in the bash to display the configuration of the network interfaces of the *Ubuntu* machine:

```
Ubuntu Server Base SSI [Corriendo] - Oracle VM VirtualBox
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::a00:27ff:fe99:a781 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:99:a7:81 txqueuelen 1000 (Ethernet)
    RX packets 5595 bytes 4814808 (4.8 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 2482 bytes 163597 (163.5 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.179.33 netmask 255.255.255.0 broadcast 192.168.179.255
    inet6 fe80::a00:27ff:fe53:94f1 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:53:94:f1 txqueuelen 1000 (Ethernet)
    RX packets 13 bytes 963 (963.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 23 bytes 1706 (1.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s9: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.2.33 netmask 255.255.255.0 broadcast 192.168.2.255
    inet6 fe80::a00:27ff:fe80:d137 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:80:d1:37 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 23 bytes 1706 (1.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

Here we can see that the second interface address is the **192.168.179.33**, when it should be, in our example, **192.168.56.33** (as we have found in the previous step).

So, we need to change the address of this network interface. To do that, we must edit the file **/etc/netplan/50-cloud-init.yaml**. This is a configuration file, so we must use the **sudo** command to be able to modify it. So, using **sudo nano /etc/netplan/50-cloud-init.yaml**, we change the address of that network interface:

```
Ubuntu Server Base SSI [Corriendo] - Oracle VM VirtualBox
GNU nano 2.9.3
# This file is generated from information from the
# the datasource. Changes to it will not be applied
# To disable cloud-init's network configuration
# /etc/cloud/cloud.cfg.d/99-disable-networking.conf
# network: {config: disabled}
network:
  ethernets:
    enp0s3:
      dhcp4: true
    enp0s8:
      addresses:
        - 192.168.179.33/24
      nameservers: {}
    enp0s9:
      addresses:
        - 192.168.2.33/24
      nameservers: {}
  version: 2

Ubuntu Server Base SSI [Corriendo] - Oracle VM VirtualBox
GNU nano 2.9.3 /etc/netplan/50-cloud-init.yaml
# This file is generated from information from the
# the datasource. Changes to it will not be applied
# To disable cloud-init's network configuration
# /etc/cloud/cloud.cfg.d/99-disable-networking.conf
# network: {config: disabled}
network:
  ethernets:
    enp0s3:
      dhcp4: true
    enp0s8:
      addresses:
        - 192.168.56.33/24
      nameservers: {}
    enp0s9:
      addresses:
        - 192.168.2.33/24
      nameservers: {}
  version: 2
```

Once done, we save the file and exit from the editor. We must also restart the service:

```
sudo netplan apply
```

Now, we will check again the address of the network interfaces through **ifconfig**:

```

Ubuntu Server Base SSI [Corriendo] - Oracle VM VirtualBox
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::a00:27ff:fe99:a781 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:99:a7:81 txqueuelen 1000 (Ethernet)
    RX packets 5597 bytes 4815988 (4.8 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 2495 bytes 165045 (165.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.56.33 netmask 255.255.255.0 broadcast 192.168.56.255
    inet6 fe80::a00:27ff:fe53:94f1 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:53:94:f1 txqueuelen 1000 (Ethernet)
    RX packets 15 bytes 1266 (1.2 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 33 bytes 2406 (2.4 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s9: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.2.33 netmask 255.255.255.0 broadcast 192.168.2.255
    inet6 fe80::a00:27ff:fe80:d137 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:80:d1:37 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 33 bytes 2406 (2.4 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

```

Now, everything is correct, and the connection should work. To test it, and to avoid further problems, first we **temporally disable the firewall** to be sure it will not block any connection:

```
sudo ufw disable
```

To check the connectivity, in a *Windows* physical system we run the **cmd** command to create a command prompt window. There we will try to ping our *Ubuntu* virtual machine:

```

C:\Users\Miguel>ping 192.168.56.33

Haciendo ping a 192.168.56.33 con 32 bytes de datos:
Respuesta desde 192.168.56.33: bytes=32 tiempo<1m TTL=64
Respuesta desde 192.168.56.33: bytes=32 tiempo<1m TTL=64
Respuesta desde 192.168.56.33: bytes=32 tiempo<1m TTL=64
Respuesta desde 192.168.56.33: bytes=32 tiempo<1m TTL=64

Estadísticas de ping para 192.168.56.33:
    Paquetes: enviados = 4, recibidos = 4, perdidos = 0
    (0% perdidos),
    Tiempos aproximados de ida y vuelta en milisegundos:
        Mínimo = 0ms, Máximo = 0ms, Media = 0ms

C:\Users\Miguel>

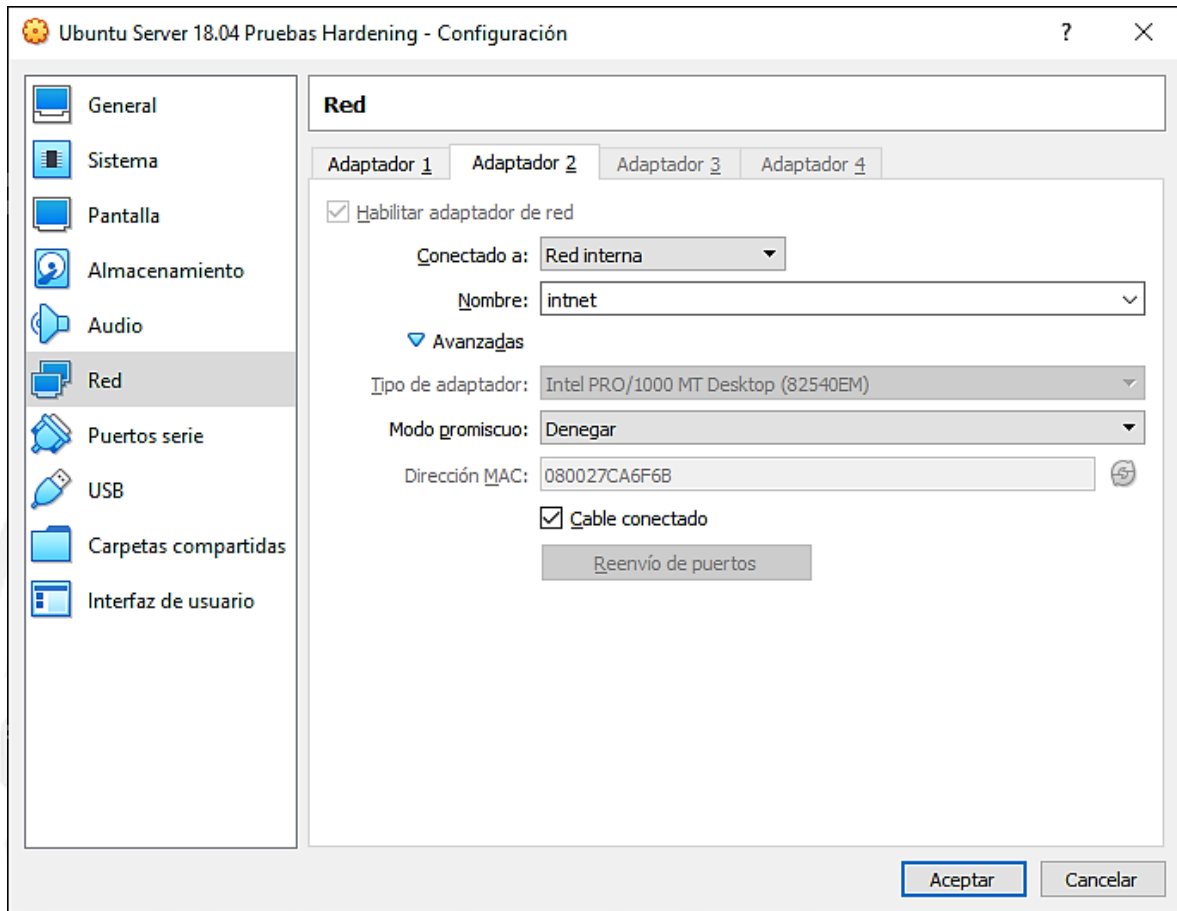
```

Finally, the connection is working. You can use *putty*, *MobaXterm* or other application that uses the SSH protocol to try to connect to the *Ubuntu* system from the *Windows* one. If it works, congratulations! If it does not work, move to the SSH section of this FAQ to solve the problem.

I cannot connect two virtual machines using an Internal network

This problem could be due to several reasons. Please make sure that:

- Both VMs have such a network interface enabled and its cable is connected:



- The name of the internal network **MUST BE THE SAME** on both VMs.
- You have IPs (preferably static) in the same network, according to what we saw in theory. Typical network masks are **255.255.255.0** for this purpose, and typical networks used for this begin with **192.168.X.X** (private IPs).
- The IPs you chose are different. For example, the first machine can be **192.168.2.20** and the second **192.168.2.30**

This should fix the problem. The other cause is an occasional *VirtualBox* network daemon crash, which nowadays is very rare, and a system reboot may be able to fix it.

When I start the machine I get only a black screen and it does nothing...

This happens due to an incompatibility problem between *VirtualBox* and *Hyper-V*, which many of you have because other courses, such as when **installing Docker Desktop**. To solve this, the simplest and fastest solution is to use the "**non-optimized**" version of the supplied virtual machines (it does not matter if it is Option 1 (the **.ova**) or 2 (*Vagrant*) because they are prepared to work in these cases.

Can I use .ova with VMWare?

Although until now we had no way to prove it, thanks to the student **Eduardo Blanco Bielsa** we know that the procedure documented by VMWare here: <https://kb.vmware.com/s/article/2053864> works, and the supplied machine can be started and executed normally. Therefore, the answer is **yes** 😊



MobaXTerm problems

I cannot connect to the VM with MobaXTerm

When I try to use *MobaXTerm* I do not know what address I have to put to connect, I have put the one of the network, but it rejects the connection and I do not know if I am doing something wrong. What I did was do the install the indicated command on the virtual machine (install `openssh-server`) and open the firewall for `ssh`.

Answer: If you have already done all that and restarted the machine, for *MobaXTerm* to work **you must put the IP of the host-only adapter of the machine** (the second network card). In a standard installation, it would be a `192.168.56.x`, but it can change if the host-only card was created after installation, as we said earlier.

ClamAV problems

In ClamAV when I try to update the signatures it always fails

I get this error:

```
uo263946@ubuntu:~$ sudo apt install clamav
[sudo] password for uo263946:
Reading package lists... Done
Building dependency tree
Reading state information... Done
clamav is already the newest version (0.102.1+dfsg-0ubuntu0.18.04.2).
0 upgraded, 0 newly installed, 0 to remove and 12 not upgraded.
uo263946@ubuntu:~$ sudo freshclam
ERROR: /var/log/clamav/freshclam.log is locked by another process
ERROR: Problem with internal logger (UpdateLogFile = /var/log/clamav/freshclam.log).
ERROR: initialize: libfreshclam init failed.
ERROR: Initialization error!
uo263946@ubuntu:~$ sudo service clamav-freshclam stop
uo263946@ubuntu:~$ sudo freshclam
Mon Feb  3 16:42:01 2020 -> ClamAV update process started at Mon Feb  3 16:42:01 2020
Mon Feb  3 16:42:01 2020 -> daily database available for download (remote version: 25715)
Mon Feb  3 16:42:31 2020 -> ^Download failed (28) Mon Feb  3 16:42:31 2020 -> ^ Message: Timeout
reached
Mon Feb  3 16:42:31 2020 -> ^getcvd: Can't download daily.cvd from https://database.clamav.net/d
aily.cvd
Mon Feb  3 16:42:31 2020 -> Trying again in 5 secs...
Mon Feb  3 16:42:36 2020 -> daily database available for download (remote version: 25715)
Mon Feb  3 16:43:06 2020 -> ^Download failed (28) Mon Feb  3 16:43:06 2020 -> ^ Message: Timeout
reached
Mon Feb  3 16:43:06 2020 -> ^getcvd: Can't download daily.cvd from https://database.clamav.net/d
aily.cvd
Mon Feb  3 16:43:06 2020 -> Trying again in 5 secs...
Mon Feb  3 16:43:11 2020 -> daily database available for download (remote version: 25715)
[Time: 7.3s, ETA: 24.7s [=====>] 12.78MiB/55.81MiB
```

Answer: The first thing to do is to verify that the machine has a network connection with a **ping** or **wget** to a known website. In case there is one, if the result of the operation shows a timeout with the *ClamAV* signature server, it is a failure of the *ClamAV* company (not yours), as this means that their server is currently not accessible. It will work when restarting the machine later.

Lynis problems

Where is the number that show the “machine resistance” to attacks?

Answer: At the end of the *Lynis* report, indicated as “*Hardening Index*”

```
Hardening index : 56 [#####]
Tests performed : 224
Plugins enabled : 1

Components:
- Firewall [V]
- Malware scanner [V]

Lynis Modules:
- Compliance Status [?]
- Security Audit [V]
- Vulnerability Scan [V]

Files:
- Test and debug information : /var/log/lynis.log
- Report data : /var/log/lynis-report.dat
```



SSH problems

In the Ubuntu VM you give us I am unable to connect via SSH

Putty gives me an access denied when I enter the password (I am sure it is okay). The `ssh` service is running and the `ufw` shows port `22` open. I have been looking for a few things on the internet, but nothing seems to work, any ideas?

Answer: Which user are you trying to access with? Because that error is seen with users who do not have permission to login by SSH or are created with errors. If it is the default user of the machine we gave you, is not this error, because this has been tested. The problem may be due to several causes, and these are viable solutions to test:

Even if it is up and running, the service might have stopped because of an error. Verify that the service is still operational with: `sudo service SSH status`, should show `active (running)`

- Try to enter as that user in localhost. From the VirtualBox console of that virtual machine do `ssh localhost` and see if the password works. Once you enter, `exit` the VM. This rules out any configuration/access/operation issues with `SSH`.
- Temporarily disable the firewall `sudo ufw disable` and try again. If it works, review port settings, a `deny` has more priority than an `allow`.
- Test that the IP of the connection is that of the machine, and you are not connecting another SSH (this is no joke, it happened to more than one of you 😊)
- Access the UO user you created on your machine via *VirtualBox* console. It is possible that, if you never login as that user, certain files have not been created in its home, and SSH needs reading them to access. You can also access via `ssiuser` and then change users with `su uoXXXXXX -`. `exit` returns to `ssiuser`
- Consult the file `/var/log/auth.log`, as at the end you should find why it will not let you login as a specific user. You can see the final part with the `tail` command. Do it right after you cause an access denied to locate the error easier.
- The `ssh` configuration comes with a default `AllowUsers ssiuser`. This just let `ssiuser` to do remote access. So, you must add another user you want to access with where it is indicated here: <https://unix.stackexchange.com/questions/336861/how-to-SSH-in-a-server-when-getting-access-denied>



Linux commands

Properly changing user identity

The `su` command is used to change user identities when you have logged in. You can `su` to any user you know the password, but just doing `su` may give you problems depending on the program you are working with. This happens for example with `gpg` (you cannot access any of your keyrings) among other programs, interfering with the expected behavior of the laboratory commands.

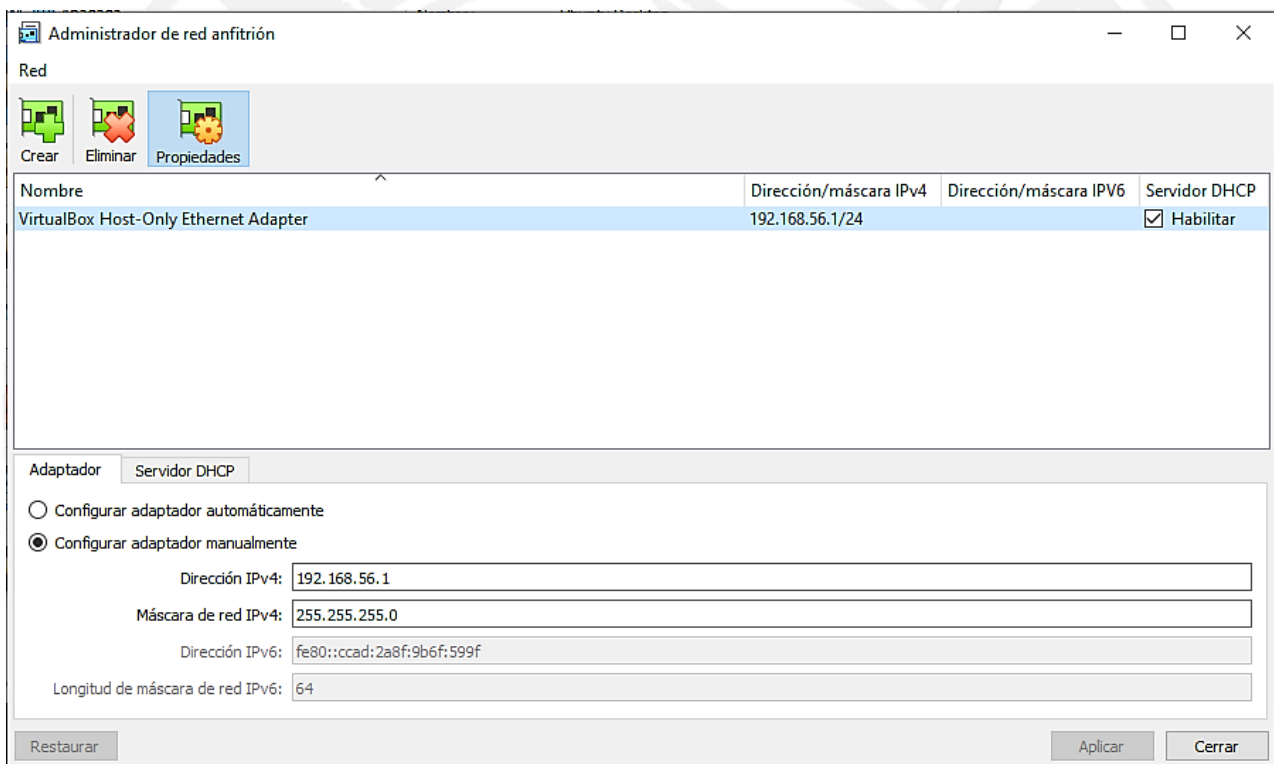
This happens because doing `su <user>` does not start the shell as a login shell with an environment like the real login. To do that you should do `su <user> -` (with the `-`) so the behavior is as the expected one and to change to the target user home directory automatically.

VM connection problems

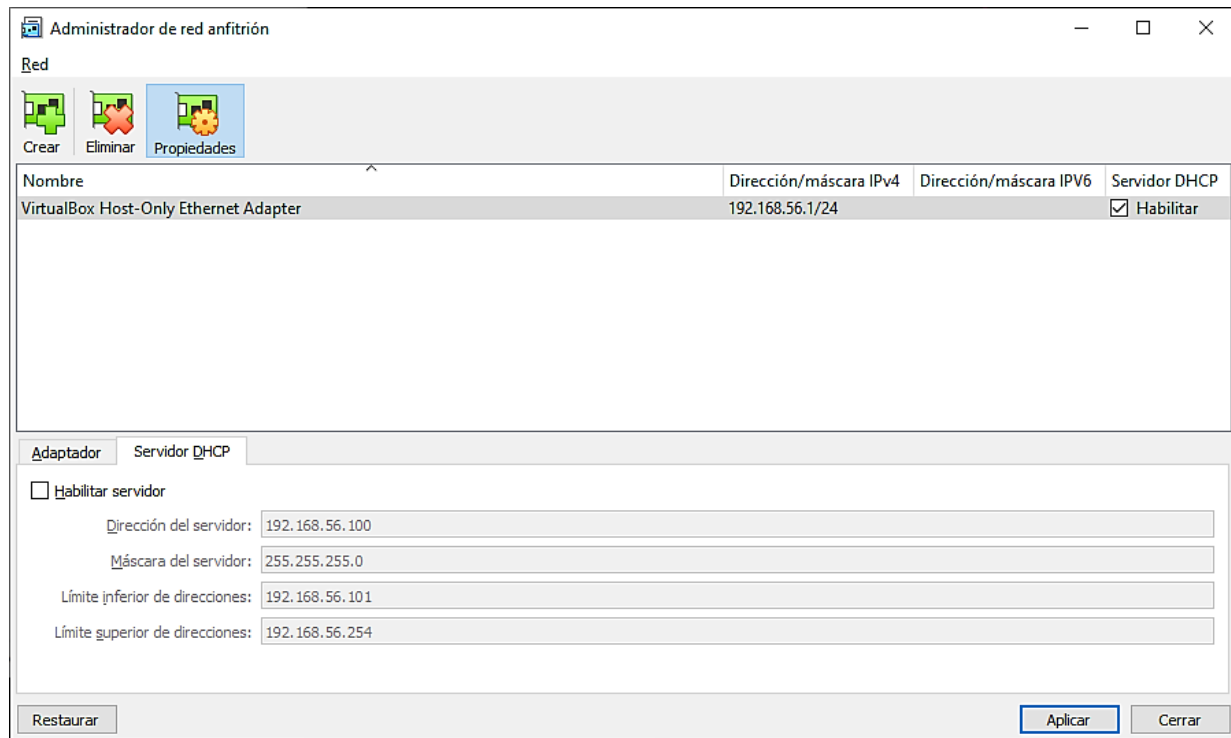
I am unable to access the VM services due to a timeout error

A timeout error means that your physical host is unable to find the machine. There are a couple of reasons for this:

- Switch off the virtual machine to be able to access all its configuration.
- First, make sure that you are using the **192.168.56.x** network addressing of the *VirtualBox Host-Only* interface (or another network if you created the *VirtualBox host-only* interface later). This can be checked in *File - Host network manager* in the VirtualBox interface:



- If this is right, disable the DHCP service in this interface that usually uses the **192.168.56.100** IP to provide its service and may collide with the one you put. This can be done in the same screen, in the "DHCP server" tab:



- Boot the VM again and try to access the service on the specified IP. It should work now. Make sure that the VM has fully booted (you reach the **login:** prompt) to prevent accessing prematurely.
- If this is not right, **ping** to the physical host to make sure there is connection: **ping 192.168.56.1**. If the **ping** says something like "**Destination unreachable**", check the *Host-only* network IP in the *Windows* control panel, just in case. Note that if you have created the *VirtualBox* *host-only* network after the installation, this network card is usually named "**NPCap loopback adapter**".