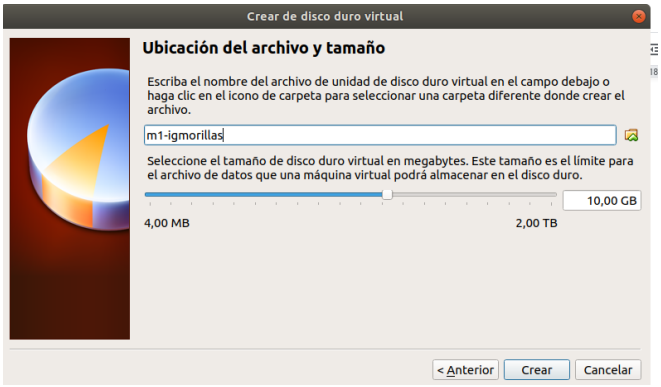
Nombre: Ignacio Morillas Padial
Correo: igmorillas@correo.ugr.es

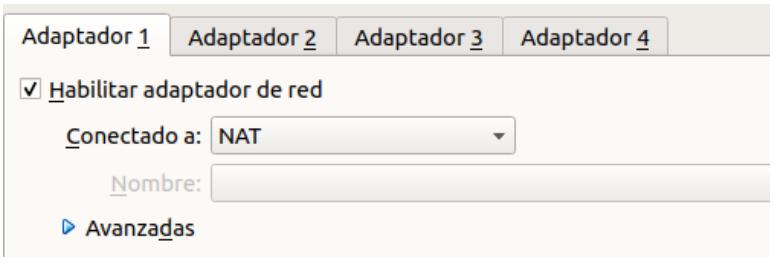
Práctica 1
Preparación de las herramientas

Instalación de las máquinas

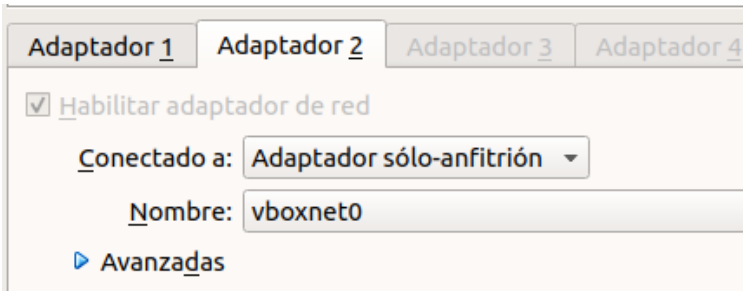
1. Para la realización de prácticas se ha descargado **"Ubuntu Server 18 LTS"** de https://ubuntu.com/download/server.
2. Creamos la primera máquina llamada **"m1-igmorillas"** con un disco duro dinámico de 10GB dinámico.



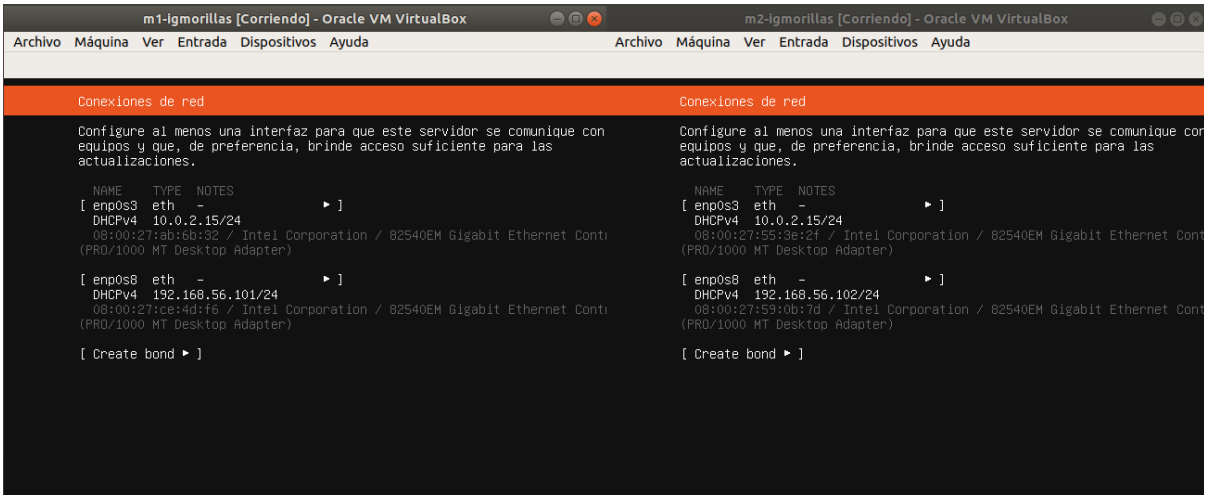
3. Una vez creada configuramos los parámetros de Red, para que las máquinas puedan comunicarse entre un mismo anfitrión y entre ellas, y estas tengan conexión a internet. Por lo que le añadiremos 2 adaptadores red: uno en modo NAT y otro en solo-anfitrión para crear una red local entre las máquinas virtuales y el anfitrión.



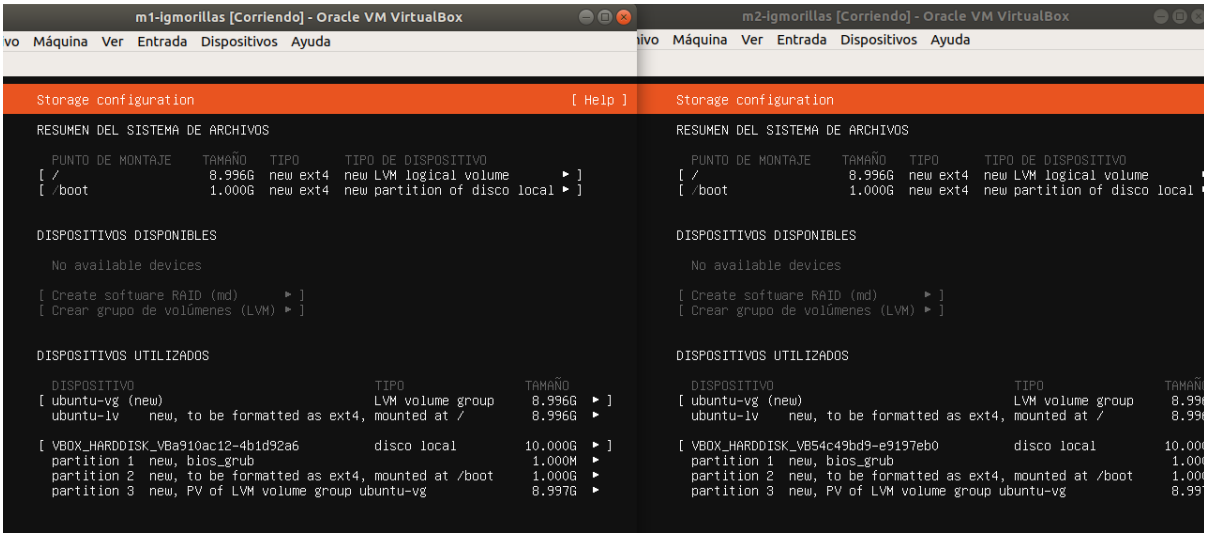
Abrimos una terminal e introducimos: **"$ sudo vboxmanage hostonlyif create"** para crear un adaptador solo para host.



4. Comenzamos el proceso de instalación de la **”m1-igmorillas,** para ello sigolas indicaciones indicadas en https://vivaubuntu.com/instalar-ubuntu-server-18-04-lts-en-virtualbox/
    a. Instalación de DHCP por defecto y se nos va a asignar una ip, podemos ver que a cada máquina se le asigna una ip distinta enp0s8

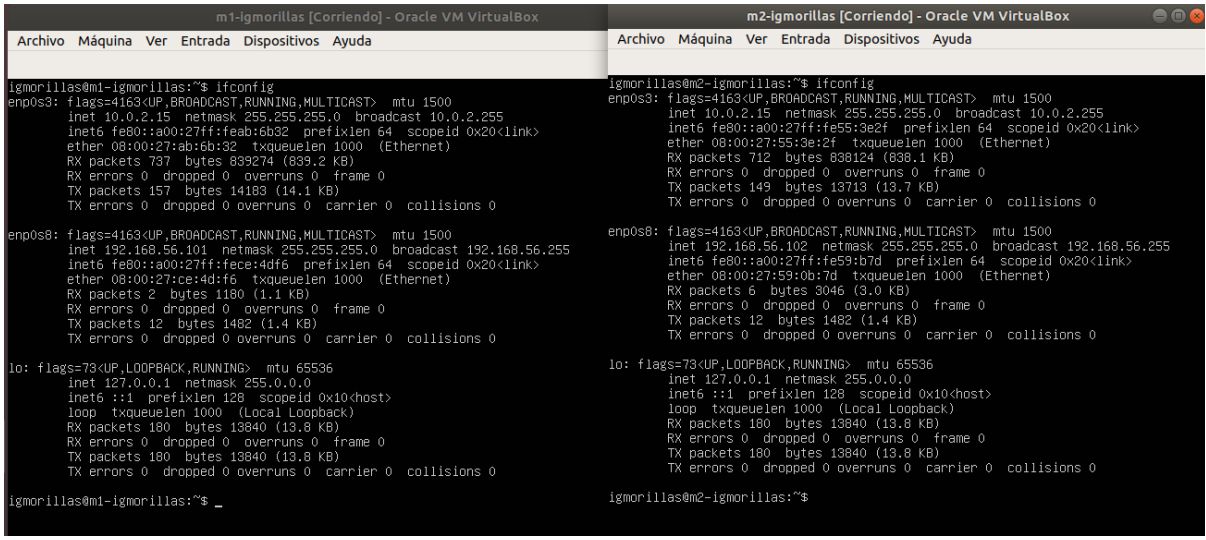


    b. Configuración de proxy, como no tenemos lo dejamos en blanco
    c. En la configuración del sistema de archivos marcamos la opción por defecto también. “**Use An Entire Disk”**
    d. Resumen de la instalación



e. Configuración de perfil

f. Una vez Finalizado entramos con nuestro login y contraseña.



5. **Ahora vamos a instalar en las 2 maquinas Apache+ PHP + MySQL, y el servidor SSH.Para ello seguire los apsos de** https://medium.com/@carlosferrerhernandez/instalaci%C3%B3n-de-apache-mysql-php-con-ubuntu-18-04-1-4ae049dfdddf
   a. Instalamos apache
      $ sudo apt update
      $ sudo apt install apache2
   b. Ajuste del cortafuegos para permitir el tráfico web
      $ sudo ufw app list
   c. Instalamos MySQL
      $ sudo apt install mysql-server mysql-client
   d. Instalamos PHP
      $ sudo apt install php libapache2-mod-php php-mysql
6. activar la cuenta de root
   $ sudo passwd root

7. Versión de apache2: **$ apache2 -v**

```
igmorillas@m1-igmorillas:~$ apache2 -v
Server version: Apache/2.4.29 (Ubuntu)
Server built:   2020-08-12T21:33:25
```

8. para ver si está ejecución :**$ sudo service apache2 status**

```
igmorillas@m1-igmorillas:~$ systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: e
  Drop-In: /lib/systemd/system/apache2.service.d
           └─apache2-systemd.conf
   Active: active (running) since Mon 2021-03-08 10:12:29 UTC; 42s ago
  Process: 819 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS
 Main PID: 937 (apache2)
    Tasks: 55 (limit: 1107)
   CGroup: /system.slice/apache2.service
           ├─937 /usr/sbin/apache2 -k start
           ├─938 /usr/sbin/apache2 -k start
           └─939 /usr/sbin/apache2 -k start

Mar 08 10:12:23 m1-igmorillas systemd[1]: Starting The Apache HTTP Server...
Mar 08 10:12:28 m1-igmorillas apachectl[819]: AH00558: apache2: Could not reliabl
Mar 08 10:12:29 m1-igmorillas systemd[1]: Started The Apache HTTP Server.
```

```
igmorillas@m2-igmorillas:~$ systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: e
  Drop-In: /lib/systemd/system/apache2.service.d
           └─apache2-systemd.conf
   Active: active (running) since Mon 2021-03-08 10:13:28 UTC; 6min ago
  Process: 753 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS
 Main PID: 937 (apache2)
    Tasks: 55 (limit: 1107)
   CGroup: /system.slice/apache2.service
           ├─937 /usr/sbin/apache2 -k start
           ├─938 /usr/sbin/apache2 -k start
           └─939 /usr/sbin/apache2 -k start

Mar 08 10:13:21 m2-igmorillas systemd[1]: Starting The Apache HTTP Server...
Mar 08 10:13:27 m2-igmorillas apachectl[753]: AH00558: apache2: Could not reliabl
Mar 08 10:13:28 m2-igmorillas systemd[1]: Started The Apache HTTP Server.
```

9. Ahora instalamos curl que nos permitirá simular acciones de un usuario en un navegador web
   $ sudo apt-get install curl
10. Vamos a comprobar que el Apache funciona correctamente

```
enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.56.101  netmask 255.255.255.0  broadcast 192.168.56.255
        inet6 fe80::a00:27ff:fece:4df6  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:ce:4d:f6  txqueuelen 1000  (Ethernet)
        RX packets 22  bytes 6414 (6.4 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 19  bytes 2486 (2.4 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 104  bytes 8360 (8.3 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 104  bytes 8360 (8.3 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

igmorillas@m1-igmorillas:~$ curl http://192.168.56.101/ejemplo.html
<HTML>
        <BODY>
                Maquina1
                Web de ejemplo de igmorillas para SWAP
                Email:igmorillas@correo.ugr.es
        </BODY>
</HTML>
```

```
enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.56.102  netmask 255.255.255.0  broadcast 192.168.56.255
        inet6 fe80::a00:27ff:fe59:b7d  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:59:0b:7d  txqueuelen 1000  (Ethernet)
        RX packets 18  bytes 4548 (4.5 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 19  bytes 2486 (2.4 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 104  bytes 8361 (8.3 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 104  bytes 8361 (8.3 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

igmorillas@m2-igmorillas:~$ curl http://192.168.56.102/ejemplo.html
<HTML>
        <BODY>
                Maquina2
                Web de ejemplo de igmorillas para SWAP
                Email: igmorillas@correo.ugr.es
        </BODY>
</HTML>
```

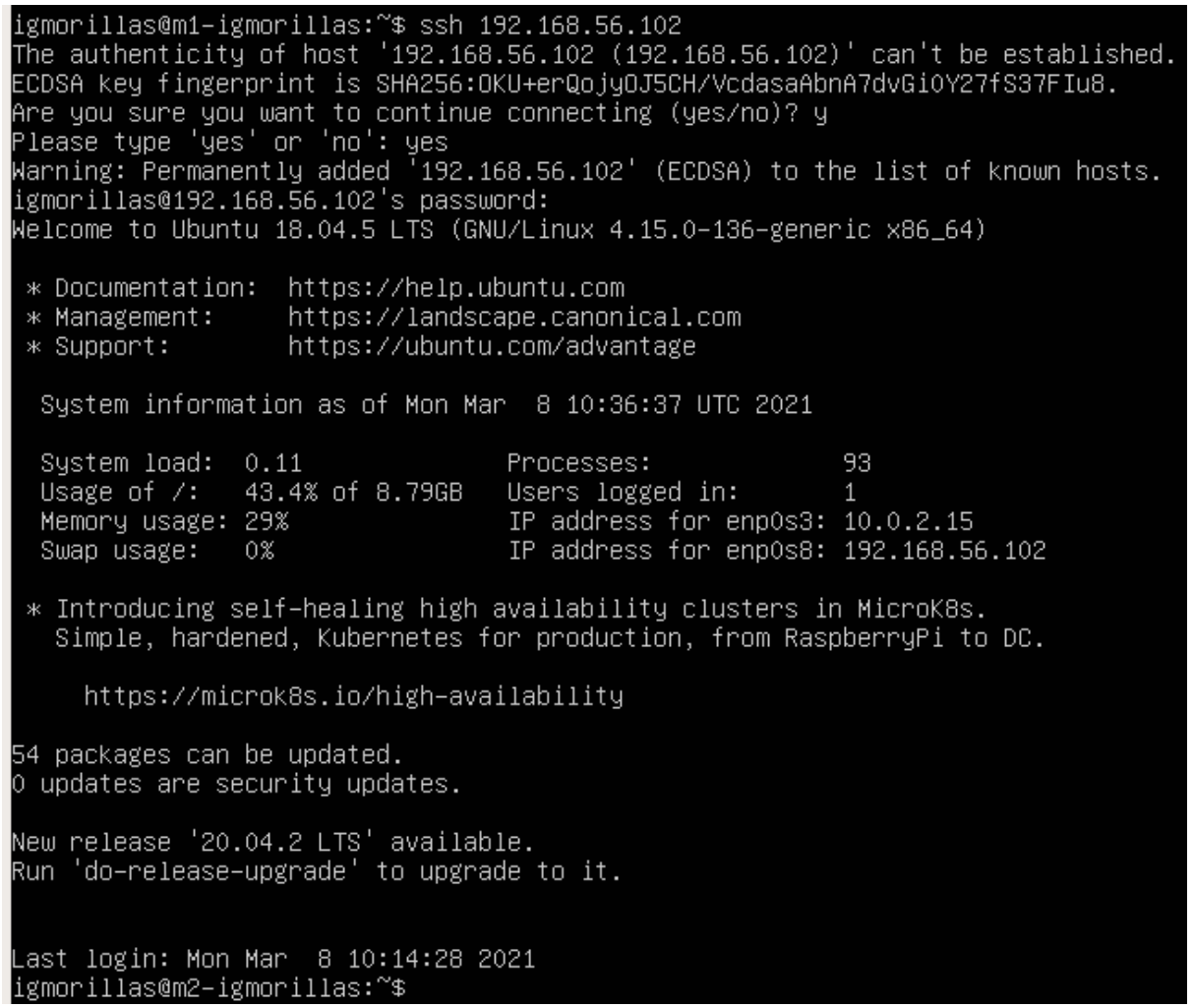
11. también he probado a descargar un archivo

```
igmorillas@m1-igmorillas:~$ curl -o imagen.png https://www.google.es/images/srpr/logo3w.png
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  6748  100  6748    0     0  27769      0 --:--:-- --:--:-- --:--:-- 27884
```

Cuestiones a resolver

1. Acceder por ssh de una máquina a otra:

Máquina 1 -> 2:



Máquina 2 -> 1 :

```
igmorillas@m2-igmorillas:~$ ssh 192.168.56.101
The authenticity of host '192.168.56.101 (192.168.56.101)' can't be established.
ECDSA key fingerprint is SHA256:2pMuE1F8fVMzaZChYRaQvSZ5v3nLZPh2FZIsDteSkPI.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.56.101' (ECDSA) to the list of known hosts.
igmorillas@192.168.56.101's password:
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 4.15.0-136-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Mon Mar  8 10:37:35 UTC 2021

  System load:  0.0               Processes:             95
  Usage of /:   43.5% of 8.79GB   Users logged in:       1
  Memory usage: 30%               IP address for enp0s3: 10.0.2.15
  Swap usage:   0%                IP address for enp0s8: 192.168.56.101

 * Introducing self-healing high availability clusters in MicroK8s.
   Simple, hardened, Kubernetes for production, from RaspberryPi to DC.

     https://microk8s.io/high-availability

54 packages can be updated.
0 updates are security updates.

New release '20.04.2 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


Last login: Mon Mar  8 10:12:50 2021
igmorillas@m1-igmorillas:~$ _
```

2. Acceder con curl de una máquina a la otra

Máquina 1 muestra curl de la 2:

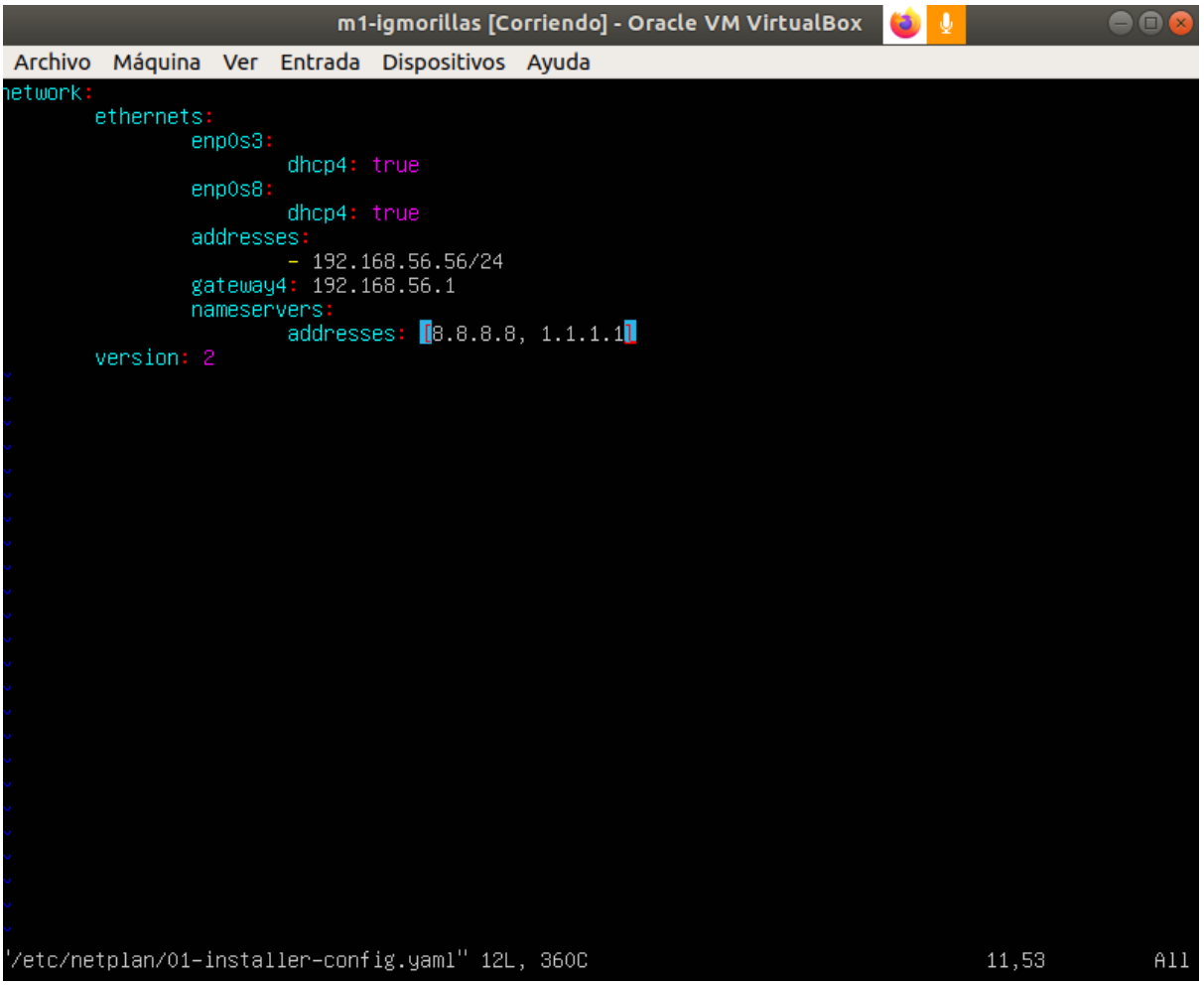
```
igmorillas@m1-igmorillas:~$ curl http://192.168.56.102/ejemplo.html
<HTML>
        <BODY>
                Maquina2
                Web de ejemplo de igmorillas para SWAP

                Email: igmorillas@correo.ugr.es
        </BODY>
</HTML>
igmorillas@m1-igmorillas:~$
```

Máquina 2 muestra el curl de la 1:

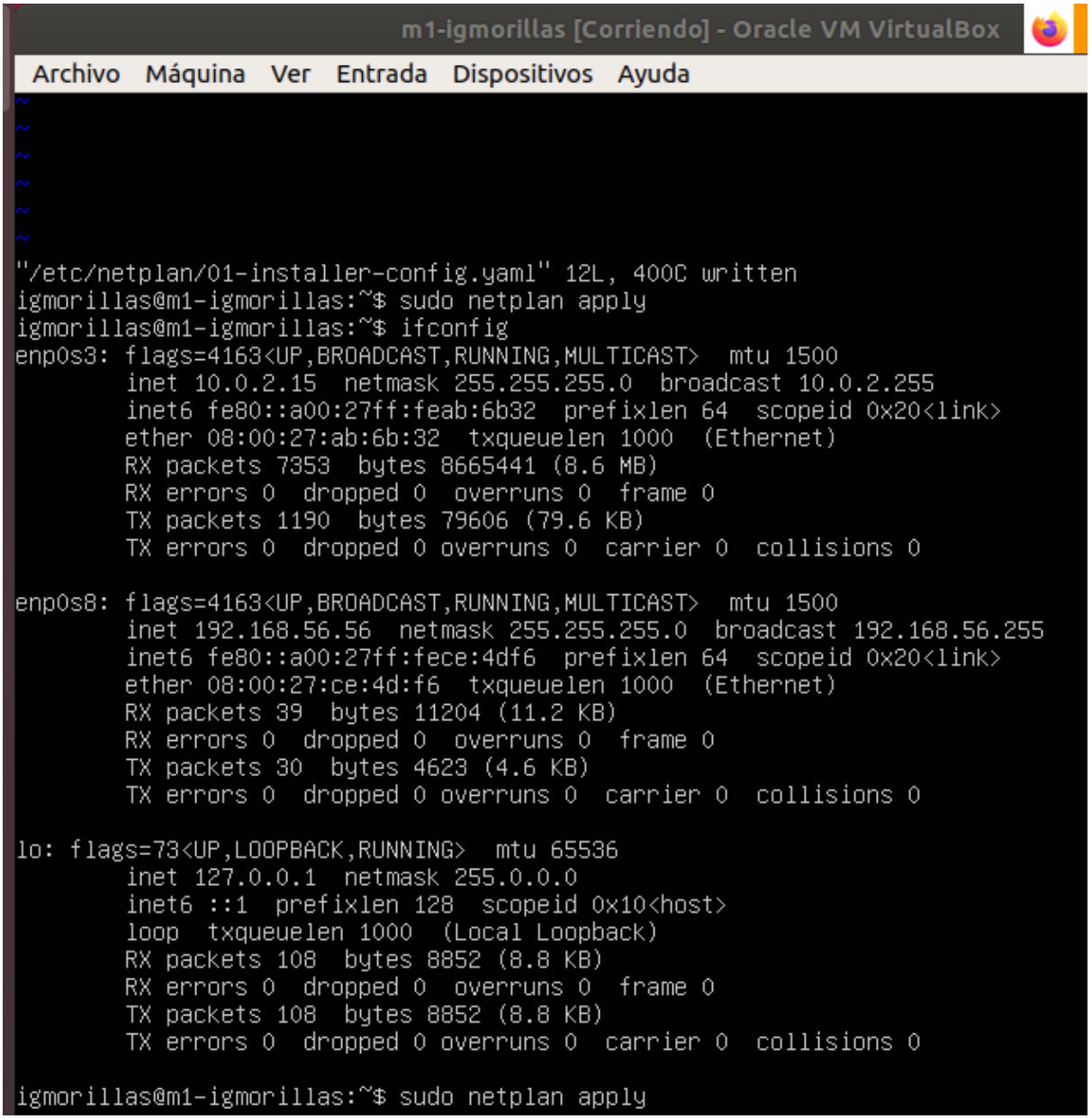
```
igmorillas@m2-igmorillas:~$ curl http://192.168.56.101/ejemplo.html
<HTML>
        <BODY>
                Maquina1
                Web de ejemplo de igmorillas para SWAP
                Email:igmorillas@correo.ugr.es
        </BODY>
</HTML>
igmorillas@m2-igmorillas:~$
```

3. Mostrar configuraciones de red y opciones de netplan

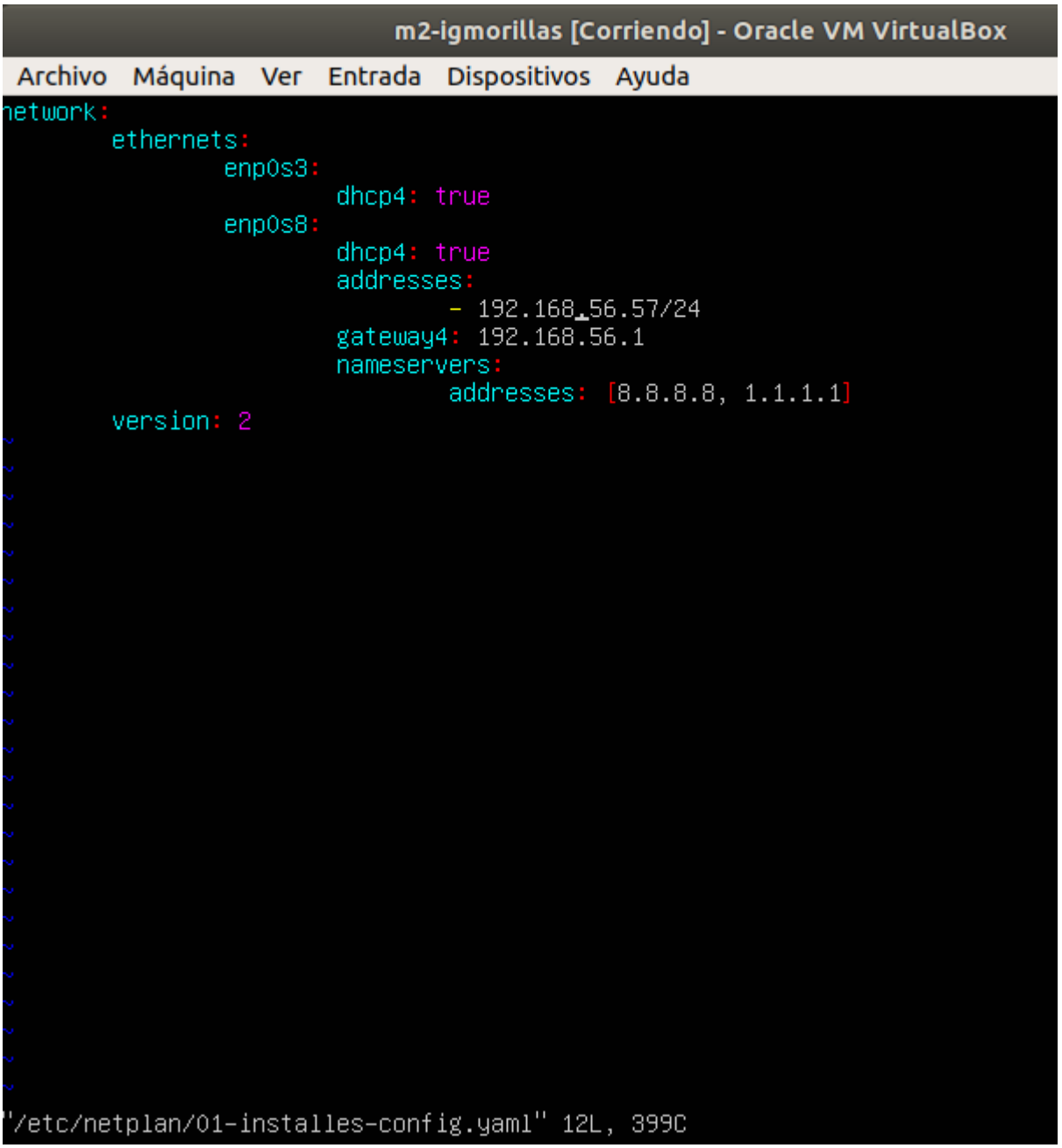
nota: esto lo hice después pero funcionan el ssh y el curl sin problema.
$ sudo vi /etc/netplan/01-installer-config.yaml



Lo aplicamos con
$ sudo netplan apply
Vemos com enp0s8 a cambiado su IP


m1-igmorillas [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
~
~
~
~
~
~
"/etc/netplan/01-installer-config.yaml" 12L, 400C written
igmorillas@m1-igmorillas:~$ sudo netplan apply
igmorillas@m1-igmorillas:~$ ifconfig
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:feab:6b32 prefixlen 64 scopeid 0x20<link>
ether 08:00:27:ab:6b:32 txqueuelen 1000 (Ethernet)
RX packets 7353 bytes 8665441 (8.6 MB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 1190 bytes 79606 (79.6 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 192.168.56.56 netmask 255.255.255.0 broadcast 192.168.56.255
inet6 fe80::a00:27ff:fece:4df6 prefixlen 64 scopeid 0x20<link>
ether 08:00:27:ce:4d:f6 txqueuelen 1000 (Ethernet)
RX packets 39 bytes 11204 (11.2 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 30 bytes 4623 (4.6 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 108 bytes 8852 (8.8 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 108 bytes 8852 (8.8 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
igmorillas@m1-igmorillas:~$ sudo netplan apply

Lo mismo para la máquina 2:



```
igmorillas@m2-igmorillas:~$ ifconfig
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:fe55:3e2f  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:55:3e:2f  txqueuelen 1000  (Ethernet)
        RX packets 7829  bytes 8926923 (8.9 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 1521  bytes 99773 (99.7 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.56.57  netmask 255.255.255.0  broadcast 192.168.56.255
        inet6 fe80::a00:27ff:fe59:b7d  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:59:0b:7d  txqueuelen 1000  (Ethernet)
        RX packets 258  bytes 60685 (60.6 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 207  bytes 30954 (30.9 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 134  bytes 11468 (11.4 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 134  bytes 11468 (11.4 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```